



Region 11: Guadalupe Regional Flood Planning Group Meeting

Wednesday, January 6, 2021
2:00pm

Agenda Item 1

Call to Order

1. Attendance
2. Establish Quorum

Agenda Item 2

Welcome

Agenda Item 3

Public General Comments

Public Comments limited to 3 minutes per speaker

Agenda Item 4

Approval of Meeting Minutes

1. Approval of meeting minutes from December 2, 2020 Region 11 RFPG Meeting

Meeting Minutes
Region 11 Guadalupe Regional Flood Planning Group Meeting
December 2, 2020
2:00 PM

Guadalupe-Blanco River Authority River Annex (905 Nolan Street, Seguin, TX 78155)
or
GoToWebinar Virtual Meeting

Roll Call:

<u>Voting Member</u>	<u>Interest Category</u>	<u>Present (x) / Absent () / Alternate Present (*)</u>
Doug Miller	<i>Agricultural interests</i>	X
John Johnston	<i>Counties</i>	X
Annalisa Peace Vanessa Puig-Williams*	<i>Environmental interests</i>	X
Beth Parker	<i>Flood districts</i>	
Kevin Stone	<i>Industries</i>	X
Joseph Pantalion	<i>Municipalities</i>	X
Kimberly Meitzen	<i>Public</i>	X
R. Brian Perkins	<i>River authorities</i>	X
Gian Villarreal	<i>Small business</i>	X
Ronald Fieseler	<i>Water districts</i>	X
Joseph McDaniel	<i>Water utilities</i>	X

<u>Non-voting Member</u>	<u>Agency</u>	<u>Present(x)/Absent()/ Alternate Present (*)</u>
Sue Reilly	Texas Parks and Wildlife Department	X
Natalie Johnson	Texas Division of Emergency Management	X
Jami McCool	Texas Department of Agriculture	X
Allen Nash	Texas State Soil and Water Conservation Board	X
Kris Robles	General Land Office	X
Morgan White	Texas Water Development Board (TWDB)	X
Joel Klumpp Brittney Wortham-Teakell*	Texas Commission on Environmental Quality	*

Quorum:

Quorum: **Yes**

Number of voting members or alternates representing voting members present: **10**

Number required for quorum per current voting positions of 12: **7**

Other Meeting Attendees:

Lauren Willis, GBRA (Meeting Facilitator)

Ramiro Mendoza, GBRA (IT)

Other Meeting Attendees: **

Reem Zoun, TWDB
Ryke Moore, TWDB
Matt Nelson, TWDB
James Bronikowski, TWDB
Richard Bagans, TWDB
Megan Ingram, TWDB
Lauren Graber, LCRA
Laurie Moyer, City of San Marcos
Eric Stewart, HDR
David Briggs
Tommy Hill, GBRA
Michelle Havelka, TCEQ
Mike Personett

Vanessa Puig-Williams, EDF
Josh Logan
Adam Conner, Freese & Nichols
Sam Vaugh, HDR
Stephanie Griffin
Fritz Reinig
Jim Carrillo
Paula Jo Lemonds, HDR
Stephanie Castillo
Mohamed Bagha
Nick Panyard

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

All meeting materials are available for the public at:

<http://www.twdb.texas.gov/flood/planning/regions/schedule.asp>

AGENDA ITEM NO. 1: Call to Order

Doug Miller called the meeting to order at 2:00 PM. Lauren Willis called roll of the planning group members to record attendance and a quorum was established.

AGENDA ITEM NO. 2: Welcome

Doug Miller welcomed members to the meeting. Lauren Willis provided meeting facilitation information and instructions. Kris Robles stated he wasn't receiving RFPG emails.

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

Doug Miller provided instructions for public comments. Vanessa Puig-Williams introduced herself as Annalisa Peace's alternate. Brittney Wortham-Teakell verified that she was present and standing in for Joel Klumpp.

AGENDA ITEM NO. 4: Approval of Minutes from the November 4, 2020 Region 11 RFPG Meeting

Doug Miller opened discussion on approving the minutes from the November 4, 2020 Region 11 RFPG Meeting.

One comment was brought forth about the incorrect spelling of Kimberly Meitzen's name during open discussion.

A motion was made by Joseph McDaniel to approve the November 4, 2020 Region 11 RFPG Meeting minutes amended that Kimberly Meitzen's name be spelled correctly.

The motion was seconded by Annalisa Peace.

The vote to approve the minutes from the November 4, 2020 Region 11 RFPG Meeting passed by a vote of 10 Ayes.

AGENDA ITEM NO. 5: TWDB Update/Presentation

Morgan White presented on two topics: Flood Planning 101 and Request for Applications Process & Contract Details.

AGENDA ITEM NO. 6: Other Presentation

Doug Miller provided instructions for submitting future presentations related to flood planning efforts.

AGENDA ITEM NO. 7: Consider nominating and electing RFPG Vice Chair and Secretary

Doug Miller described the Vice Chair & Secretary election process and opened the floor to nominations for the Vice Chair.

Brian Perkins made a nomination of John Johnston as the Vice Chair.

The vote to select John Johnston as Vice Chair of Region 11 Guadalupe RFPG passed by a vote of 10 Ayes.

Doug Miller opened the floor to nominations for the Secretary.

Ronald Fiesler made a nomination of Brian Perkins as the Secretary.

The vote to select Brian Perkins as Secretary of Region 11 Guadalupe RFPG passed by a vote of 10 Ayes.

AGENDA ITEM NO. 8: Consider nominating and electing two members-at-large to serve on the Executive Committee

Doug Miller described the election process and opened the floor to nominations for the two members-at-large.

Annalise Peace made a nomination of Kimberly Meitzen as a member-at-large.

John Johnston made a nomination of Ronald Fiesler as a member-at-large

The vote to select Kimberly Meitzen and Ronald Fiesler as members-at-large of Region 11 Guadalupe RFPG passed by a vote of 10 Ayes.

AGENDA ITEM NO. 9: Discussion and possible consideration to add additional voting and non-voting positions to the RFPG

No public comments were given.

Doug Miller opened discussion of additional voting and non-voting positions that may be needed to ensure adequate representation from the interest in the region.

A motion was made by Joseph McDaniel to add three voting positions in the categories of river authorities, municipalities and counties and to add one non-voting position in the public interest category.

The motion was seconded by Brian Perkins.

The motion passed by unanimous consent.

AGENDA ITEM NO. 10: Update from Planning Group Sponsor regarding status of Regional Flood Planning Grant contract with the TWDB.

Lauren Willis discussed the status of application for Regional Flood Planning Grant Funds, the technical consultant procurement process and informed the RFPG that the TWDB would be presenting at the January meeting on the Scope of Work posted with TWDB RFA.

AGENDA ITEM NO. 11: Discuss a means by which the RFPG sponsor will develop and host a public website (required per §361.21(b)).

Lauren Willis discussed that GBRA staff will be buying a domain name and creating the website.

AGENDA ITEM NO. 12 Discuss a means by which the RFPG sponsor will accept written public comment prior to and after meetings (required per §361.21(c)).

Lauren Willis discussed that an email will be connected with the website to send in public comments.

AGENDA ITEM NO. 13 Discussion of the required solicitation for person or entities who request to be notified of RFPG activities (required per §361.21(e)) .

Lauren Willis discussed that an email will be connected with the website in order to be added to a distribution list for future RFPG activities.

AGENDA ITEM NO. 14: Public General comments (Public comments limited to 3 minutes per speaker)

No public comments were given.

AGENDA ITEM NO. 15: Consider date and agenda items for next meeting

Doug Miller opened discussion to consider the date and agenda items for the next meeting.

RFPG discussed meeting on the first Wednesday of every month, beginning on January 6, 2021.

Potential agenda items for the next meeting include presentation by other entities, as necessary.

AGENDA ITEM NO. 14: Adjourn

The members discussed the required Open Meetings Act and Public Information Act trainings. The members discussed the meeting setup and IT equipment.

The meeting adjourned at 3:53 PM by Doug Miller.

Approved by the Region 11 Guadalupe RFPG at a meeting held on 01/06/2021.

Brian Perkins, SECRETARY

Doug Miller, CHAIR

Agenda Item 5

Texas Water Development Board Update/Presentation

- RFPG Responsibilities: Scope of Work Overview

RFPG Responsibilities: Scope of Work Overview (20 minutes)

General Document Cross-Reference

Regional Flood Planning Contract Document References			2023 Regional Flood Plan Chapter, Associated TAC Sections, and Content		
TWDB Contract Reimbursement Accounting Number ('CAS')	Exhibit A - Contract SOW Task	Exhibit C - General Guidelines for Regional Flood Plan Development	Regional Flood Plan Chapter Number	Primary TAC Section	General Content
1	1	1	1	§361.30; §361.31; §361.32	Planning Area Description
2	2A	2	2	361.33	Existing Condition Flood Risk Analyses
3	2B			361.34	Future Condition Flood Risk Analyses

Task 1 – Planning Area Description



Llano dam on the Llano river sits on the banks of the county seat.

Image: TWDB

A general description of the region, including:

- social & economic character
- flood-prone areas, types of major flood risks, and key historical flood events
- political subdivisions with flood related authority
- the extent of local regulation and development codes relevant to flooding
- existing or proposed natural flood mitigation features and constructed major flood infrastructure

Task 2A & 2B – Existing & Future Condition Flood Risk Analyses

Perform existing and future condition **flood hazard analyses** to determine the location and magnitude of both 1.0% and 0.2% annual chance flood events



Develop existing & future condition **flood exposure analyses** to identify who and what might be harmed for both 1.0% and 0.2% annual chance flood events.

Perform existing & future condition **vulnerability analyses** to identify vulnerabilities of communities and critical facilities

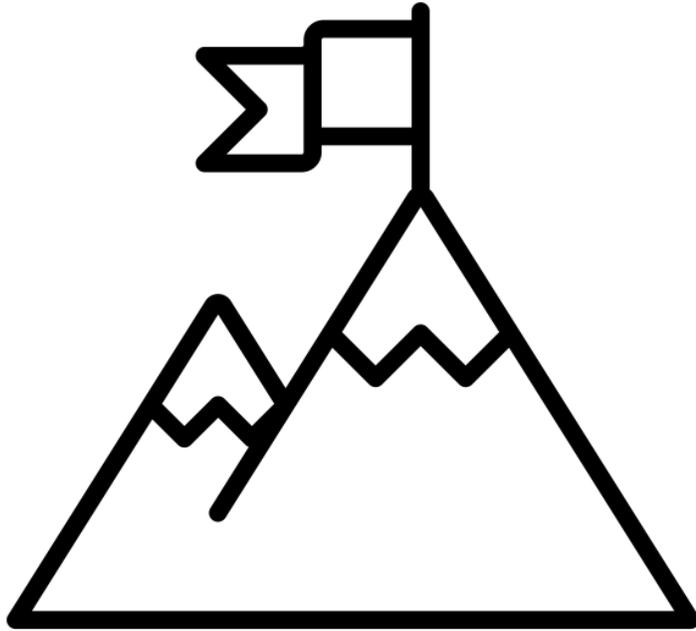
Task 3A – Evaluation & Recommendations on Floodplain Management Practices

- Consider how current floodplain management practices or regulations increase flood risks.
- Consider how the 1.0% annual chance floodplain and associated flood risks may change over time.
- Consider adopting minimum floodplain management/land use standards that an entity must adopt prior to including any evaluations, projects, or strategies in the regional flood plan.



West Fork San Jacinto River near Humble, Texas after Hurricane Harvey
Image: Steve Fitzgerald, Harris County Flood Control District

Task 3B – Flood Mitigation & Floodplain Management Goals

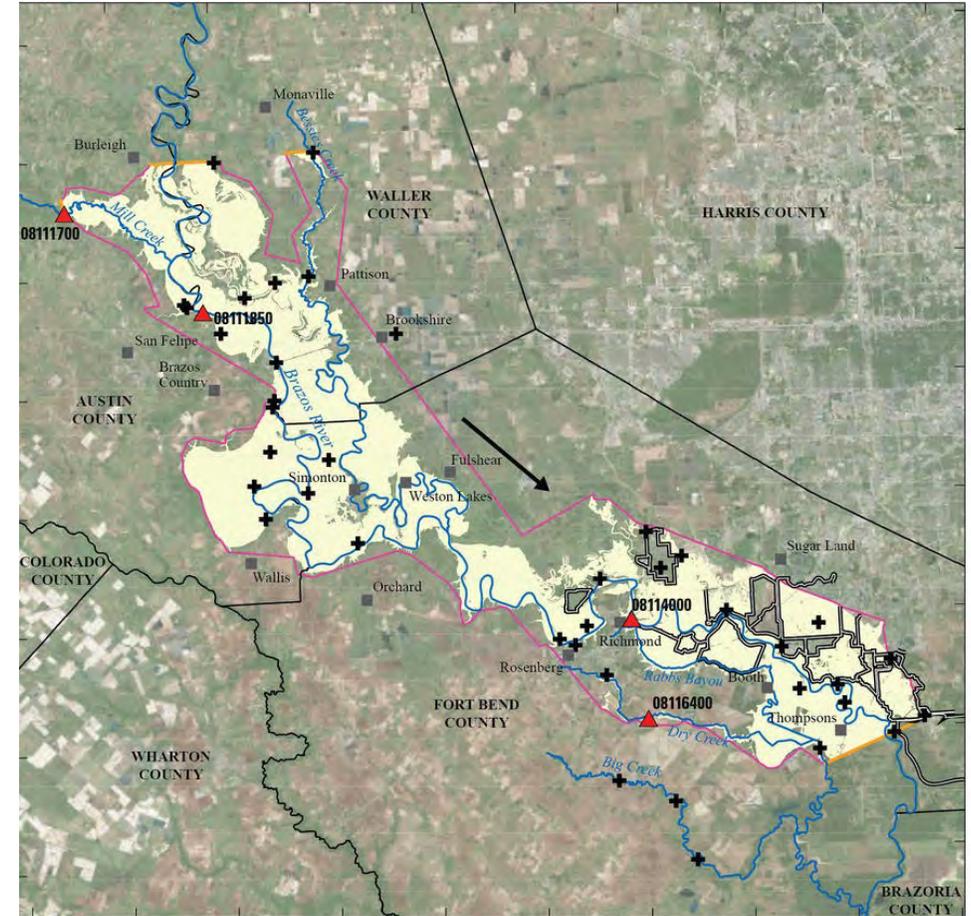


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- Identify specific and achievable flood mitigation and floodplain management goals
 - Short (10 year) & Long-Term (30 year)
- State the levels of residual flood risk after goals are fully met.

Task 4A – Flood Mitigation Needs Analysis

- Identify locations within the region that have the greatest flood mitigation and flood risk study needs.
- Based on the analyses and goals developed by the RFPG under Tasks 2A through 3B



Map of inundated areas (yellow areas) on the lower Brazos River after Hurricane Harvey
Image: USGS

Key Terms for Tasks 4 & 5: FME, FMP, FMS

Flood Management Evaluation (FME)

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



Cottonwood Creek Flood Study, San Marcos, TX.

Image: City of San Marcos

Flood Management Strategy (FMS)

- A proposed plan to reduce flood risk or mitigate flood hazards to life or property (may or may not require associated FMPs to be implemented).



Exploration Green project, Clear Lake City, TX

Image: Texas Water Resources Institute

Flood Mitigation Project (FMP)

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

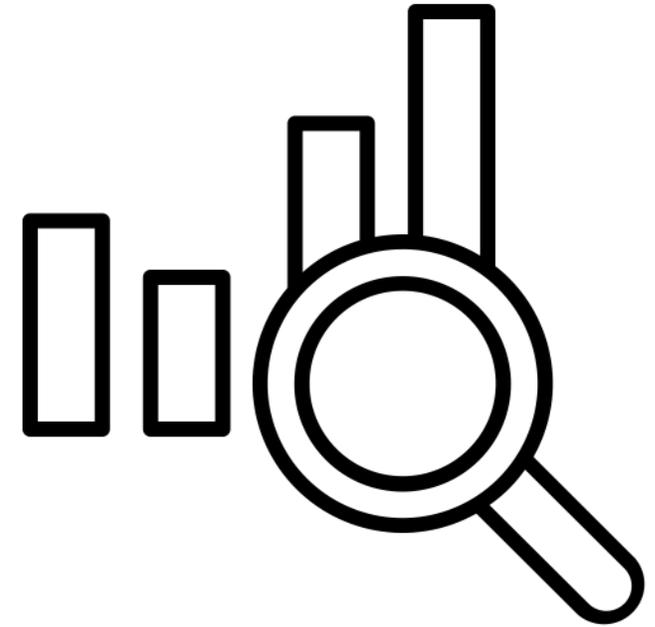


El Paso storm water project, El Paso, TX

Image: El Paso Water

Task 4B – Identification and Evaluation of Potential FMEs & Potentially Feasible FMSs and FMPs

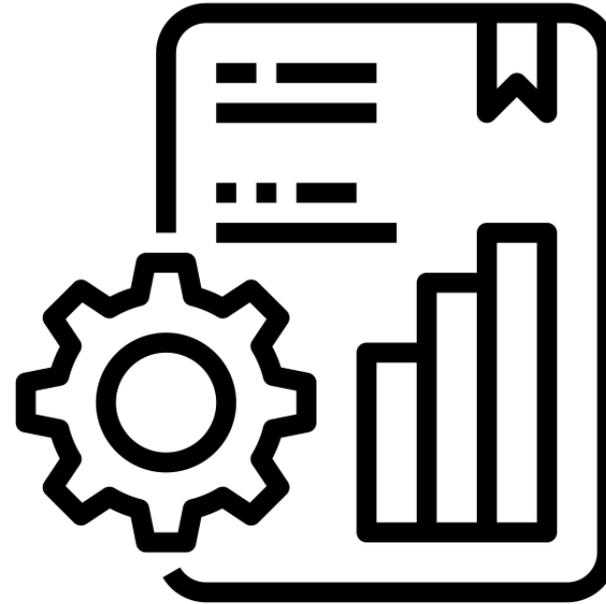
- Identify potential FMEs and potentially feasible FMSs and FMPs based on process developed with public input
- Evaluate potential FMEs and potentially feasible FMSs and FMPs based on a variety of factors described in rules and guidance.
- The FMPs should be permittable, constructible, and implementable.



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Task 4C – Prepare and Submit Technical Memorandum

- Include all deliverables from Tasks 1 to 4B detailed in the Scope of Work
- TWDB Guidance Document will provide more information.
- Tentative Due Date: January 2022



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Task 5 – Recommendation of FMEs, FMSs & FMPs

- Recommend FMEs that are most likely to identify potentially feasible FMSs and FMPs based on evaluations under Task 4B
- Recommend FMSs and FMPs to reduce the impacts of flood based on evaluations under Task 4B
- Recommendations should be based on comparison of alternatives



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Regional & State Flood Planning Long-Range Planning Process



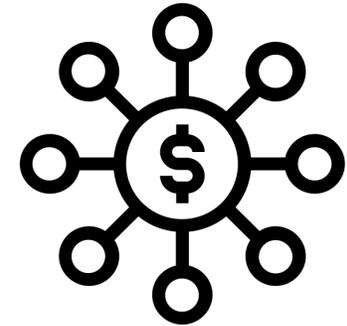
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Regional Flood Plans will identify flood risk and recommend FMEs, FMSs, and FMPs within regions.



Created by Creative Stall
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State Flood Plan will rank recommended FMEs, FMSs, and FMPs statewide.



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

*Funding to implement projects can also come from local, federal, or other sources.

Task 6A – Impacts of Regional Flood Plan

- Summarize the relative reduction in flood risk that implementation of the plan would achieve.
- Describe impacts of recommended FMSs and FMPs on environment, agriculture, recreation, water quality, erosion, sedimentation, and navigation.
- State that FMPs will not negatively affect neighboring areas.



Crops in the lower Rio Grande Valley
Image: TWDB



Recreational boating.
Image: TWDB



Dolan Falls
Image: TWDB

Task 6B – Impacts on Water Supply

- Summarize how Regional Flood Plan will affect water supply.
- How would FMSs and FMPs contribute to water supply?
- How would FMSs and FMPs impact water supply, availability, or projects in the State Water Plan?



© Texas Water Development Board

Task 7 – Flood Response Information and Activities

- Summarize existing flood response preparations.
- Coordinate with entities in the region to gather information
- RFPGs do not perform analyses or other activities related to disaster response or recovery.



Texas State Guard Hurricane Harvey emergency response.

Image: Texas State Guard

Task 8 – Administrative, Regulatory, and Legislative Recommendations

- Develop policy recommendations to implement and achieve the RFPG's stated goals and plans.
- Consider potential new revenue-raising opportunities to fund flood activities in the region.



Image: TWDB

Task 9 – Flood Infrastructure Financing Analysis

- Survey and report on how sponsors propose to finance recommended FMEs and FMPs
- Include recommendations on the proposed role of the State in financing FMEs and FMPs



Dam on the Llano River under Hwy 16 in Llano, Texas.

Image: TWDB

Task 10 – Public Participation & Plan Adoption

Administrative activities not included in other tasks, including:

- Meeting preparations, notices, agendas, materials, minutes, presentations, and public comments
- Website creation and maintenance
- Intraregional and interregional coordination and communication to develop the regional flood plan.



TWDB flood outreach meeting in Bastrop, TX.

Image: TWDB



Image: Brent Hanson, U.S. Geological Survey. Public domain.

Questions? Comments?

Agenda Item 6

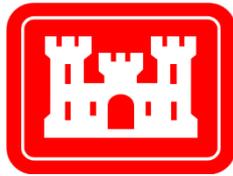
Other

Presentations

The InFRM Watershed Hydrology Assessment for the Guadalupe River Basin

Helena Mosser, P.E.
Lead Hydraulic Engineer
U.S. Army Corps of Engineers

Max Strickler, DFM
Lead Hydrologist
U.S. Army Corps of Engineers



FEMA



The Interagency Flood Risk Management (InFRM) Watershed Hydrology Assessment for the Guadalupe River Basin

Date: 06 January 2021

Audience: Region 11 - Guadalupe Regional Flood Planning Group

Location: Virtual

Max Strickler, CFM
Lead Hydrologist
US Army Corps of Engineers
Fort Worth District

Helena Mosser, P.E.
Lead Hydraulic Engineer
US Army Corps of Engineers
Fort Worth District

Presentation Outline:

- **What are InFRM and the Watershed Hydrology Assessments?**
- **NOAA Atlas 14 Rainfall Depths for the Guadalupe Basin**
- **Final Frequency Flow Results**
- **Conclusions**



What are InFRM & the Watershed Hydrology Assessments?

The Interagency Flood Risk Management (InFRM) Team

Collaboration of Federal Agencies → One Mission

- Pilot Program began in 2014 within FEMA Region 6
- Purpose to develop actionable information to reduce long-term flood risk in the region
- Leverages information, expertise, programs and resources across the federal agencies
- Operates under the umbrella of Integrated Water Resources Science and Services (IWRSS)



To provide **reliable, impartial, timely information** that is needed to understand the Nation's water resources.



provide the best weather, water, and climate forecasts through international cooperation on hydro-meteorological observations, data exchange, modeling, research, and technology development; and to provide global leadership in setting meteorological standards and building partnerships **to save lives and protect property.**



Deliver vital public and military engineering services; partnering in peace and war to strengthen our Nation's security, energize the economy and **reduce risks from disasters.**



FEMA

Support our citizens and first responders to ensure that as a nation we work together to build, sustain and improve our capability to **prepare for, protect against, respond to, recover from and mitigate all hazards**



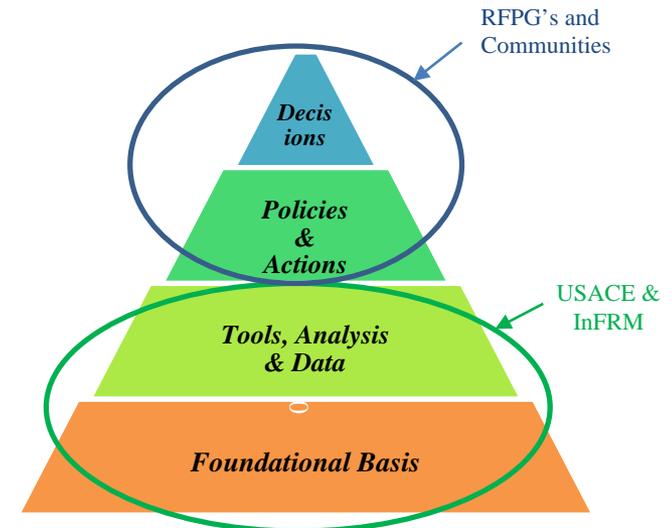
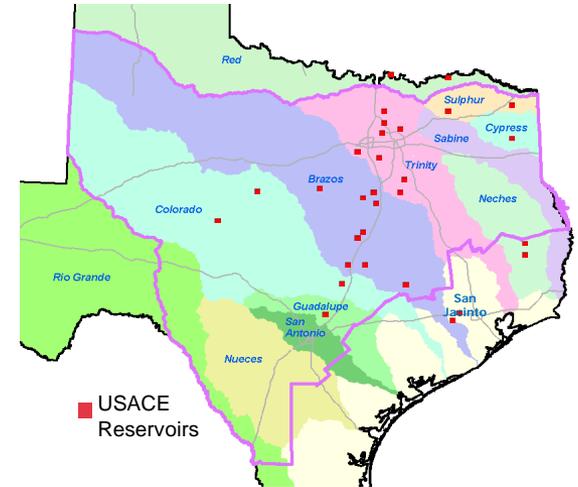
US ARMY CORPS OF ENGINEERS ROLE IS FLOOD RISK REDUCTION

- Funding assistance to communities for flood damage reduction projects
 - Continuing Authorities Program (CAP) - Section 205 FRM: structural or non-structural measures; <\$10M federal investment; Section 208 Snagging/Clearing: reduce nuisance flood damages caused by debris and minor shoaling of rivers; <\$500k federal (Both cost shared 50/50 study, then 65/35 design & construction).
 - General Investigation Feasibility studies – larger scale projects or watershed approach to help communities solve a water resource problem (50/50 or 75/25 cost share); study authorization is provided by Congressional resolutions and funding is provided in an appropriations bill.
 - Planning Assistance to States (PAS) – funding for a broad range of studies from flooding to water availability (cost sharing)
 - Flood Plain Management Services (FPMS) – assists communities with floodplain related studies (cost share or reimbursable)
 - Silver Jackets

- US Army Corps of Engineers (USACE) Dam Operations
 - Owns and operates 29 multipurpose reservoirs, oversees flood operations for others
 - Reservoirs establish and maintain river conditions in 7 river systems (\$100B+ damages prevented)
 - Funding partner for network of stream and precipitation gages across the state

- Designed and constructed billions \$'s in statewide flood damage reduction projects including coastal

- Technical expertise
 - Regional planners, program managers, scientist and engineers and designers
 - National virtual teams – allows rapid repositioning of resources
 - Industry standard software for flood analysis
 - Real-time flood forecasting and inundation mapping
 - Preparedness and resiliency tools and initiatives
 - Research and education



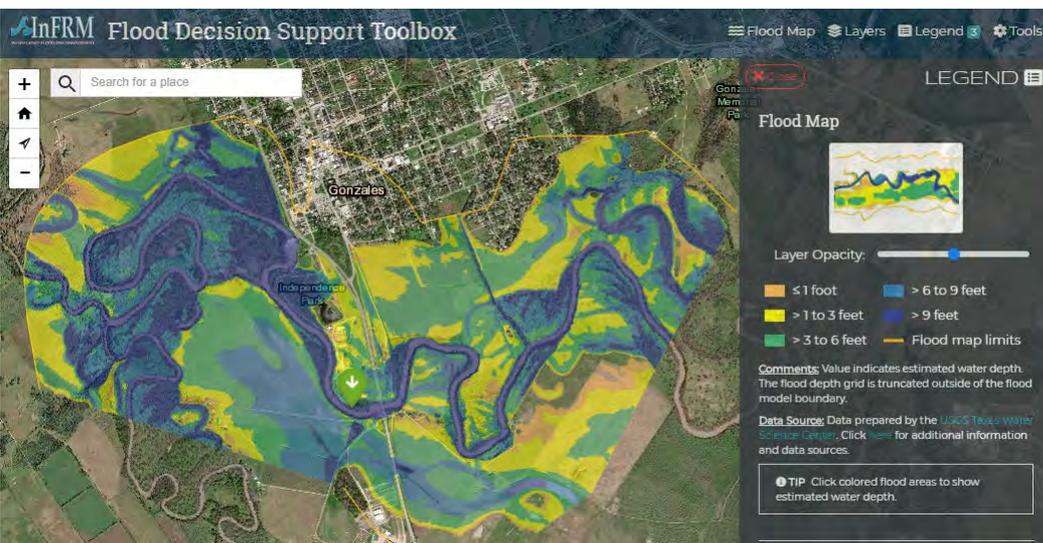
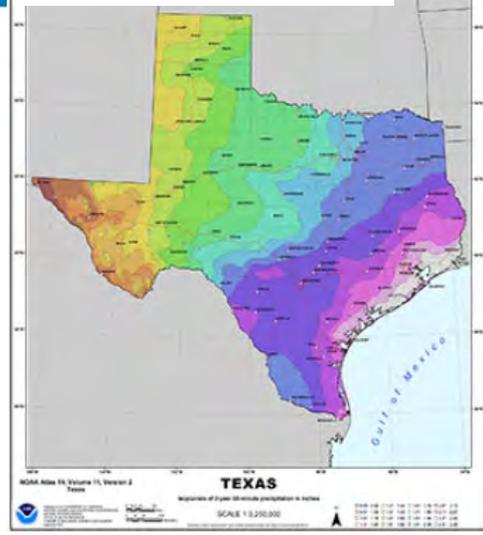
Collaborating Nationally. Empowering Locally.

www.InFRM.us

Estimated Base Flood Elevation (estBFE) Viewer



NOAA ATLAS 14



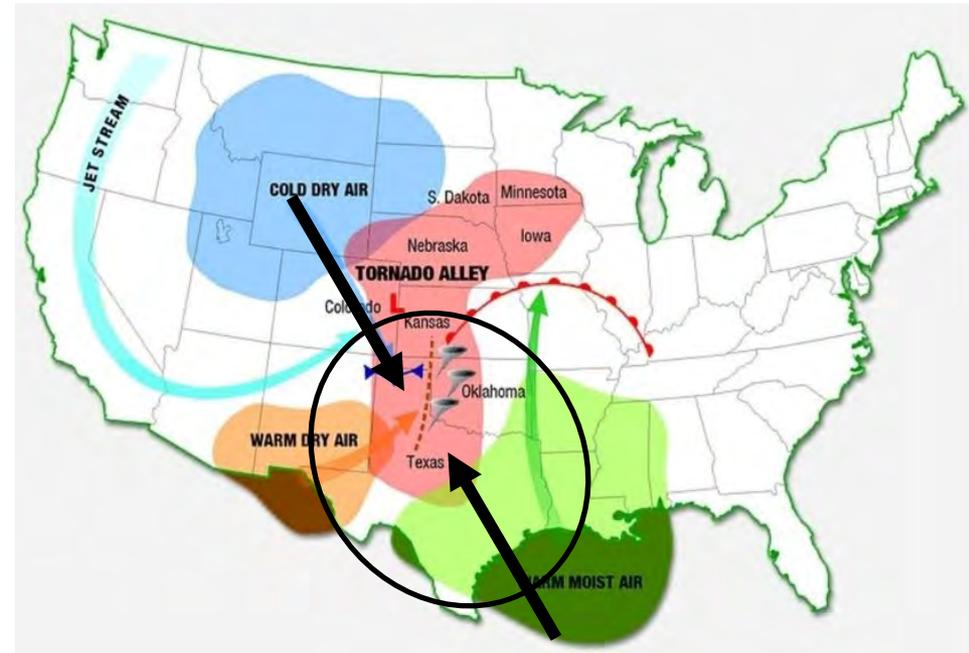
InFRM Watershed Hydrology Assessments



What Are the InFRM Watershed Hydrology Assessments About?

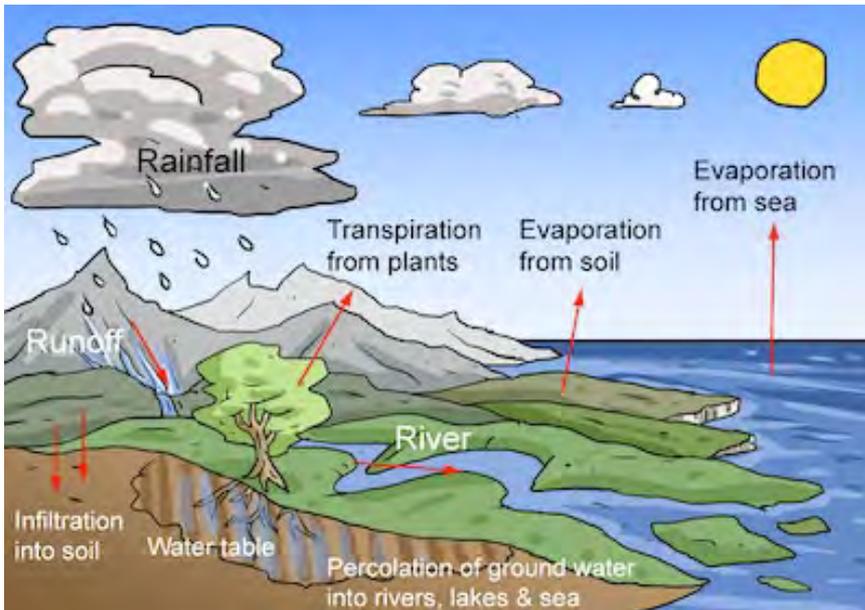
Meteorology:

Study weather patterns and the likelihood and intensity of storm events over a region



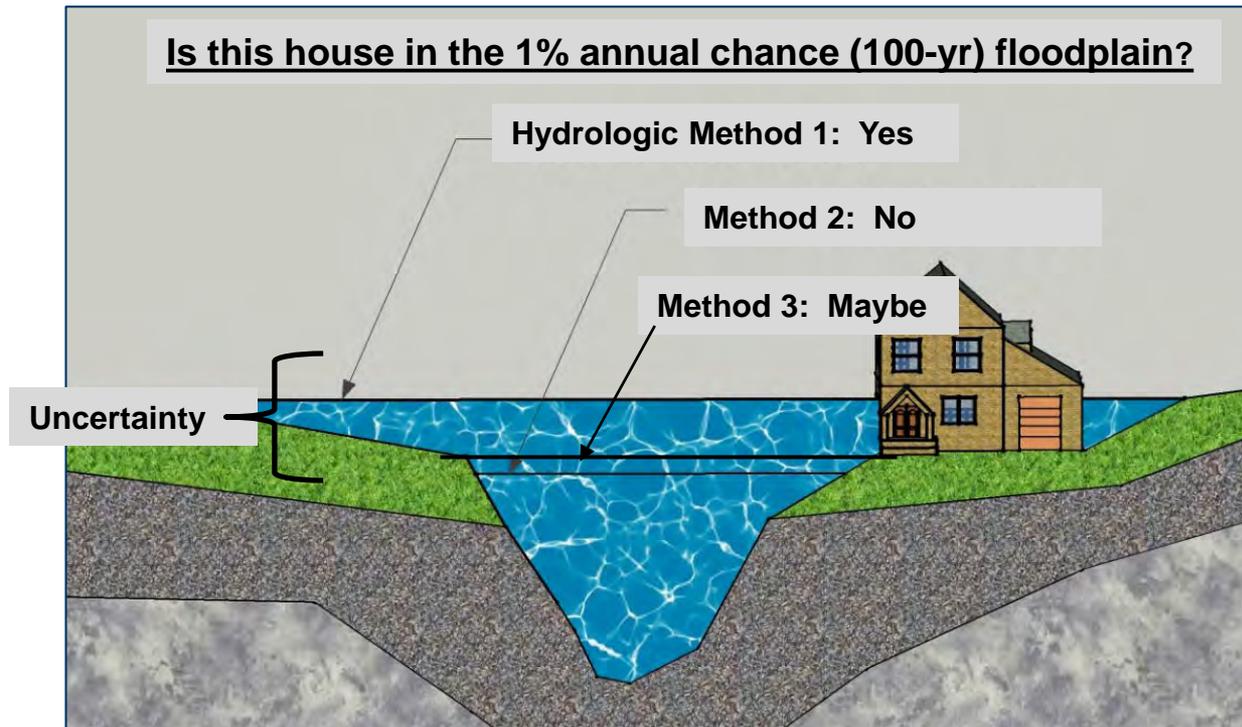
Watershed Hydrology:

Study how much water will result from a given storm event at a point of interest on the river



The Problem of Hydrology:

- Single largest source of uncertainty in flood risk estimation
- Many commonly used and accepted methods
- Every method will yield a different answer
- In Texas, this can yield up to 20-feet of variation in flood depth



Purposes of the InFRM Watershed Hydrology Assessments (WHAs)

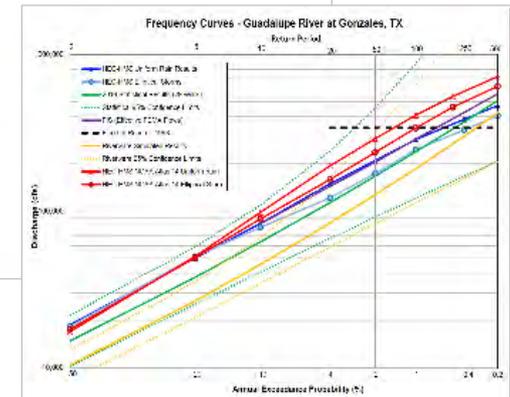
- Estimate 1% annual chance (100-yr) and other frequency flows across the basin
- Employs a Comprehensive Approach to Hydrology:
 - Uses a range of hydrologic methods and compares their results
 - Considers non-stationary factors like regulation, land use & climate variation
 - Tells the story of how the 1% flow has changed over time
- Outcomes suggest areas where FEMA flood hazard information may need to be updated



Interagency Flood Risk Management (InFRM)

Hydrology Report for the
Guadalupe River Basin

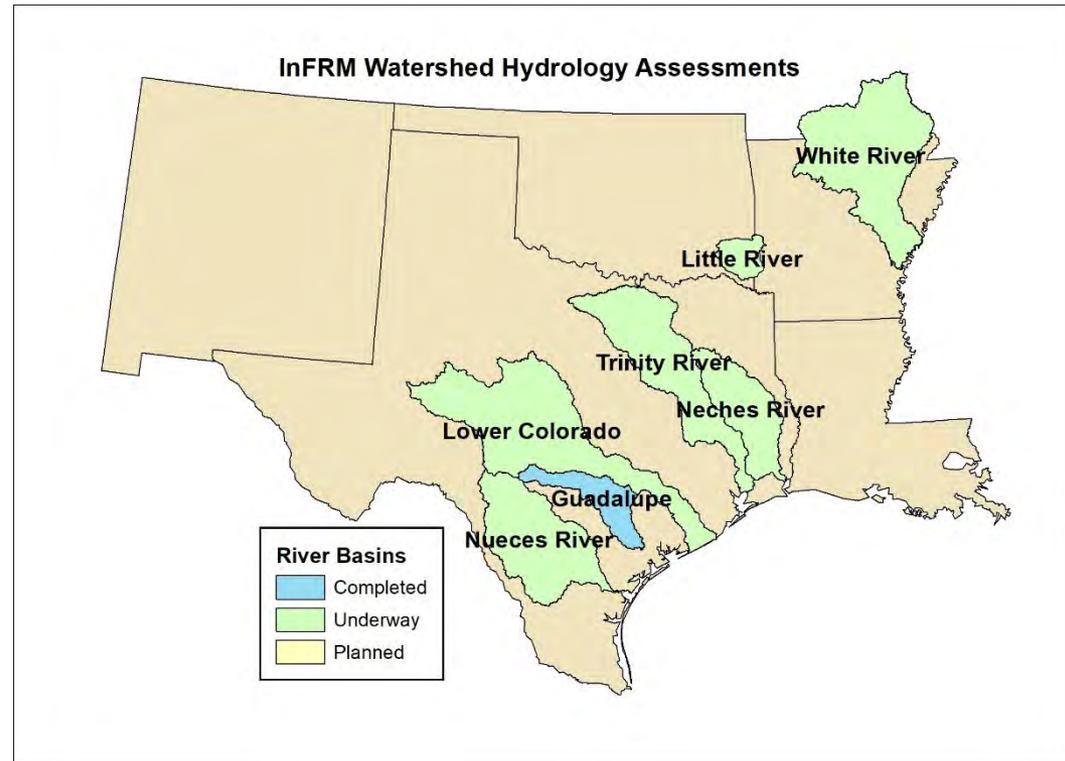
10 September 2018



Selected River Basins

Basis for Selection:

- Where sufficiently detailed USACE modeling products (CWMS) are available as a starting point
- Where FEMA has future floodplain mapping activities scheduled
- Limited to FEMA Region 6

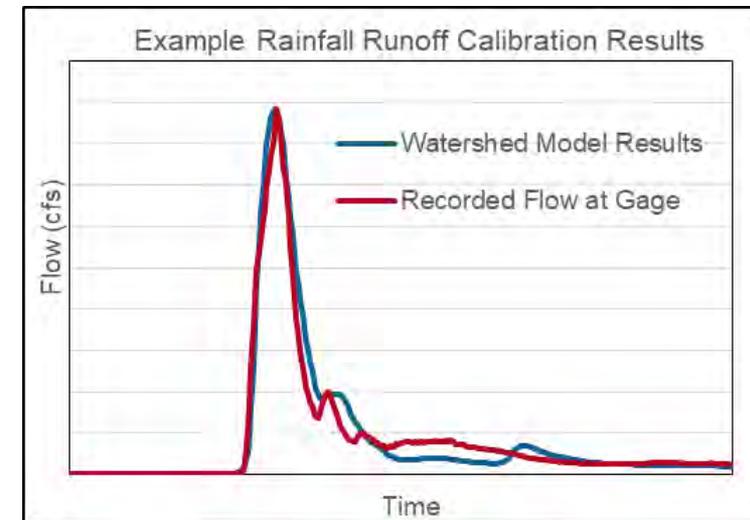
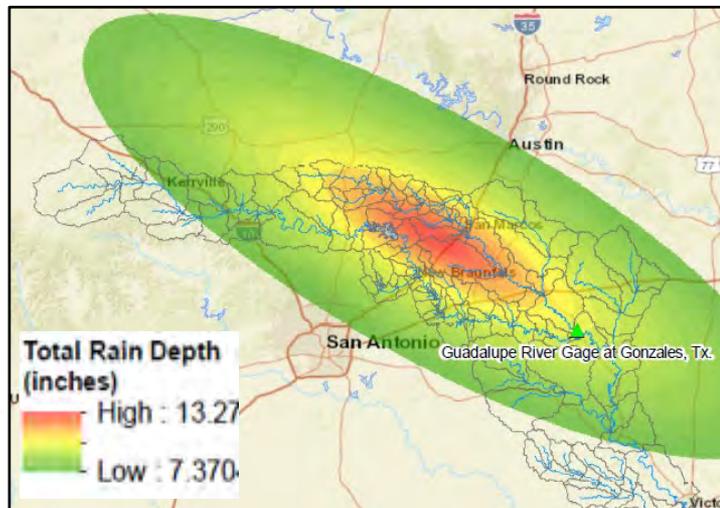
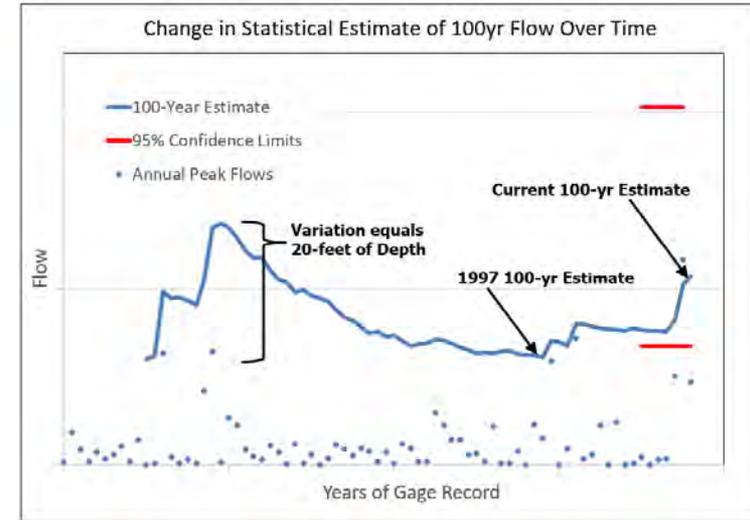


Multi-Layered Analysis in the Watershed Hydrology Assessments

- **Statistical Hydrology**
 - Analyze stream gage records with Bulletin 17C, Change over Time Plots
- **Precipitation Studies**
 - NOAA Atlas 14, Area Reduction Factor studies
- **Rainfall Runoff Modeling**
 - Storm Calibrations, Uniform Rainfall, & Elliptical Storms
- **Reservoir (Period of Record) Simulations**
 - Extended gage records from Riverware
- **Reservoir Studies**
 - Dam Pool Elevation & Outflow Frequency Estimates
 - Uses USACE Dam Safety Procedures

Unique Features in the InFRM Watershed Hydrology Assessments

- **Change Over Time Plots from Statistical Estimates**
- **Extensive Calibration of Rainfall Runoff Models**
- **Elliptical Shaped Frequency Storms**



NOAA Atlas 14 Rainfall Depths for the Guadalupe River Basin

NOAA Atlas 14 for Texas

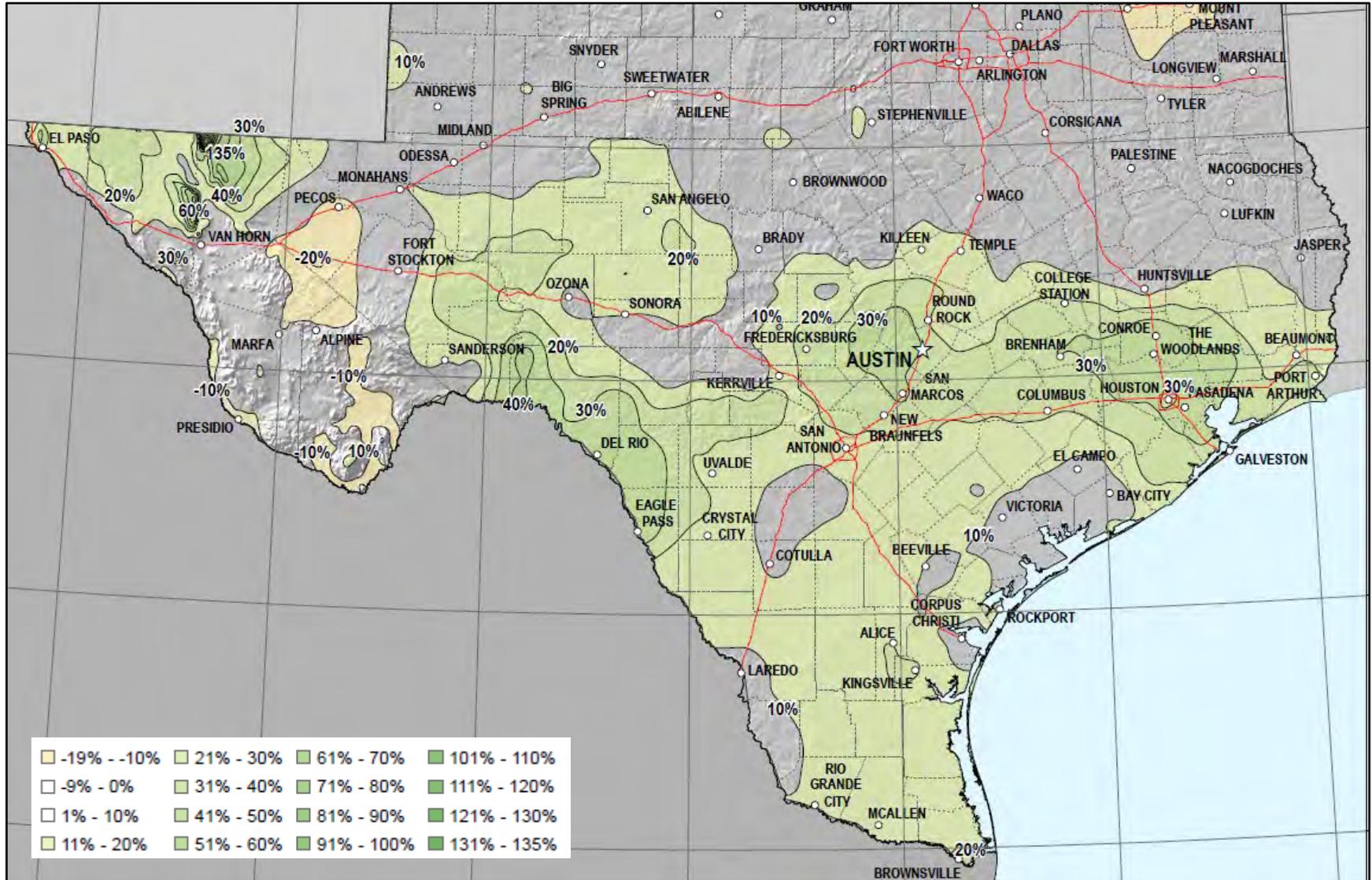
What is it?

- Rainfall frequency estimates
- How much rain in a 100-year storm event?
- Volume 11 (for Texas) was released in 2018
- Better understanding of the risk from extreme precipitation events



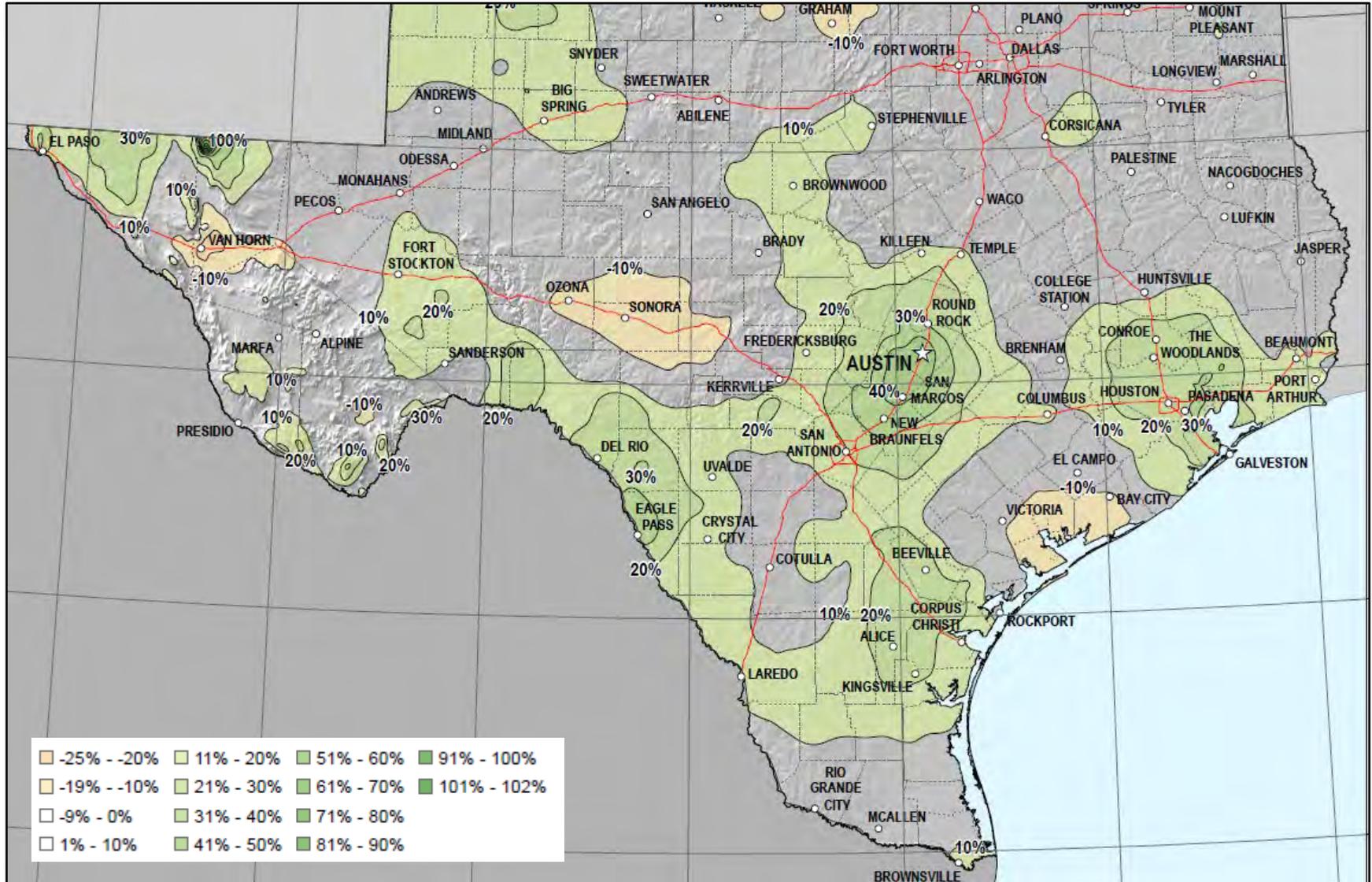
NOAA Atlas 14 vs. 2004 USGS Rainfall Atlas

% Difference in 100-yr 24-hr Precip

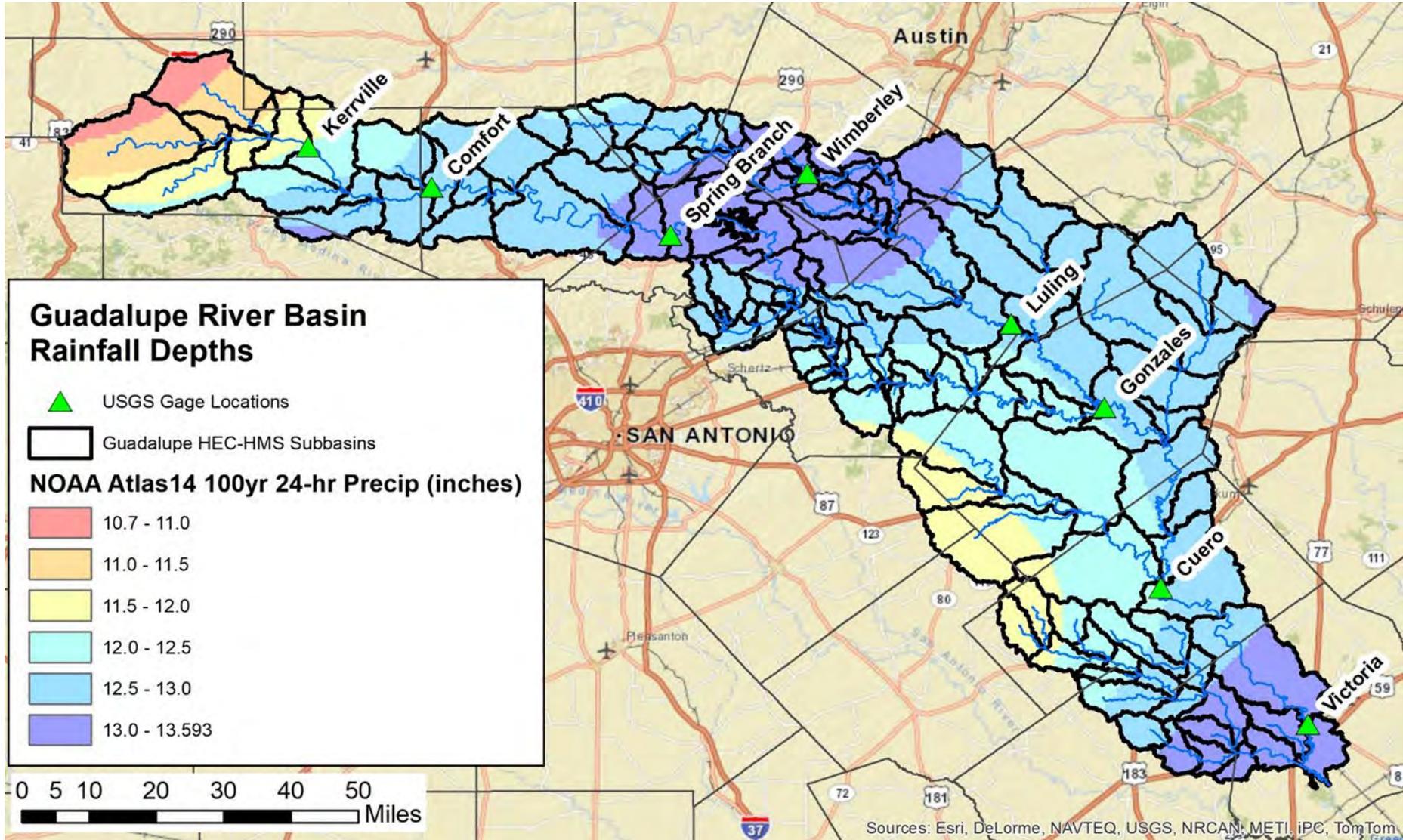


NOAA Atlas 14 vs. 2004 USGS Rainfall Atlas

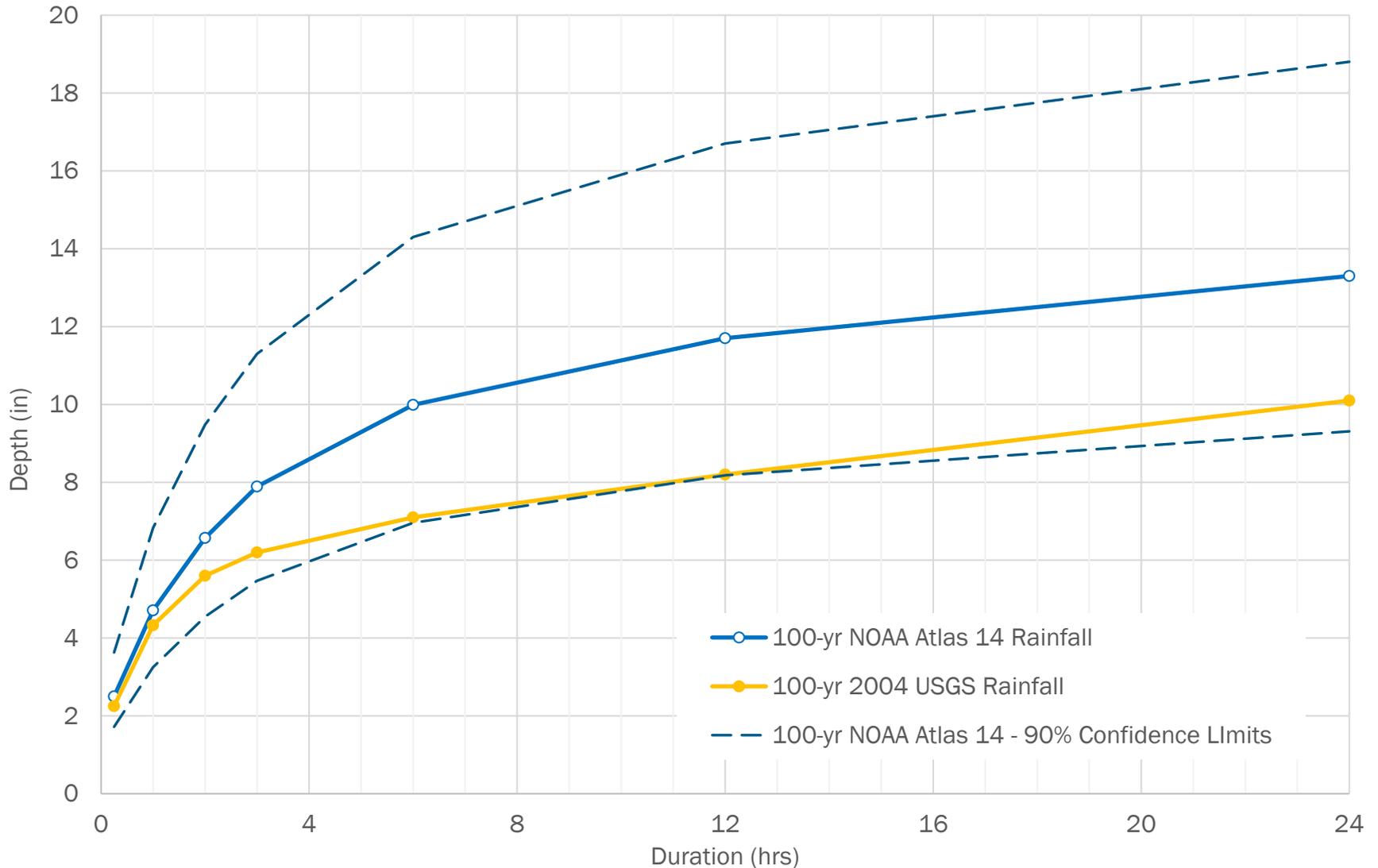
% Difference in 100-yr 6-hr Precip



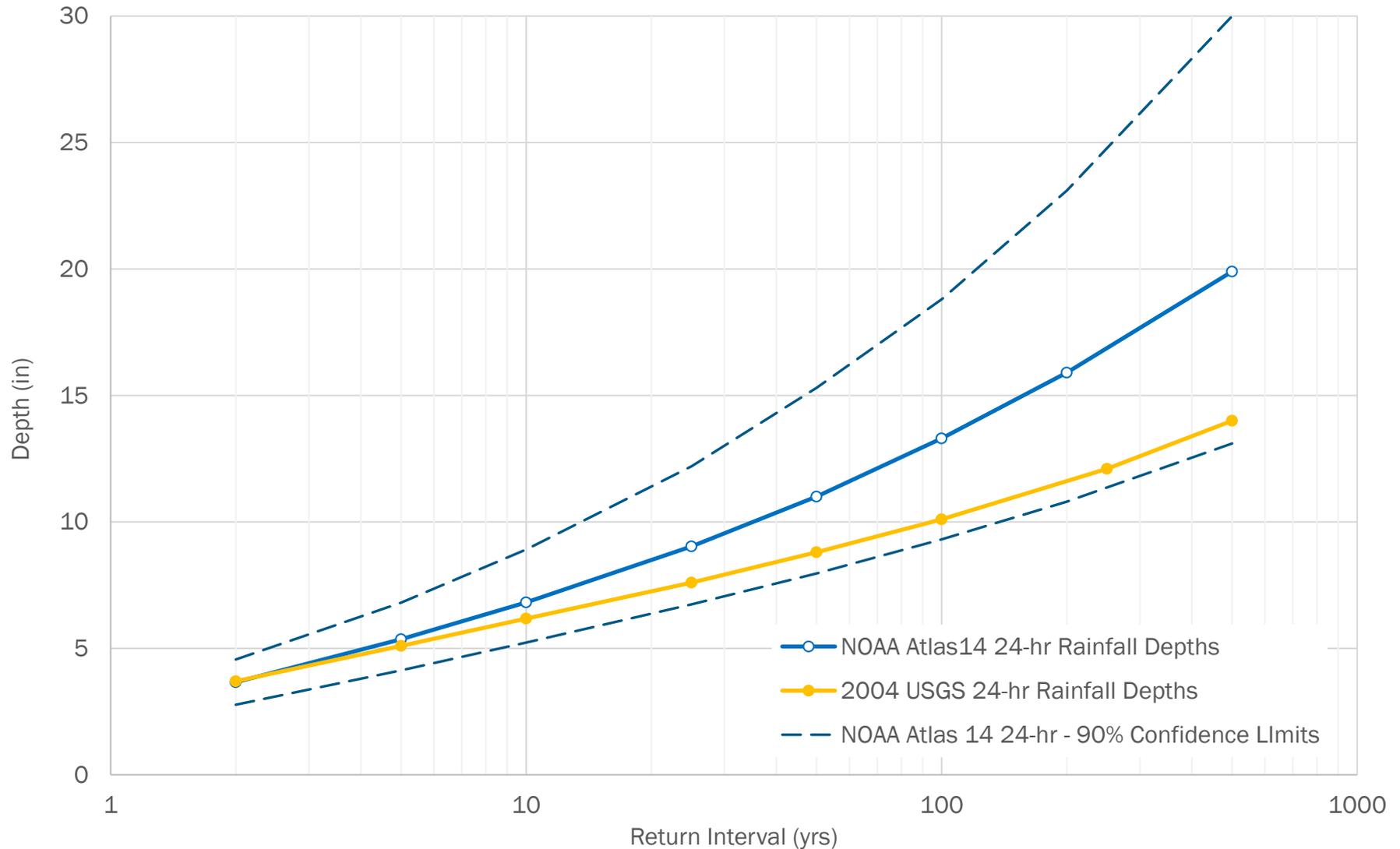
NOAA Atlas 14 100-yr, 24 hour Rainfall Depths for the Guadalupe Basin



100-yr Rainfall Depth vs. Duration Comparison at Wimberley, TX

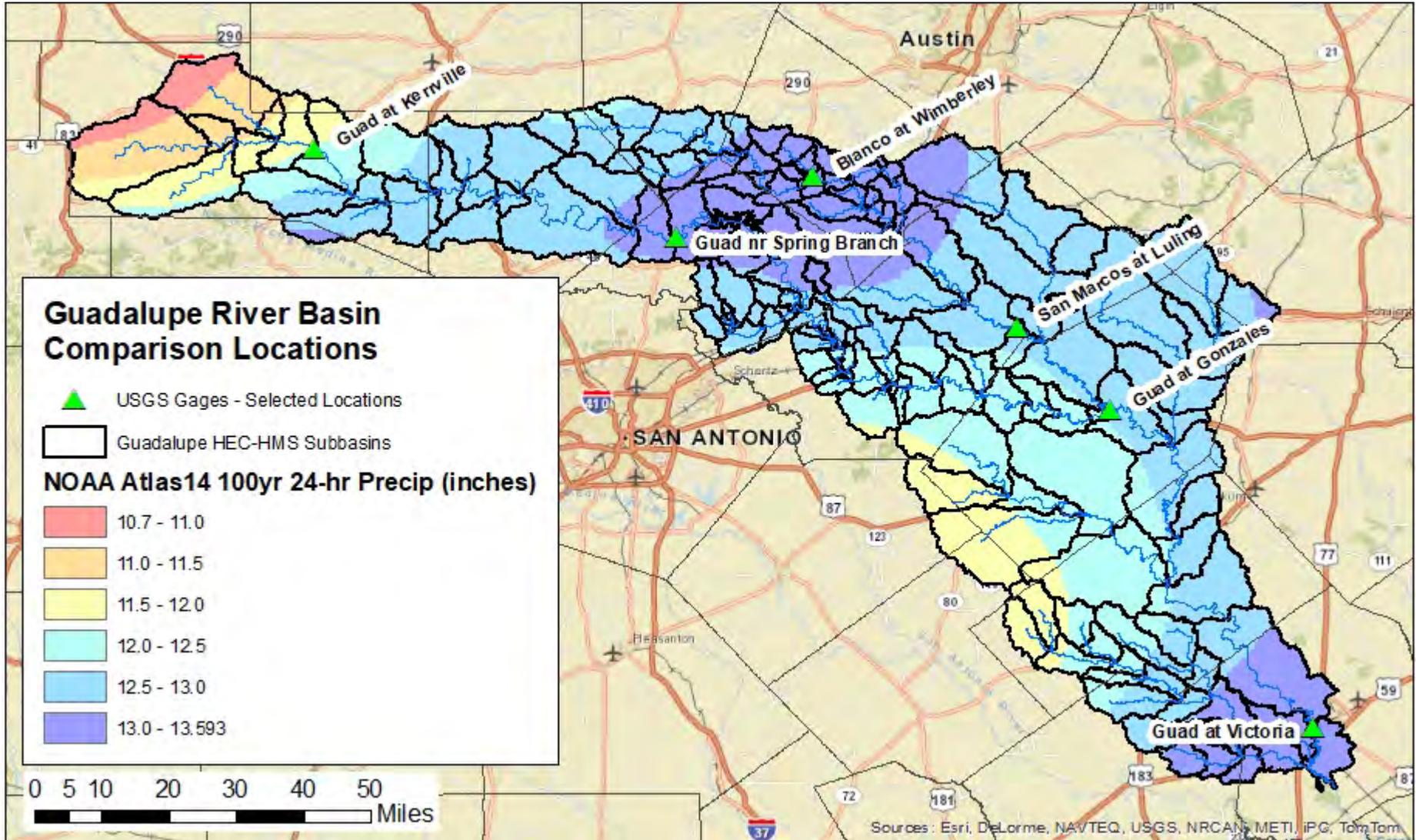


24-hr Rainfall Depth vs. Frequency Comparison at Wimberley, TX



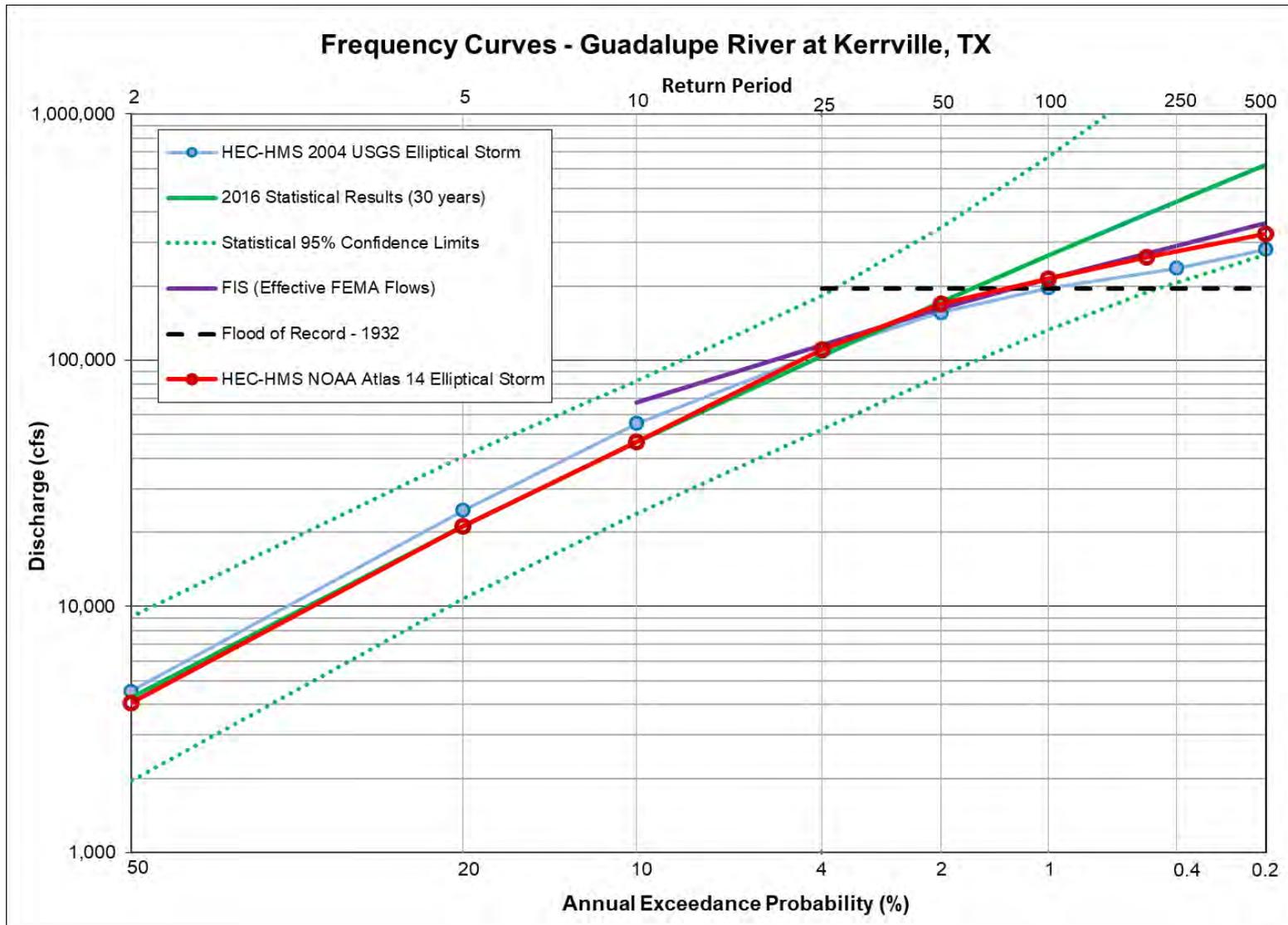
Final Frequency Flow Results

Frequency Peak Flow Results: Map of Example Locations



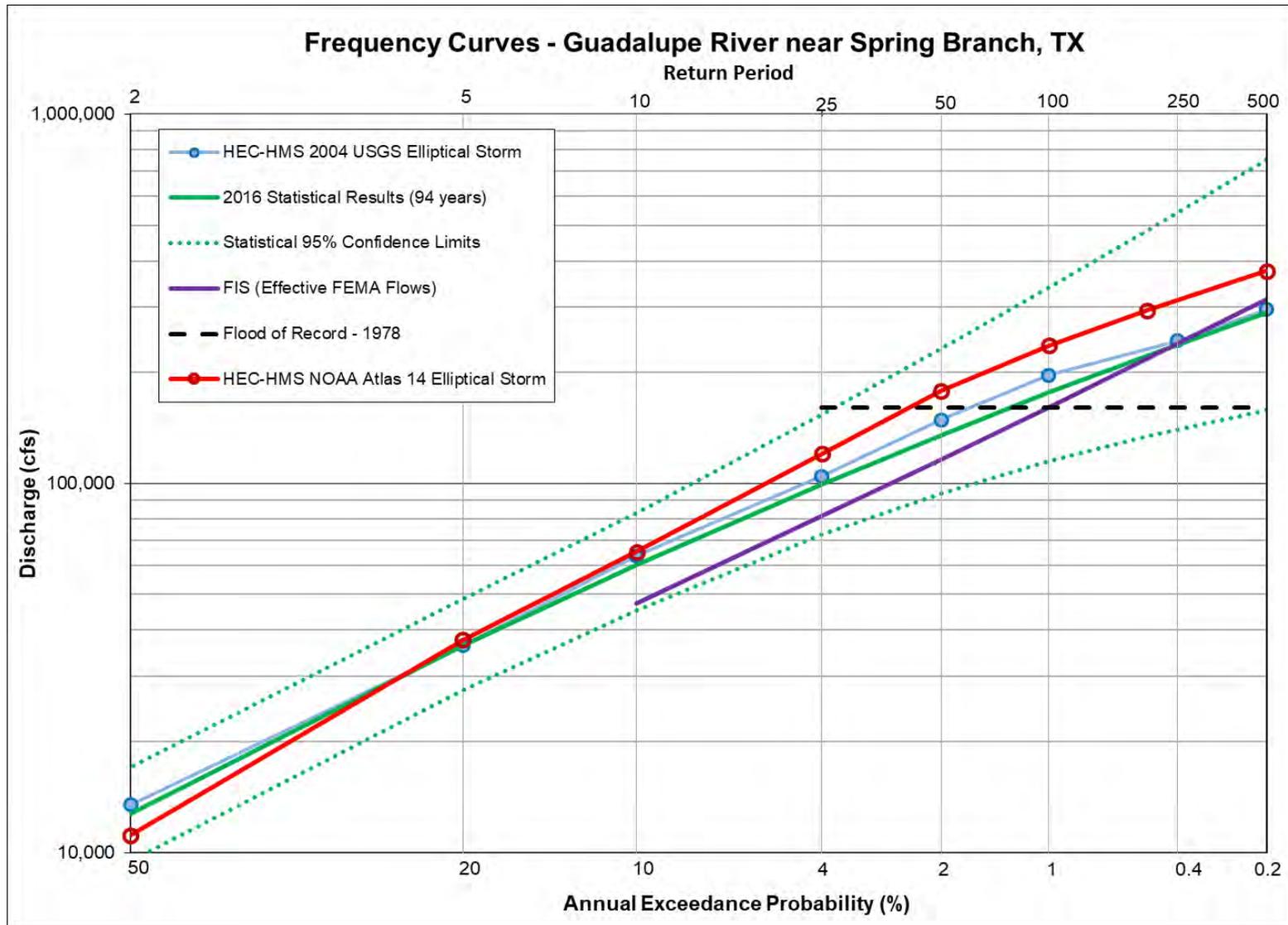
Frequency Flow Results Comparison: Guadalupe River at Kerrville

- Very little change in rainfall depths
- Final 1% Flow with NOAA Atlas 14 Rainfall \approx 215,000 cfs**
- Effective FIS 1% Flow \approx 215,000 cfs**



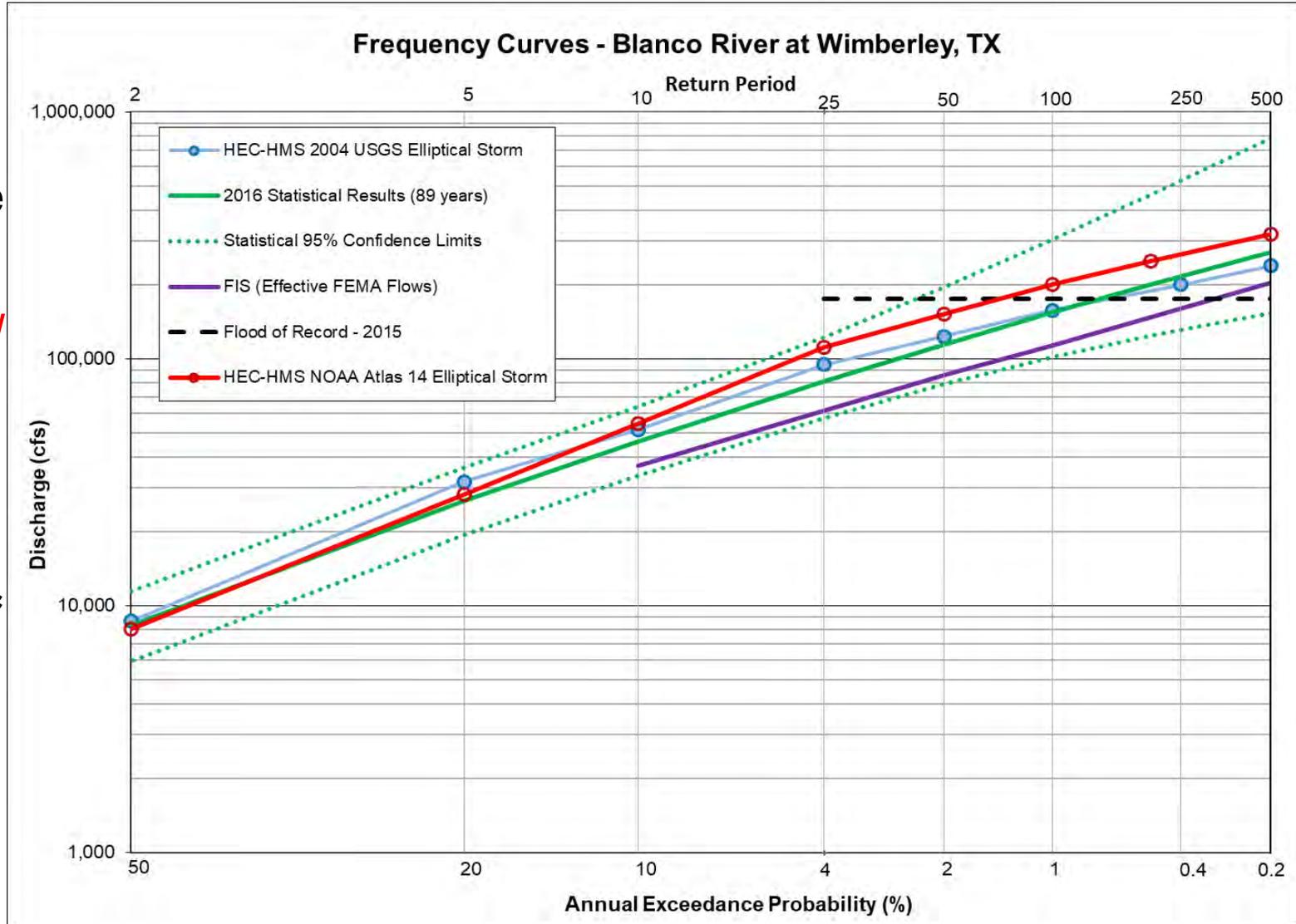
Frequency Flow Results Comparison: Guadalupe River nr Spring Branch

- Increasing 1% rainfall depths as one moves downstream
- Final 1% Flow with NOAA Atlas 14 Rainfall \approx 236,000 cfs
- Effective FIS 1% Flow \approx 161,000 cfs



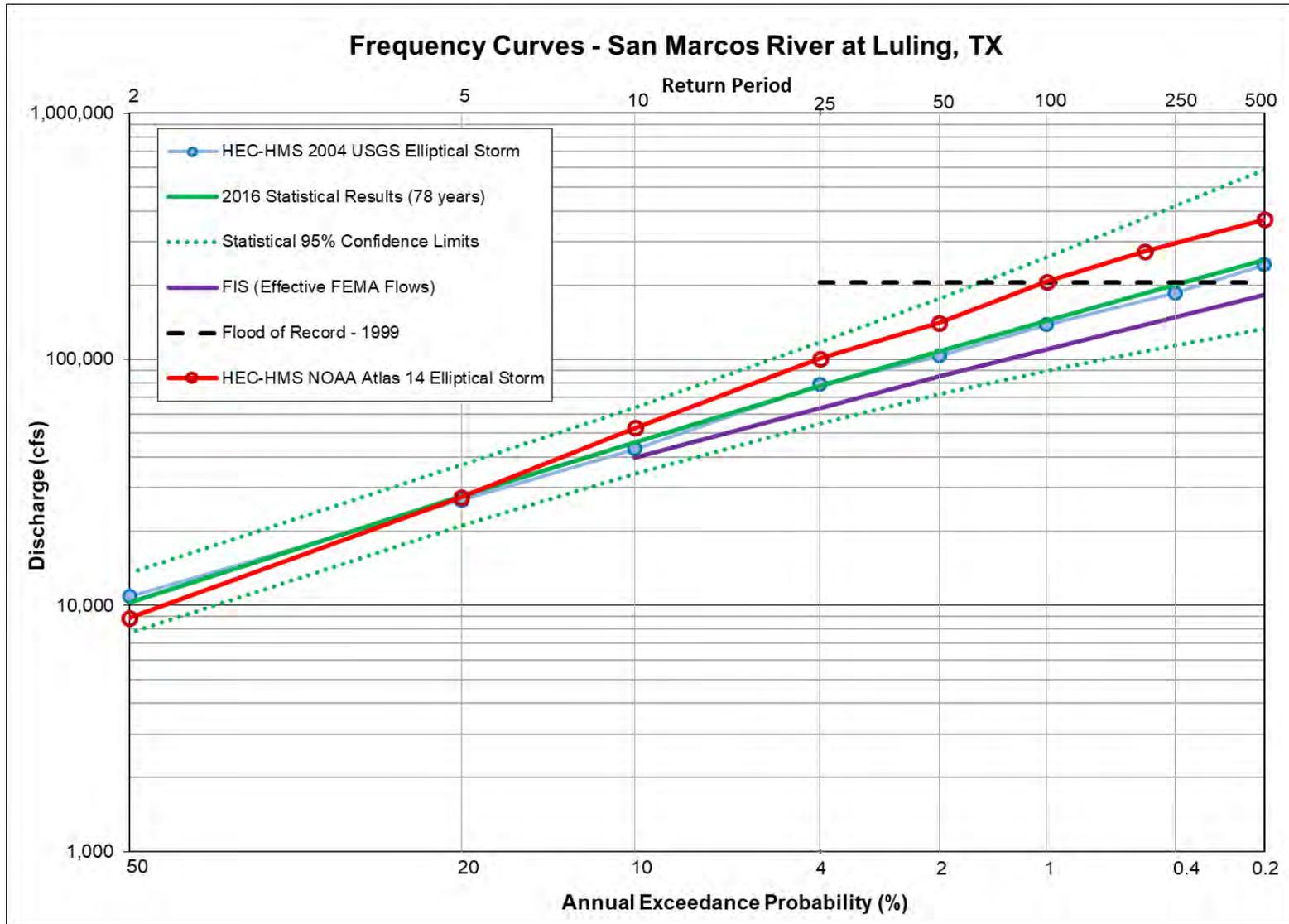
Frequency Flow Results Comparison: Blanco River at Wimberley

- Significant increase in 1% rainfall depths on the Blanco River
- Final 1% Flow with NOAA Atlas 14 Rainfall \approx 200,000 cfs
- 2015 Flood \approx 175,000 cfs
- Previous Effective FIS 1% Flow \approx 113,000 cfs



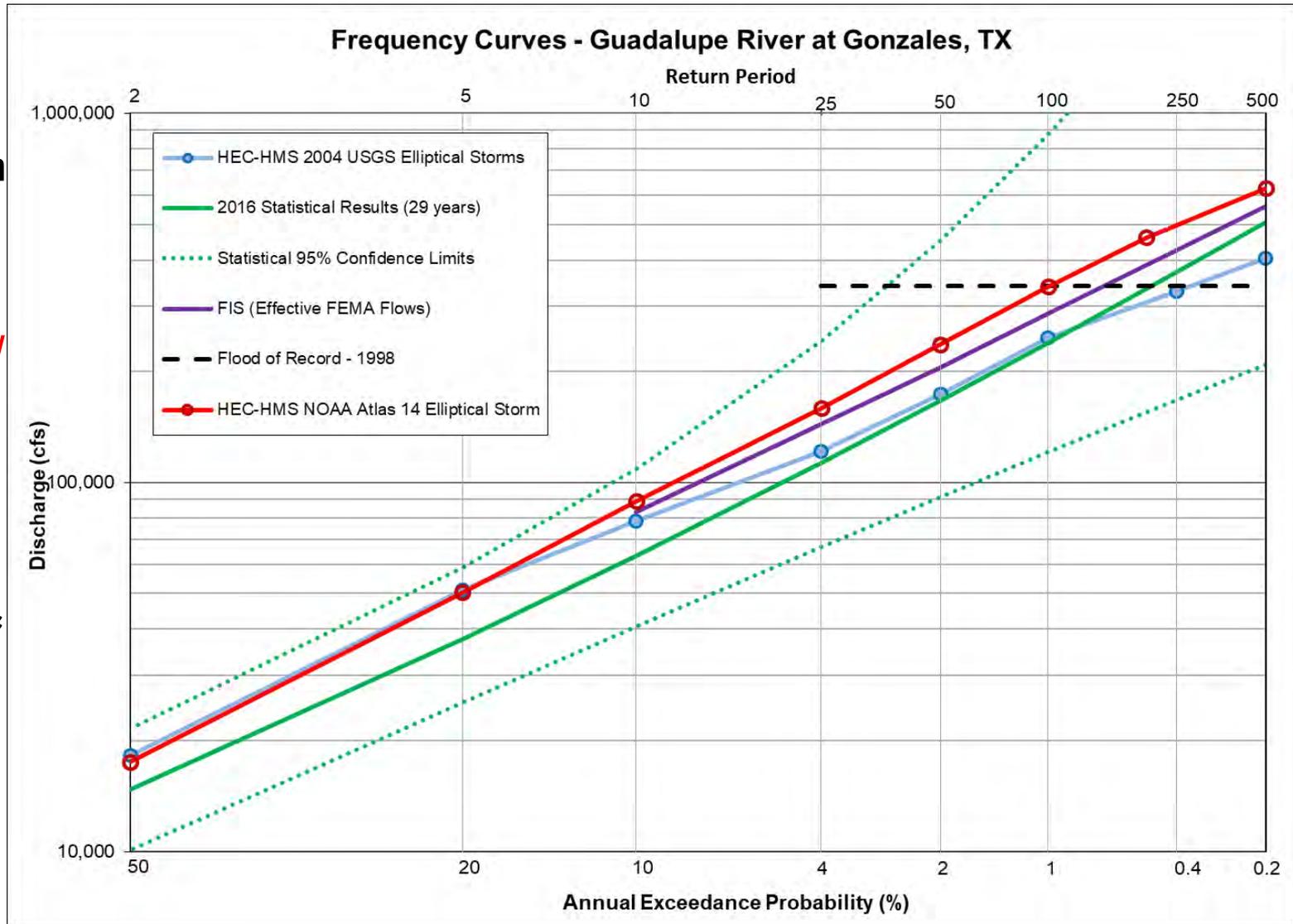
Frequency Flow Results Comparison: San Marcos River at Luling

- Driven by significant increase in 1% rainfall in Hays County
- Final 1% Flow with NOAA Atlas 14 Rainfall \approx 207,000 cfs**
- 1998 Flood \approx 206,000 cfs
- Effective FIS 1% Flow \approx 110,000 cfs



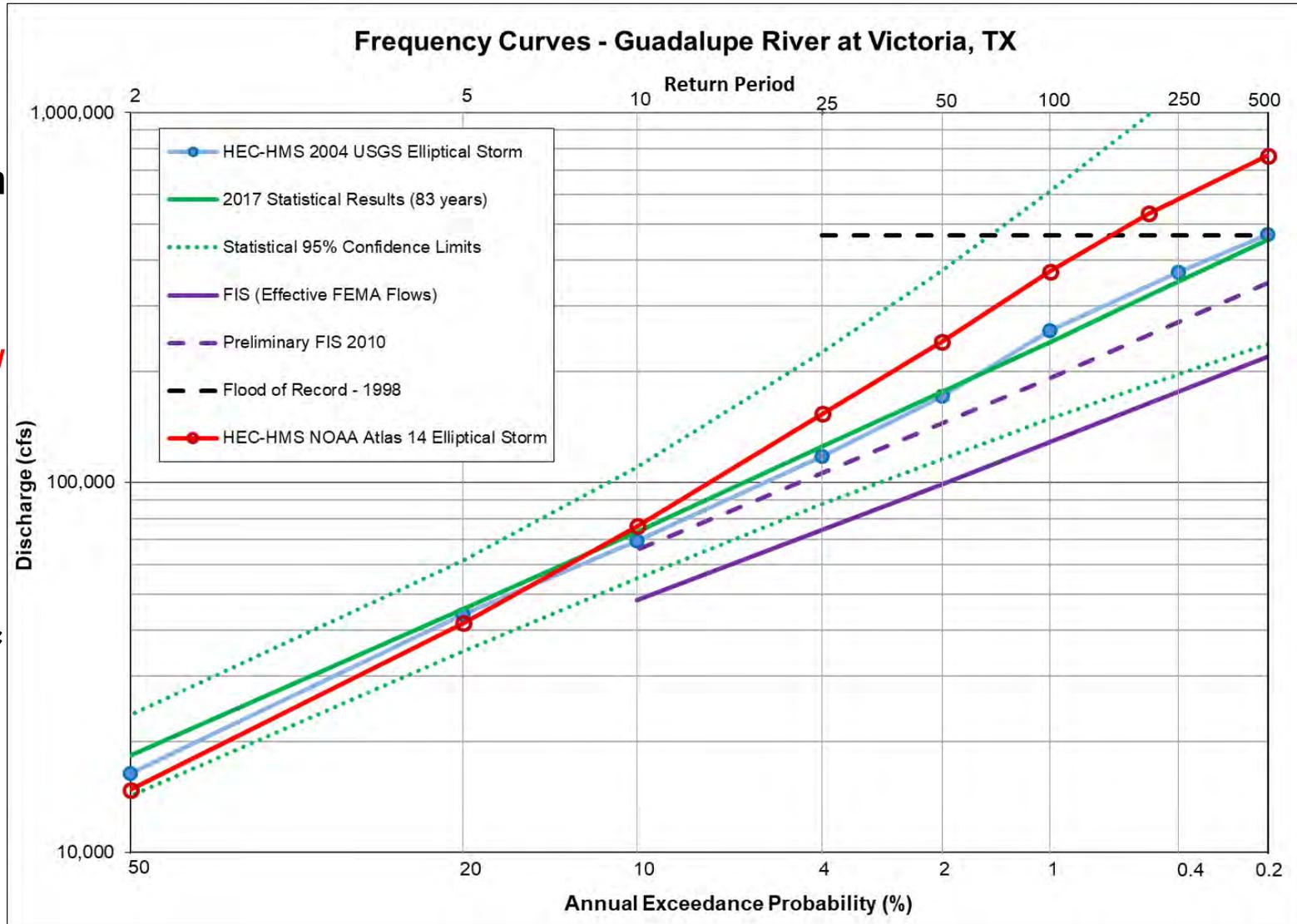
Frequency Discharge Results Comparison: Guadalupe River at Gonzales

- Driven by significant increase in 1% rainfall on in Hays County
- Final 1% Flow with NOAA Atlas 14 Rainfall \approx 338,000 cfs**
- 1998 Flood \approx 340,000 cfs
- Previous Effective FIS 1% Flow \approx 287,000 cfs



Frequency Discharge Results Comparison: Guadalupe River at Victoria

- Driven by significant increase in 1% rainfall on in Hays County
- Final 1% Flow with NOAA Atlas 14 Rainfall \approx 372,000 cfs**
- 1998 Flood \approx 466,000 cfs**
- Previous Effective FIS 1% Flow \approx 129,000 cfs**



Conclusions

Conclusions:

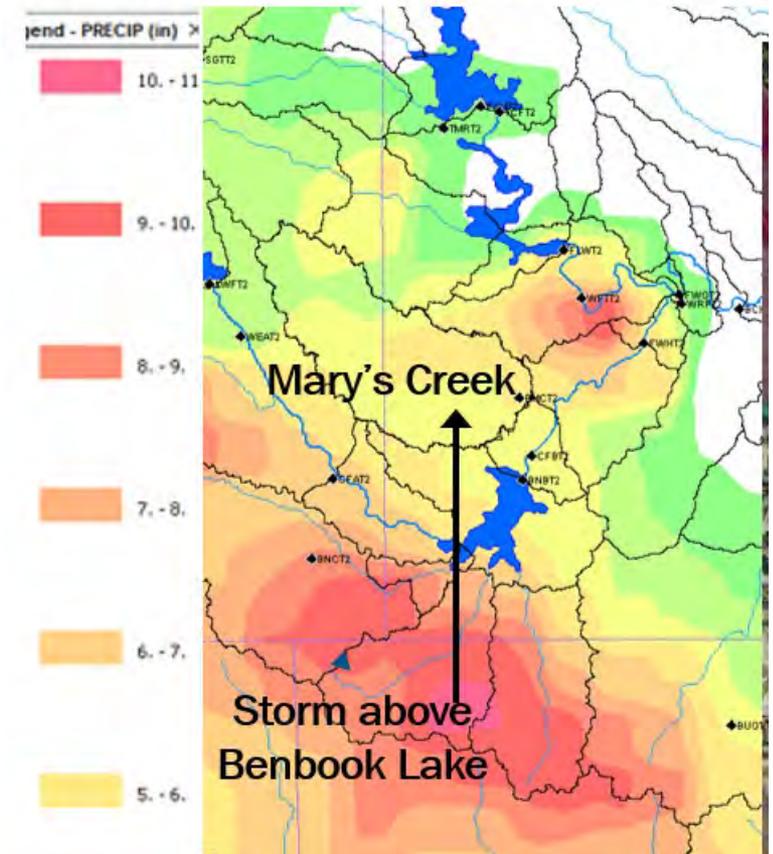
- NOAA Atlas 14 showed significant increases in the 100-yr rainfall for the Guadalupe Basin (3+ inches for 6-hr to 24-hr durations), especially in Hays and Comal Counties.
- If rainfall is increasing, older rainfall depths and historic gage records *may no longer* be a good estimate of future flooding in the Guadalupe Basin.
- The higher rainfall depths of NOAA Atlas 14 led to significant increases (35% - 45%) in the 100-yr peak flows for the Blanco and San Marcos Rivers and on the lower reaches of the Guadalupe River.
- NOAA Atlas 14 indicates that major floods like May 2015 and Oct 1998 are expected to happen more frequently in the Guadalupe Basin than previously thought.
- Complete results are available in the Guadalupe WHA Final Report, which can be downloaded from the InFRM website (www.InFRM.us).



Other Areas where InFRM & USACE can provide Technical Assistance

- Adding detail to the WHA hydrology for a Community
- Modeling Storm Shifted “What if” Scenarios for Emergency Preparedness
- Providing data, models & advice
- Let us know how we can help!

Moved 2010 Storm by 10 mi





Max Strickler, CFM

Lead Hydrologist

US Army Corps of Engineers

Fort Worth District

Maxwell.R.Strickler@usace.army.mil

817-886-1541 (office)

Helena Mosser, P.E.

Lead Hydraulic Engineer

US Army Corps of Engineers

Fort Worth District

Helena.P.Mosser@usace.army.mil

817-913-0542 (mobile)

DATE	TOPIC	PRESENTER
January 2, 2021	The InFRM Watershed Hydrology Assessment for the Guadalupe River Basin	Helena Mosser, P.E. Lead Hydraulic Engineer, U.S. Army Corps of Engineers and Max Strickler, CFM Lead Hydrologist, U.S. Army Corps of Engineers
February 3, 2021	Information provided to Emergency Management and First Responders during forecasted flood events	John Jonston
February 3, 2021	Early flood warning system that has been worked on by Kerr County and UGRA. The preliminary study has been completed and this project is basically ready to request funding.	Commissioner Letz, County Engineer Charlie Hastings & Engineer John Hewitt
March 3, 2021	Development of FEMAs limited detail model (base level engineering) that spans the Guadalupe river basin that can be used to evaluate projects	FEMA/consultant

Presentation Ideas Date TBD

TOPIC	PRESENTER
Introduce the TWDB Region 11 Flood Planning Group to the GLO Combined River Basins project including discussion of project goals, phase budgets and associated timelines, river basins planning regions, introduction of the West Region vendor team and our region-specific goals, study methodology, outreach coordination, available funding streams, and provide region-specific timelines for future activities on the project.	Shonda Mace, GLO and Elizabeth Levitz, AECOM
Base Level Engineering (Plum Creek)	Halff & TWDB
Site specific modeling for the San Antonio River Basin	SARA technicians
Expanding the use of floodplain models. Updated the floodplain model for the Guadalupe River and created Countywide inundation maps correlated to the forecasted river gauge in Victoria	John Johnston
City of San Marcos flood protection efforts: City regulatory changes to prevent future flooding, Projects completed or underway to mitigate flood drainage, Outstanding needs and potential future projects	Laurie Moyer, P.E. - City of San Marcos
Kerr County in working with TXDOT has done preliminary work on a drainage / flood control project for the community of Center Point. Preliminary engineering of drainage area complete. TXDOT has completed the drainage work along Highway 27. Drainage easements and engineering need to be done.	Commissioner Letz, County Engineer Charlie Hastings & Engineer John Hewitt
Kerr County has identified several areas between Center Point and Comfort where the drainage across Highway 27 needs to be improved for safety considerations, Several accidents have occurred in these areas. This would be a joint TXDOT and Kerr County	Commissioner Letz, County Engineer Charlie Hastings & Engineer John Hewitt
Kerr County and Kendall County have done preliminary work regarding the flooding in Comfort. While Comfort is mostly in Kendall County, most of the flooding is caused by drainage basins in Kerr County. Kerr County and Kendall County have had numerous discussions regarding this issue and need funding for engineering and construction.	Kerr & Kendall County
Texas Living Waters Project: Nonstructural solutions to flooding, including natural and nature-based flood mitigation strategies (30 min)	Texas Living Waters Project

Agenda Item 7

Consider Nominating
& Electing Guadalupe
RFPG Members to be
non-voting liaisons to
Regions 10 & 12

1. Nominations for Region 10 RFPG liaison by members
2. Discussion and consider taking action to elect Region 10 RFPG liaison
3. Nominations for Region 12 RFPG liaison by members
4. Discussion and consider taking action to elect Region 12 RFPG liaison

Agenda Item 8

Consider approving the proposed Request for Qualifications (RFQ) for the Regional Sponsor (GBRA) to initiate procurement for a technical consultant

**REQUEST FOR QUALIFICATIONS
FOR PREPARATION OF A REGIONAL FLOOD PLAN FOR REGION 11 FLOOD
PLANNING AREA
(GBRA Bid # 2021-XXX)**

RETURN PROPOSAL ELECTRONICALLY:

Via BidNetDirect at <https://www.bidnetdirect.com/texas/guadalupeblancoriverau>

By Mail:

Victor Castillo
GUADALUPE-BLANCO RIVER AUTHORITY
933 East Court St.
Seguin, TX 78155

The Region 11 Guadalupe Regional Flood Planning Group (RFPG) acting through the Guadalupe-Blanco River Authority (GBRA) is soliciting a Request for Qualifications for technical services from qualified firms for assistance in the development of a Regional Flood Plan for the Region 11 Guadalupe RFPG. GBRA's procurement policy provides for open, fair, and competitive procurement practices with equal opportunity for all vendors. GBRA particularly encourages qualified Small, Minority, and Women owned businesses to submit proposals in response to the RFQ.

Proposals shall be received electronically no later than:

Monday, February 8, 2021 2:00PM

Proposer shall sign and date the proposal acknowledgement in Attachment A. Proposals which are not signed and dated shall be rejected.

GBRA appreciates your time and effort in preparing a proposal. Please note that all proposals must be received by the deadline. Proposals received after the deadline will not be considered for the award of the contract, and shall be considered void. Please let us know of any proposal requirements which are causing you difficulty in responding to this proposal. GBRA wants to make the process as easy and fair as possible, so that all potential vendors can compete.

Questions must be submitted via BidNetDirect at

<https://www.bidnetdirect.com/texas/guadalupeblancoriverau>

by Monday, January 25, 2021 2:00PM. Responses will be issued in the form of a Q&A response. Any questions received after the deadline may or may not be answered.

GUADALUPE-BLANCO RIVER AUTHORITY
REQUEST FOR QUALIFICATIONS
INSTRUCTIONS/TERMS OF CONTRACT

GBRA will be receiving qualifications for the following:

In 2019, the Texas Legislature and Governor Abbot expanded the authority of the Texas Water Development Board (TWDB) to administer a new State and Regional Flood Planning process. The 15 regions designated in Texas are based on river basins including Region 11, also known as the Guadalupe RFPG. At the first meeting of the Region 11 Guadalupe RFPG on November 4, 2020, the group designated GBRA to be the Political Subdivision coordinating the activities of Region 11. This will include applying for a grant to the TWDB, entering into a contract with the TWDB for the Administration of the First Flood Planning Cycle, coordinating the procurement of a Technical Consultant, maintaining compliance with the TAC, being the administrative and fiscal agent for Region 11, and ensuring the delivery of a Region 11 Guadalupe Regional Flood Plan to the TWDB no later than January 10, 2023.

The Guadalupe RFPG consists of portions of Bandera, Bastrop, Blanco, Caldwell, Calhoun, Comal, DeWitt, Fayette, Gillespie, Goliad, Gonzales, Guadalupe, Hays, Karnes, Kendall, Kerr, Lavaca, Real, Refugio, Travis, Victoria and Wilson counties lying within the Guadalupe River Basin.

Under the direction of the Region 11 Guadalupe RFPG, the technical consultant shall prepare the regional flood plan. The technical consultant shall also assist the Guadalupe RFPG in preparing the appropriate scope of work that adequately addresses all tasks in 31 TAC 361 and contains the elements of the scope of work as defined in 31 TAC 362, i.e. the description of tasks, responsible parties, schedule, and description of deliverables. The TWDB has provided a Draft Regional Flood Planning (RFP) Scope of Work (Attachment B).

In addition to the technical role, the consultant shall assist the Guadalupe RFPG's regional sponsor (GBRA) in the design and implementation of public involvement activities (including conducting public meetings, reviewing and responding to public comments, and developing educational materials related to regional flood planning issues) for presentation to both technical and non-technical audiences in the region.

Consultants submitting qualifications should be familiar with the rules and guidance for state and regional flood planning and regional flood planning grant assistance adopted by the TWDB (31 TAC Chapter 361, Subchapter C, Regional Flood Plan Requirements, 31 TAC Chapter F, Regional Flood Planning Grants and 31 TAC Chapter 362 State Flood Planning Guideline Rules, Subchapter A, State Flood Plan Development). These rules contain procedures governing applications for financial assistance related to the development or revision of regional flood management plans, and guidelines for the development of the state flood plan. Particularly, the rules contain specific time frames, deadlines, and requirements for making applications for state financial assistance for the scope of work and budget for the development of the regional flood plan. The schedule

for completion and delivery of work products for the Guadalupe RFPG shall reflect these publication dates.

ADDITIONAL INFORMATION

The purpose of this request for statements of qualifications is to permit the evaluation of the relative professional and technical qualifications of respondents.

The statement of qualifications should be no more than 12 pages in length including any appendices or other materials, including cover letter. Resumes do not account toward the statement of qualifications page length and may be unlimited in number, but limited to two pages in length each. Responses should address the items in attachment A.

ANTICIPATED SCHEDULE

RFQ Release Date	Monday, January 11, 2021
Question Submission date	Monday, January 25, 2021 2:00PM
Proposal Deadline	Monday, February 8, 2021 2:00PM

BASIS OF SELECTION

The response should not exceed 12 pages (including cover letter, any appendices, or other materials) or it may be disqualified. All responses shall be submitted electronically via BidNet.

The highest ranked firm(s) may be interviewed by the Executive Committee of the Region 11 Guadalupe RFPG. The Executive Committee will make a recommendation to the RFPG and selection will be based on a vote of the Voting Membership. After selection by the RFPG, GBRA and that firm will work together to reach agreement on this proposal.

The Region 11 RFPG will utilize the following criteria to assist with the scoring of the responses to this RFQ:

1. Overall compliance with the RFQ Attachments A and B.
2. Overall description of work plan and organizational structure to accomplish assignment.
3. Experience and expertise of key personnel proposed to work on this project.
4. Discussion with references.
5. Previous relevant project experience and ability to complete project on time and within budget.

LATE PROPOSALS: Proposals received by GBRA after the submission deadline will be considered void and unacceptable.

ALTERING PROPOSALS: Proposals cannot be altered or amended after submission deadline.

Any interlineation, alteration, or erasure made before opening time must be initialed by the signer of the proposal, guaranteeing authenticity.

WITHDRAWAL OF PROPOSAL: A proposal may not be withdrawn or canceled by the proposer without the permission of GBRA for a period of ninety (90) days following the date designated for the receipt of proposals, and proposer so agrees upon submittal of their proposal

PROPOSAL AWARD: GBRA reserves the right to award proposals in the best interest of the Guadalupe Region 11 RFPG.

DEBARMENT AND SUSPENSION: In awards involving federal finds, before an award may be given, GBRA is required to verify the selected proposer in the System of Award Management (SAM) system to ensure they are not suspended or debarred from conducting business with the Federal government as an agent or representative of other contractors or of participants in Federal assistance programs, or as an individual surety to other Government contractors.

CHANGE ORDERS: No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing by GBRA and endorsed by the Proposer, Region 11 RFPG, TWDB, and GBRA.

CONFLICT OF INTEREST: No public official shall have an interest in this contract, except in accordance with the Texas Local Government Code, Chapter 171 and the Texas Government Code, Chapter 572. Additionally, pursuant to Texas Local Government Code, Chapter 176 *et seq.*, a person or business, (including their agents, as applicable), who seek to contract or enter into an agreement with GBRA, may be required to file a conflict of interest questionnaire (FORM CIQ) with the Texas Ethics Commission. Such form can be found at https://ethics.state.tx.us/filinginfo/conflict_forms.htm. The specific section regarding “vendor” requirements, as that term is defined by the statute, are set forth in Section 176.006. A list of GBRA officers, required by Section 176.0065, can be found at <https://www.gbra.org/documents/public/GovtCode176List.pdf>

ETHICS: The proposer shall not offer or accept gifts or anything of value nor enter into any business arrangement with any employee, official, representative or agent of GBRA.

ADDENDA: Any interpretations, corrections or changes to this RFQ, specifications, or instructions/terms of contract will be made by addenda. Sole issuing authority of addenda shall be vested in GBRA. Addenda will be delivered by mail, fax, or electronically to all who are known to have received a copy of this RFQ. Proposers shall acknowledge receipt of all addenda.

PROPOSAL MUST COMPLY with all federal, state, county and local laws concerning these types of goods or service.

MINIMUM STANDARDS FOR RESPONSIBLE PROSPECTIVE PROPOSERS:

A prospective proposer must affirmatively demonstrate proposer's responsibility and prospective proposer must meet the following requirements:

1. Be able to comply with the required or proposed delivery schedule;
2. Have a satisfactory record of performance;
3. Have a satisfactory record of integrity and ethics;
4. Be otherwise qualified and eligible to receive an award.

GBRA may request representation and other information sufficient to determine proposer's ability to meet these minimum standards listed above.

PROPOSER SHALL PROVIDE with this proposal response, all documentation required by this RFQ. Failure to provide this information may result in rejection of proposal.

HISTORICALLY UNDERUTILIZED BUSINESS: In order to maximize the utilization of certified HUBs, GBRA is requesting all eligible HUB vendors please submit their HUB certification documentation as part of their proposal submission.

SUCCESSFUL PROPOSER SHALL defend, indemnify and save harmless GBRA and all its of officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful proposer, or of any agent, employee, subcontractor or supplier in the execution of, or performance under, any contract which may result from proposal award. Successful proposer indemnifies and will indemnify and save harmless GBRA from liability, claim or demand on their part, agents, servants, customers, and/or employees whether such liability, claim or demand arise from event or casualty happening or within the occupied premises themselves or happening upon or in any of the halls, elevators, entrances, stairways or approaches of or to the facilities within which the occupied premises are located. Successful proposer shall pay any judgment with costs which may be obtained against GBRA growing out of such injury or damages.

WAGES: Successful proposer shall pay or cause to be paid, without cost or expense to GBRA, all Social Security, Unemployment and Federal Income Withholding Taxes of all such employees and all such employees shall be paid wages and benefits as required by Federal and/or State Law.

TERMINATION OF CONTRACT: This contract shall remain in effect until the contract expires or is terminated by either party with a thirty (30) days written notice prior to any cancellation. The successful proposer must state therein the reasons for such cancellation. Should proposer terminate the agreement before the end of the term specified in the agreement, proposer shall be liable to GBRA for any damages resulting from such termination.

TERMINATION FOR DEFAULT: GBRA reserves the right to enforce the performance of this contract in any manner prescribed by law or deemed to be in the best interest of GBRA in the

event of breach or default of this contract. GBRA reserves the right to terminate the contract immediately in the event the successful proposer fails to:

1. Meet schedules;
2. Defaults in the payment of any fees;
3. Otherwise perform in accordance with these specifications.

In the event the successful proposer shall fail to perform, keep or observe any of the terms and conditions to be performed, kept or observed, GBRA shall give the successful proposer written notice of such default; and in the event said default is not remedied to the satisfaction and approval of GBRA within two (2) working days of receipt of such notice by the successful proposer, default will be declared and all the successful proposer's rights shall terminate.

Proposer, in submitting this proposal, agrees that GBRA shall not be liable for damages in the event that GBRA declares the proposer in default.

NOTICE: Any notice provided by this proposal (or required by law) to be given by GBRA to the successful proposer shall be conclusively deemed to have been given and received on the next day after such written notice has been deposited in the mail by Registered or Certified Mail with sufficient postage affixed thereto, addressed to the successful proposer at the address so provided; provided this shall not prevent the giving of actual notice in any other manner.

PATENTS/COPYRIGHTS: The successful proposer agrees to protect GBRA from claims involving infringements of patents and/or copyrights which may result from this award.

REMEDIES: The successful proposer and GBRA agree that both parties have all rights, duties, and remedies available.

VENUE: This agreement will be governed and construed according to the laws of the State of Texas without regards to its conflicts of law provisions. This agreement is executed in Guadalupe County, Texas.

ASSIGNMENT: The successful proposer shall not sell, assign, transfer or convey this contract, in whole or in part, without the prior written consent of GBRA.

INSURANCE POLICIES: The type and coverage amount of any insurance policy required by successful proposer shall be delineated in the accompanying specifications or contract and shall include worker's compensation insurance at levels required under the laws of the State of Texas. Each insurance policy to be furnished by successful proposer shall include by endorsement to the policy, a statement that a notice shall be given to GBRA by certified mail thirty (30) days prior to cancellation or upon any material change in coverage. Furthermore, any General Liability and any Automobile Liability insurance policy required by this proposal will list GBRA as an "Additional Insured."

FORM 1295: Proposer acknowledges that for contracts meeting specific criteria, GBRA may not accept or enter into a contract until they have received a completed and signed Texas Ethics Commission (“TEC”) Form 1295 from the Proposer, pursuant to Texas Government Code § 2252.908. Proposer understands that failure to provide said form complete with a certificate number assigned by the TEC may prohibit the remainder of the parties hereto from entering into this Agreement. Pursuant to the rules prescribed by the TEC, the TEC Form 1295 must be completed online through the TEC’s website, assigned a certificate number, printed, signed and provided to GBRA.

HB89 FORM: Per 85(R) HB89 a written verification from the company that it:

- 1) does not boycott Israel; and
- 2) will not boycott Israel during the term of the contract

SB252 ACKNOWLEDGEMENT: Proposer acknowledges they are not listed by the Comptroller of the State of Texas, per 85(R) SB252 concerning the listing of companies that have ties to the Government of Sudan, the Government of Iraq, ties with foreign terrorist organizations, or a foreign terrorist organization.

ANTI-BOYCOTT ISRAEL VERIFICATION

In accordance with Chapter 2270, Texas Government Code, a governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract. The signatory executing this document on behalf of Proposer verifies that the Proposer does not boycott Israel and will not boycott Israel during the term of this contract.

RELEASE OF INFORMATION: GBRA does not release any information including, but not limited to, bid amounts, number of bids, identities of proposers, bidders, or potential bidders until a contract has been awarded and executed. Pursuant to Texas Government Code 552.104, also see Texas Attorney General Open Records Decision No. 46 (1974)

ATTACHMENT A
STATEMENT OF QUALIFICATIONS

Please develop your Statement of Qualifications (SOQ) based on the criteria below. Please ensure your SOQ is organized accordingly.

1. Capacity to Perform:
 - a) Describe your firm's resources and capabilities including: location, size staffing, and length of local office's presence in Texas along with a plan identifying how the firm will be available to the region. Include similar information for additional team members.
 - b) The capability of your firm to commit necessary resources to the project in order to meet the project schedule.
 - c) Describe your firm's ability to complete projects without significant cost escalations or overrun.

 2. Team Organization:
 - a) Provide an organizational chart that identifies roles and responsibilities of individual team members.
 - b) Identify the team's proposed management structure. Include the person that will serve as the point of contact for the scope of services development and negotiations. Provide qualifications of the proposed project manager, assistant project manager, and technical leads, including a description of their role.
 - c) Identify all staff and team members that will work on this project, including their professional licenses and certifications. Provide their resumes detailing their qualifications and related experience.

 3. Firm's Experience – State and Regional Water Planning in Texas:
 - a) Describe your firm's experience and involvement in flood planning within the State of Texas and nationally.
 - b) Describe your firm's experience and involvement in State and Regional Water Planning in Texas.
 - c) Describe your firm's experience with flood resilience modeling particularly identifying existing and future flood risk analyses, flood mitigation strategies, and projects within the Region 11 Guadalupe Regional Planning Group's boundaries.
 - d) Describe your firm's experience with the State of Texas hazard mitigation plan, other regional and local flood hazard mitigation plans and regional and local flood planning studies.
 - e) Provide a list of no more than seven (7) projects total for the team similar to
-

the scope of work discussed herein, with descriptions of the projects, members of the project teams, time schedule, and references who are able to verify the information presented. All projects must have been completed within the last ten (10) years. Demonstrate as many of the following types of recent work experience as possible:

- i. Flood planning and flood risk analyses efforts of various sizes and locations;
- ii. Regional and state water planning for various size regions and states;
- iii. Productive projects involving the Texas Water Development Board;
- iv. Interactions with diverse interest groups and stakeholders participating in regional flood planning;
- v. Facilitating consensus-building and conflict resolution among stakeholders with diverse and potentially conflicting interests;
- vi. Reviewing population forecasts and developing and gaining acceptance of alternative forecasts as necessary;
- vii. Ability to collect and manage data and information available from relevant sources;
- viii. Familiarity and experience with flood planning grant administration and timely and comprehensive invoicing requirements;
- ix. Knowledge of statutory and regulatory policies to facilitate floodplain management and flood mitigation planning and implementation;
- x. Familiarity and experience with flood infrastructure financing analysis
- xi. Understanding and experience in Texas Water Law related issues;
- xii. Competent management and reporting of project subcontractors;
- xiii. Demonstrate the ability to provide Geographic Information System (GIS) database and mapping deliverables;
- xiv. Development of flood mitigation strategies to address future needs.

Qualifications Acknowledgement:

Dated as of this _____ day of _____, 20____.

Name of Firm: _____

Signature: _____

Printed Name: _____

Title: _____

Address:

Phone: _____ E-mail: _____

Name of Contact Person: _____

Phone: _____ E-mail: _____

Attachment B
Draft RFP Scope of Work

Draft Regional Flood Planning (RFP) Scope of Work

Table of Contents

Task 1 – Planning Area Description	1
Task 2A – Existing Condition Flood Risk Analyses.....	2
Task 2B – Future Condition Flood Risk Analyses	4
Task 3A - Evaluation and Recommendations on Floodplain Management Practices	7
Task 3B – Flood Mitigation and Floodplain Management Goals	8
Task 4A – Flood Mitigation Needs Analysis.....	9
Task 4B – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects	11
Task 4C – Prepare and Submit Technical Memorandum.....	14
Task 5 – Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects	15
Task 6A – Impacts of Regional Flood Plan.....	17
Task 6B – Contributions to and Impacts on Water Supply Development and the State Water Plan.....	18
Task 7 – Flood Response Information and Activities	19
Task 8 – Administrative, Regulatory, and Legislative Recommendations	19
Task 9 – Flood Infrastructure Financing Analysis.....	20
Task 10 – Public Participation and Plan Adoption	21

Task 1 – Planning Area Description

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 Texas Administrative Code (TAC) Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.30, 361.31, and 361.32.

The objective of this task is to prepare a standalone chapter to be included in the 2023 Regional Flood Plan (RFP) that describes the Flood Planning Region (FPR).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to prepare a chapter that includes:

1. A brief, general descriptions of the following:
 - a. social and economic character of the region such as information on development, population, economic activity, and economic sectors most at risk of flood impacts;
 - b. the areas in the FPR that are flood-prone and the types of major flood risks to life and property in the region;
 - c. key historical flood events within the region including associated fatalities and loss of property;
 - d. political subdivisions with flood-related authority and whether they are currently actively engaged in flood planning, floodplain management, and flood mitigation activities;
 - e. the general extent of local regulation and development codes relevant to existing and future flood risk;
 - f. agricultural and natural resources most impacted by flooding; and
 - g. existing local and regional flood plans within the FPR.
2. A general description of the location, condition, and functionality of existing natural flood mitigation features and constructed major flood infrastructure within the FPR.
3. Include a tabulated list and GIS map of existing infrastructure.
4. Include an assessment of existing infrastructure.
5. Explain, in general, the reasons for non-functional or deficient natural flood mitigation features or major flood infrastructure being non-functional or deficient, provide a description of the condition and functionality of the feature or infrastructure and whether and when the natural flood feature or major flood infrastructure may become fully functional, and provide the name of the owner and operator of the major flood infrastructure.
6. A general description of the location, source of funding, and anticipated benefits of proposed or ongoing major infrastructure and flood mitigation projects in the FPR.
7. A review and summary of relevant existing planning documents in the region.
Documents to be summarized include those referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables: A completed Chapter 1 describing the FPR, existing natural flood mitigation features, constructed major flood infrastructure, and major infrastructure and flood mitigation projects currently under development. A tabulated list and GIS map of existing infrastructure and their conditions. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2A – Existing Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.33.

The objective of this task is to prepare a chapter to be combined with Task 2B and included in the 2023 Regional Flood Plan (RFP) that describes the existing and future condition flood risk in the FPR.

The RFPGs shall perform existing condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed shall be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need Flood Management Evaluations (FMEs), and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform existing condition flood hazard analyses to determine the location and magnitude of both 1.0% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the existing conditions for the planning area;
 - b. identify areas within each FPR where hydrologic and hydraulic model results are already available and summarize the information;
 - c. utilize best available data, including hydrologic and hydraulic models for each area; prepare a map showing areas identified by the RFPG as having an annual likelihood of inundation of more than 1.0% and 0.2%, the areal extent of this inundation, and the sources of flooding for each area; and

- d. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding and/or local knowledge.
 2. Develop high-level, region-wide, and largely GIS-based existing condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1.0% annual chance and 0.2% annual chance flood events as follows:
 - a. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure;
 - b. for the floodplain as defined by FEMA or as defined by an alternative analysis if the FEMA-defined floodplain is not considered best available;
 - c. may include only those flood mitigation projects with dedicated construction funding and scheduled for completion prior to adoption of the next state flood plan.
 - d. shall consider the population and property located in areas where existing levees or dams do not meet FEMA accreditation as inundated by flooding without those structures in place. Provisionally accredited structures may be allowed to provide flood protection, unless best available information demonstrates otherwise.
 - e. shall consider available datasets to estimate the potential flood hazard exposure including, but not limited to:
 - i. number of residential properties and associated population;
 - ii. number of non-residential properties;
 - iii. other public infrastructure;
 - iv. major industrial and power generation facilities;
 - v. number and types of critical facilities;
 - vi. number of roadway crossings;
 - vii. length of roadway segments; and
 - viii. agricultural area and value of crops exposed.
 - f. shall include a qualitative description of expected loss of function, which is the effect that a flood event could have on the function of inundated structures (residential, commercial, industrial, public, or others) and infrastructure, such as transportation, health and human services, water supply, wastewater treatment, utilities, energy generation, and emergency services.
 3. Perform existing condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the existing condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding

issues, emergency management plans, and location of critical systems like primary and back-up power.

4. All data produced as part of the existing condition flood exposure analysis and the existing condition vulnerability analysis shall include:
 - a. underlying flood event return frequency;
 - b. type of flood risk;
 - c. county;
 - d. HUC8;
 - e. existing flood authority boundaries;
 - f. Social Vulnerability Indices for counties and census tracts; and
 - g. other categories as determined by RFPGs or in TWDB Flood Planning guidance documents.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 2A & 2B) to be included in the 2023 RFP.
- Prepare maps according to 1(d) and 1(e).
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2B – Future Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.34.

The objective of this task is to prepare a chapter to be combined with Task 2A and included in the 2023 Regional Flood Plan (RFP) that describes the existing and future condition flood risk in the FPR.

RFPGs shall perform future condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude and frequency of flooding;

(2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed shall be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform future condition flood hazard analyses to determine the location and magnitude of both 1.0% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30 years of continued development and population growth under current development trends and patterns, and existing flood regulations and policies based on:
 - i. current land use and development trends and practices and associated projected population based on the most recently adopted state water plan decade and population nearest the next RFP adoption date plus approximately 30 years or as provided for in TWDB Flood Planning guidance documents;
 - ii. reasonable assumptions regarding locations of residential development and associated population growth;
 - iii. anticipated relative sea level change and subsidence based on existing information;
 - iv. anticipated changes to the functionality of the existing floodplain;
 - v. anticipated sedimentation in flood control structures and major geomorphic changes in riverine, playa, or coastal systems based on existing information;
 - vi. assumed completion of flood mitigation projects currently under construction or that already have dedicated construction funding; and
 - vii. other factors deemed relevant by the RFPG.
 - b. identify areas within each FPR where future condition hydrologic and hydraulic model results are already available and summarize the information;
 - c. utilize best available data, including hydrologic and hydraulic models for each area;
 - d. where future condition results are not available, but existing condition hydrologic and hydraulic model results are already available, the RFPGs shall

modify hydraulic models to identify future conditions flood risk for 1.0% and 0.2% annual chance storms based on simplified assumptions utilizing the information identified in this task.

- e. prepare a map showing areas of 1.0% and 0.2% annual chance of inundation for future conditions, the areal extent of this inundation, and the sources of flooding for each area.
 - f. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding, and/ or local knowledge.
2. Perform future condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1.0% annual chance and 0.2% annual chance flood events as follows:
- a. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure;
 - b. analyses of existing and future developments within the future condition floodplain and the associated flood hazard exposure; and
 - c. to include only those flood mitigation projects with dedicated construction funding scheduled for completion prior to the next RFP adoption date plus 30 years or as provided for in TWDB Flood Planning guidance documents.
 - d. Identification of flood prone areas associated with the hazard exposure analyses shall be based on analyses that rely primarily on the use and incorporation of existing and available:
 - i. FIRMs or other flood inundation maps and GIS related data and analyses;
 - ii. available hydraulic flood modeling results;
 - iii. model-based or other types of geographic screening tools for identifying flood prone areas; and
 - iv. other best available data or relevant technical analyses that the RFPG determines to be the most updated or reliable.
3. Perform future condition vulnerability analyses as follows:
- a. identify resilience of communities located in flood-prone areas identified as part of the future condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.
4. All data produced as part of the future condition flood exposure analysis and the future condition vulnerability analysis shall include:

- a. underlying flood event return frequency;
- b. type of flood risk;
- c. county;
- d. HUC8;
- e. existing flood authority boundaries;
- f. Social Vulnerability Indices for counties and census tracts; and
- g. other categories as determined in TWDB Flood Planning guidance documents.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 2A & 2B) to be included in the 2023 RFP.
- Prepare maps according to 1(e) and 1(f). A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3A - Evaluation and Recommendations on Floodplain Management Practices

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.35.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the extent to which a lack of, insufficient, or ineffective current floodplain management and land use practices, regulations, policies, and trends related to land use, economic development, and population growth, allow, cause, or otherwise encourage increases to flood risks to both:
 - a. existing population and property, and
 - b. future population and property.
2. Take into consideration the future flood hazard exposure analyses performed under Task 2B, consider the extent to which the 1.0% annual chance floodplain,

along with associated flood risks, may change over time in response to anticipated development and associated population growth and other relevant man-made causes, and assess how to best address these potential changes.

3. Based on the analyses in (1) and (2), make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR. These region-specific recommendations may include minimum floodplain management and land use standards and should focus on how to best address the changes in (2) for entities within the region. These recommendations shall inform recommended strategies for inclusion in the RFP.
4. RFPGs may also choose to adopt region-specific, minimum floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt prior to the RFPG including in the RFP any Flood Management Evaluations, Flood Management Strategies, or Flood Mitigation Projects that are sponsored by or that will otherwise be implemented by that entity.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 3A & 3B) to be included in the 2023 RFP.
- List region-specific recommendations regarding forward-looking floodplain management and land use, which may include minimum floodplain management and land use standards.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3B – Flood Mitigation and Floodplain Management Goals

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.36.

Consider the Guidance Principles under 31 TAC §362.3, Tasks 1-3A, input from the public, and other relevant information and considerations.

This Task includes, but is not limited to, performing all work in accordance with TWDB

rules and guidance required to:

1. Identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the FPR to include, at a minimum, goals specifically addressing risks to life and property.
2. Consider minimum recommended flood protection goal provided by TWDB.
3. Recognize and clearly state the levels of residual risk that will remain in the FPR even after the stated flood mitigation goals are fully met.
4. Structure and present the goals and the residual risks in an easily understandable format for the public including in conformance with TWDB Flood Planning guidance documents.
5. When appropriate, choose goals that apply to full single HUC8 watershed boundaries or coterminous groups of HUC8 boundaries within the FPR.
6. Identify both short-term goals (10 years) and long-term goals (30 years).

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 3A & 3B) to be included in the 2023 RFP.
- Identify flood mitigation and floodplain management goals considering minimum recommended flood protection goal provided by TWDB.
- Identify specific and achievable flood mitigation and floodplain management goals (10 year and 30 year) in an easily understandable format for the public.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4A – Flood Mitigation Needs Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.37.

The RFPG shall conduct the analysis in a manner that will ensure the most effective and efficient use of the resources available to the RFPG.

This Task includes, but is not limited to, performing all work in accordance with TWDB

rules and guidance required to:

1. Based on the analyses and goals developed by the RFPG under Tasks 2A through 3B and any additional analyses or information developed using available screening-level models or methods, the RFPG shall identify locations within the FPR that the RFPG considers to have the greatest flood mitigation and flood risk study needs by considering:
 - a. the areas in the FPR that the RFPG identified as the most prone to flooding that threatens life and property;
 - b. the relative locations, extent, and performance of current floodplain management and land use policies and infrastructure located within the FPR;
 - c. areas identified by the RFPG as prone to flooding that don't have adequate inundation maps;
 - d. areas identified by the RFPG as prone to flooding that don't have hydrologic and hydraulic models;
 - e. areas with an emergency need;
 - f. existing modeling analyses and flood risk mitigation plans within the FPR;
 - g. flood mitigation projects already identified and evaluated by other flood mitigation plans and studies;
 - h. documentation of historic flooding events;
 - i. flood mitigation projects already being implemented; and
 - j. any other factors that the RFPG deems relevant to identifying the geographic locations where potential FMEs and potentially feasible FMSs and FMPs shall be identified and evaluated under §361.38.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4A & 4B) to be included in the 2023 RFP.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMSs and FMPs shall be evaluated
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance

documents.

Task 4B – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.38.

Based on analyses and decisions under Tasks 2A through 4A the RFPG shall identify and evaluate potential FMEs and potentially feasible FMSs and FMPs, including nature-based solutions, some of which may have already been identified by previous evaluations and analyses by others.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Receive public comment on a proposed process to be used by the RFPG to identify and select FMEs, FMSs, and FMPs for the 2023 RFP. Revise and update documentation of the process by which FMS that were identified as potentially feasible and selected for evaluation in the 2023 RFP. Include a description of the process selected by the RFPG in the Technical Memorandum and the draft Regional Flood Plan and adopted RFPs.
2. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC §361.22.
3. When evaluating FMSs and FMPs the RFPG will, at a minimum, identify one solution that provides flood mitigation associated a with 1.0% annual chance flood event. In instances where mitigating for 1.0% annual chance events is not feasible, the RFPG shall document the reasons for its infeasibility, and at the discretion of the RFPG, other FMSs and FMPs to mitigate more frequent events may also be identified and evaluated based on TWDB Flood Planning guidance documents.
4. A summary of the RFPG process for identifying potential FMEs and potentially feasible FMSs and FMPs shall be established and included in the draft and final adopted RFP.
5. The RFPG shall then identify potentially feasible FMSs and FMPs in accordance with the RFPG established process.
6. For areas within the FPR that the RFPG does not yet have sufficient information or resources to identify potentially feasible FMSs and FMPs, the RFPG shall identify areas for potential FMEs that may eventually result in FMSs and/or FMPs.
7. The RFPG shall evaluate potentially feasible FMSs and FMPs understanding that, upon evaluation and further inspection, some FMSs or FMPs initially identified as potentially feasible may, after further inspection, be reclassified as infeasible.
8. Evaluations of potentially feasible FMSs and FMPs will require associated, detailed hydrologic and hydraulic modeling results that quantify the reduced impacts from flood events and the associated benefits and costs. Information may be based on

previously performed evaluations of projects and related information. Evaluations of potentially feasible FMS and FMPs shall include the following information and be based on the following analyses:

- a. A reference to the specific flood mitigation or floodplain management goal addressed by the feasible FMS or FMP;
- b. A determination of whether FMS or FMP meets an emergency need;
- c. An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism;
- d. An equitable comparison between and consistent assessment of all FMSs and FMPs that the RFPG determines to be potentially feasible;
- e. A demonstration that the FMS or FMP will not negatively affect a neighboring area;
- f. A quantitative reporting of the estimated benefits of the FMS or FMP, including reductions of flood impacts of the 1.0% annual chance flood event and other storm events identified and evaluated if the project mitigates to a more frequent event, to include, but not limited to:
 - (1) Associated flood events that must, at a minimum, include the 1.0% annual chance flood event and other storm events identified and evaluated;
 - (2) Reduction in habitable, equivalent living units flood risk;
 - (3) Reduction in residential population flood risk;
 - (4) Reduction in critical facilities flood risk;
 - (5) Reduction in road closure occurrences;
 - (6) Reduction in acres of active farmland and rangeland flood risk;
 - (7) Estimated reduction in fatalities, when available;
 - (8) Estimated reduction in injuries, when available;
 - (9) Reduction in expected annual damages from residential, commercial, and public property; and
 - (10) Other benefits as deemed relevant by the RFPG including environmental benefits and other public benefits.
- g. A quantitative reporting of the estimated capital cost of FMPs in accordance with TWDB Flood Planning guidance documents;
- h. Calculated benefit-cost ratio for FMPs in accordance with Exhibit C: General Guidelines and based on current, observed conditions;
- i. For projects that will contribute to water supply, all relevant evaluations required under §357.34(e) (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies and Water Management Strategy Projects), as determined by the EA based on the type of contribution, and a description of its consistency with the currently adopted State Water Plan;
- j. A description of potential impacts and benefits from the FMS or FMP to the environment, agriculture, recreational resources, navigation, water quality,

- erosion, sedimentation, and impacts to any other resources deemed relevant by the RFPG;
- k. A description of residual, post-project, and future risks associated with FMPs including the risk of potential catastrophic failure and the potential for future increases to these risks due to lack of maintenance;
 - l. Implementation issues including those related to rights-of-way, permitting, acquisitions, relocations, utilities and transportation; and
 - m. Funding sources and options that exist or will be developed to pay for development, operation, and maintenance of the FMS or FMP.
9. Evaluations of potential FMEs will be at a reconnaissance or screening-level, unsupported by associated detailed hydrologic and hydraulic analyses. These will be identified for areas that the RFPG considers a priority for flood risk evaluation but that do not yet have the required detailed hydrologic and hydraulic modeling or associated project evaluations available to evaluate specific FMSs or FMPs for recommendation in the RFP. These FMEs shall be based on recognition of the need to develop detailed hydrologic models or to perform associated hydraulic analyses and associated project evaluations in certain areas identified by the RFPG. Evaluations of potential FMEs shall include the following analyses:
- a. A reference to the specific flood mitigation or floodplain management goal to be addressed by the potential FME.
 - b. A determination of whether FME may meet an emergency need.
 - c. An indication regarding the potential use of federal funds, or other sources of funding as a component of the total funding mechanism.
 - d. An equitable comparison between and consistent assessment of all FMEs.
 - e. An indication of whether hydrologic and or hydraulic models are already being developed or are anticipated in the near future and that could be used in the FME.
 - f. A quantitative reporting of the estimated benefits, including reductions of flood risks, to include:
 - (1) Estimated habitable, living unit equivalent and associated population in FME area;
 - (2) Estimated critical facilities in FME area;
 - (3) Estimated number of roads closures occurrences in FME area;
 - (4) Estimated acres of active farmland and rangeland in FME area; and
 - g. A quantitative reporting of the estimated study cost of the FME and whether the cost includes use of existing or development of new hydrologic or hydraulic models. For FMEs, RFPGs do not need to demonstrate that an FME will not negatively affect a neighboring area.
10. RFPGs shall evaluate and present potential FMEs and potentially feasible FMSs and FMPs with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency

with an approved RFP.

11. Analyses shall be performed in accordance with TWDB Flood Planning guidance documents.
12. All data produced as part of the analyses under this task shall be organized and summarized in the RFP in accordance with TWDB Flood Planning guidance documents.
13. Analyses shall clearly designate a representative location of the FME and beneficiaries including a map and designation of HUC8 and county location.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4B & 5) to be included in the 2023 RFP.
- A list of the potentially feasible FMSs and associated FMPs that were identified by the RFPG. The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMSs and FMPs shall be evaluated. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data shall be organized and summarized in the RFP in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4C – Prepare and Submit Technical Memorandum

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.13(e).

This Task includes, but is not limited to, performing all work in accordance with TWDB

rules and guidance required to:

1. Prepare a concise Technical Memorandum to include:
 - a. A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities;
 - b. A list of previous flood studies considered by the RFPG to be relevant to development of the RFP;
 - c. A 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;
 - d. A 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;
 - e. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available;
 - f. A list of available flood-related models that the RFPG considers of most value in developing its plan;
 - g. The flood mitigation and floodplain management goals adopted by the RFPG per §361.36;
 - h. The documented process used by the RFPG to identify potentially feasible FMSs and FMPs;
 - i. A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, if any; and
 - j. A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.
2. Approve submittal of the Technical Memorandum to TWDB at a RFPG meeting subject notice requirements in accordance with 31 TAC §361.21(h). The Technical Memorandum must be submitted to TWDB in accordance with Section I Article I of the contract.

Task 5 – Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.39.

The objective of this task is to evaluate and recommend Flood Management Evaluations

(FMEs), Flood Management Strategies (FMSs) and their associated Flood Mitigation Projects (FMPs) to be included in the 2023 RFP that describes the work completed, presents the potential FMEs, potentially feasible FMSs and FMPs, recommended and alternative FMSs and FMPs, including all the technical evaluations, and presents which entities will benefit from the recommended FMSs and FMPs.

Work associated with any Task 5 subtasks shall be contingent upon a written notice- to-proceed. This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Recommend FMSs and FMPs to reduce the potential impacts of flood based on the evaluations under §361.38 and RFPG goals and that must, at a minimum, mitigate for flood events associated with at 1.0 percent annual chance (100-yr flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on TWDB Flood Planning guidance documents. Recommendations shall be based upon the identification, analysis, and comparison of alternatives that the RFPG determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.
2. Provide additional information in conformance with TWDB Flood Planning guidance documents which will be used to rank recommended FMPs in the state flood plan.
3. Recommend FMEs that the RFPG determines are most likely to result in identification of potentially feasible FMSs and FMPs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1.0% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
4. Recommended FMSs or FMPs may not negatively affect a neighboring area or an entity's water supply.
5. Recommended FMSs or FMPs that will contribute to water supply may not result in an overall allocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.
6. Specific types of FMEs, FMSs, or FMPs that should be included and that should not be included in RFPs must be in accordance with TWDB Flood Planning guidance documents.
7. FMS and FMP documentation shall include a strategy or project description, discussion of associated facilities, project map, and technical evaluations addressing all considerations and factors required under 31 TAC §361.38(h).
8. Coordinate and communicate with FME, FMS, and FMP sponsors, individual local governments, regional authorities, and other political subdivisions.
9. Process documentation of selecting all recommended FMSs and associated FMPs including development of FMS evaluations matrices and other tools required to assist the RFPG in comparing and selecting recommended FMSs and FMPs.
10. Document the evaluation and selection of all recommended FMS and FMPs,

including an explanation for why certain types of strategies may not have been recommended.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4B & 5) to be included in the 2023 RFP to include technical analyses of all evaluated FMSs and FMPs.
- A list of the recommended FMEs, FMSs, and associated FMPs that were identified by the RFPG. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data shall be organized and summarized in the RFP in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6A – Impacts of Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.40.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to include:

1. a region-wide summary of the relative reduction in flood risk that implementation of the RFP would achieve within the region including with regard to life, injuries, and property.
2. a statement that the FMPs in the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR.
3. a general description of the types of potential positive and negative socioeconomic or recreational impacts of the recommended FMSs and FMPs within the FPR.
4. a general description of the overall impacts of the recommended FMPs and FMSs in the RFP on the environment, agriculture, recreational resources, water quality,

erosion, sedimentation, and navigation.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables: Prepare a stand-alone chapter (including work from both Tasks 6A & 6B) to be included in the 2023 RFP. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6B – Contributions to and Impacts on Water Supply Development and the State Water Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.41.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Include a region-wide summary and description of the contribution that the regional flood plan would have to water supply development including a list of the specific FMSs and FMPs that would contribute to water supply.
2. Include a description of any anticipated impacts, including to water supply or water availability or projects in the State Water Plan, that the regional flood plan FMSs and FMPs may have.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables: Prepare a stand-alone chapter (including work from both Tasks 6A & 6B) to be included in the 2023 RFP. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 7 – Flood Response Information and Activities

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.42.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Summarize the nature and types of flood response preparations within the FPR including providing where more detailed information is available regarding recovery.
2. Coordinate and communicate, as necessary, with entities in the region to gather information.
3. RFPGs shall not perform analyses or other activities related to planning for disaster response or recovery activities.
4. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables: Prepare a stand-alone chapter to be included in the 2023 RFP. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 8 – Administrative, Regulatory, and Legislative Recommendations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.43.

The objective of this task is to prepare a separate chapter to be included in the 2023 RFP that presents the RFPG's administrative, legislative, and regulatory recommendations.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to develop:

1. Legislative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
2. Other regulatory or administrative recommendations that they consider necessary to

- facilitate floodplain management and flood mitigation planning and implementation.
3. Any other recommendations that the RFPG believes are needed and desirable to achieve its regional flood mitigation and floodplain management goals.
 4. Recommendations regarding potential, new revenue-raising opportunities, including potential new municipal drainage utilities or regional flood authorities, that could fund the development, operation, and maintenance of floodplain management or flood mitigation activities in the region.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables: Prepare a stand-alone chapter to be included in the 2023 RFP. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 9 – Flood Infrastructure Financing Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §361.44.

The objective of this task is to report on how sponsors of recommended FMPs propose to finance projects.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Coordinate and communicate with individual local governments, regional authorities, and other political subdivisions.
2. Perform a survey, including the following work:
 - a. Contacting FME and FMP sponsors.
 - b. Collection and collation of data.
 - c. Documentation of the effectiveness of survey methodology, providing percent survey completions, and whether an acceptable minimum percent survey completion was achieved.
 - d. Submission of data.
3. Coordinate with FME and FMP sponsors as necessary to ensure detailed needs and costs associated with their anticipated evaluations and projects are sufficiently represented in the RFP for future funding determinations.
4. Assist the RFPG with the development of recommendations regarding the proposed

role of the State in financing flood infrastructure projects identified in the RFP.

5. Summarize the survey results.

The information gathered and developed in preparation of this chapter shall be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the RFP chapter by TWDB.

Deliverables: A completed Chapter 9 shall be delivered in the 2023 RFP to include summary of reported financing approaches for all recommended FMPs. Data shall be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 10 – Public Participation and Plan Adoption

The objective of this task is to address public participation, public meetings, eligible administrative and technical support activities, and other requirements and activities eligible for reimbursement. Objectives also include activities necessary to complete and submit a draft RFP and final RFP, and obtain TWDB approval of the RFP.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. In addition to generally meeting all applicable statute requirements governing regional and state flood planning this portion of work shall, in particular, include all technical and administrative support activities necessary to meet all the requirements of 31 TAC Chapters 361 and 362 that are not already addressed under the scope of work associated with other contract Tasks but that are necessary and or required to complete and deliver an draft Regional Flood Plan and final, adopted RFP to TWDB and obtain approval of the adopted RFP by TWDB.
2. Organization, support, facilitation, and documentation of all meetings/hearings associated with: preplanning meeting; consideration of a substitution of alternative flood management strategies; public hearing after adoption of the draft Regional Flood Plan and prior to adoption of the final RFP; and consideration of RFP amendments, alternative FMS substitutions, or Board-directed revisions.

Technical Support and Administrative Activities

1. RFPGs shall support and accommodate periodic presentations by the TWDB for the purpose of orientation, training, and retraining as determined and provided by the TWDB during regular RFPGRWPG meetings.
2. Attendance and participation of technical consultants at RFPG, subgroup,

- subcommittees, special and or other meetings and hearings including preparation and follow-up activities.
3. Developing technical and other presentations and handout materials for regular and special meetings to provide technical and explanatory data to the RFPG and its subcommittees, including follow-up activities.
 4. Administrative and technical support and participation in RFPG activities, and documentation of any RFPG workshops, work groups, subgroup and/or subcommittee activities.
 5. Technical support and administrative activities associated with periodic and special meetings of the RFPG including developing agendas and coordinating activities for the RFPG.
 6. Provision of status reports to TWDB for work performed under this Contract.
 7. Development of draft and final responses for RFPG approval to public questions or comments as well as approval of the final responses to comments on RFP documents.
 8. Intraregional and interregional coordination and communication, and or facilitation required within the FPR and with other RFPGs to develop a RFP.
 9. Incorporation of all required data and reports into RFP document.
 10. Modifications to the RFP documents based on RFPG, public, and or agency comments.
 11. Preparation of a RFP chapter summarizing Task 10 activities including review by RFPG and modification of document as necessary.
 12. Development and inclusion of Executive Summaries in both draft Regional Flood Plan and final RFP.
 13. Production, distribution, and submittal of all draft and final RFP-related planning documents for RFPG, public and agency review, including in hard-copy format when required.
 14. Assembling, compiling, and production of the completed draft Regional Flood Plan and Final Regional Flood Plan document(s) that meet all requirements of statute, 31 TAC Chapters 361 and 362, Contract and associated guidance documents.
 15. Submittal of the RFP documents in both hard copy and electronic formats to TWDB for review and approval; and all effort required to obtain final approval of the RFP by TWDB.

Other Activities

1. Review of all RFP-related documents by RFPG members.
2. Development and maintenance of a RFPG website or RFPG-dedicated webpage on the RFPG administrator's website for posting planning group meeting notices, agendas, materials, and plan information.
3. Limited non-labor, direct costs associated with maintenance of the RFPG website.
4. Development of agendas, presentations, and handout materials for the public meetings and hearings to provide to the general public.
5. Documentation of meetings and hearings to include recorded minutes and/or audio

recordings as required by the RFPG bylaws and archiving and provision of minutes to public.

6. Preparation and transmission of correspondence, for example, directly related to public comments on RFP documents.
7. Promoting consensus decisions through conflict resolution efforts including monitoring and facilitation required to resolve issues between and among RFPG members and stakeholders in the event that issues arise during the process of developing the RFP, including mediation between RFPG members, if necessary.
8. RFPG membership solicitation activities.
9. Meeting all posting, meeting, hearing and other public notice requirements in accordance with the open meetings act, statute, and 31 TAC §361.21 and any other applicable public notice requirements.
10. Solicitation, review, and dissemination of public input, as necessary.
11. Any efforts required, but not otherwise addressed in other SOW tasks that may be required to complete an RFP in accordance with all statute and rule requirements.

Deliverables:

- A completed Chapter 10 summarizing public participation activities and appendices with public comments and RFPG responses to comments.
- Complete draft Regional Flood Plan and final, adopted RFP documents.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Agenda Item 9

Update from RFPG

Sponsor (GBRA)

regarding status of:

1. Open solicitation for vacant RFPG member positions: river authorities, municipalities, counties, electric generating utilities and public
2. Regional Flood Planning Grant contract with the TWDB
3. Public website: www.guadalupeRFPG.org

Agenda Item 10

Public General Comments

Public Comments limited to 3 minutes per speaker

Agenda Item 11

Consider date and agenda items for next meeting

Agenda Item 12

Adjourn