

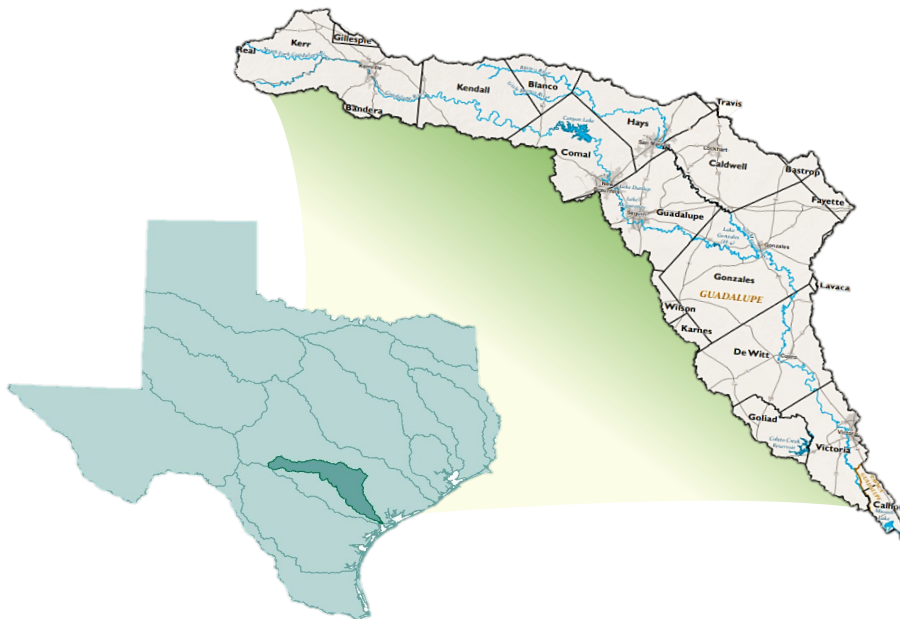
# EXECUTIVE SUMMARY

## ES.1 Introduction to the Guadalupe Flood Planning Region

In 2019, the 86th Texas Legislature passed Senate Bill 8 that authorized and established the regional and state flood planning processes. The Legislature assigned the responsibility of the regional and state flood planning process to the Texas Water Development Board (TWDB). This report presents the Draft Region 11 Guadalupe Regional Flood Plan (RFP), which represents the first-ever regionwide flood plan for the Guadalupe Flood Planning Region (FPR) or Region 11. Region 11 is one of 15 Regional Flood Planning Groups (RFPGs) across the state of Texas tasked with developing a regional flood plan.

The Guadalupe FPR comprises the Guadalupe River and its contributing creeks and streams that flow from the Texas Hill Country as far west as Kerr County into San Antonio Bay. Due to the varying ecoregions and topography, the Guadalupe FPR experiences multiple types of flood risk, including riverine, coastal, and local (urban) flooding. The northern half of the Guadalupe FPR lies within what is known as “Flash Flood Alley.” It is considered one of the most flood-prone areas due to the area’s steep terrain, shallow soil, and unusually high rainfall rates.

The Comal, Blanco, and San Marcos Rivers all feed the Guadalupe River along this region. The adjacent San Antonio River joins the Guadalupe River just before it enters San Antonio Bay and the Gulf of Mexico. Major surface water impoundments, some of which have flood storage, include Canyon Lake, Coletto Creek Reservoir, Lake Dunlap, Lake McQueeney, Lake Placid, Wood Lake, and Lake Gonzales. The Upper Guadalupe River Authority has also constructed several impoundments in the upper basin. **Chapter 1** contains an in-depth description of the region.



*Figure ES-1: Guadalupe Flood Planning Region 11*

The Region 11 Guadalupe RFPG is comprised of 15 voting members and 10 non-voting members, volunteers who oversaw and directed the development of this plan. The Guadalupe-Blanco River Authority (GBRA) was selected by TWDB as the planning group sponsor for Region 11. The RFPG held a public meeting on July 27, 2022, during which they approved the submittal of the Draft Region 11 Guadalupe RFP to TWDB by August 1, 2022. The preliminary draft flood plan was made available to the public on the RFPG’s website prior to this meeting. Following the meeting, the consultant team addressed comments received and made necessary revisions before submitting the Draft Regional Flood Plan to TWDB and the public. The final plan will be posted to the RFPG’s website and paper copies of the plan will be made available at three locations within the region:

- Upper Guadalupe River Authority (UGRA) – 125 Lehmann Drive, Kerrville, TX 78028
- Guadalupe-Blanco River Authority (GBRA) – 933 East Court Street, Seguin, TX 78155
- Victoria Public Library – 302 North Main Street, Victoria, TX 77901

A public hearing will be held on September 7, 2022, in Kerrville to present and receive feedback on the draft plan. The public will have at least 30 days prior to and 30 days following the public hearing to provide written comments, in addition to providing written and/or oral comments at the public hearing. The RFPG will respond to the comments received and revised the draft plan as appropriate. The RFPG is scheduled to meet on January 4, 2023, in Seguin to adopt the final plan for submittal to TWDB by January 10, 2023.

## ES.2 Chapters Included in the Plan

TWDB developed the scope of work and technical guidelines that adhere to the legislation directing each RFPG to develop its regional flood plan. The plan includes 10 required chapters plus TWDB-required tables and maps. TWDB-required tables and maps are included in various appendices of this plan.

- Chapter 1: (Task 1) Planning Area Description
- Chapter 2: Flood Risk Analyses
  - Task 2A: Existing Condition Flood Risk Analyses
  - Task 2B: Future Condition Flood Risk Analyses
- Chapter 3: Floodplain Management Practices and Flood Protection Goals
  - Task 3A: Evaluation and Recommendations on Floodplain Management Practices
  - Task 3B: Flood Mitigation and Floodplain Management Goals
- Chapter 4: Assessment and Identification of Flood Mitigation Needs
  - Task 4A: Flood Mitigation Needs Analysis
  - Task 4B: Classification of Potential Flood Management Evaluations (FMEs) and Potentially Feasible Flood Management Strategies (FMSs) and Flood Mitigation Projects (FMPs)
- Chapter 5: (Task 5) Recommendation of FMEs, FMSs and Associated FMPs
- Chapter 6: Impact and Contribution of the RFP

- Task 6A: Impacts of the RFP
- Task 6B: Contributions to and Impacts on Water Supply Development and the State Water Plan
- Chapter 7: (Task 7) Flood Response Information and Activities
- Chapter 8: (Task 8) Legislative, Administrative, and Regulatory Recommendations
- Chapter 9: (Task 9) Flood Infrastructure Financing Analysis
- Chapter 10: (Task 10) Public Participation and Plan Adoption
- Related Appendices

Please note that Task 4C referred to Technical Memorandum Number 1 and Technical Memorandum Number 2 that were approved by the RFPG and submitted to TWDB in January and March 2022, respectively, to indicate significant progress in the development of this plan. These two memos served as significant milestones in plan development and include outdated information. To reduce confusion, these two memos were not included in the RFP, although much of the content has been incorporated.

The RFPG was responsible for developing this regional flood plan; however, the implementation of specific recommendations and flood mitigation actions included in this plan will require action by local communities in the Guadalupe FPR.

TWDB will merge each of the required tables submitted by all 15 RFPGs to develop the State Flood Plan and corresponding database. TWDB also required specific Geographical Information System (GIS) schema to be submitted electronically as part of this plan. These files were provided directly to TWDB. These files were also shared with the General Land Office (GLO) per TWDB's request to share regional flood data with this state agency that is preparing its own flood mitigation planning along the Texas coast.

## ES.3 Key Findings

### Flood Risk:

- Though the Guadalupe FPR varies widely in its geographies and characteristics, flood risk is prevalent throughout the region. More than 1,169 square miles of land area (19% of the region) is at risk of flooding, exposing approximately 45,801 buildings, 166,622 people, 3,206 roadway-stream crossings, and 689 square miles of agricultural land to flood risks.
- If current population growth, land development, and flood management practices continue, the amount of land area at risk of flooding is projected to increase by 18% over the next 30 years.

### Floodplain Management and Goals:

- A vast majority of communities within the region participate in the National Flood Insurance Program (NFIP) and are required to regulate development within floodplains. However, many communities only adopt minimum flood development standards. Adoption of higher standards and increased enforcement are recommended to avoid increases in future flood risk.
- The RFPG adopted six goals, related to improved low water crossing safety, nature based solutions, adoption of higher floodplain management standards, participation in FEMA's Community Rating System, reduction of structures at flood risk, and increasing local dedicated funding sources for flood-related infrastructure.

### Study and Mitigation Needs

- An analysis of flood study and mitigation needs demonstrated that 65% of the Guadalupe FPR has inadequate flood mapping and is in need of updated data and information. The Cities of New Braunfels, San Marcos, Cuero, Gonzales, Victoria, Kerrville and Kyle were identified as those with the greatest known flood risks and mitigation needs; however, there is significant risk across the Guadalupe FPR.

### Recommended Flood Projects, Studies, and Strategies

- The RFPG worked with local communities to identify, evaluate, and recommend 127 flood studies (evaluations), 32 flood projects, and 5 regional flood strategies.
- The recommended flood projects would provide for the removal of 1,169 structures from flood risk, protecting approximately 1,864 people, and preventing 24 road closure occurrences.
- The flood studies recommended in this plan would provide updated data and information for the region and include planning activities for 87 future flood projects.
- The flood strategies recommended in this plan would advance the region's capabilities and involvement in public outreach, floodplain management, and flood preparedness.

### Funding Needs

- This plan identified significant barriers to generating local funding and obtaining available state and federal funds for necessary flood studies and projects.
- Overall, \$782,584,393 is needed to implement the flood projects, studies, and strategies recommended in this plan, with an estimated \$703,051,997 required from state and federal sources.

### Recommendations

- The RFPG recommends a total of 10 legislative, 12 administrative, and 3 regulatory recommendations it considers necessary to facilitate floodplain management and flood mitigation planning and implementation.

## ES.4 Existing and Future Flood Risks

Compiling a comprehensive understanding of flood risk as it exists throughout the Guadalupe Flood Planning Region was a critical first step in the creation of this regional flood plan. The current flood risk data served as a keystone in the regional flood planning process upon which many of the subsequent regional flood planning tasks and decisions were based. Proactive planning for flood risk also requires an assessment of how flood risk could be expected to increase in the future. **Chapter 2** presents the findings of the existing condition flood risk analysis and future condition flood risk analysis, based on a no-action scenario of continued development trends, regulations, and population growth during the next 30 years. Flood risks were evaluated for both the 1% annual chance event (ACE) and 0.2% ACE, and incorporated various types and sources of flooding, including riverine, urban, and coastal.

The analyses were performed in three parts:

1. Flood hazard analyses to determine the location, magnitude, and frequency of flooding
2. Flood exposure analyses to identify who and what might be harmed within the region
3. Vulnerability analyses to identify the degree to which communities and critical facilities may be affected by flooding.

**Chapter 2** describes in depth the process that was undertaken to determine and quantify flood hazards in the region and presents the results of the hazard, exposure, and vulnerability analyses. **Table ES-1** shows the difference between the flood hazard area under existing and future conditions. **Figure ES-2** shows a region-wide view of the resulting existing flood risks for the 1% and 0.2% ACEs. **Figure ES-3** shows the existing and future condition flood hazard area (square miles) by county.

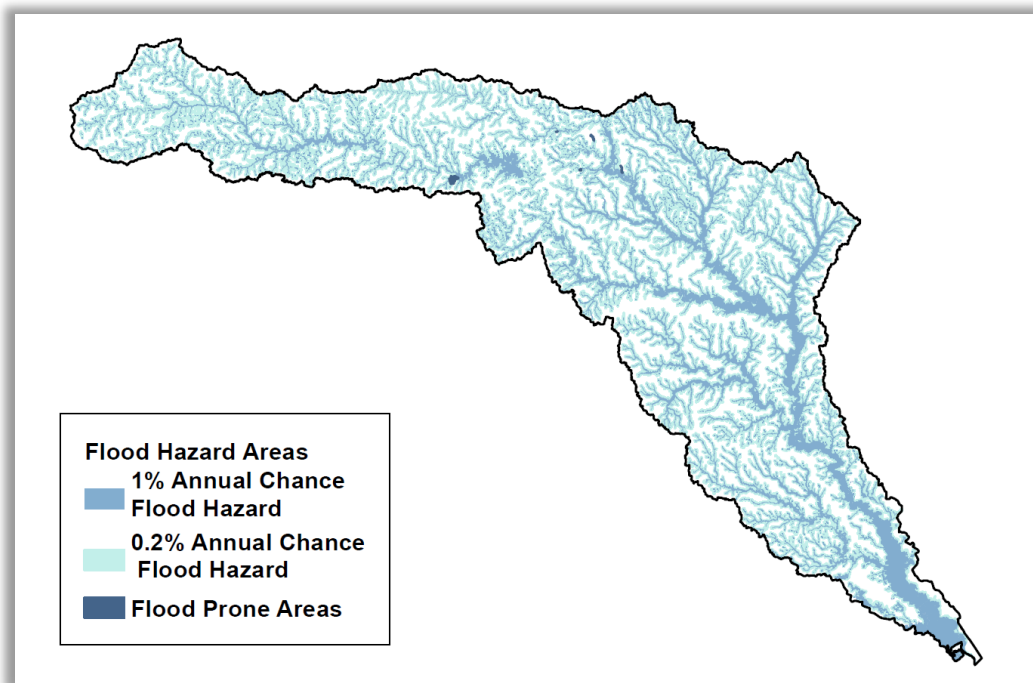
Population within the Guadalupe FPR is generally projected to continue the high growth rates experienced over the past several decades, with greater concentrations of population expanding outward from the San Antonio and Austin metropolitan statistical areas. The region's population is projected to increase by 62% between 2020 and 2050, with the most significant population increases expected to take place in Bastrop, Hays, Comal, Kendall, Caldwell, and Guadalupe Counties. These are also areas that have historically experienced severe flooding events.

Flooding can impact people, property, critical facilities, infrastructure, agricultural production and more. The flood exposure analysis showed that currently 45,801 buildings, 166,622 people, 3,206 roadway-stream crossings, and 689 square miles of agricultural land are exposed to flood risks. These figures increase significantly under future conditions. **Table ES-2** presents an overview of the existing and future condition flood exposure analysis results. The impacts of

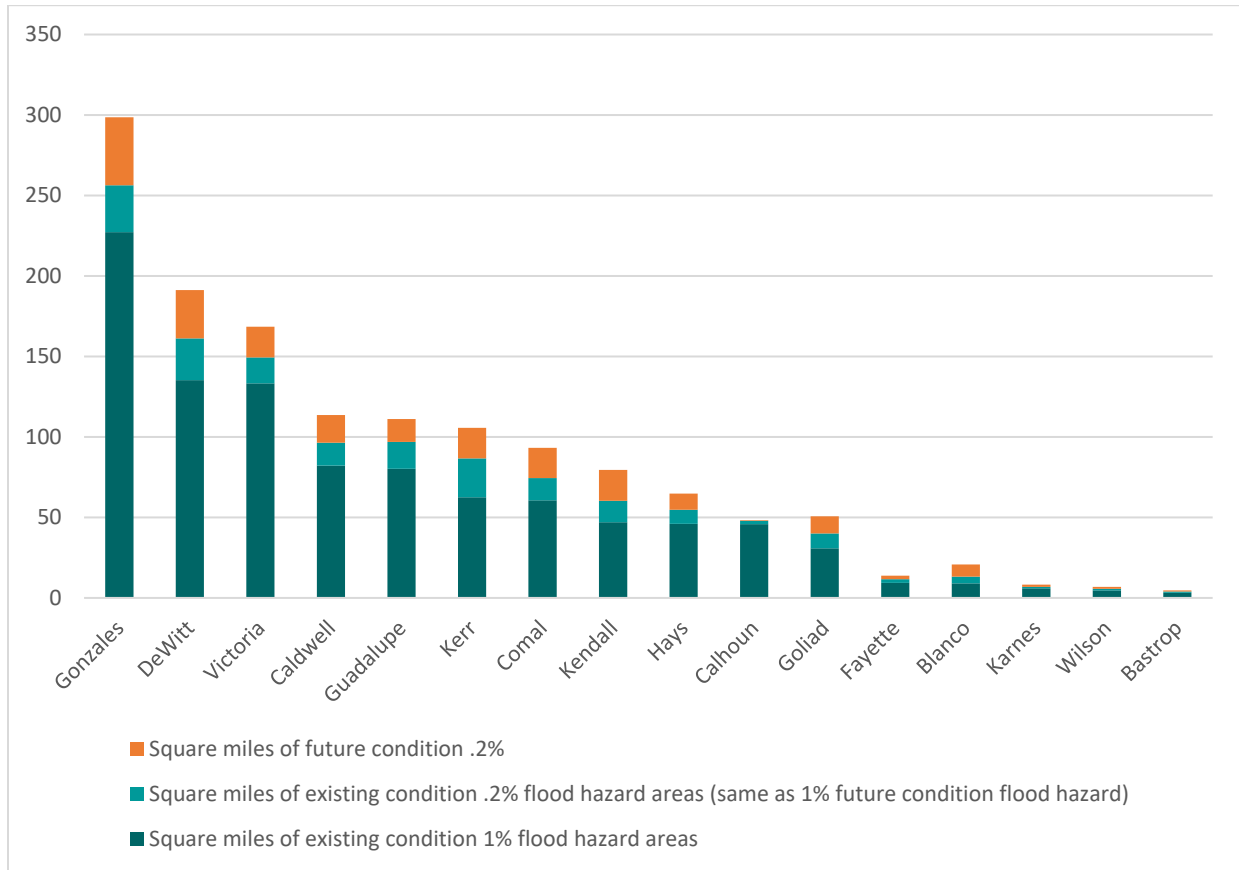
flooding on socially vulnerable populations and a community’s ability to recover were also assessed in **Chapter 2**.

**Table ES-1: Existing and Future Conditions Flood Hazard Area Comparison**

Flood Hazard Frequency	Flood Hazard Area (in square miles)		Change (%)
	Existing	Future	
1%	986	1,169	18.6%
0.2%	183	215	17.5%
<b>Total</b>	<b>1,169</b>	<b>1,384</b>	<b>18.4%</b>



**Figure ES-2: Existing Conditions Flood Hazard Areas Overview**



**Figure ES-3: Flood Hazard Area by County**

**Table ES-2: Flood Exposure Results**

Exposure Feature Type	TOTAL EXISTING	TOTAL FUTURE	% INCREASE
Total Structures	45,801	71,501	56.1%
Structures: Residential	32,101	53,015	65.2%
Structures: Non-Residential	13,700	18,486	34.9%
Critical Facilities	214	307	43.5%
Roadway-Stream Crossings (count)	3,206	3,546	10.6%
Roadway-Stream Crossings (miles)	1,379.5	1,795.2	30.1%
Agricultural Land (sq miles)	689.6	808	17.2%
Population	166,622	268,206	61.0%

## ES.5 Floodplain Management Practices and Flood Protection Goals

Floodplain management, land use, infrastructure design, and other practices play a key role in preventing future increases in flood risk. **Chapter 3** presents a qualitative assessment of current floodplain management practices in the region and recommendations for improvement.

Although most of the communities within the Guadalupe FPR participate in FEMA’s National Flood Insurance Program (NFIP), which requires participating communities to adopt floodplain management regulations to ensure new development is reasonably safe from flooding, the RFPG considers that many of the communities only adopt minimum flood development standards and are not proactive in their approach to floodplain development. In addition, many entities at the county level are not aware of their authority to implement floodplain development standards higher than NFIP minimums. The RFPG concludes that communities could enhance their policies to minimize the potential of additional flood risks in the future.

The RFPG is tasked with defining and adopting flood mitigation and floodplain management goals for the region that are specific, achievable, and, when implemented, will demonstrate progress toward the overarching goal set by the state of protecting against the loss of life and property. The RFPG’s selected goals guided the development and recommendation of the FMEs, FMSs, and FMPs for the planning region, as discussed in **Chapters 4 and 5**.

Each goal has a short-term (10 year) and long-term (30 year) component. **Table ES-3** presents the goals adopted by the Guadalupe RFPG for this plan. For a deeper understanding of the RFPG’s recommended practices and goals, see **Chapter 3**.

**Table ES-3: Adopted Flood Mitigation and Floodplain Management Goals**

Short Term (10 year)	Long Term (30 year)
Improve safety beyond minimal signage at 35% of low-water crossings through automatic flood warning gates and/or flood level passed.	Improve safety beyond minimal signage at 90% of low-water crossings through automatic flood warning gates and/or flood level passed.
Consider incorporating nature-based practices when acreage exceeds one acre (low-impact development [LID], green infrastructure, natural channel design) in 30% of FMPs and FMSs recommended in the RFP.	Consider incorporating nature-based practices when acreage exceeds one acre (LID, green infrastructure, natural channel design) in 100% of FMPs and FMSs recommended in the RFP.
Increase adoption of higher standards to 30% of communities in high-growth counties.  Communities = cities and counties High-growth county is considered greater than 50% population growth in 30 years	Increase adoption of higher standards to 70% of communities in high-growth counties.  Communities = cities and counties High-growth county is considered greater than 50% population growth in 30 years



Short Term (10 year)	Long Term (30 year)
<p>Increase high-growth community CRS participation to 50% of all high-growth communities.</p> <p>High-growth communities – cities with a population greater than 10,000 people in 2030</p>	<p>Increase high-growth community CRS participation to 75% of all high-growth communities.</p> <p>High-growth communities – cities with a population greater than 10,000 people in 2030</p>
<p>Reduce number of vulnerable buildings/structures/critical facilities within the 1% existing flood hazard layer by 20%.</p>	<p>Reduce number of vulnerable buildings/structures/critical facilities within the 1% existing flood hazard layer by 50%.</p>
<p>Increase percentage of communities with dedicated funding sources for operations and maintenance and implementation of storm drainage systems to 35% of communities.</p>	<p>Increase percentage of communities with dedicated funding sources for operations and maintenance and implementation of storm drainage system to 60% of communities.</p>

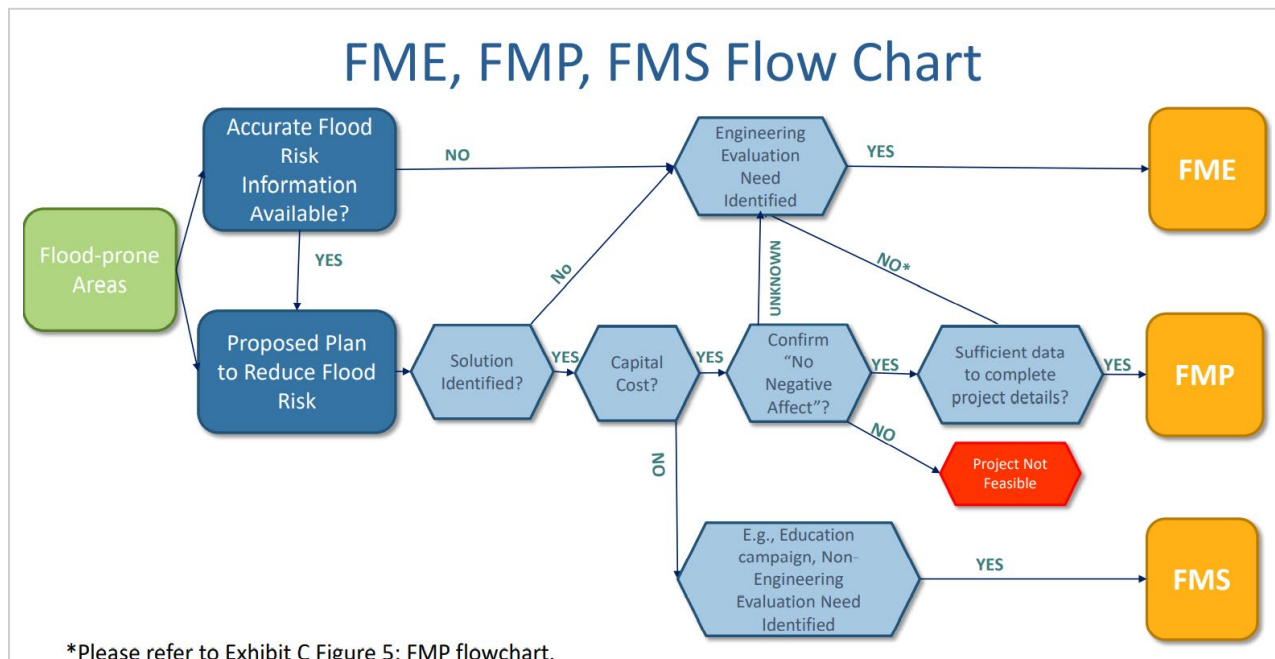
## ES.6 Assessment and Identification of Flood Mitigation Needs

The RFPG conducted a flood mitigation needs analysis to identify the areas with the greatest gaps in flood risk knowledge and the areas of greatest known flood risk and mitigation needs. This big-picture assessment helped guide the subsequent efforts of identifying FMEs, FMSs, and FMPs. The analysis considered a variety of criteria, including flood risk exposure to buildings, low-water crossings, critical infrastructure, agricultural areas, and other resources; NFIP participation; gaps in flood mapping information; lack of hydrologic and hydraulic models; existing flood risk mitigation plans; flood mitigation projects previously identified; historic flooding reports; and social vulnerability of communities. The Cities of New Braunfels, San Marcos, Cuero, Gonzales, Victoria, Kerrville and Kyle were identified as those with the greatest known flood risks and mitigation needs; however, there is significant risk across the Guadalupe FPR. Approximately 65% of the Guadalupe FPR has inadequate flood mapping and was identified as having significant gaps in flood risk information. These areas are in need of updated data and information to accurately depict flood risk. For more information, see **Chapter 4**.

## ES.7 Identification and Selection of Recommended Floodplain Management and Flood Mitigation Actions

To address the identified flood risks in the Guadalupe FPR, the RFPG identified and evaluated FMEs, FMSs, and FMPs. FMEs consist of watershed studies or additional evaluations needed to determine the viability of a project. FMPs are structural or non-structural projects to mitigate flood risk. The FMS category is intended to capture other types of solutions, such as ordinances,

flood early warning systems, and more. **Figure ES-4** illustrates the screening process used by the RFPG’s consultant team to confirm that potential actions had been sorted into their appropriate category.



**Figure ES-4: Potential Flood Risk Reduction Action Screening Process**

Source: TWDB

The Guadalupe RFPG opted to take an inclusive approach to the evaluation and recommendation process. If an FME, FMS, or FMP met TWDB requirements, was aligned with the Guadalupe FPR’s flood mitigation and floodplain management goals, and seemed reasonable, the planning group included it in the regional plan. A summary of the FMEs, FMSs, and FMPs recommended in this regional flood plan is found in **Table ES-4**, **Table ES-5**, and **Table ES-6**. For more detailed information about each individual action, see **Chapter 5**.

The Guadalupe RFPG evaluated the overall impacts of the Regional Flood Plan, not only to areas at risk of flooding, structures and populations in the floodplain and number of low water crossings, but also water supply, the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation. The recommended flood projects would provide for the removal of 1,169 structures from flood risk, protecting approximately 1,864 people, and preventing 24 road closure occurrences. The flood studies recommended in this plan would provide updated data and information for the region and include planning activities for 87 future flood projects. The flood strategies recommended in this plan would advance the region’s capabilities and involvement in public outreach, floodplain management, and flood preparedness. There are no known negative impacts from any of the recommended flood risk reduction actions on any of these areas. For more detailed information on the impact and contribution of this Regional Flood Plan, see **Chapter 6**.

**Table ES-4: Summary of FME Types**

FME Type		Description	Number
Watershed Planning	Drainage master plans, other community-scale plans	Supports the development and analysis of H&H models to evaluate flood risk within a given jurisdiction, evaluates potential alternatives to mitigate flood risk, and develops CIPs.	21
	H&H modeling, regional watershed studies	Supports the development and analysis of H&H models to define flood risk or identify flood-prone areas OR large-scale studies that are likely to benefit multiple jurisdictions.	10
	Flood mapping updates	Promotes the development and/or refinement of detailed flood risk maps to address data gaps and inadequate mapping. Creates FEMA mapping in previously unmapped areas and updates existing FEMA maps as needed.	3
Project Planning	Engineering project planning	Evaluates a proposed project to determine whether implementation would be feasible; OR provides initial engineering assessment, including conceptual design, alternative analysis, and up to 30% engineering design.	87
Preparedness	Studies on Flood Preparedness	Encourages preemptive evaluations and strategies to better prepare an area in the event of flood.	6

**Table ES-5: Summary of FMP Types**

<b>FMP Type</b>	<b>General Description</b>	<b>Number of FMPs Recommended</b>
Stormwater Infrastructure Improvements	Improvements to stormwater infrastructure, including channels, ditches, ponds, and stormwater pipes	6
Roadway Drainage Improvements	Improvements to roadway drainage infrastructure, including side ditches, culvert crossings, and bridge crossings	9
Regional Detention Facilities	Runoff control and management via detention facilities	10
Property Acquisition	Voluntary acquisition of flood-prone structures	1
Flood Warning Systems	Installation of gauges, sensors, or barricades to monitor streams and low-water crossings for potential flooding and to support emergency response	2
Emergency Generators	Purchasing and installing emergency generators at critical facilities	4

**Table ES-6: Summary of FMS Types**

FMS Type	General Description	Number of FMSs Recommended
Education and Outreach	Develops a coordinated education, outreach, and training program to inform and educate the public about the dangers of flooding, flood insurance, how to prevent flood damages to property, and training.	61
Flood Measurement and Warning	Installs gauges, barricades, signage and improvements to increase low-water crossing safety; creates or enhances evacuation plans; improves community preparedness.	45
Infrastructure Projects	Supports general city- and countywide programs to develop and implement flood reduction projects.	16
Property Acquisition and Structural Elevation	Acquires, relocates, and/or elevates flood-prone structures. Acquires floodplain and protects environmentally sensitive areas by converting floodplain encroachments into open space land.	31
Regulatory and Guidance	Reviews, updates, and enhances flood-damage prevention ordinances and development practices. Considers incorporating higher standards.	31
	Develops and adopts “green infrastructure” programs and incorporates regulatory standards to protect open space in flood-prone areas.	
	Joins the FEMA Cooperating Technical Partners (CTP) program to lower flood insurance rates for residents.	

## ES.8 Legislative, Administrative, and Regulatory Recommendations

This planning process provides an opportunity for the RFPG to make recommendations to the state of Texas to improve floodplain management and mitigation within the region. The RFPG recommends a total of 10 legislative, 12 administrative, and 3 regulatory recommendations, which are summarized in Tables **ES-7**, **ES-8**, and **ES-9**. Additional explanation and rationale for each recommendation is included in **Chapter 8**.

**Table ES-7: Legislative Recommendations**

ID Number	Recommendation
8.1.1	<b>Continue recurring biennial appropriations to Flood Infrastructure Fund (FIF) for Study, Strategy, and Project implementation.</b>
8.1.2	<b>Expand municipal and county authority to regulate land use and development in floodplains</b> and address legal concerns regarding potential takings
8.1.3	<b>Expand city and county authority to ensure that new development does not increase downstream flooding</b>
8.1.4	<b>State adoption of higher flood standards</b> , for example, establish a minimum floor elevation two feet above the base flood elevation to account for potential changes in future rainfall depths and flood elevations. Enact legislation updating the state building code to a more recent edition (e.g., the 2018 edition of the International Building Code and International Residential Code).
8.1.5	<b>Promote, develop and allocate State funding to assist dam owners</b> (public and private) with the costs associated with repair and maintenance of dams
8.1.6	<b>Expand the ongoing program and funding to enhance flood early warning system implementation</b> on a regional basis (especially in rural areas)
8.1.7	<b>Provide guidance and funding for “buy out” programs to remove repetitive loss structures and potentially convert flood prone neighborhoods into green space/parkland</b> as an alternative to large-scale construction projects. Importantly, funding should consider factors other than benefit-to-cost ratio (BCR). Funding should continue and be expanded for both pre- and post-disaster buyout programs.
8.1.8	<b>Continue and expand funding to improve safety at low water crossings through structural improvements and/or flood warning systems or other enhanced safety measures.</b>
8.1.9	<b>Provide counties with the authority to require commercial outfitters, landowners, and parks to safely park recreational vehicles and recreational equipment outside of the floodplain.</b> Develop and promote educational materials such as flood warning or evacuation planning to help guide businesses and parks.
8.1.10	<b>Provide funding to increase the number of conservation easements for riparian areas</b> and land in the 100-year floodplains.

**Table ES-8: Administrative Recommendations**

ID Number	Recommendation
8.2.1	Develop model ordinances for general law cities (building codes, Low Impact Design/Development, Green Infrastructure, other)
8.2.2	<b>Continue and expand funding to support ongoing education/ training regarding floodplain management</b>
8.2.3	<b>Modify the selection process for flood projects</b> so that project selection is not scored or awarded only on a traditional benefit-cost ratio
8.2.4	<b>Continue and increase funding and/or technical assistance to develop updated floodplain maps</b>
8.2.5	<b>Develop a statewide database and tracking system to document flood-related fatalities</b> and provide a public website/dashboard that conveys map-based statistical information regarding these fatalities
8.2.6	<b>Continue and increase funding for stream monitoring at high-risk flood prone areas.</b>
8.2.7	<b>Provide incentives to local governments to participate in the FEMA Community Rating System (CRS) program.</b>
8.2.8	<b>TWDB, TFMA, river authorities, and local governments should provide Green Infrastructure training to agencies, local governments, engineers, planners and encourage this practice in flood mitigation efforts.</b>
8.2.9	<b>TWDB Flood Infrastructure Fund (FIF) project selection process should place additional emphasis on social vulnerability, sustainability, environmental resilience, etc.</b> in addition to benefit cost analysis to guide the funding and implementation of multi-dimensional projects that can provide water supply and other benefits beyond flood mitigation.
8.2.10	<b>TWDB/TFMA or others should develop a riparian management guidance document that addresses vegetation management purpose, timing, and location within the floodplain and floodway</b>
8.2.11	<b>Encourage counties to exercise their existing authority to manage new and existing development, and fund projects to mitigate existing flooding.</b>
8.2.12	<b>Encourage communities to work together to enhance program/project efforts to improve funding and implementation opportunities</b>

**Table ES-9: Regulatory Recommendations**

ID Number	Recommendation
8.3.1	<b>TxDOT design criteria should include stormwater detention requirements to not increase downstream flooding from new highway projects</b>
8.3.2	<b>Statewide detention and/or verification of no downstream impact from new development for design storms ranging from the 2-year to the 100-year storm</b>
8.3.3	<b>State should provide guidance and/or authority to local governments to manage proposed RV parks in the floodplain</b>

## ES.9 Cost of the Draft Plan

TWDB requires that each RFPG assess and report on how sponsors propose to finance recommended FMEs, FMSs, and FMPs. A primary aim of this survey effort is to understand the funding needs of local sponsors and propose what role the state should have in financing the recommended FMEs, FMSs, and FMPs. **Overall, there is an estimated \$782,584,393 needed to implement the recommended FMEs, FMSs, and FMPs in this regional flood plan. Of that amount, approximately \$703,051,997 in state and federal funding is projected to be needed (89.8%).** This number does not represent the amount of funding needed to mitigate all risks in the region and solve flooding problems in their totality. This number simply represents the funding needs for the specific, recommended studies, strategies, and projects in this cycle of regional flood planning. Future cycles of regional flood planning will continue to identify more projects and studies needed to further flood mitigation efforts in the Guadalupe FPR.

Overall, a combination of increased local capabilities to self-fund flood-related activities and projects and increased funding from state and federal sources are needed to address the flood risk reduction needs identified through this regional planning process and documented in this plan.

## ES.10 Public Participation and Outreach

The Guadalupe RFPG made a commitment to develop the 2023 Guadalupe RFP through a transparent process in which public input and participation is welcomed and encouraged. The technical consultant team prepared a Public Involvement Plan (PIP) for the RFPG to supplement the legally required efforts with opportunities to encourage and obtain meaningful public and stakeholder input throughout the planning process. The Guadalupe RFPG encouraged public input and comment in a manner that exceeded the requirements in state laws and regional flood planning rules. Highlights of the public involvement and outreach strategies employed are listed below. Some are described further below, and all are described in detail in **Chapter 10**.

- Development of a Public Involvement Plan (PIP)
- Development of an extensive public and stakeholder contact list.



- Development and implementation of an interactive mapping tool to place on the Guadalupe RFPG website to gather information about flood-prone areas and existing flood management efforts using forms and surveys.
- Identification and evaluation of opportunities to enhance available information on the Guadalupe RFPG website.
- Use of social media accounts to post messages about upcoming Guadalupe RFPG meetings and activities.
- Development and implementation of a Virtual Public Meeting (VPM) tool to supplement the second in-person Guadalupe RFPG pre-planning meeting.
- Routine review and reporting of all public comments received through either the Guadalupe RFPG website or the Guadalupe RFPG email account.

The public and stakeholder involvement efforts emphasized two-way communication between the public and stakeholders and the Guadalupe RFPG. The Guadalupe RFPG maintained proactive communication and information dissemination during the planning process so that the public and stakeholders were informed and provided a process for how they could provide input, share data, or have their comments, questions, or concerns addressed.

The Guadalupe RFPG held regular monthly meetings during the timeframe of 2020 – 2023. These meetings included presentation of materials, discussions, deliberations, voting on specific measures, and public comment. **Chapter 10** provides a summary of all the Guadalupe RFPG public meetings, which includes regular meetings and executive committee meetings. **Photos ES-1, ES-2, and ES-3** depict some of the RFPG’s meetings.



***Photo ES-1: August 4, 2021,  
Pre-Planning Meeting,  
Wimberley, Texas.***



***Photo ES-2: May 10, 2022  
Regular Guadalupe RFPG Meeting  
Seguin, Texas.***



***Photo ES-3: June 27, 2022,  
Regular Guadalupe RFPG Meeting,  
Seguin, Texas.***