SECTION 9. JURISDICTIONAL ANNEXES

9.1 Fort Bend County

This section presents the jurisdictional annex for Fort Bend County that provides resources and information to assist public and private sectors in reducing losses from future hazard events. This annex is not guidance on what to do when a disaster occurs. Instead, this annex concentrates on actions to reduce or eliminate damage to property and people that can be implemented before a disaster. Information presented includes a general overview of the County, the Fort Bend County representatives who participated in the planning process, an assessment of Fort Bend County's risk and vulnerability, the different capabilities used in Fort Bend County, and an action plan that will be implemented to achieve a more resilient community.

9.1.1 Hazard Mitigation Planning Team

Fort Bend County identified primary and alternate points of contact and developed the 2023 Hazard Mitigation Plan (HMP) over the course of several months with input from many County departments, including the Fort Bend County Office of Homeland Security and Emergency Management. The Emergency Management Coordinator represented Fort Bend County on the Fort Bend County HMP Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development by reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The following table summarizes county officials who participated in the development of the annex and in what capacity. Additional documentation on the County's planning process through Planning Partnership meetings is included in Volume 1, Section 2 (Planning Process) and Appendix C (Meeting Documentation).

Table 9.1-1. Hazard Mitigation Planning Team

Primary Point of Contact		Alternate Point of Contact	
Name/Title:	Greg Babst/Emergency Management Coordinator	Name/Title:	Vladimir Hidrovo-Alban/Recovery Manager
Address:	307 Fort St, Richmond, TX 77469	Address:	307 Fort St, Richmond, TX 77469
Phone Number:	281-238-3428	Phone Number:	281-238-3470
Email:	Gregory.Babst@fortbendcountytx.gov	Email:	Vladimir.Hidorov-Alban@fbctx.gov
NFIP Floodplain Administrator			
Name/Title:	KP George/County Judge		
Address:	401 Jackson St., Richmond, TX 77469		
Phone Number:	281-341-8606		
Email:	FBC.Judge@fbctx.gov		
Additional Contributors:			
Name/Title: Method of Participation:	Craig W. Kalkomey/CFM Provided key input in the planning process, served on the Steering Committee throughout the planning process		
Name/Title: Method of Participation:	Rick J. Staigle, PE, PTOE/First Assistant County Engineer Provided information and helped facilitate information gathering.		

9.1.2 Municipal Profile

Refer to Section 3 (County Profile) for details.

9.1.3 Jurisdictional Capability Assessment and Integration

Fort Bend County performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Volume 1, Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. The jurisdictional assessment includes the following analyses:

- An assessment of legal and regulatory capabilities
- Development and permitting capabilities
- An assessment of administrative and technical capabilities
- An assessment of fiscal capabilities
- An assessment of education and outreach capabilities
- Classification under various community mitigation programs
- The County's adaptive capacity to withstand hazard events

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of the hazard mitigation analysis, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress toward plan integration. The updated mitigation strategy provided an opportunity for Fort Bend County to identify opportunities for integration of mitigation concepts that can be incorporated into municipal procedures.

Planning, Legal, and Regulatory Capability and Integration

Section 5 (Capability Assessment) provides an overview of the planning, legal, and regulatory capabilities. The table below summarizes the regulatory tools that are available to Fort Bend County, what is present in the jurisdiction, and code citation and date.

Table 9.1-2. Planning, Legal, and Regulatory Capability and Integration

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual/Department/Agency Responsible
Codes, Ordinances, & Regulations				
Building Code	No	-	-	-
How does this reduce risk?				
Zoning/Land Use Code	No	-	-	-
How does this reduce risk?				
Subdivision Ordinance	Yes	Subdivision Regulations	Local	County Commissioner
How does this reduce risk? Subdivision Regulations outline the requirements for submitting plats. Any property owners outside the limits of a municipality must have a plan of subdivision prepared if the owner divides the tract into two or more parts.				
Site Plan Ordinance	Yes	Fort Bend County Civil Site Plan Submittals	Local	Fort Bend Engineering
How does this reduce risk?				

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual/Department/Agency Responsible
Civil site plans are required for all commercial developments, roadway improvements, and public infrastructure projects in Fort Bend County. These plans are required to ensure compliance with county, state, and federal laws and regulations.				
Stormwater Management Ordinance	No	-	-	-
How does this reduce risk?				
Post-Disaster Recovery/ Reconstruction Ordinance	No	-	-	-
How does this reduce risk?				
Real Estate Disclosure	No	-	-	-
How does this reduce risk?				
Growth Management	No	-	-	-
How does this reduce risk?				
Environmental Protection Ordinance	No	-	-	-
How does this reduce risk?				
Flood Damage Prevention Ordinance	Yes	Floodplain Management	Local	County Commissioners Court
How does this reduce risk? It is the purpose of these regulations to promote public health, safety, and general welfare and to minimize public and private losses due to the flood conditions in specific areas by provisions designed to: • Protect human life and health • Minimize expenditures of public money for costly flood control projects • Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public • Minimize prolonged business interruptions • Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets, and bridges located in the floodplains • Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas • Ensure that potential buyers are notified that the property is in a flood area				
Wellhead Protection	No	-	-	-
How does this reduce risk?				
Emergency Management Ordinance	No	-	-	-
How does this reduce risk?				
Climate Change Ordinance	No	-	-	-
How does this reduce risk?				
Other	-	-	-	-
Planning Documents				
Comprehensive/Master Plan	No	-	-	-
How does this reduce risk?				
Capital Improvement Plan	No	-	-	-
How does this reduce risk?				

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual/Department/Agency Responsible
Disaster Debris Management Plan	Yes	Fort Bend County Disaster Debris Management Plan	County	Homeland Security and Emergency Mgmt
How does this reduce risk? Outlines procedures to follow to safety and efficiently clear, collect, and dispose of debris from a disaster. Has a safety component and outlines the roles of departments and other stakeholders with responsibilities under the plan.				
Floodplain Management or Watershed Plan	No	-	-	-
How does this reduce risk?				
Stormwater Management Plan	Yes	Stormwater Management Program	Local	Fort Bend County Stormwater Quality Coalition
How does this reduce risk? The Illicit Discharge Detection and Elimination minimum control measure consists of BMPs that focus on the detection and elimination of illicit discharges into the MS4. The detection of non-stormwater discharges and illegal dumping will be accomplished through the inspection of outfalls at a frequency of 20 percent per year such that the Coalition's entire MS4 area will be inspected by the end of the five-year permit term. Any discharges identified during outfall inspections will be analyzed using colorimetric field test kits to determine the nature of the discharge, and the flow will be traced upstream to identify the source.				
Open Space Plan	No	-	-	-
How does this reduce risk?				
Urban Water Management Plan	No	-	-	-
How does this reduce risk?				
Habitat Conservation Plan	No	-	-	-
How does this reduce risk?				
Economic Development Plan	No	-	-	-
How does this reduce risk?				
Shoreline Management Plan	No	-	-	-
How does this reduce risk?				
Community Wildfire Protection Plan	No	-	-	-
How does this reduce risk?				
Community Forest Management Plan	No	-	-	-
How does this reduce risk?				
Transportation Plan	Yes	Fort Bend County Major Thoroughfare Plan	Local	Engineering
How does this reduce risk? The Major Thoroughfare Plan is designed to address the mobility needs of Fort Bend County as it continues to become more urbanized. It establishes a hierarchical network of controlled-access highways and toll roads, principal thoroughfares, major thoroughfares, and collectors. The classification of a particular roadway is based on the function of the road relative to mobility and access.				
Agriculture Plan	No	-	-	-
How does this reduce risk?				
Climate Action/ Resiliency/Sustainability Plan	No	-	-	-

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual/Department/Agency Responsible
How does this reduce risk?				
Tourism Plan	No	-	-	-
How does this reduce risk?				
Business/ Downtown Development Plan	No	-	-	-
How does this reduce risk?				
Other	-	-	-	-
Response/Recovery Planning				
Comprehensive Emergency Management Plan	Yes	Emergency Operations Plan	Local	Fort Bend County Division of Homeland Security and Emergency Mgmt
How does this reduce risk? The Emergency Operations Plan (EOP) is an all-hazard plan that guides Fort Bend County's efforts to prepare for, respond to, recover from, and mitigate the effects of a major emergency or disaster. Specifically, the EOP focuses on the following: • Outlines the County's emergency management organizational structure • Establishes the emergency management responsibilities of County departments, local jurisdictions, and private and community organizations and identifies how they coordinate with Fort Bend County Office of Homeland Security & Emergency Management to ensure an effective response to any emergency • Describes when the County would activate the Emergency Operations Center (EOC)				
Continuity of Operations Plan	Yes	Fort Bend County Continuity of Operations Plan	County	Homeland Security and Emergency Mgmt
How does this reduce risk? The plan outlines the processes County departments will take to ensure the mission essential functions of the County can be continued despite a disruption. Also identifies processes for succession of leadership and delegations of authority.				
Strategic Recovery Planning Report	No	-	-	-
How does this reduce risk?				
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-
How does this reduce risk?				
Post-Disaster Recovery Plan	Yes	Annex J under the Emergency Operations Plan	County	Homeland Security and Emergency Mgmt
How does this reduce risk?				
Public Health Plan	Yes	Annex H under the EOP has several appendices that address public health emergency preparedness and response. Annex O under the EOP addresses human service needs including shelter and potable water.	County	Fort Bend County Health and Human Services
How does this reduce risk?				

	Jurisdiction has this? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual/Department/Agency Responsible
The public health emergency plans outline actions to take to prevent, prepare for, respond to, and recover from public health emergencies in the County.				
Other	-	-	-	-
How does this reduce risk?				

Development and Permitting Capability

The table below summarizes the capabilities of Fort Bend County to oversee and track development.

Table 9.1-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment:
Do you issue development permits? • If yes, what department is responsible?	Yes	The Fort Bend County Fire Marshal is the authority having jurisdiction over the unincorporated areas of Fort Bend County.
If you do not issue development permits, what is your process for tracking new development?	N/A	
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Development Permits are issued for development within Special Flood Hazard Areas (SFHA), and another type of Development Permit is issued for development outside SFHA.
Do you have a buildable land inventory? • If yes, please describe	No	-
Describe the level of build-out in your jurisdiction.	N/A	-

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to Fort Bend County and their current responsibilities that contribute to hazard mitigation.

Table 9.1-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Administrative Capability		
Planning Board	Yes	Fort Bend County Community Planning and Development Program's goal is to develop viable urban communities by providing decent housing and a suitable living environment and expanding economic opportunities principally for low- and moderate-income persons.
Zoning Board of Adjustment	No	Fort Bend County has not adopted zoning ordinances and does not issue Certificates of Occupancy. However, Fort Bend County has adopted a County Fire Code, and the Fort Bend County Fire Marshal's Office issues Certificates of Compliance for certain multi-family and non-residential developments.
Planning Department	Yes	The Facilities Management and Planning department provides recommendations and budget estimations to the

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
		Commissioner's Court for new buildings, infrastructure improvements, and renovations of existing buildings to effectively accommodate the growth of County services.
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	The mission of the Environmental Health Department is to protect the public, consumer, and environmental health of the people in Fort Bend County. In accomplishing this mission, Environmental Health employees shall be at all times impartial and diligent. In the execution of their duties, they shall be guided by those constitutional and legal principles which are the foundation of the United States of America and the State of Texas.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	The mission of the Budget Office is to prepare the County's budget for the fiscal year as a readable, informative, and accurate forecast of the County's projected revenues and expenditures.
Public Works/Highway Department	Yes	Services provided by this department include: • Road Construction, Maintenance and Repair • County Road Drainage • Herbicide Treatment • Right-of-Way Mowing • Residential Driveway Installation, Repair, Replacement • Installation, Maintenance & Repair of Street Signs & Barricades • Road Striping
Construction/Building/Code Enforcement Department	Yes	Ensure construction complies with approved plans.
Emergency Management/Public Safety Department	Yes	It is the mission of the Fort Bend County Department of Homeland Security and Emergency Management to create an environment of readiness for the whole community through a comprehensive program of prevention, protection, mitigation, response, and disaster recovery.
Warning Systems / Services (mass notification system, outdoor warning signals, etc.)	Yes	FBC Alert – Emergency alert program for residents to sign up to receive alerts related to severe weather, road closures, missing persons, and evacuations.
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Through the Road and Bridge Department – They maintain roadways, drainage, and vegetation management.
Mutual aid agreements	Yes	Neighboring counties and communities
Human Resources Manual	Yes	Developing, implementing, and evaluating activities and programs that address employee training and development, performance appraisal, talent and performance management, and the unique needs of County employees, to ensure that the knowledge, skills, abilities, and performance of our workforce meet current and future County and individual needs.
Other	No	-
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	No	Engineering Department
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering Department

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Planners or engineers with an understanding of natural hazards	Yes	Fort Bend County Office of Homeland Security and Emergency Management
Staff with expertise or training in benefit/cost analysis	Yes	Engineering Department
Professionals trained in conducting damage assessments	Yes	Engineering Department
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Information Technology
Environmental scientists familiar with natural hazards	No	-
Surveyor(s)	Yes	
Emergency Manager	Yes	Fort Bend County Office of Homeland Security and Emergency Management
Grant writer(s)	Yes	Fort Bend County Grant Program Manager
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-

Fiscal Capability

The table below summarizes the financial resources available to Fort Bend County.

Table 9.1-5. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use? (Yes/No)
Community Development Block Grants (CDBG, CDBG-DR)	Yes
Capital improvement project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas, or electric service	No
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	Yes
Withhold public expenditures in hazard-prone areas	Yes
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	-

Education and Outreach Capability

The table below summarizes the education and outreach resources available to Fort Bend County.

Table 9.1-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	Comment:
Public Information Officer or communications office	Yes	The Communications Manager under the County Judge's Office serves as the Public Information Officer for the County.
Personnel skilled or trained in website development	Yes	Fort Bend County Information and Technology Department
Hazard mitigation information available on your website	Yes	Fort Bend County Office of Homeland Security and Emergency Management website

Outreach Resources	Available? (Yes/No)	Comment:
Social media for hazard mitigation education and outreach	Yes	Fort Bend County Office of Homeland Security and Emergency Management
Citizen boards or commissions that address issues related to hazard mitigation	Yes	At the municipal level
Warning systems for hazard events	Yes	FBC Alert – emergency alert program for residents to sign up to receive alerts related to severe weather, road closures, missing persons, and evacuations
Natural disaster/safety programs in place for schools	Yes	Conducted through the schools
Does the jurisdiction have any public outreach mechanisms/programs in place to inform citizens about natural hazards, risks, and ways to protect themselves during such events? • If yes, please describe.	Yes	County website and social media accounts

Community Classifications

The table below summarizes classifications for community programs available to Fort Bend County.

Table 9.1-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (ISO Fire Protection Classes 1 to 10)	No	-	-
Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Other	No	-	-

Adaptive Capacity

Adaptive capacity is defined as "the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences" (IPCC 2014). Each jurisdiction has a unique combination of capabilities to adjust to, protect from, and withstand a future hazard event, future conditions, and changing risk. The table below summarizes the adaptive capacity for each identified hazard of concern and the jurisdiction's capability to address related actions using the following classifications:

- Strong: Capacity exists and is in use.
- Moderate: Capacity might exist but is not used or could use some improvement.
- Weak: Capacity does not exist or could use substantial improvement.

Table 9.1-8. Adaptive Capacity

Hazard	Adaptive Capacity – Strong/Moderate/Weak
Dam/Levee Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Extreme Temperature	Moderate
Flood	Moderate

Hazard	Adaptive Capacity – Strong/Moderate/Weak
Geologic Hazards	Moderate
Hurricane/Tropical Storm	Moderate
Severe Weather	Moderate
Tornado	Moderate
Wildfire	Moderate
Winter Weather	Moderate

9.1.4 National Flood Insurance Program (NFIP) Compliance

The table below provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the NFIP.

NFIP Summary

The following table summarizes the NFIP statistics for Fort Bend County.

Table 9.1-9. NFIP Summary

Municipality	Policies in Force[a]	Number of Paid Claims[a]	Amount of Paid Claims[a]	Number of NFIP RL Properties[b]	Number of NFIP SRL Properties[b]
Fort Bend	9,669**	4,403**	$297,594,358.10**	269*	28*

Sources: a BureauNet 2022 (https://nfipservices.floodsmart.gov/reports-flood-insurance-data)
b 2018 Fort Bend County HMP
Notes: Due to a contractual agreement with FEMA, detailed information at the municipal level was not available to incorporate into the 2023 HMP Update. The information presented here was collected from data provided by the State of Texas and from FEMA's HUDEX Report.
**Number of RL and SRL properties provided by the State of Texas*
***Total policies in force and paid claims collected from FEMA's OpenFEMA Dataset: FIMA NFIP Redacted Claims*
RL Repetitive Loss
SRL Severe Repetitive Loss

Table 9.1-10. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
Describe areas prone to flooding in your jurisdiction. • Do you maintain a list of properties that have been damaged by flooding?	Only within a 1% Annual Chance Flood Hazard area • No
• Do you maintain a list of property owners interested in flood mitigation? • How many homeowners and/or business owners are interested in mitigation (elevation or acquisition)?	No
Are any RiskMAP projects currently underway in your jurisdiction? • If so, state what projects are underway.	Yes • Lower Brazos Watershed • San Bernard Watershed
• How do you make Substantial Damage determinations? • How many were declared for recent flood events in your jurisdiction?	• Damaged structures are inspected to determine if the cost of repairs is 50% or more of the pre-damaged value of the structure. FEMA Substantial Damage Estimating software is used to estimate repair costs, and Fort Bend Central Appraisal District data is used to confirm the pre-damaged value. • Since 2016, 91 structures have been declared substantially damaged.
How many properties have been mitigated (elevation or acquisition) in your jurisdiction?	• 11 properties mitigated using Hazard Mitigation Grant funding. • 42 properties mitigated using Increased Cost of Compliance (ICC) claims or private funding.

NFIP Topic	Comments
• If there are mitigated properties, how were the projects funded?	
Do your flood hazard maps adequately address the flood risk within your jurisdiction? • If not, state why.	Yes
NFIP Compliance	
What local department is responsible for floodplain management?	Engineering
Are any certified floodplain managers on staff in your jurisdiction?	Yes
Do you have access to resources to determine possible future flooding conditions from climate change?	No
Does your floodplain management staff need any assistance or training to support its floodplain management program? • If so, what type of assistance/training is needed?	No
Provide an explanation of the NFIP administration services you provide (e.g. permit review, GIS, education/outreach, inspections, engineering capability)	Permit review and issuance of Development Permits for new development, respond to building violations, assist constituents on flood zone determinations and determining Base Flood Elevations, provide guidance to constituents on building requirements in the SFHA, and provide community acknowledgment for Letters of Map Change.
How do you determine if the proposed development on an existing structure would qualify as a substantial improvement?	A contractor estimate is reviewed to determine if the cost of the proposed improvements to the structure is 50% or more of the pre-damaged value of the structure.
What are the barriers to running an effective NFIP program in the community, if any?	No barriers currently.
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state the violations.	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	CAV – Concluded July 13, 2022 CAC – July 11, 2023
• What is the local law number or municipal code of your flood damage prevention ordinance? • What is the date that your flood damage prevention ordinance was last amended?	N/A 1/26/21
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Exceeds. The County has a freeboard requirement of 2 feet above the BFE, prohibits filling or requires compensatory storage within the SFHA, requires Development Permits for structures outside the SFHA, and enforces minimum slab elevation criteria to protect structures from local drainage flooding outside the SFHA.
Are there other local ordinances, plans, or programs (e.g. site plan review) that support floodplain management and meeting the NFIP requirements? For instance, does the planning board or zoning board consider efforts to reduce flood risk when reviewing variances such as height restrictions?	N/A
Does your community plan to join the CRS program or is your community interested in improving your CRS classification?	Yes, the County is interested in joining the CRS program.

9.1.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to appreciating a jurisdiction's overall risk to its hazards of concern. The table below

summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.

Table 9.1-11. Number of Building Permits for New Construction

Type of Development	2018		2019		2020		2021		2022	
Number of Building Permits for New Construction Issued Since the previous HMP* (total/within regulatory floodplain)										
	Total	**Within SFHA**	**Total**	**Within SFHA**	**Total**	**Within SFHA**	**Total**	**Within SFHA**	**Total**	**Within SFHA**
Single-Family	6,362	77	6,223	173	8,139	52	7,135	45	5,747	123
Multi-Family	25	0	9	0	9	0	10	0	47	1
Other (commercial, mixed-use, etc.)	234	28	234	21	215	22	216	24	240	25
Total Permits Issued	6,621	105	6,466	194	8,363	74	7,361	69	6,034	149

SFHA Special Flood Hazard Area (1% annual chance flood event)

** Only location-specific hazard zones or vulnerabilities are identified.*

Table 9.1-12. Recent and Expected Future Development

Property or Development Name	Type (e.g. Res., Comm.)	# of Units / Structures	Address and Parcel ID	Known Hazard Zone(s)	Description/Status of Development
Recent Major Development from 2018 to Present					
Please Refer to Individual Jurisdictional Annexes					
Known or Anticipated Major Development in the Next Five (5) Years					
Please Refer to Individual Jurisdictional Annexes					

9.1.6 Jurisdictional Risk Assessment

The hazard profiles in Volume 1, Section 4 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. Section 4.1 (Methodology and Tools) and Section 4.4 (Hazard Ranking) provide detailed summaries of Fort Bend County's risk assessment results and data used to determine the hazard ranking discussed later in this section.

Hazard Event History

Fort Bend County has a history of natural and non-natural hazard events, as detailed in Volume I, Section 4 (Risk Assessment). A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities.

Hazard Ranking and Vulnerabilities

The hazard profiles in Volume 1, Section 4 (Risk Assessment) have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes Fort Bend County's risk assessment results and data used to determine the hazard ranking.

Hazard Ranking

This section provides the community-specific identification of the primary hazard concerns based on identified problems, impacts, and the results of the risk assessment as presented in Volume 1, Section 4 (Risk Assessment). The ranking process involves an assessment of the likelihood of occurrence for each hazard, the potential impacts of the hazard on people, property, and the economy, and community capabilities to address the hazard and changing future

climate conditions. Mitigation action development uses the inputs from the evaluation to target those hazards with the highest level of concern.

As discussed in Section 4.4 (Hazard Ranking), each participating jurisdiction can have differing degrees of risk exposure and vulnerability compared with Fort Bend County as a whole. Refer to Section 4.4 (Hazard Ranking) for the countywide hazard ranking.

Critical Facilities

Critical facilities located in Fort Bend County are summarized in Section 3 (County Profile). Details on the potential hazard impacts on those facilities are found in Section 4.3 (Hazard Profiles).

Identified Issues

After a review of Fort Bend County's hazard event history, hazard rankings, jurisdiction-specific vulnerabilities, hazard area extent and location, and current capabilities, Fort Bend County identified the following vulnerabilities within their community:

- There are numerous properties and roads along and near the Brazos River that suffer from flooding and water pooling, including:*
    - Kingdom Heights (Rosenburg)
    - Valley Lodge Subdivision Area (Simonton)
    - Riveredge Drive (Richmond)
    - 800 Block of Ferry Street (Richmond)
    - North Second Street at Preston Street (Richmond)
    - Rabbs Bayou - Wheaton Street (Richmond)
    - Newer Homes around Riverstone at University Boulevard
- The County experiences flooding issues related to failing infrastructure and increasing precipitation events. Some of the repetitive flood areas include:*
    - Lower Bois D'Arc Area (Fulshear)
    - Redbird Lane (Fulshear)
    - West Airport Boulevard (Meadows Place)
    - US Highway 90 A
    - Thompson Highway (Richmond)
    - West Keegans Bayou
- There are areas along the Brazos River that are severely eroding and contributing to flooding issues.*
- There is a lack of communication and resources regarding evacuation and sheltering procedures among the County and the municipalities.*
- The County does not have yearly outreach programs to educate residents on how to respond to and mitigate the hazard of concerns.*
- The County has 269 repetitive loss and 29 severe repetitive loss properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage.
- There are critical facilities that are located in the special flood hazard area.
- The County does not have an up-to-date Continuity of Operations Plan and annexes that address the current hazards of concern and integrate the HMP.

- The County is unaware of critical facilities that may not be able to perform continuity of operations during power outages, which can lead to environmental degradation via sewage backup or can inhibit emergency responders from accessing and communicating with residents or municipalities in need.
- The County does not have an up-to-date Disaster Debris Management Plan that integrates the HMP and the hazards of concern.
- The County does not have locations that are designated for vaccination clinics and PPE distribution clinics across the County.

**This issue was identified as a specific area of concern based on resident response to the Fort Bend County Hazard Mitigation public survey.*

9.1.7 Mitigation Strategy and Prioritization

This section discusses past mitigation actions and status, describes proposed hazard mitigation initiatives, and prioritizes actions to address over the next five years.

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2018 HMP. Actions that are in progress are carried forward and combined with new actions as part of this 2023 HMP update and are included in the tables with prioritization. Previous actions that are now ongoing programs and capabilities are indicated as such and previously presented in the Capability Assessment earlier in this annex.

Table 9.1-13. Status of Previous Mitigation Actions

Project	Responsible Party	What is the status? (e.g., In Progress, No Progress, Ongoing Capability, or Completed) If in progress or completed, please describe the funding source, cost, and who is implementing it.	If you did not complete the action, should the action be included in the 2023 HMP (i.e., there is still a need, this is still a priority)? Yes/No	If Yes, please describe the original problem (i.e., hazard, location, historic losses)	If Yes, identify the responsible department/person to implement the project.
Conduct Traffic Study	FBC HS&EM	Ongoing	No	-	-
Expansion of Big Creek Channel	FBC Drainage District	Ongoing	No	-	-
Ensure the County has Adequate Plans and Resources	FBC HS&EM, FBC Road and Bridge	Ongoing	No	-	-
Initiate a Fuel Load Reduction Campaign	Fire Marshall, FBC Public Works	Ongoing	No	-	-
Improvements to Stafford Run Creek	FBC Drainage District	Ongoing	No	-	-
Develop Feasibility Study	FBC HS&EM	Ongoing	No	-	-
Construction of a Regional Detention Facility	Missouri City FBC Drainage District	Ongoing	No	-	-
Excavation of Bull Head Slough and Upper Oyster Creek	FBC Drainage District	Ongoing	No	-	-
Create a Debris Removal Program	FBC Drainage District	Complete – the County developed a Debris Management Plan	No	-	-
Mitigate Repetitive Loss Properties	FBC Engineering FBC Drainage District	Ongoing	Yes	The County experiences flooding issues related to failing infrastructure and increasing precipitation events.	The County will work with the State and municipalities affected to conduct a flood study to determine the cause of flooding. The County will hire an engineer to determine what flood mitigation techniques need to be implemented in all areas.
Complete a Structural/Engineering Study	FBC Facilities & Planning	Ongoing	No	-	-
Initiate Upgrades to at-risk Public Structures and Higher Standards for New Public Structures	FBC Facilities & Planning	Ongoing	No	-	-
Examine the Feasibility of Developing an Extreme Temperature Program (	FBC HHS	Ongoing	No	-	-
Complete a Phase II Facility and Site Evaluation Feasibility Study	Brazos River Authority, multiple jurisdictions, and jurisdictional municipal utility districts	Ongoing	Yes	There are numerous properties and roads along and near the Brazos River that suffer from flooding and water pooling.	The County will implement a comprehensive Brazos Flood Study and will document and map areas that cause flooding issues. The County will work with affected municipalities to implement the best and most cost-effective flood prevention

Project	Responsible Party	What is the status? (e.g., In Progress, No Progress, Ongoing Capability, or Completed) If in progress or completed, please describe the funding source, cost, and who is implementing it.	If you did not complete the action, should the action be included in the 2023 HMP (i.e., there is still a need, this is still a priority)? Yes/No	If Yes, please describe the original problem (i.e., hazard, location, historic losses)	If Yes, identify the responsible department/person to implement the project.
					infrastructure to reduce flooding issues.
Participate in the Development and Construction of Allen's Creek Reservoir	Brazos River Authority	Ongoing	No	-	-
Encourage the Development of Inundation Maps	Floodplain Administrator	Ongoing	No	-	-
Bury all Electrical/Power Lines	FBC Public Works	Ongoing	No	-	-
Lead Efforts to Participate in Firewise	FCB OEM	Ongoing	No	-	-
Prevent River Bank Erosion	FBC Drainage District	Ongoing	Yes	There are areas along the Brazos River that are severely eroding and contributing to flooding issues.	The County will work with municipalities affected to conduct an erosion study along the Brazos River and will implement the most cost-effective solution to reduce and mitigate erosion.
Signage for Areas that Flood Easily	FBC Public Works	Ongoing	No	-	-
High Water Barricades	FBC Engineering/Drainage District, OEM	Ongoing	No	-	-
Gridless Core Power Supply	FBC Public Works	Ongoing	No	-	-
Countywide Radar Subscription Service and Display	FBC HS&EM	Ongoing	No	-	-
Install Lightning Rods	FBC Public Works	Ongoing	No	-	-
Purchase Additional UPS	FBC Public Works	Ongoing	No	-	-
Skywarn Training	FBC HS&EM	Ongoing	No	-	-
Develop PSA for Mitigation Techniques	FBC HS&EM	Ongoing	No	-	-
Explore the Installation of Sensors to Detect Freezing	FBC HS&EM/Road and Bridge	Ongoing	No	-	-
Participate in the NFIP Community Rating System	FBC Engineering	Ongoing	No	-	-
Develop a Drought Emergency/Contingency Plan	FBC Drainage and OEM	Ongoing	No	-	-
Examines the Feasibility of Developing an Extreme Temperature Program	FBC HHS	Ongoing	No	-	-

Additional Mitigation Efforts

In addition to the mitigation initiatives completed in the table above, Fort Bend County identified the following mitigation efforts completed since the last HMP:

- None Identified

Since the adoption of the County's first HMP, Fort Bend County has made significant mitigation progress in the following areas:

- None Identified

Proposed Hazard Mitigation Initiatives for the HMP Update

Fort Bend County participated in a mitigation action workshop in March 2023 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards (January 2013) and FEMA Mitigation Assistance Resource Guide for Texas (2020).

The table below indicates the range of proposed mitigation action categories. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table to further demonstrate the wide range of activities and mitigation measures selected.

Table 9.1-14. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam/Levee Failure	X	X	-	X	-	-	X	-	X	X
Disease Outbreak	X	X	-	X	X	-	X	-	X	X
Drought	X	X	-	X	-	-	X	-	X	X
Extreme Temperature	X	X	-	X	-	-	X	-	X	X
Flood	X	X	-	X	-	-	X	-	X	X
Geologic Hazards	X	X	-	X	-	-	X	-	X	X
Hurricane/Tropical Storm	X	X	-	X	-	-	X	-	X	X
Severe Weather	X	X	-	X	-	-	X	-	X	X
Tornado	X	X	-	X	-	-	X	-	X	X
Wildfire	X	X	-	X	-	-	X	-	X	X
Winter Weather	X	X	-	X	-	-	X	-	X	X

Note: Mitigation categories are described below the Mitigation Initiatives.

The table below summarizes the specific mitigation initiatives Fort Bend County would like to pursue in the future to reduce the effects of hazards. The initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities.

Table 9.1-15. Proposed Hazard Mitigation Initiatives

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
2023-Fort Bend County-001	Brazos River Flood Study	**Problem:** There are numerous properties and roads along and near the Brazos River that suffer from flooding and water pooling, including: • Kingdom Heights (Rosenburg) • Valley Lodge Subdivision Area (Simonton) • Riveredge Drive (Richmond) • 800 Block of Ferry Street (Richmond) • North Second Street at Preston Street (Richmond) • Rabbs Bayou - Wheaton Street (Richmond) • Newer Homes around Riverstone at University Boulevard **Solution:** The County will implement a comprehensive Brazos Flood Study and will document and map areas that cause flooding issues. The County will work with affected municipalities to implement the best and most cost-effective flood prevention infrastructure to reduce flooding issues.	Flood, Severe Weather, Winter Weather	2, 3, 4	Less than 5 years	Fort Bend County Engineer, Participating municipalities	BRIC, HMGP, CDBG, FMA, County and Municipality Budget	The County and jurisdictions will experience reduced flooding from the Brazos River.	TBD after Study	High	SIP	SP
2023-Fort Bend County-002	Flood Study	**Problem:** The County experiences flooding issues related to failing infrastructure and increasing precipitation events. Some of the repetitive flood areas include: • Lower Bois D'Arc Area (Fulshear) • Redbird Lane (Fulshear) • West Airport Boulevard (Meadows Place) • US Highway 90 A • Thompson Highway (Richmond) • West Keegans Bayou **Solution:** The County will work with the State and municipalities affected to conduct a flood study to determine the cause of flooding. The County will hire an engineer to determine what flood mitigation techniques need to be implemented in all areas.	Flood, Severe Weather, Winter Weather	2, 3, 4	Less than 5 years	Fort Bend County, Participating municipalities, Engineer, State	BRIC, HMGP, CDBG, FMA, County and Municipality Budget	The County and jurisdictions will experience reduced flooding.	TBD after Study	High	SIP	SP

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
2023-Fort Bend County-003	Brazos Erosion Study	**Problem:** There are areas along the Brazos River that are severely eroding and contributing to flooding issues. **Solution:** The County will work with municipalities affected to conduct an erosion study along the Brazos River and will implement the most cost-effective solution to reduce and mitigate erosion.	Geologic Hazards, Flood	2, 3, 4	Less than 5 years	Fort Bend County, Participating municipalities, Engineer	BRIC, HMGP, CDBG, FMA, County and Municipality Budget	The County and jurisdictions will experience reduced erosion along the Brazos River.	TBD after study	High	SIP	SP
2023-Fort Bend County-004	Shelter and Evacuation Communications*	**Problem:** There is a lack of communication and resources regarding evacuation and sheltering procedures among the County and the municipalities. **Solution:** The County will work with municipalities to communicate about available sheltering procedures and evacuation procedures.	Dam/ Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood, Geologic Hazards, Hurricane/ Tropical Storm, Severe Weather, Tornado, Wildfire, Winter Weather	1, 2, 5	Less than 5 years	Fort Bend County	County and Municipality Budget	The County and its municipalities will become more knowledgeable about available shelters and evacuation procedures.	Staff Time	High	EAP	ES
2023-Fort Bend County-005	Yearly Community Outreach Program	**Problem:** The County does not have yearly outreach programs to educate residents on how to respond to and mitigate the hazard of concerns. **Solution:** The County will implement a yearly outreach program to all residents to inform them of how to respond to and mitigate hazards and will integrate shelter/evacuation information so that all County residents are aware of the options.	Dam/ Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood, Geologic Hazards, Hurricane/ Tropical Storm, Severe Weather, Tornado, Wildfire, Winter Weather	1	Ongoing	Fort Bend County OEM	County Budget	The County residents will become more knowledgeable about hazards of concern.	Staff Time	High	EAP	PI
2023-Fort Bend County-006	Repetitive Loss Mitigation	**Problem:** The County has 269 repetitive loss and 29 severe repetitive loss properties. Many of these structures were built without flood design standards. These properties require mitigation to prevent future losses and prevent loss of life and property damage. **Solution:** The County will conduct outreach to the RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in flood-prone areas that experience frequent flooding (high-risk areas).	Flood, Hurricane/ Tropical Storm, Severe Weather, Winter Weather	2, 5	Less than 5 Years	NFIP Floodplain Administrator, supported by homeowners	HMGP and FMA, BRIC, local cost share by residents	Eliminates flood damage to homes and residents.	>$500,000	High	SIP	SP

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
2023-Fort Bend County-007	Critical Facilities/ Community Lifelines Flood Protection*	**Problem**: There are critical facilities and community lifelines that are located in the special flood hazard area. **Solution:** The County will conduct a feasibility assessment to determine what additional floodproofing measures are needed at these facilities to protect each to the 500-year flood level. Options include: • Elevation of facility • Floodproofing of facility • Mobile flood-barriers Once the most cost-effective option is identified, the County will carry out the option.	Flood	2	Less than 5 years	County Engineer	HMGP and PDM, BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, County Budget	Ensures that facilities can carry out continuity of operations.	TBD by feasibility assessment	High	SIP	SP
2023-Fort Bend County-008	Update the Continuity of Operations Plan	**Problem:** The County does not have an up-to-date Continuity of Operations Plan and annexes that address the current hazards of concern and integrate the HMP. **Solution:** The County will integrate the HMP into the Continuity of Operations Plan and annex update.	Dam/ Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood, Geologic Hazards, Hurricane/ Tropical Storm, Severe Weather, Tornado, Wildfire, Winter Weather	1, 2	1 Year	County Administration	County Budget	The County will be better prepared to establish continuity of operations during hazard events.	Staff Time	High	LPR	ES
2023-Fort Bend County-009	Backup Generators*	**Problem:** The County is unaware of critical facilities that may not be able to perform continuity of operations during power outages, which can lead to environmental degradation via sewage backup, or can inhibit emergency responders from accessing and communicating with residents or municipalities in need. **Solution:** The County will develop a list of critical facilities that require backup power to be able to operate during power outages. Once identified, the County will conduct engineering studies to determine the correct sized generators that each facility would need. The County will then acquire funding to purchase and install needed generators.	Dam/ Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood, Geologic Hazards, Hurricane/ Tropical Storm, Severe Weather, Tornado, Wildfire, Winter Weather	1, 2	4 Years	County and Municipality Administrations	BRIC, HMGP, CDBG, FMA, Generator Grant County and Municipality Budget	Critical facilities will be able to operate during power outages.	$100,000/ Generator	High	SIP	SP
2023-Fort Bend County-010	Disaster Debris Management Plan	**Problem:** The County does not have an up-to-date Disaster Debris Management Plan that integrates the HMP and the hazards of concern. **Solution:** The County will integrate the HMP into its Disaster Debris Management update.	Dam/ Levee Failure, Disease Outbreak, Drought, Extreme Temperature, Flood, Geologic Hazards, Hurricane/ Tropical Storm, Severe Weather, Tornado,	1, 2	1 Year	County and Municipality Administrations	County Budget	The County will be better prepared to handle the aftermath of hazards.	Staff Time	High	LPR	ES

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
			Wildfire, Winter Weather									
2023-Fort Bend County-011	Vaccination Locations	**Problem:** The County does not have locations that are designated for vaccination clinics and PPE distribution clinics across the County. **Solution:** The County will identify locations that can be used as vaccination clinics and distribution centers and will notify all County residents.	Disease Outbreak	2	1 year	County Health Department	County Budget	The County will be better prepared for pandemics.	Staff Time	High	EAP	PR
2023-Fort Bend County-012	Additional Internal Flood Storage	**Problem:** After Hurricane Harvey, the District discovered homes that were built lower than expected. This project is to increase the flood storage within the levee-protected area to provide 18 to 24 inches of freeboard below the lowest residential structure. **Solution:** The solution includes excavating and/or lowering portions of the existing Sweetwater Country Club or other green spaces to provide additional flood storage. The Sweetwater Country Club is an existing flood storage area with an easement over the golf course with natural storage that existed before the development of the area.	Flood, Hurricane/ Tropical Storm	2, 3	24 Months	Fort Bend County Levee Improvement District No. 2	FEMA HMGP, FMA, and BRIC Grants	Increase Flood Storage which will decrease the flood risk for residential homes and reduce potential ponding within streets.	$10 million	High	SIP, NSP	
2023-Fort Bend County-013	Levee Flood Risk Education Outreach*	**Problem:** With the growth in Fort Bend County, the Districts see many new residents who do not understand their flood risk or know they live behind a levee. **Solution:** Working with the City of Sugar Land and Fort Bend County, develop outreach tools to help residents understand their flood risk and educate themselves on what it means to live behind a levee. This includes providing information on what levels the levees protect and what happens when it rains within the levee. This tool would also assist with understanding when a levee would be excavated and what residents and businesses should do when an evaluated order is issued.	Dam and Levee Failure, Flood, Hurricane/ Tropical Storm	1, 4, 5	1 Year	Fort Bend County Levee Improvement District No. 2	FEMA HMGP	More educated residents mean less stress and fewer questions during events. This frees up resources to flood fight.	$50,000	Medium	LPR, EAP	
2023-Fort Bend County-014	Expanded Flood Warning System*	**Problem:** During flood events, a few key roadways (Commonwealth Boulevard, Elkins Road, and University Drive) can go underwater. At night, poor lighting makes it difficult for residents to see the flooded street. **Solution:** A flood warning system in the District could be published on the District's website notifying the residents and the City of Sugar Land	Flood, Hurricane/ Tropical Storm	1, 2, 4, 5	2 Years	Fort Bend County Levee Improvement District No. 14	FEMA HMGP and FMA	Safer Streets mean lower risks for residents and drivers along the major thoroughfares.	$90,000	High	SIP, EAP	

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
		on the conditions of the internal flood storage and notify drivers of impassable streets. There is a City of Sugar Land Fire Station that is impacted when Commonwealth is unpassable.										
2023-Fort Bend County-015	Ditch H Erosion Protection*	**Problem:** Similar to other streams in Fort Bend County, Ditch H has a high erosion potential during flood events. This erosion could cause issues for existing water and sewer utilities, pipelines, and levees. **Solution:** Develop a long-range erosion protection plan to monitor erosion conditions and standards for repairing the erosion promptly. The plan would also review permanent erosion control measures that could be implemented to reduce the risk of erosion.	Flood, Hurricane/ Tropical Storm, Geologic	2, 3, 4	5 Years	City of Sugar Land Engineering Department	FEMA HMGP and BRIC	Reducing the risk of erosion will reduce the risk of negatively impacting the existing levees and the homes protected.	Plan ~ $100,000 Possible Construction ~ $10 million	High	SIP, NSP	
2023-Fort Bend County-016	Master Drainage Plan Update*	**Problem:** With the adoption of Atlas 14 and possible operation changes of the Barker Dam, the District's channel network could be negatively impacted or have reduced flood storage. **Solution:** Using the latest modeling techniques and methodologies, the District will update its master drainage plan for all channels within the District. This plan will identify areas with increased flood risk and provide detailed mitigation options to improve the drainage system and reduce the flood risk.	Flood, Hurricane/Tropical Storm	1, 2, 4, 5	2 Years	Fort Bend County Drainage District	NRCS Watershed Protection	Better Local data to understand the flood risks for the area and how to reduce those risks.	$300,0000	High	LPR, NSP, EAP	
2023-Fort Bend County-017	Erosion and Sediment Reduction	**Problem:** Due to the silty, sandy conditions within the Barker Watershed, several thousand cubic feet of silt and sand wash into the Willow Fork Drainage District system and the Barker Reservoir. This takes up necessary flood storage and requires millions of dollars annually to remove. **Solution:** Perform an erosion and sediment study to evaluate the main sources of the sediment transport and identify mitigation actions to reduce the amount of silt and sand from depositing within critical flood control facilities.	Flood, Geologic, Hurricane/ Tropical Storm	2, 3, 4, 5	3 Years	Fort Bend County Levee Improvement District No. 14	USACE PL84-99	The silt/sands reduce the amount of available storage and capacities within the channel and Barker Reservoirs, which can increase the flood risk from reoccurring events. This will help reduce that risk.	$300,000	High	LPR, NSP, SIP	

Project Number	Mitigation Initiative Name	Description of Problem and Solution	Hazard(s) to be Mitigated	Goals Met	Estimated Timeline	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Priority	Mitigation Category	CRS Category
2023-Fort Bend County-018	Barker Reservoir Flood Risk Outreach*	**Problem:** With the growth in Fort Bend County, the District sees many new residents who do not understand the flood risk from the Barker Reservoir. **Solution:** Working with Fort Bend County, develop outreach tools to help residents understand their flood risk and educate themselves on what it means to live within the Barker Reservoir Flood Pool. This includes providing information on how the levels of the reservoir negatively affect roadways and residential property. This tool would also assist with understanding when they would be excavated and what residents and businesses should do when an evaluated order is issued.	Flood, Hurricane/ Tropical Storm	1, 4, 5	2 Years	Fort Bend County Levee Improvement District No. 2	FEMA HMGP	Educating residents so they can prepare and respond quicker and more efficiently. Could reduce the number of water rescues.	$100,000	Medium	LPR, EAP	

**Mitigation initiative is related to a critical facility and/or community lifeline*

Notes: Not all acronyms and abbreviations defined below are included in the table.

Acronyms and Abbreviations:

CRS	*Community Rating System*
FEMA	*Federal Emergency Management Agency*
HMA	*Hazard Mitigation Assistance*
N/A	*Not applicable*
NFIP	*National Flood Insurance Program*

Potential FEMA HMA Funding Sources:

FMA	*Flood Mitigation Assistance Grant Program*
HMGP	*Hazard Mitigation Grant Program*
BRIC	*Building Resilient Infrastructure and Communities Program*

Timeline:
The time required for completion of the project upon implementation.

Cost:
The estimated cost for implementation.

Benefits:
A description of the estimated benefits, either quantitative and/or qualitative.

Mitigation Category:

- *Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.*
- *Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.*
- *Natural Systems Protection (NSP)—These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities.*

CRS Category:

- *Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.*
- *Property Protection (PP)—These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.*
- *Public Information (PI)—Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.*
- *Natural Resource Protection (NR)—Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.*
- *Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES)—Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.*

The prioritization criteria provided in Volume 1, Section 6 (Mitigation Strategy) identify 14 evaluation/prioritization criteria to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as High, Medium, or Low. The table below provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.

Table 9.1-16. Summary of Prioritization of Actions

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2023-Fort Bend County-001	Brazos River Flood Study	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2023-Fort Bend County-002	Flood Study	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2023-Fort Bend County-003	Brazos Erosion Study	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High
2023-Fort Bend County-004	Shelter and Evacuation Communications	1	0	1	1	1	1	1	0	1	1	1	1	1	1	12	High
2023-Fort Bend County-005	Yearly Community Outreach Program	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2023-Fort Bend County-006	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2023-Fort Bend County-007	Critical Facilities Flood Protection	1	1	1	1	1	1	0	1	1	1	0	0	1	1	11	High
2023-Fort Bend County-008	Update the Continuity of Operations Plan	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13	High
2023-Fort Bend County-009	Backup Generators	1	1	1	1	1	1	0	0	1	1	1	1	1	1	12	High
2023-Fort Bend County-010	Disaster Debris Management Plan	1	1	1	1	1	1	1	0	1	1	1	1	1	1	13	High
2023-Fort Bend County-011	Vaccination Locations	1	0	1	1	1	1	1	1	1	1	0	1	1	1	12	High
2023-Fort Bend County-012	Additional Internal Flood Storage	1	1	0	1	1	1	0	0	0	1	1	1	1	1	10	High
2023-Fort Bend County-013	Levee Flood Risk Education Outreach	1	0	0	1	1	1	1	0	0	1	-1	1	1	1	8	Medium
2023-Fort Bend County-014	Expanded Flood Warning System	1	0	1	1	0	1	1	0	0	1	1	1	1	1	10	High
2023-Fort Bend County-015	Ditch H Erosion Protection	1	1	0	1	0	1	0	1	0	1	1	1	1	1	10	High
2023-Fort Bend County-016	Master Drainage Plan Update	0	0	1	1	0	1	1	0	0	1	1	1	1	1	9	High

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2023-Fort Bend County-017	Erosion and Sediment Reduction	0	0	0	1	0	1	1	1	0	1	1	1	1	1	9	High
2023-Fort Bend County-018	Barker Reservoir Flood Risk Outreach	0	0	0	1	0	1	1	0	-1	1	1	1	1	1	7	Medium

Note: Volume 1, Section 6 (Mitigation Strategy) conveys guidance on prioritizing mitigation actions. Low (0-4), Medium (5-8), High (9-14).