

Fort Bend County



Fort Bend County
Levee Improvement District No. 7
Hazard Mitigation Plan Update 2023

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List of Acronyms

BFE	Base Flood Elevation
CFR	Code of Federal Regulations
FBCLID	Fort Bend County Levee Improvement District
FBCMUD	Fort Bend County Municipal Utility District
FEMA	Federal Emergency Management Agency
DFIRM	Digital Flood Insurance Rate Map
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
HMP	Hazard Mitigation Plan
LID	Levee Improvement District
MPC	Mitigation Planning Committee
mph	Miles per Hour
NCEI	National Centers for Environmental Information
NFIA	National Flood Insurance Act
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
RL	Repetitive Loss
TDEM	Texas Division of Emergency Management
TWDB	Texas Water Development Board
USGS	U.S. Geological Survey

Executive Summary

The Fort Bend County Levee Improvement District No. 7 (“the District”) undertook development of this update to its Hazard Mitigation Plan (Plan) because of the increasing awareness that natural hazards, especially flood hazards and the potential for levee failure, may affect people and property in the area. The District was created under the provisions of Article XVI, Section 59 of the Texas Constitution, and operates pursuant to Chapters 49 and 57 of the Texas Water Code, as amended, and Chapter 7808 of the Texas Special District Local Laws Code. The District was created to construct certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, which is part of the City of Sugar Land, from flooding from the Brazos River.

The existing Hazard Mitigation Plan was reviewed and revised to expand upon District vulnerabilities to hazards and outline mitigation actions that help to reduce or avoid the impacts of hazards. Approval of the Plan Update will keep the District eligible for federal mitigation grant program funds administered by the State of Texas Division of Emergency Management (TDEM) and the Texas Water Development Board (TWDB). In this Plan Update, the Mitigation Planning Committee (MPC) re-assessed hazard vulnerabilities, reviewed the status of mitigation actions proposed in its original Hazard Mitigation Plan from 2018, and looked at what future mitigation actions need to be taken based on the vulnerabilities of the District and the residents within the boundary of the District. **Figure 1** shows the planning area for this Hazard Mitigation Plan.

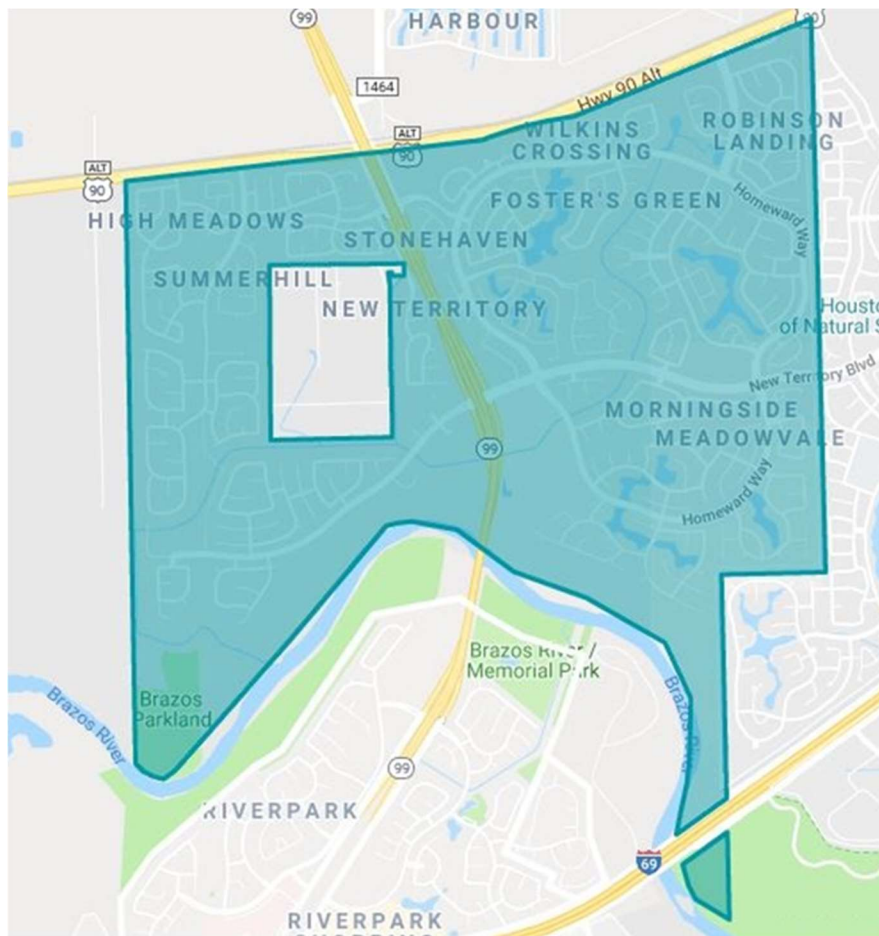


Figure 1 – Hazard Mitigation Study Area, Fort Bend County Levee Improvement District No. 7

The District is susceptible to a range of hazards inherent to southeast Texas; however, the hazards considered in this Plan are limited to those impacting the District's ability to fulfil its purpose. According to the petition for its creation, the District was organized for the following purposes:

- 1) To construct and maintain levees and other improvements on, along, and contiguous to rivers, creeks, and streams within and adjacent to the District;
- 2) To reclaim land within the District from overflow from these streams;
- 3) To control and distribute the waters of rivers and streams within and adjacent to the District by straightening and otherwise improving them; and
- 4) To provide for the proper drainage and other improvement of the reclaimed land within the District.

Authority for the preparation of the Hazard Mitigation Plan is derived from Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended; The National Flood Insurance Act of 1968 (NFIA), as amended; and Title 44 Code of Federal Regulations Section 201.6 (44 CFR 201.6).

1 The Planning Process

1.1 Introduction

The District's 2023 Hazard Mitigation Plan Update (Plan) builds on the District's original Hazard Mitigation Plan, developed and approved in 2018. The District undertook development of its original Hazard Mitigation Plan due to increasing awareness that natural hazards, especially flood hazards and the potential for a levee failure, may affect people and property in the area. The original plan identified District vulnerabilities to hazards and outlined mitigation actions that help to reduce or avoid the impacts of hazards. Approval of the Plan made the District eligible for federal mitigation grant program funds administered by the State of Texas Division of Emergency Management (TDEM) and the Texas Water Development Board (TWDB).

In this Plan Update, the Mitigation Planning Committee re-assessed hazard vulnerabilities, reviewed the status of mitigation actions proposed in its original Hazard Mitigation Plan from 2018, and looked at what future mitigation actions need to be taken based on the vulnerabilities of the District and the residents within the boundary of the District.

1.2 Authority & Current Capabilities

The District is a special purpose district of the State of Texas created under the provisions of Article XVI, Section 59, of the Texas Constitution, and operating pursuant to Chapters 49 and 57 of the Texas Water Code, as amended, and Chapter 7808 of the Texas Special District Local Laws Code.

The District was created to construct certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, which is part of the City of Sugar Land, from flooding from the Brazos River. According to the petition for its creation, the District was organized for the following specific purposes:

- 1) To construct and maintain levees and other improvements on, along, and contiguous to rivers, creeks, and streams within and adjacent to the District;
- 2) To reclaim land within the District from overflow from these streams;
- 3) To control and distribute the waters of rivers and streams within and adjacent to the District by straightening and otherwise improving them; and
- 4) To provide for the proper drainage and other improvement of the reclaimed land within the District.

The District is governed by a five-member Board of Directors. Board members participated in the Hazard Mitigation Planning process. The Board holds a regular meeting once a month to manage and conduct the business and affairs of the District, and these meetings are open to the public pursuant to the Open Meetings Act, Chapter 551, Texas Government Code.

As is typical for smaller governmental agencies, the District contracts with consultants such as attorneys, engineers, auditors, bookkeepers, tax assessor-collectors, operators, and financial advisors. These consultants provide services, advice, and reports to assist the Board in managing the District.

The District, which encompasses the New Territory subdivision, operates and maintains approximately 3.75 miles of levees and other drainage facilities that include:

- Ellis Creek, an internal drainage channel that collects and conveys storm water runoff;
- Outfall structures where internal storm water drainage is discharged outside of the levee and into the Brazos River via an external drainage channel that is also operated and maintained by the District;

- One pump station (electric facility that pumps stormwater within the levee to the outside of the levee and into the external drainage channel during a combined river/rainfall flood event);
- Flap gates (gates preventing river water from entering New Territory); and
- Nine detention/retention ponds (artificial lakes that include a permanent pool of water and space to detain excess water).

The District also has the power (pursuant to a separate statute) to construct, maintain and operate a reclaimed water system for purposes of providing a non-potable water source to the New Territory Residential Community Association, Inc. for irrigation of the common areas and make-up water to the lakes within New Territory.

The District is subject to building codes and land use ordinances under the City of Sugar Land, however due to consisting nearly entirely of fully-developed single-family residential neighborhoods, the District does not anticipate building codes or land use contributing to increased hazard vulnerabilities.

In order to improve capabilities, the District actively participates in regional emergency planning exercises with adjacent cities, special districts, and County staff. Communication to residents occurs through many forms, including a District specific website which was launched in 2018. Furthermore, the District maintains and regularly updates its Emergency Action Plan (EAP), which establishes procedures and processes for the District to employ during a severe flood event. To address significant maintenance or upgrade needs, the District also administers a capital improvement program.

Authority for the preparation and updating of the Hazard Mitigation Plan is derived from Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended; The National Flood Insurance Act of 1968 (NFIA), as amended; and Title 44 *Code of Federal Regulations* Section 201.6 (44 CFR 201.6). These require State and local governments to develop, formally adopt, and regularly update Hazard Mitigation Plans in order to be eligible for certain disaster mitigation grant funding sources.

It should be noted that, due to the District's limited authority, the District is not a participant in the National Flood Insurance Program (NFIP). The land within the District's levees is either within Fort Bend County or the City of Sugar Land; both entities are participants in the NFIP. The City of Sugar Land is the Floodplain Administrator for the area within the District boundaries.

1.3 The Mitigation Planning Committee

The Mitigation Planning Committee (MPC) was established to direct the Hazard Mitigation Plan Update. The MPC members are identified in **Table 1**. After reviewing the existing Plan, including re-assessing hazards and determining the status of the previously included mitigation actions, the MPC oversaw the development of the plan update, incorporated public involvement and input, and scheduled all meetings. The MPC determined that in addition to the small committee that would steer the planning process, a larger group of interested and potentially effected individuals called "Stakeholders" would be included in the planning process to discuss the planning process, submit proposed mitigation actions, review drafts and provide comments at critical points in the development of the Plan. Once the Plan was drafted, the MPC reviewed the contents with the District Board of Directors for their comment and approval.

Table 1 – Mitigation Planning Committee

Team Member	Job Title	Organization
Nathan Bedee	Director	FBCLID7
Jim Grotte	Director	FBCLID7
Phil Martin	Project Manager for the District	Mike Stone Associates, Inc.

Team Member	Job Title	Organization
Kane Mudd	Engineer for the District	LJA Engineering, Inc.
Chris Skinner	Attorney for the District	Schwartz, Page & Harding, L.L.P
Matthew Reed	Attorney for the District	Schwartz, Page & Harding, L.L.P
Michael Willet	Communications for the District	Touchstone District Services
Jeff Perry	Operator for the District	Levee Management Services, LLC
Tyson Duncan	LID7 BRECP EOR	AECOM
Ed Panuska	Mitigation Planning Consultant	AECOM

A Stakeholder Meeting was held on April 24, 2023 through an online webinar to introduce the District's planning process and request Stakeholder involvement and input. Stakeholders were also invited to the public meeting and were requested to provide feedback through email or by telephoning the District. The Stakeholder group invited to participate included the individuals and entities listed in **Table 2**. See **Appendix B** for invitations and presentations from the Stakeholder Involvement process.

Table 2 – Stakeholders

Member	Title	Organization
Michael Walker	Executive Director	New Territory Residential Community Association
Robert Wilson	Senior Drainage Engineer	City of Sugar Land
Robert Valenzuela	Assistant City Manager	City of Sugar Land
Mark Poland	Chief of Police	City of Sugar Land Police Department
Gabe Lavine	Administrator	City of Sugar Land Office of Emergency Management
Greg Babst	Emergency Management Coordinator	Fort Bend County Emergency Operations
Rodney Grimmer	Senior Planning Coordinator	Fort Bend County Emergency Operations
Stacy Slawinski	County Engineer	Fort Bend County
Jeff Janecek	Assistant Chief Engineer	Fort Bend County Drainage District
Mike Stone	General Manager and Chief Operating Officer	Fort Bend County Toll Road Authority
Craig Kalkomey	Engineer for FBCLID2	LJA Engineering, Inc.
Jason Kelly	Engineer for FBCLID17	LJA Engineering, Inc.
Michael Rusk	Engineer for FBCLID11	LJA Engineering, Inc.
Michael Rusk	Engineer for FBCLID10	LJA Engineering, Inc.
Wallace Trochesset	Engineer for FBCMUD 121	LJA Engineering, Inc.
Dave Scott	Presiding Officer	Brazos River Authority
David Collinsworth	General Manager	Brazos River Authority

1.4 Public Involvement

Consistent with District's standard objective to inform and involve citizens, and to fulfill the public involvement requirements of the mitigation planning programs, the District solicited input, notified, and invited residents to participate in the mitigation planning process. Regular and special session board meetings, which are open to and well attended by members of the public, are typically held twice a month.

In particular, the development and review of the Plan was on the officially published agenda and was discussed in detail at Board meetings on April 6, 2023, April 18, 2023, May 4, 2023, and May 16, 2023. See **Appendix B** for details of these meetings.

The public had an opportunity to review the draft Plan when the document was posted on the District's website at <http://www.fbclid7.com/>. Prior to placing the document online, at the May 4, 2023 Board Meeting the District announced that the draft Plan would be available for review and comments would be taken at the May 16, 2023 Public Board Meeting, and that this meeting was open to the public and all stakeholders. See **Appendix B** for the May 16th meeting agenda.

Prior to the Public Meeting, a press release was prepared informing the public about the Hazard Mitigation Planning process and urging the public to be involved. It also provided the time, date, and location of the Public Meeting. The notice was published on the District Website, in addition to the official published agenda for the Board Meeting. The press release and website post advertising the Public Meeting are included in **Appendix B** of this Plan.

On May 16, 2023 the Public Meeting was held to consider comments on the draft Plan and to solicit additional public input. At the meeting, the District provided comment forms for any members of the public to formally submit a comment. The attendee list and sign-in sheet from the Public Meeting are included in **Appendix B** of this Plan.

After the Public Meeting, the MPC hosted an anonymous, online public survey aimed towards gathering additional viewpoints towards community preparedness and mitigation. Questions included in the 2-minute survey included:

- 1) Have you ever experienced or been impacted by a natural disaster in your current community?
- 2) In your opinion, what are the top three hazards facing your community?
- 3) How concerned are you about the possibility of your community being affected by a natural disaster?
- 4) In your household, has anyone done any of the following disaster preparedness activities?
- 5) Are there any other comments you would like to include regarding FBCLID7's Hazard Mitigation Planning strategies and hazards possibly affecting your local community?

For each question, respondents were given a series of possible responses. Answers were collected over a period of two weeks from May into early June. Over 250 responses in total were received, identifying several major themes:

- Over two out of three respondents indicated that they had been affected by a natural disaster in some way.
- Floods, Hurricanes & Tropical Storms, and Levee Failure were identified as the hazards most likely to impact the community.
- A majority of the respondents indicated that they are "Somewhat Concerned" about the possibility of their community being affected by a natural disaster, while fewer than ten percent of respondents indicated that were not at all worried.

Results of the public survey are presented in **Appendix B**.

All input received was reviewed and considered for incorporation into this Plan.

Additionally, the District reached out to various local organizations (via phone and email) from the academic (Fort Bend Independent School District) and business (Fort Bend Chamber of Commerce) fields, as well as to non-profit, community-based organizations that serve vulnerable and underserved populations in the area (Fort Bend Women's Center, Fort Bend Hope, Second Mile, and the Texas Coastal Plains Chapter of the American Red Cross). The organizations received an explanation of the Hazard Mitigation Plan and the update process, as well as a draft of the HMP Update to review and provide feedback on. Emails also included data collection questions similar to the public survey. After three weeks, this feedback was compiled and incorporated into this Plan.

Based on FEMA's National Risk index, the social vulnerability for these communities is shown as either Very Low or Relatively Low. The New Territory Residential Community Association, a non-profit homeowner's association, was a stakeholder and engaged throughout the development of the HMP update, sending frequent emails and communication to its residents regarding plan status updates and opportunities for resident involvement in the plan's development. The mitigation benefits of this plan will impact all residents in the community.

1.5 Review and Incorporation of Existing Plans, Studies, Reports, and Technical Information

Other planning documents can be used as a valuable resource for integrating information related to hazard mitigation into the District's Plan. As part of the development of the Plan, other plans, studies, and reports that are applicable to the natural hazards discussed in the Plan were reviewed and incorporated where applicable.

The specific plans, studies and reports used for informational purposes along with a discussion on how they were incorporated into the Plan, are listed below.

- **Fort Bend County Levee Improvement District (FBCLID) No. 7 Emergency Action Plan (adopted in August 2017).** This plan was used to understand the procedures and field operations that are to be undertaken by the District during events outside of normal operational parameters.
- **Fort Bend County Hazard Mitigation Plan (HMP) Update (2018).** The plan was used as a reference for hazards as they pertain to the District's jurisdictional area.
- **City of Sugar Land Hazard Mitigation Plan Update (2020).** The plan was used as a reference for hazards as they pertain to the District's jurisdictional area, and to identify key Stakeholders.
- **Fort Bend County Flood Insurance Rate Map (FIRM - 2014).** The Flood Insurance Rate Maps (FIRMs) prepared by the Federal Emergency Management Agency (FEMA) offer the best overview of flood risks. FIRMs are used to regulate new development and to control the substantial improvement and repair of substantially damaged buildings. Fort Bend County FIRMs were reviewed and included in the Plan to develop a floodplain map identifying the 100-year floodplain.
- **Fort Bend County Flood Insurance Study (FIS, 1997).** The most recent FIS revised study is dated June 5, 1997. These studies were reviewed as part of the draft Plan. Information describing the flood hazards was added to **Section 2**.
- **State of Texas Hazard Mitigation Plan Update (2018).** The State HMP update was reviewed and considered while developing this Plan. The mitigation strategies and mitigation goals are referenced in **Section 3.2** of this Plan.
- **FEMA National Risk Index Report (2023).** This report was used to examine risk factors for communities within the jurisdiction of FBCLID 7 and the surrounding areas in the region.

1.6 Plan Adoption and Continued Public Involvement

Upon adoption of this Plan Update, the public will be notified of any substantial changes to the document between 2023 and the next scheduled Plan update in 2028. Any changes proposed by the MPC considered significant will be distributed to the Stakeholders. The Stakeholders will be encouraged to review the changes and provide comments on any proposed plan revisions.

The District will involve the public in the plan maintenance process and during the next Plan update in 2028, using the same methods as the plan development. The public will be notified when the revision process is started and will be provided the opportunity to review and comment on changes to the Plan and prioritize action items. It is expected that a combination of informational public meetings, draft documents posted on the website, and public Board of Director meetings will be undertaken.

The District's Hazard Mitigation Plan will be posted on the District's website and notices of its availability will be distributed to the Federal and State agencies, Fort Bend County, all identified stakeholders, as well as in a public notice.

1.7 Plan Monitoring, Evaluating and Updating

The MPC determined that monitoring and evaluation of the hazard mitigation process, and the Plan specifically, would be best accomplished with annual meetings. Upon adoption in 2018, the MPC will meet on an annual basis to discuss varying aspects of the hazard mitigation process, including assessing progress to date, reviewing the process for updating the Plan, the need for continued public involvement, risk assessment evaluation, and review of mitigation actions to determine if any significant changes are warranted. This will occur during a regular or special session of the Board of Directors and include the general public and any interested stakeholders. In addition, the Chairman may convene a separate meeting of the appropriate District, City of Sugar Land, and County departments to discuss and determine progress, and to identify obstacles to progress, if any, related to the hazard mitigation process. Upon recommendation of the Board of Directors, the District's mitigation planning consultant will implement necessary additional planning actions, and/or updates to the Plan.

In addition to annual meetings, as another way to ensure the plan stays current, the Chairman will convene meetings after damage-causing natural hazard events to review the effects of such events. Based on those effects, updates to the mitigation priorities listed in **Table 12** may be made or additional event-specific actions identified.

In summary, the District will initiate Plan reviews and updates based on the following:

1. The recommendation of the Chairman or on its own initiative, the District Board may initiate a Plan review at any time;
2. At approximately the 1-year anniversary of the Plan's adoption, and every year thereafter;
3. After natural hazard events that appear to significantly change the apparent risk to District assets, operations, and/or citizens;
4. When activities of the District, County, or the State significantly alter the potential effects of natural hazards on District assets, operations and/or citizens. Examples include completed mitigation projects that reduce risk, or actions or circumstances that increase risk; or
5. When new mitigation opportunities or sources of funding are identified.

In addition to the circumstances listed above, revisions that warrant changing the text of this Plan or incorporating new information may be prompted by a number of circumstances, including identification of

specific new mitigation projects, completion of several mitigation actions, or requirements for qualifying for specific funding.

Major comprehensive review of the hazard mitigation planning process and revisions to this Hazard Mitigation Plan will be considered on a 5-year cycle. After being updated in 2023, the Plan will enter its next review cycle sometime in 2028. The MPC will be convened to conduct the comprehensive evaluation and revision. The MPC will also consider whether it is preferable to include the District as a participant in a regional Plan update (Fort Bend County or City of Sugar Land), instead of as a stand-alone Plan update.

1.8 Incorporating Mitigation Plan Requirements into Other Local Planning Mechanisms

As a result of the collaborative effort in developing the 2018 Hazard Mitigation Plan, and with the anticipated goal of improving the resiliency of the District, the following projects and activities recommended by the original plan were added to the District's Capital Improvement Plan:

- Outfall Channel Erosion Control Project
- Procure Additional Temporary Pumping Capacity
- Maintain Ownership of Tiger Dams
- Maintain Website to Disseminate Public Information
- Pump Station Capacity Enhancement Project
- Internal Detention Basin Project
- Brazos River Erosion Control Project

The District intends to integrate this Hazard Mitigation Plan Update into other local planning efforts through the following process and framework.

For activities associated with District infrastructure, the District will plan for these activities during their standard annual budgeting process and within their existing planning mechanisms, including the District Capital Improvement Plan and Emergency Action Plan. The District will also work with the stakeholders identified in this planning effort to make sure elements of this plan are incorporated in any other plans that are outside the jurisdiction of the district such as Capital Improvement Plans, Master Drainage plans, Emergency Action Plans, etc. The District will designate specific Board meetings to discuss this ongoing effort and invite the Stakeholders to attend and participate in the process of integrating this Plan into the existing planning mechanisms. This includes participation by the District in other regional efforts related to the Brazos River and floodplain mapping and flood mitigation in Fort Bend County.

2 Hazard Assessment

2.1 Overview of Risks

Natural hazards can cause damage and losses (including physical damage, indirect and economic losses, and injuries and deaths) when the hazard occurs or impacts people and property. Once hazards are identified, the level of risk exposure for people and property can be determined to show how “at risk” a planning area is. When the full range of possible natural hazards is reviewed, it becomes apparent that some events occur frequently and some are extremely rare. Some hazards impact large numbers of people to a limited degree, while others may cause significant damage to a small, localized area.

The National Oceanic and Atmospheric Administration’s (NOAA) and the National Centers for Environmental Information, (NCEI, formerly the National Climatic Data Center), collect and maintain certain hazard data in summary format, indicating injuries, deaths, and estimated damages. The data presented in this plan are for Fort Bend County, where the District is located, to demonstrate the potential for natural hazards in the District. According to a query of the NCEI database for “Fort Bend County, Texas”, 336 weather events were reported between January 1950 and April 2023 (the most recent search date available). Fort Bend County has experienced:

- 111 significant severe thunderstorms with high winds (four of which had greater than 60 knot winds),
- 1 hurricane and 4 tropical storms,
- 48 floods/flash floods,
- 1 strong wind event,
- 2 heavy rain events,
- 9 winter weather/wind chill/ice events,
- 69 hail events,
- 17 lightning events,
- 62 tornadoes and funnel clouds,
- 4 severe droughts, and
- 8 extreme heat waves.

The NCEI estimates that the damage from these events totals \$8.45 billion.

2.2 District Hazards

The District is susceptible to a range of hazards inherent to southeast Texas; however, for the reasons outlined below, the District has determined the most appropriate and useful approach to developing its Hazard Mitigation Plan is to eliminate certain hazards from the detailed risk assessment in the Plan. The three reasons for eliminating certain hazards are:

- 1) The eliminated hazards are not significant enough to warrant detailed vulnerability assessment and loss estimation;
- 2) The District’s mission and jurisdictional authority are explicitly limited to activities related to drainage and levees (although the organization does have the authority to complete actions to protect and mitigate damage to its own facilities); and

3) Assets and populations that are potentially exposed to hazards are part of an existing mitigation plan with actions to address hazards outlined in their HMPs. Fort Bend County and the City of Sugar Land have the authority and the responsibility to sponsor mitigation activities for their constituent populations and communities. The District will continue to coordinate with the County and City to ensure mitigation actions are developed and implemented, aiming to reduce or eliminate any opposition or redundancy between the jurisdictions.

The District's specific assets considered in this Plan include: a reused water system, the levee along the west and south sides of the District, several channels (Ellis Creek, Ditch O), nine of the 12 lakes within the District, the storm water pump station and the external channel (including various flap gates and sluice gates). See **Figure 2** for the location of District assets. However, along with these fixed assets, the District also has responsibilities to provide proper drainage within the levee system as well as to maintain the levee's ability to provide flood protection. This plan will consider the impact of hazards on the District's ability to meet those responsibilities.



Figure 2 – Location of District Assets

The MPC evaluated the District's risk exposure to natural hazards and the ability of the District to regulate and prepare for such events, as outlined in **Section 1.2**. Additionally, the MPC consulted FEMA's National Risk Index for the area within the District's jurisdiction. The risk report can be found as part of **Appendix G**. Based on the District's limited authority when it comes to managing hazards other than flood and the lack of occurrences and/or the limited effect that certain hazards have on the District's assets, the following hazards have been eliminated from consideration and no mitigation action items are associated with them:

- Severe Winter Storms,
- Earthquake,
- Land Subsidence,
- Wildfire,
- Coastal Erosion,
- Pandemic,
- Hailstorms,
- Extreme Heat,
- Expansive Soils,
- Drought,
- Tornado,
- Thunderstorm Winds,
- Lightning.

The District hazards addressed as part of this plan are:

- Hurricanes and Tropical Storms,
- Flood, and
- Levee Failure

The MPC reviewed each hazard and assigned a probability of occurrence based on the experience of the MPC members and an understanding of the hazards, as outlined in the hazard profiles in **Sections 2.5** through **2.8**. The probability categories are shown in **Table 3**.

Table 3 – Hazard Probability

Probability:

- ☐ High: Event probable in next year.
- ☐ Medium: Event probable in next 5 years
- ☐ Low: Event possible in next 10 years.

Climate change is described as a significant change in either the average state of the climate or in its variability over an extended period. Climate change in and of itself is not necessarily a hazard, but it may increase the frequency and/or intensity of identified hazards over time. Climate change could affect communities in a variety of ways, but it is currently unclear what extent the impacts will have on the Planning Area. It is anticipated that hazard-causing events will fluctuate due to climate change over time. While

climate change may not directly impact the frequency or probability of hazards, it may impact the severity of future events. To this end, within appropriate hazards throughout this plan, we have identified specific impacts that increased severity brought on by climate change may elicit. As new information and new models are developed, a climate change Risk Assessment may be enhanced to measure and assess these impacts more accurately.

2.3 Geography, Climate, and Population

The District is located in southeast Texas within the boundaries of New Territory, a master-planned community and a Census Designated Place (CDP). The district consists of approximately 3.8 square miles which lies entirely within Fort Bend County. The City of Richmond is the Fort Bend County seat. The largest city in the county is the City of Sugar Land. In November 2016, the Sugar Land city council voted in favor of annexing New Territory. The annexation was effective December 12, 2017. **Figure 3** is a map identifying the boundary area for the District.

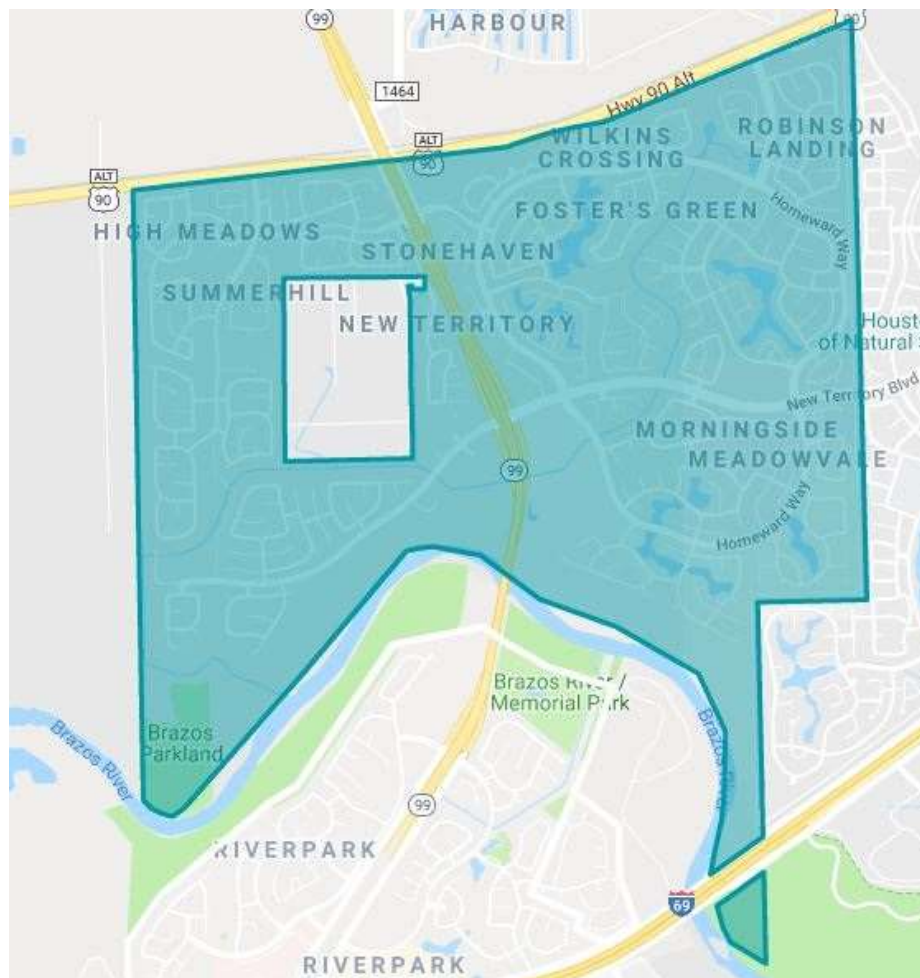


Figure 3 – Planning Area: Fort Bend County Levee Improvement District No. 7

Fort Bend County is located in the Texas Coastal Plain and is relatively flat. Ground surface elevations (not including the levees) across the district have little variance, with the highest elevations reaching 87 feet above

sea level. Annual average rainfall in the county is 51 inches. The District is bordered on the north by US 90A, to the south by the Brazos River.

There have been no significant changes to development within LID7 since the adoption of the previous HMP. Most of the area within the District primarily consists of single-family residential subdivisions with light commercial development along collectors and thoroughfares. This land use and population density remains unchanged from the previous HMP. As a result, the level hazard vulnerabilities due to changes in development in the area remain consistent with the previous HMP, and without drastic redevelopment should have little to no impact in the immediate future in terms of vulnerabilities.

According to the United States Census Bureau, the estimated 2016 population within New Territory CDP was 15,843 residents. This is a 4.3 percent increase from the 2010 census data, which was the last Census data available prior to New Territory's annexation by the City of Sugar Land. **Table 4** summarizes the 2010 census population within the Plan area.

Table 4 – 2010 Population of Plan Area

Jurisdiction	2010 Population	Estimated Vulnerable or Sensitive Populations		2010 Population Density per square mile
		Elderly (Over 65)	Below Poverty Level	
New Territory (CDP)	15,186	457	683	3,996

2.4 Past Disaster Declarations

FEMA maintains records on Federally Declared Disasters, dating back to 1953. Data on Presidential Disaster Declarations characterize some natural disasters that have affected the area. In 1965, the Federal government began to maintain records of events determined to be significant enough to warrant declaration of a major disaster by the President of the United States. Presidential Disaster Declarations are made at the county level and are not specific to any one city or sub-area. Between 1983 and 2023 there were 19 disasters involving a severe storm, hurricane, or flooding declared in Fort Bend County; those disasters are listed in **Table 5**. The "Disaster Type" in **Table 5** is either EM (Emergency) or DR (Major Disaster).

Table 5 – Declared Emergencies and Major Disasters in Fort Bend County
(Source: FEMA, Disaster Declaration Summary Database)

Disaster Number	Declaration Date	Disaster Type	Title	Incident Begin Date	Incident End Date	Declared County/ Area
4586	2/19/2021	DR	SEVERE WINTER STORMS	2/11/2021	2/21/2021	Fort Bend County
3554	2/14/2021	EM	SEVERE WINTER STORM	2/11/2021	2/21/2021	Fort Bend County

Disaster Number	Declaration Date	Disaster Type	Title	Incident Begin Date	Incident End Date	Declared County/ Area
3540	8/24/2020	EM	TROPICAL STORMS MARCO AND LAURA	8/23/2020	8/27/2020	Fort Bend County
3530	7/26/2020	EM	HURRICANE HANNA	7/25/2020	7/31/2020	Fort Bend County
4485	3/25/2020	DR	COVID-19 PANDEMIC	1/20/2020		Fort Bend County
3458	3/13/2020	EM	COVID-19	1/20/2020		Fort Bend County
4332	8/25/2017	DR	HURRICANE HARVEY	8/23/2017	9/15/2017	Fort Bend County
4272	6/11/2016	DR	SEVERE STORMS AND FLOODING	5/22/2016	6/24/2016	Fort Bend County
4269	4/25/2016	DR	SEVERE STORMS AND FLOODING	4/17/2016	4/30/2016	Fort Bend County
4223	5/29/2015	DR	SEVERE STORMS, TORNADOES, STRAIGHT-LINE WINDS AND FLOODING	5/4/2015	6/22/2015	Fort Bend County
1791	9/13/2008	DR	HURRICANE IKE	9/7/2008	10/2/2008	Fort Bend County
3294	9/10/2008	EM	HURRICANE IKE	9/7/2008	9/26/2008	Fort Bend County
3290	8/29/2008	EM	HURRICANE GUSTAV	8/27/2008	9/7/2008	Fort Bend County
3277	8/18/2007	EM	HURRICANE DEAN	8/17/2007	9/5/2007	Fort Bend County
2639	5/26/2006	FM	LAKE OLYMPIA FIRE	5/26/2006		Fort Bend County
1624	1/11/2006	DR	EXTREME WILDFIRE THREAT	11/27/2005	5/14/2006	Fort Bend County

Disaster Number	Declaration Date	Disaster Type	Title	Incident Begin Date	Incident End Date	Declared County/ Area
1606	9/24/2005	DR	HURRICANE RITA	9/23/2005	10/14/2005	Fort Bend County
3261	9/21/2005	EM	HURRICANE RITA	9/20/2005	10/14/2005	Fort Bend County
3216	9/2/2005	EM	HURRICANE KATRINA EVACUATION	8/29/2005	10/1/2005	Fort Bend County
1439	11/5/2002	DR	SEVERE STORMS, TORNADOES AND FLOODING	10/24/2002	11/15/2002	Fort Bend County
1379	6/9/2001	DR	TX-TROPICAL STORM ALLISON-06-06-2001	6/5/2001	6/20/2001	Fort Bend County
3142	9/1/1999	EM	EXTREME FIRE HAZARDS	8/1/1999	12/10/1999	Fort Bend County
1257	10/21/1998	DR	TX-FLOODING 10/18/98	10/17/1998	11/15/1998	Fort Bend County
1239	8/26/1998	DR	TROPICAL STORM CHARLEY	8/22/1998	8/31/1998	Fort Bend County
1041	10/18/1994	DR	SEVERE THUNDERSTORMS AND FLOODING	10/14/1994	11/8/1994	Fort Bend County
930	12/26/1991	DR	SEVERE THUNDERSTORMS	12/20/1991	1/14/1992	Fort Bend County
689	8/19/1983	DR	HURRICANE ALICIA	8/18/1983	8/20/1983	Fort Bend County

2.5 Hurricanes and Tropical Storms

There are three types of tropical cyclones defined by NOAA: hurricanes, tropical storms, and tropical depressions. **Table 6** lists the criteria for each classification.

Table 6 – Classification of Tropical Cyclones

Stage of Development	Criteria
Tropical Depression (development)	Maximum sustained surface wind speed is < 39 mph
Tropical Storm	Maximum sustained wind speed ranges 39 - <74 mph
Hurricane	Maximum sustained surface wind speed 74 mph+
Tropical Depression (dissipation)	Decaying stages of a cyclone in which maximum sustained surface wind speed has dropped below 39 mph

2.5.1 Location of Hurricanes and Tropical Storms

The hazard of hurricanes and tropical storms is expected to affect the District uniformly. The District is on the Texas Gulf Coast; while it does not share a border with the Gulf, the southernmost part of the county is only 48 miles from the coastline. Past occurrences of hurricanes and tropical storms, including the list of previous hurricanes and tropical storms that have impacted the District are discussed in **Section 2.5.3**.

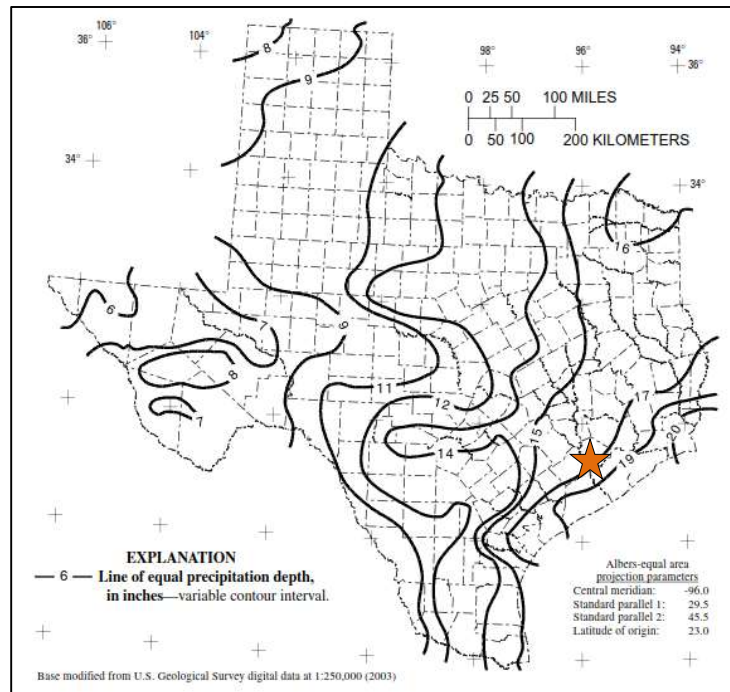
2.5.2 Extent of Hurricanes and Tropical Storms

Hurricanes are classified into five categories according to the Saffir-Simpson Hurricane Wind Scale, as shown in **Table 7**.

Table 7 – Saffir/Simpson Hurricane Wind Scale

Storm Category	Central Pressure	Sustained Winds	Storm Surge	Potential Damage
1	> 980 mbar	74 - 95 mph	4 – 5 feet	Minimal
2	965 – 979 mbar	96 - 110 mph	6 – 8 feet	Moderate
3	945 – 964 mbar	111 – 130 mph	9 – 12 feet	Extensive
4	920 – 944 mbar	131 – 155 mph	13 – 18 feet	Extreme
5	< 920 mbar	> 155 mph	> 18 feet	Catastrophic

Tropical storms and hurricanes are common in the planning area, and storms of any magnitude are very likely to occur in any given year. The District should anticipate and prepare for Category 5 and Category 4 hurricanes. Tropical storms tend to have longer durations, producing prolonged wet and saturated conditions, which can lead to flooding, and volumes of rain beyond the design capacity of drainage structures as was witnessed during Hurricane Harvey. **Figure 4** shows the precipitation predicted by the U.S. Geological Survey (USGS) for a 100-year storm (1% Annual Chance) with 7-day duration in Fort Bend County to be approximately 17-inches.



Approximate location of the District

**Figure 4 – Depth of Precipitation for 100-Year Storm for 7-Day Duration in Texas
(Source: USGS Rainfall Atlas)**

2.5.3 Historical Hurricanes and Tropical Storms

Significant historical hurricane and tropical storm events that had a direct path through Fort Bend County are summarized in **Table 8**.

Table 8 – Damage-Causing Historical Hurricane and Tropical Storm Events in Fort Bend County from 1998-2023

Year	Storm Name	Category	FBC Property Damage
1998	Frances	Tropical Storm	\$100,000
2001	Allison	Tropical Storm	\$7,740,000
2002	Fey	Tropical Storm	\$4,500,000
2008	Ike	Category 2	\$400,000,000
2017	Harvey	Category 4	\$8,000,000,000
Totals			\$8,412,340,000

This information was extracted from the NCEI Storm Events Database, which summarizes “the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries,

significant property damage, and/or disruption to commerce". Other hurricanes and tropical storms have occurred in Fort Bend County but may not be listed in the database. Significant past events include:

- **Hurricane Harvey, 2017.** This hurricane was a Category 4 storm with estimated sustained winds of 130-mph at landfall. Fifty inches of rain is the high-end estimated rainfall total from the National Hurricane Center as Harvey passed over Texas. Some parts of Texas received nine days of continuous rainfall. Harvey produced numerous tornadoes and severe flooding over portions of Fort Bend County. Total damages of this storm in Fort Bend County, as reported by the NCEI database, were \$8 billion.
- **Hurricane Ike, 2008.** This hurricane made landfall on Galveston Island as a Category 2 hurricane with estimated sustained winds of 110 mph. An estimated 10-in to 20-in of rain fell across the southeast Texas region. At the time, Ike was the third-costliest of any Atlantic hurricane and resulted in \$37.5 billion in damages, with only hurricanes Sandy (2012) and Katrina (2005) estimated higher. There were pockets of damage from the storm in Fort Bend County, with eastern part of the county hardest hit. An estimated 200 roofs sustained damage, and there were three indirect fatalities due to carbon monoxide poisoning. The resulting damage from Hurricane Ike in Fort Bend County was estimated at \$400 million.
- **Tropical Storm Allison, 2001.** Allison moved inland less than 12 hours after forming just off the west end of Galveston Island. Allison made its initial landfall on Galveston Island during the evening of June 5, and during the next five days produced record rainfall that led to devastating flooding across portions of Southeast Texas. Heavy rain, totaling 8 to 12 inches, occurred over the Sugar Land-Stafford area of Fort Bend on June 7. The resulting damage from Allison in Fort Bend County was estimated at \$7.74 million.

Figure 5 shows hurricane tracks that have passed over Fort Bend County since 1871, according to NOAA.

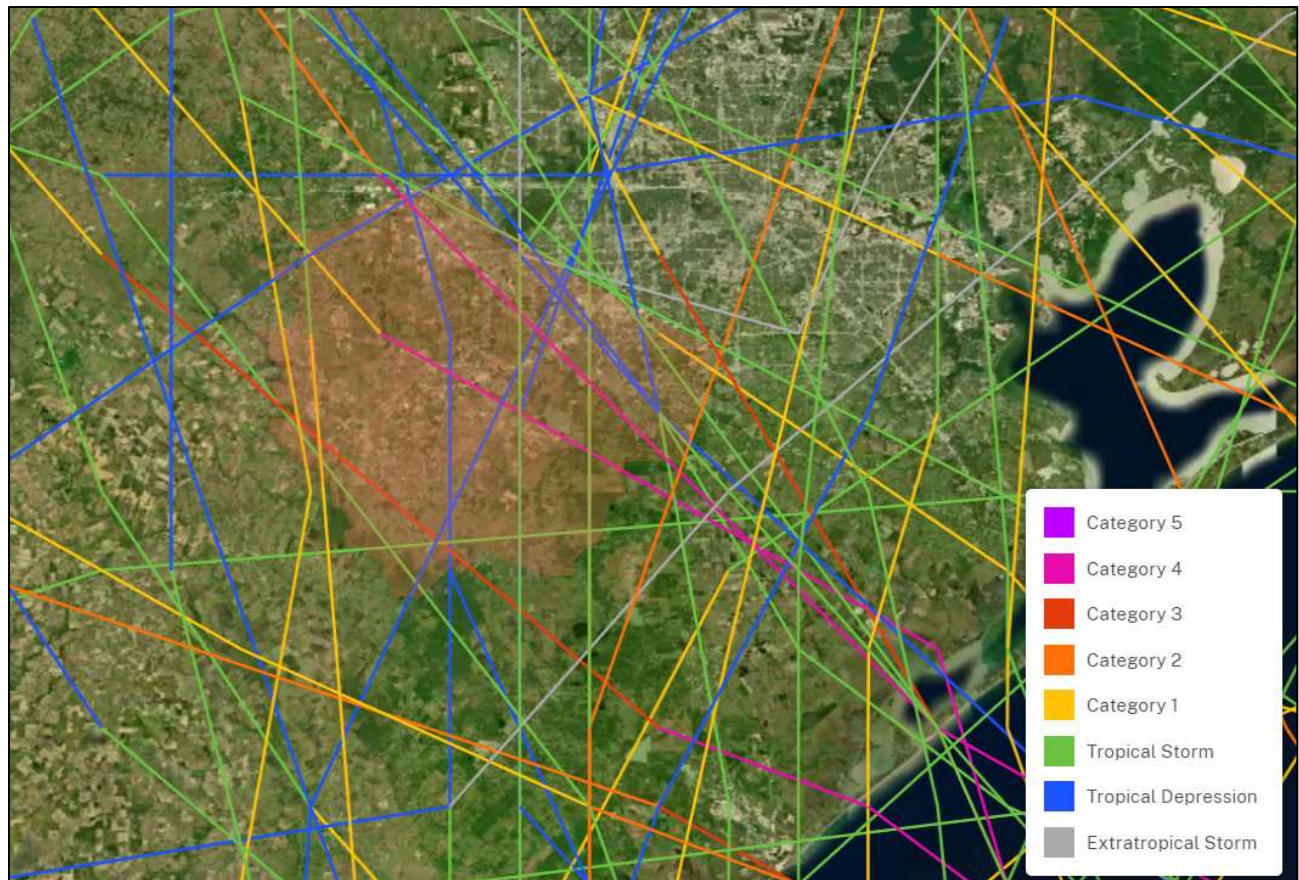


Figure 5 – Historical Hurricanes and Tropical Storms in Fort Bend County

2.5.4 Probability of Hurricanes and Tropical Storms

Based on historical data, the probability of the District being affected by hurricanes and tropical storms is medium. This is comparable to the vulnerability described in the 2018 HMP.

Probability:

- ☐ High: Event probable in next year.
- ☒ Medium: Event probable in next 5 years
- ☐ Low: Event possible in next 10 years.

2.5.5 Impact and Vulnerability related to Hurricanes and Tropical Storms

The District's mission and jurisdictional authority are explicitly limited to activities related to levee improvement, and protecting the integrity of the levees. Therefore, the District only has the authority to mitigate the effect of hurricanes and tropical storms on District-owned facilities and personnel. Hurricanes can cause a significant threat to buildings and equipment as they could be struck by flying debris, falling trees/branches, utility lines, and poles as well as sustain damage from the wind. District specific assets that are vulnerable to Hurricanes include the storm water pump station, the reclaimed water system, the outfall structure, and several detention

facilities. However, considering the long warning time associated with Hurricanes and Tropical storms, the District will do its best to warn personnel, and coordinate protecting its equipment, if possible.

Since the District's main focus is on activities related to levees, the hazard of hurricanes and tropical storms has an emphasis on the secondary hazard of subsequent flooding that can occur during and after these events and the mitigation actions for flood will serve to mitigate the effects of all the hazards that contribute to flooding. The flood elements, including inundation depths experienced from severe storms, hurricanes, tropical storms, and other large rain events are discussed in **Section 2.6**.

Because the tropical storms and hurricanes that impact the District and the surrounding areas form over warm waters, any change in ocean temperatures as a result of climate change has the potential to impact risk associated with this hazard, with warmer temperatures leading to stronger storms with greater rainfall amounts.

2.6 Flood

A flood is an overflow of a large amount of water, beyond its normal limits, over what is normally dry land.

The District's levee system protects the New Territory neighborhood from the Brazos River 100-year floodplain, which puts it at risk for a flood event. Flooding is a naturally occurring event, but becomes hazardous when the public, infrastructure, and property are affected. Historically, floods are, and continue to be the most frequent, destructive, and costly natural hazard facing the District.

2.6.1 Types of Flooding

Flash Flood Events – According to the National Weather Service, a flash flood is flooding that begins within 6 hours, and often within 3 hours, of the heavy rainfall (or other cause). Flash floods can be caused by a number of things but are most often due to extremely heavy rainfall from thunderstorms. Flash floods can occur due to dam or levee breaks, and/or mudslides (debris flow). The intensity of the rainfall, the location and distribution of the rainfall, the land use and topography, vegetation types and growth/density, soil type, and soil water-content all determine just how quickly the flash flooding may occur, and influence where it may occur. Urban areas are also prone to flooding in short timespans and, sometimes, rainfall (from the same storm) over an urban area will cause flooding faster and more severe than in the suburbs or countryside. The impervious surfaces in the urban areas do not allow water to infiltrate the ground, and the water runs off to the low spots very quickly. Flash flooding occurs so quickly that people are caught off-guard. Their situation may become dangerous if they encounter high, fast-moving water while traveling. If people are at their homes or businesses, the water may rise quickly and trap them, or cause damage to the property without them having a chance to protect the property.

Riverine Flooding – Riverine flooding occurs when water rises out of the banks of the waterway, which is a common cause of flooding in the District. Flooding along waterways is a function of both precipitation levels and water run off volumes that drain from larger watersheds which can often be predicted in advance. In the District's jurisdiction, the larger riverine systems will experience a flood crest 24 hours or longer after the storm event begins. Within the District, riverine flooding is caused by either tropical storms or large fronts moving across Texas. These systems can take more than a day to pass, giving ample opportunity for large amounts of rain to fall over large areas. It should be noted, that in instances of high-water levels on the Brazos River, the District relies on its storm water pump station to control the level of floodwaters within the leveed areas.

Flooding due to Levee Failure – In the event of a levee breach or levee failure, the subsequent flooding would be disastrous and potentially far worse than any naturally occurring flood. The flooding could occur across the entire Levee Improvement District (LID) boundary, including over 4,600 residential lots. Aside from the flooding being expansive within the LID study area, due to the topography, the flooding duration would be on the order of days, rather than a typical flash flood or riverine flooding scenario.

Pump Failure – Pumps are operated and maintained by the District in order to prevent flooding during rain events when the Brazos River is high and gravity flow cannot occur. If the pumps experience any malfunction, or fail to operate, there could be resultant flooding within the LID Boundary. Similar to levee failure, the flooding duration would be on the order of days.

2.6.2 Location of Flooding

The area within the levees is protected from riverine flooding as long as the water level in the Brazos River is lower than the elevation of the levee where it ties back to natural ground, and as long as the pump station is operational and not surcharged or damaged.

The Special Flood Hazard Area is an area studied and defined by FEMA as an area subject to flooding in the 100-year event. The Digital Flood Insurance Rate Map (DFIRM) data provided by FEMA for the District shows the following flood hazard areas:

- **Zone A:** Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance requirements and floodplain management standards apply.
- **Zone X:** Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones.

Although the District is surrounded by the Brazos River 100-year flood plain, only the drainage ditches and amenity lakes within the District are designated as “at risk” during the 100-year event (Zone A). All remaining land within the District is designated as “area with reduced flood risk due to levee” by FEMA.

It is important to note that the DFIRM does not include all possible sources of flooding in the District, and therefore the DFIRM only helps understand a portion of the risk exposure for the District. Locations of flood zones in the District based on the Digital Flood Insurance Rate Map (DFIRM) from FEMA are illustrated in **Figure 6** below. This map became effective as of April 2, 2014.

Regional floodplain mapping efforts are ongoing. As part of the regular, annual review process for this Plan, the MPC will seek out preliminary and revised floodplain maps to determine their impacts on the District.

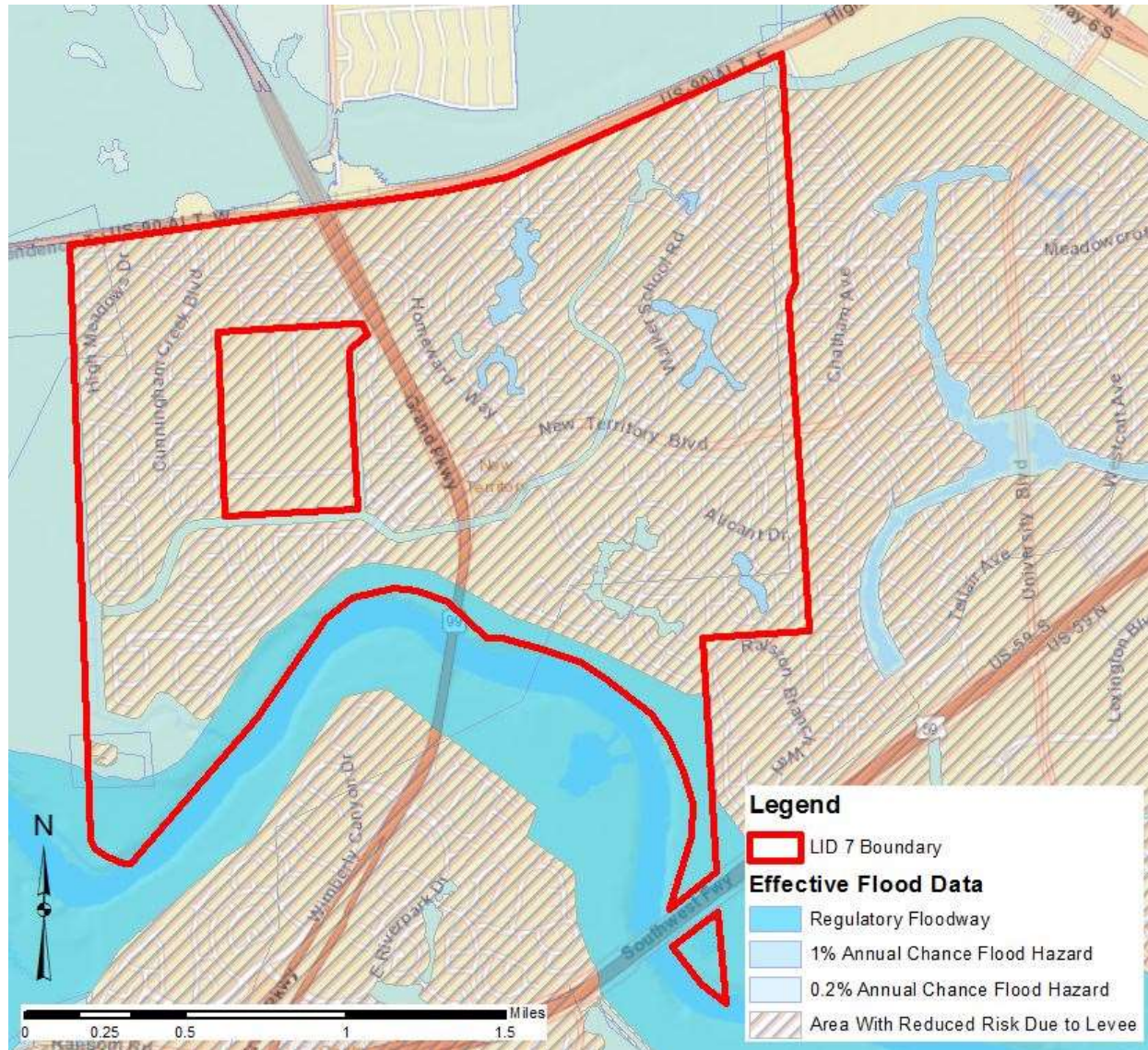


Figure 6 – FEMA Effective Floodplains

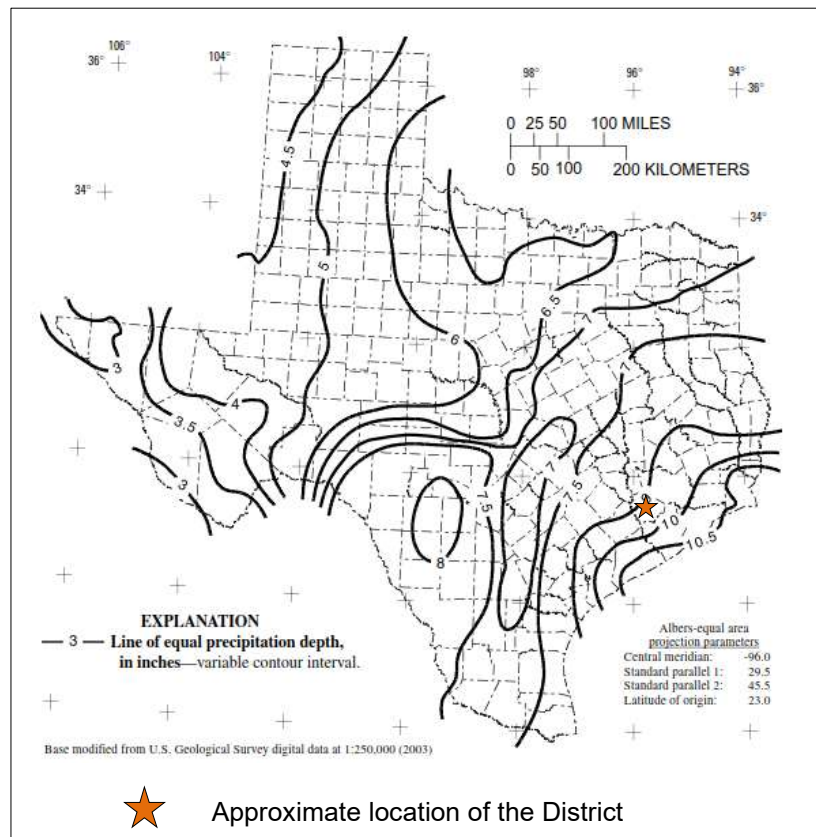
2.6.3 Previous Occurrences of Flooding

The Effective FEMA Flood Insurance Study (FIS) for Fort Bend County, dated December 21, 2017, notes there have been several significant flood events from 1899 through 1998. Reports on historic flooding show that major storms or floods in the area occurred in 1899, 1900, 1913, 1915, and 1929. The flood of 1899 and the storm of 1900 caused much damage to Fort Bend County. Crops, stock, and lives were lost during these two events. The City of Richmond suffered some of the greater losses. Four to five feet of water was seen for several days, and in some places for a stretch of land seven miles wide. The floods of 1913 and 1929 left water covering large portions of the Cities of Rosenberg and Richmond. It was reported that during the 1913 flood, the waters of the Brazos, San Bernard, and Colorado Rivers met below Rosenberg. Some recent flood events noted in the FIS, as well as subsequent events include:

- **May 7th, 2019, Flash Flooding** – A severe band of storms resulted in extreme rainfall amounts that caused widespread street flooding, blocking many roads in the area and flooding many stranded vehicles. Some areas within Fort Bend County received over seven inches of rain in a four-hour period. A maximum of nine inches of rain was reported in certain areas, with as much as 2.5 inches of rain falling within a thirty-minute span. The storm event impacted a large portion of the Brazos River watershed and put the river into flood stage.
- **August 26, 2017, Hurricane Harvey** – This hurricane was a Category 4 with estimated sustained winds of 130 mph at landfall. The main threat from Hurricane Harvey was flooding due to excessive precipitation. Fifty inches of rain is the top-end forecast rainfall amount mentioned by the National Hurricane Center with Harvey through its odyssey near/over Texas. Some parts of Texas received 9 days of rain. Interstates, critical facilities, infrastructure and hundreds of properties were flooded. Within the District, a few structures were damaged due to the pumps being unable to keep up with the rate and amount of precipitation accumulated within the LID boundary.
- **May 27-June 10, 2016, Memorial Day Flooding** – After 20 inches of rain, the water level in the Brazos River reached record heights, and Fort Bend County was added to Presidentially-declared disaster DR-4272. Mostly low to moderate income areas (about 1,200 homes total) were impacted by the disaster.
- **April 18-22, 2016, Tax Day Floods** – This storm front produced nine to 11 inches of rain in 12 hours. Within Fort Bend County, this incident caused flash and street flooding, Barker Reservoir flooding, and river flooding along the Brazos and San Bernard Rivers.
- **May 29, 2015, Memorial Day Flood** – This storm front produced eight to ten inches of rainfall in the vicinity of Fort Bend County. Depending on the location in the Houston area, it ranged from a 2-year to a 500-year frequency storm. The water level in the Brazos River reached record heights.
- **September 12-13, 2008, Hurricane Ike** – This hurricane made landfall on Galveston Island as a Category 2 hurricane with estimated sustained winds of 110 mph. An estimated 10-in to 20-in of rain fell across the southeast Texas region. At the time, Ike was the third-costliest of any Atlantic hurricane and resulted in \$37.5 billion in damages, with only hurricanes Sandy (2012) and Katrina (2005) damages estimated higher. The resulting damage from Ike in Fort Bend County was estimated at \$400 million. Total damages were estimated to be at least \$1.3 billion across southeast Texas.
- **June 7, 2001, Tropical Storm Allison** – Allison moved inland less than 12 hours after forming just off the west end of Galveston Island. Allison made its initial landfall on Galveston Island during the evening of June 5, and during the next five days produced record rainfall that led to devastating flooding across portions of Southeast Texas. Heavy rain, 8 to 12 inches, occurred over the Sugar Land-Stafford area of Fort Bend on June 7. The resulting damage from Allison in Fort Bend County was estimated at \$7.74 million.
- **October 1998, Southeast Texas Flood** – This flood event occurred across parts of south Texas and southeast Texas. The storm that caused it was one of the costliest in the recorded meteorological history of the United States, bringing rainfall of over 20 inches to some parts of southeast Texas, including the Sugar Land Area, and causing over \$750 million in damages.
- **October 1994, Southeast Texas Flood** – This flood was the deadliest southeast Texas weather event since 1983's Hurricane Alicia. Heavy rains began falling late afternoon of October 16th across Burleson, Brazos, Grimes, and Washington counties. On the night of the 17th and on the 18th, rains continued to slide further south and began afflicting people in Jackson, Wharton, Matagorda, Brazoria, and portions of Fort Bend counties. Total rainfall from the entire storm generally ranged from 10 to 20 inches with Liberty recording 30.50 inches during the storm. Over 13,000 people had to be evacuated during the floods and over 22,000 homes received flood damage. Total damage to homes and businesses was approximately \$800 million while another \$100 million was done to roads and bridges throughout southeast Texas.

2.6.4 Extent of Flooding

Flooding in Fort Bend County can result from the various types of flooding described in **Section 2.6.1**. Because of the flatness of the terrain, many inland areas are characterized by FEMA as shallow flooding during heavy rainfall. Flooding is most common after a short duration of heavy precipitation, with the typical rain total of nine inches for a 1% Annual Chance 6-hour rainfall, as shown in **Figure 7**. Flood magnitude is measured by flood depth in feet or inches. Flooding in the event of a levee failure could result in flood depths up greater than 5 feet for the 100 year rain event. In the event of pump failure, depending on the storm event, flooding could be shallow and expansive, but lasting for days.



**Figure 7 – Depth of Precipitation for 100-Year, 6-Hour Duration: Approximately 9 Inches
(Source: USGS Rainfall Atlas)**

2.6.5 Probability of Flooding

Probability:

- ☐ High: Event probable in next year.
- ☐ Medium: Event probable in next 5 years
- ☒ Low: Event possible in next 10 years.

Based on past events and the predicted precipitation, the probability of large rainfall events within the District's boundary is designated as highly likely. Fort Bend County has experienced 28 floods over a 10-year period, giving a frequency of two to three flood events per year. However, the protection provided by the levees and the pump stations make the probability of structural flooding within the District boundary relatively low.

2.6.6 Impact and Vulnerability Related to Flooding

Similar to the 2018 HMP, the impact of floods on the Plan area is not typical because of the protection provided by the levees. Typically, the District's flat topography and proximity to the Brazos River would make it prone to flooding. However, with the protection provided by the levees and internal pump station, the study area is likely only vulnerable if one of the following events were to occur:

- Levee failure due to breach;
- Levee failure due to river levels exceeding the elevation of the ends of the levee; or
- Failure or surcharge of the pump station.

The potential impacts of flooding include direct damages to structures and their contents, displacement of residents and businesses, and disruption of government services (including roads and infrastructure).

The District's vulnerability to floods is considered relatively high if one of the situations listed above occurs. If a flood event occurs, the entire study area could be inundated, including potentially several thousand residential structures. The District would be unable meet its responsibility to provide for the present and long term drainage needs in the planning area. **Table 9** shows the Critical Facilities protected by the District's levees and therefore vulnerable to flooding. Note that within the area protected by the District's levees, only one structure has ever been flooded; that incident occurred during Hurricane Harvey in 2017.

Table 9 – Critical Facilities Protected by the Levee in LID No. 7

Critical Facilities	Number
Schools	3
Banks	3
Grocery Stores	2
Gas Stations	2
Water and Wastewater Facilities	4

Climate Change Projections for two long-term climate scenarios were calculated using Climate Explorer data (NEMAC 2023) for number of days with greater than 3 inches of precipitation. One scenario describes a future in which humans stop increasing harmful emissions by 2040 and then continue to reduce emissions through the end of the century (Lower Emissions). The second scenario describes a future in which harmful emissions continue to increase through the end of the century (Higher Emissions). Climate Explorer. Another source was examined to determine the impacts of climate change on River flooding. The Environmental Protection Agency (EPA) developed an interactive map that examines the historical magnitude and frequency of river flooding in the U.S. since 1965 and climate change indicators during the same time. The data is consistent with the Climate Explorer data in that it shows little to no change in magnitude and frequency for River Flooding (U. S. Environmental Protection Agency 2023).

2.6.7 NFIP Repetitive Loss structures

As of April 2023, no Repetitive Loss (RL) structures were located within the boundary of the District.

2.7 Levee Failure

A levee is a man-made structure; usually an earthen embankment designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water to provide protection from temporary flooding.

Levee failure is a collapse or breach in the earthen structure resulting in the uncontrolled release of water, often resulting in floods that can exceed the 100-year floodplain boundaries. The breach may occur gradually or suddenly. The most dangerous breaches happen quickly, usually during high water. The District is bounded by a “u-levee” rather than a “ring levee”. In this situation the levee could fail if water levels in the adjacent Brazos River or Bullhead Bayou are high enough to flow around the end of the levee.

Many factors could lead to the earthen levees being damaged, and therefore compromised. Examples include erosion from strong river currents, impacts from debris carried by floodwaters, and even impacts from large objects such as boats or barges that collide with and gouge the levee. Some animals are known to burrow in levees, creating holes that enable water to pass through, and ultimately weakening the structure. Any of these weaknesses can lead to a levee breach.

2.7.1 Levee Failure Location

The District is responsible for operation and maintenance of the levees protecting the District. The potential levee failure locations can be assumed to be anywhere along the levees shown in **Figure 8**. The levee within the study area is approximately 3.75 miles long and approximately nine feet high. Particular consideration should be given to the ends of the levees, where water from the adjacent river has the potential to flow around the levee and into the protected neighborhoods.

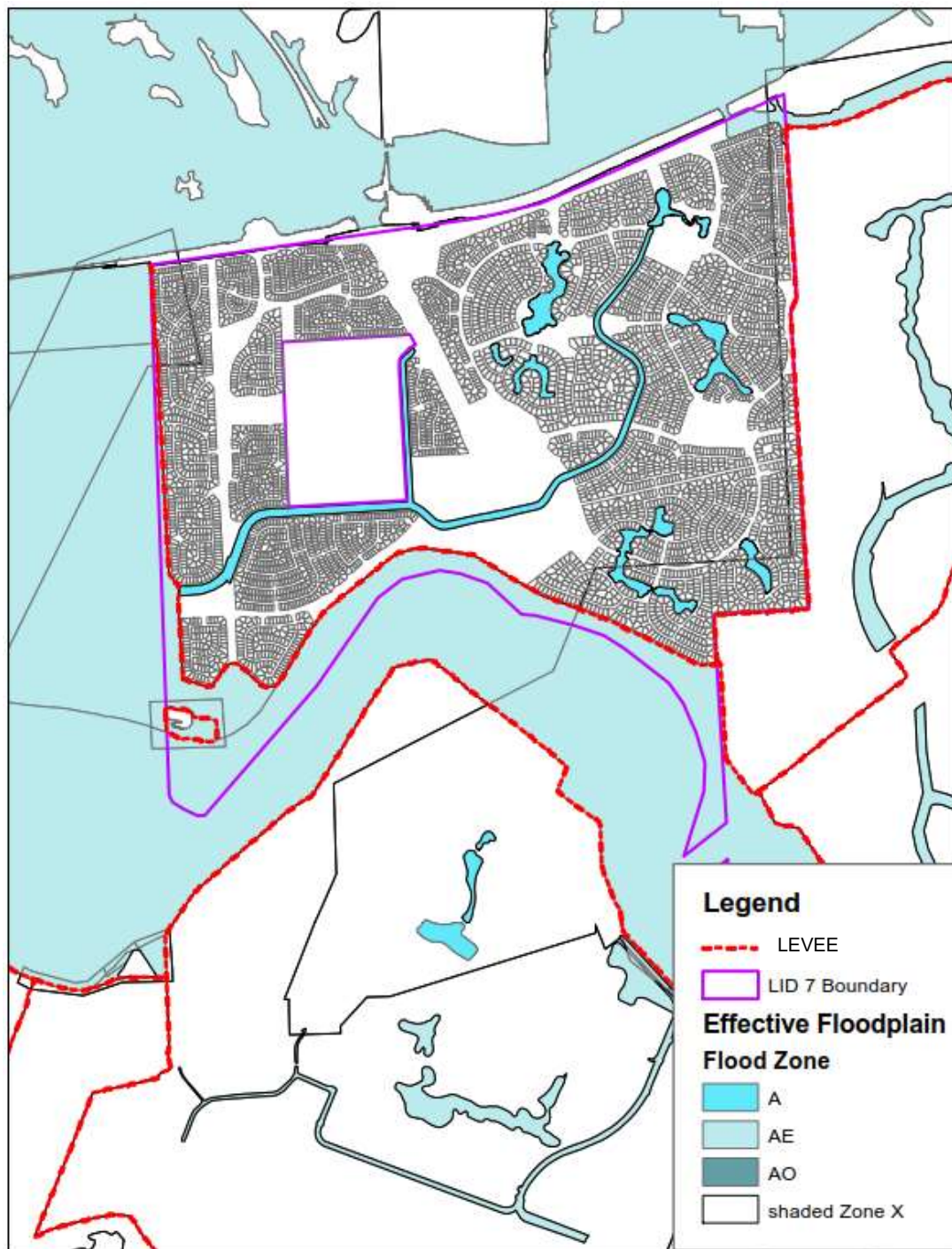


Figure 8 – Location of Levees in the Vicinity of FBCLID No. 7.

NOTE: No levee on North Side.

2.7.2 Extent of Levee Failure

The extent of levee failure can be determined by assessing the amount of area being protected by the levee, i.e. a greater amount of area being protected offers greater possibility for damage in the event of a failure. In the study area, there are more than 4,600 residences that could potentially be flooded if the levees failed, making the extent of flooding approximately 3.4 square miles. Flood magnitude is measured by flood depth in feet or inches. Based on existing models produced by the Brazos River Authority, the depth of flooding in the event of a levee failure can be expected to be greater than 5 feet throughout portions of the District.

2.7.3 Probability and Historical Levee Failure

Probability:

- ☐ High: Event probable in next year.
- ☐ Medium: Event probable in next 5 years
- ☒ Low: Event possible in next 10 years.

There are no historical levee breaches on record associated with the District's levee system; however, this hazard is still considered a possibility, in particular because recent large storm events have caused significant erosion of the banks of the Brazos River, causing it to migrate closer to the levee. There is also concern about the lack of protection on the north side of the District. The u-shape of the existing levee causes vulnerability, since the area protected by the District levees would be inundated if the water level in the Brazos River or Bullhead Bayou were to rise far enough to flow into the neighborhood from the north side. Seasonal flooding as well as cyclical droughts can degrade the levee condition, and the ability to function as the primary flood protection measure.

2.7.4 Impact and Vulnerability Related to Levee Failure

As was the case in the 2018 HMP, levee failure is the most significant hazard for the District to assess and be prepared for, as it has the potential to make the highest impact on the District's jurisdiction, and study area. All 4,600 parcels are vulnerable to flood damage in the event of levee failure. As the District's responsibility is flood protection, levee failure presents a very substantial secondary hazard of flooding in the event of a levee failure. More details on subsequent flooding found in **Section 2.6.1**.

The Levees must maintain accreditation with FEMA for the area to be shown on the map as a Shaded Zone X, a non-special flood hazard area. The loss of accreditation would change the Zone X to a Zone A which would return the entire area to a FEMA "floodplain". Within the study area there are more than 4,600 resident parcels currently protected by the levee shown in **Figure 8**, above.

Climate change could affect the safety of all levee structures. Specifically, significant changes in a region's climate or the increased frequency of heavy precipitation could seriously impact the integrity and viability of levees within the District.

3 Mitigation Strategy

3.1 District Mitigation Goals

State and federal guidance and regulations pertaining to mitigation planning require the development of a mitigation goal statement that is consistent with other goals, mission statements, and vision statements. In developing the goal statement for the first iteration of the HMP, the District reviewed FEMA's national mitigation goals, several examples of goal statements from other states and communities, and the State of Texas' Mitigation Goal.

3.1.1 Mitigation Goal Statement

The mitigation goals of the District are:

1. To protect public health, safety, and welfare;
2. To reduce losses due to hazards by identifying hazards, minimizing exposure of citizens and property to hazards, and increasing public awareness and involvement;
3. To seek solutions to potential levee safety risks and existing flooding problems;
4. To have shovel ready projects prepared for implementation if/when funding is available through the FEMA Hazard Mitigation Grant Program.

The District's mitigation goals remain unchanged from the previous iteration of the Plan.

3.2 State of Texas Mitigation Goals

The Texas Division of Emergency Management is designated by the Governor as the State's coordinating agency for disaster preparedness, emergency response, and disaster recovery assistance. TDEM also is tasked to coordinate the State's natural disaster mitigation initiatives and administer grant funding provided by FEMA. A key element in that task is the preparation of the State of Texas Hazard Mitigation Plan. The State's 2018 HMP update includes a series of mitigation goals, which augmented and expanded upon the mitigation goals from previous HMP iterations.

1. Goal 1 – Save lives and reduce public risk exposure from natural, technological, and human-caused hazard events.
2. Goal 2 – Reduce or prevent damage to public and private property from natural, technological, or human-caused hazard events.
3. Goal 3 – Empower units of local government to understand and effectively manage public risk exposure through the development of comprehensive mitigation action plans.
4. Goal 4 – Enhance the quality of vulnerability and risk assessments through the development and collection of data.
5. Goal 5 – Reduce adverse environmental, natural resource, and economic impacts from natural, technological, and human-caused hazard events.
6. Goal 6 – Empower citizens to make risk-informed decisions through public education and outreach activities.
7. Goal 7 – Enhance coordination between local, state, tribal, and federal agencies to understand the impact of hazards in Texas and develop policies and strategies to effectively manage risk.
8. Goal 8 – Reduce the number of Repetitive Loss and Severe Repetitive Loss properties through acquisition of real property from property owners, and demolition or relocation of buildings to convert the property to open space.

3.3 Federal Mitigation Goal

The Federal Emergency Management Agency's mitigation strategy is set forth in a document originally prepared in the late 1990s. This strategy is the basis on which FEMA implements mitigation programs authorized and funded by the U.S. Congress. The national mitigation goal statement is as follows:

- To engender fundamental changes in perception so that the public demands safer environments in which to live and work; and
- To reduce, by at least half, the loss of life, injuries, economic costs, and destruction of natural and cultural resources that result from natural disasters.

3.4 Previous Mitigation Actions

In the 2018 HMP, the District identified 13 actions and initiatives to reduce hazard vulnerabilities and improve mitigation capabilities. During the 2023 Update process, progress on the previous mitigation actions was evaluated by the MPC. **Table 10** provides the evaluation.

Table 10 – Previous Mitigation Actions

Action #	Mitigation Action	Hazard	Status	Include in 2023 HMP Update?	Comments
1	Pump Station Electrical Improvements	Flood, Hurricane, & Tropical Storms	Completed	N/A	
2	Northeast / Northwest Levee Improvements	Flood, Hurricane, & Tropical Storms, Levee Failure	In Progress	Yes	To be combined with North Levee Closure project (Item 8 in this table). Project is currently in preliminary engineering. Timeframe for project will be 5-10 years to completion.
3	Outfall Channel Erosion Control Project	Flood, Hurricane, & Tropical Storms, Levee Failure	In Progress	Yes	
4	Procure Additional Temporary Pumping Capacity	Flood, Hurricane, & Tropical Storms	Completed	N/A	
5	Maintain Ownership of Tiger Dams	Flood, Hurricane, & Tropical Storms, Levee Failure	Completed	N/A	
6	Integrate Emergency Notification System Through City of Sugar Land	Flood, Hurricane, & Tropical Storms, Levee Failure	N/A	No	LID7 was annexed by City of Sugar Land and is now part of its emergency notice system, additional information is now being distributed through the website.

Action #	Mitigation Action	Hazard	Status	Include in 2023 HMP Update?	Comments
7	Maintain Website to Disseminate Public Information	Flood, Hurricane, & Tropical Storms, Levee Failure	Completed	N/A	
8	North Levee Closure Project	Flood, Hurricane, & Tropical Storms, Levee Failure	In Progress	Yes	For 2023 HMP Update, this project will be combined with the Northeast/Northwest Levee Improvements project (Item 2 in this table) as part of the District's broader levee improvements.
9	Pump Station Capacity Enhancement Project	Flood, Hurricane, & Tropical Storms	In Progress	Yes	Anticipated completion date December 2023
10	Internal Detention Basin Project	Flood, Hurricane, & Tropical Storms	In Progress	Yes	Currently in plan approval phase, construction by end of 2023.
11	Brazos River Erosion Control Project	Flood, Hurricane, & Tropical Storms, Levee Failure	In Progress	Yes	Anticipated completion Fall 2024
12	Raise the Existing Levee	Flood, Hurricane, & Tropical Storms, Levee Failure	N/A	No	Original project was to provide additional freeboard, but recent studies (need to reference) indicate this might no longer be a priority.
13	Drainage System Capacity Restoration	Flood, Hurricane, & Tropical Storms	N/A	Yes	Engineer and operator to evaluate yearly on when to commence the project

3.5 Identifying Priority Actions

Each action item identifies an appropriate lead agency for each action, cost effectiveness, a schedule for completion and suggested funding sources. For this Plan, the MPC considered the "STAPLEE" methodology to prioritize mitigation actions. STAPLEE assesses actions based on six general criteria: Social, Technical, Administrative, Political, Legal, Economic, and Environmental. The criteria for prioritization are listed on each individual Mitigation Action Worksheet, in **Appendix F. Table 11** describes the STAPLEE methodology.

Table 101 – STAPLEE Methodology

STAPLEE	Criteria Explanation
S – Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.
T – Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
A – Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P – Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L – Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
E – Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.
E – Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

3.6 District Mitigation Actions

All District Mitigation Actions were reported on Mitigation Action Worksheets consistent with associated worksheets to provide further detail, seen in Appendix F. A summary table of all proposed mitigation actions is shown in **Table 12**. For more detailed descriptions and evaluation of each Mitigation Action, see worksheets in **Appendix F**.

Table 112 – Proposed District Mitigation Actions

Number	Mitigation Action	Hazard	Estimated Cost	Time (years)
1	North / Northeast / Northwest Levee Improvements	Flood, Hurricane & Tropical Storms, Levee Failure	\$25,200,000	Preliminary Design Ongoing Construction Complete in 3-5 years
2	Outfall Channel Erosion Control Project	Flood, Hurricane & Tropical Storms, Levee Failure	\$5,000,000	Construction Ongoing Complete in 1 year
3	Pump Station Capacity Enhancement Project	Flood, Hurricane & Tropical Storms	\$28,000,000	Construction Ongoing Complete in 6 months
4	Internal Detention Basin Project	Flood, Hurricane & Tropical Storms	\$13,800,000	Construction Ongoing Complete in 6 months
5	Brazos River Erosion Control Project	Flood, Hurricane & Tropical Storms, Levee Failure	\$60,000,000	Construction Ongoing Complete in 18 months

Number	Mitigation Action	Hazard	Estimated Cost	Time (years)
6	Drainage System Capacity Restoration	Flood, Hurricane & Tropical Storms	\$4,200,000	5 – 10 years
7	Pump Station in High Meadows	Flood, Hurricane & Tropical Storms	TBD	5 - 10 years

The costs shown in **Table 12** are preliminary planning-level estimates of construction cost, and may not include all costs associated with each action. If and when each project advances, the actual costs of each action may increase or decrease.

The District has pursued funding sources through FEMA, the GLO, and other local funds. As funding becomes available for the projects, the District's Board of Directors will vote to approve the project. The District's Project Manager for the District and Engineer for the District will manage projects through the various phases of development, design, and implementation.

APPENDIX A: PLANNING TEAM MEETINGS

Agenda

Meeting name

FBCLID 7 Hazard Mitigation Update Planning

Subject

FBCLID 7 Hazard
Mitigation Update
Planning

Meeting date

March 8, 2023

Time

3:00 PM

Location

Teams Meeting

Attendees

AECOM – Tyson Duncan, Ed Panuska

FBCLID7 – Phil Martin, Kane Mudd, Craig Kalkomey

Agenda

1. Introductions
2. Introduction to Hazard Mitigation Plan Update
3. Preliminary Schedule
4. Data Updates
5. Previous Mitigation Action Status Updates
6. Proposed Mitigation Action Status Updates

Agenda

Meeting name FBCLID 7 Hazard Mitigation Planning	Subject FBCLID 7 Hazard Mitigation Planning
Meeting date March 31, 2023	Time 10:00 AM
Location Teams Meeting	

Attendees:
AECOM – Tyson Duncan, Ed Panuska
City of Sugarland – Robert wilson, Gabriel Lavine, Caroline Egan
FBCLID7 – Phil Martin, Kane Mudd

Agenda

1. Introductions
2. Overview of Hazard Mitigation Update Process
3. Confirmation of stakeholder positions
4. Coordination discussion
5. Request for supporting data
6. Update schedule

APPENDIX B: PUBLIC INVOLVEMENT

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

Minutes of Meeting of Board of Directors April 6, 2023

The Board of Directors (the "Board") of Fort Bend County Levee Improvement District No. 7 (the "District") met in regular session at The Club of New Territory, 1200 Walker School Road, Sugar Land, Texas 77479, an official meeting place of the Board, on April 6, 2023, in accordance with the duly posted Notice of Public Meeting, and the roll was called of the duly constituted officers and members of the Board, as follows:

Cindy Picazo, Chairman
Gerald Kazmierczak, Vice-Chairman
Nathan Bedee, Secretary
Jeffrey Hanig, Assistant Secretary
James R. Grotte, Director

and all of said persons were present, thus constituting a quorum.

Also present were: Phil Martin of Mike Stone Associates, Inc. ("MSA"); Kane Mudd of LJA Engineering, Inc. ("LJA"); Ed Panuska and Tyson Duncan of AECOM Technical Services, Inc. ("AECOM"); Brittany Keeswood of Assessment of the Southwest, Inc. ("ASW"); Jeff Perry and Michael Brooks of Levee Management Services, LLC ("LMS"); Rick Marriott of Si Environmental, LLC ("SE"); Calep Estes and Angie Hartwell of Touchstone District Services, LLC ("Touchstone"); Sherri Greenwood of FORVIS, LLP, f/k/a BKD, LLP ("FORVIS"); Michael Cassidy, resident of the District and President of the New Territory Residential Communication Association, Inc. ("NTRCA"); numerous members of the public; and Christopher Skinner of Schwartz, Page & Harding, L.L.P. ("SPH").

The Chairman called the meeting to order and declared it open for such business as might regularly come before the Board.

PUBLIC COMMENTS

No public comments were offered.

MINUTES

As the next order of business, the Board considered approving the minutes of the Board meetings held on March 2, 2023, and March 21, 2023. After discussion, Director Kazmierczak moved to approve the draft minutes from said meetings, as written. Director Bedee seconded said motion, which carried unanimously.

TAX ASSESSOR-COLLECTOR REPORT

Ms. Keeswood presented to and reviewed with the Board the Tax Assessor-Collector Report ("TAC Report") for the period ended March 31, 2023, a copy of which TAC Report is

attached hereto as **Exhibit A**, including the disbursements presented for payment from the District's tax account and a list of delinquent taxpayers. After discussion, Director Kazmierczak moved that the TAC Report be approved and that the disbursements identified therein be approved for payment from the District's tax account. Director Bedee seconded said motion, which unanimously carried.

DELINQUENT TAX COLLECTIONS REPORT

The Board deferred consideration of the Delinquent Tax Report from Perdue, Brandon, Fielder, Collins & Mott L.L.P. ("Perdue"). Mr. Skinner informed the Board that the report is presented quarterly and the next report should come for the June regular meeting.

RESOLUTION AUTHORIZING AN ADDITIONAL PENALTY ON DELINQUENT REAL PROPERTY TAXES

The Board considered the adoption of a Resolution Authorizing an Additional Penalty on Delinquent Real Property Taxes. Mr. Skinner advised that the Board is authorized, pursuant to Section 33.07 of the Texas Tax Code, as amended, to impose, under certain conditions on July 1, an additional penalty not to exceed twenty percent (20%) of the total taxes, penalty and interest due the District on taxes that remain delinquent as of July 1 of the year in which they became delinquent. He noted that the additional penalty to be imposed by this Resolution will not apply to delinquent personal property taxes which have incurred an additional penalty pursuant to that certain Resolution Authorizing an Additional Penalty on Delinquent Personal Property Taxes, which was passed and approved by the District on January 5, 2023. After further discussion, it was moved by Director Bedee, seconded by Director Picazo and unanimously carried, that the Resolution Authorizing an Additional Penalty on Delinquent Real Property Taxes, attached hereto as **Exhibit B**, be adopted by the District, and that Perdue be authorized to proceed with the collection of the District's 2022 delinquent real property tax accounts on July 1, 2023, subject to proper notice having been given as provided in said Resolution, including the filing of lawsuits as necessary.

BOOKKEEPER'S REPORT

Ms. Greenwood presented to and reviewed with the Board a Bookkeeper's Report, dated April 6, 2023, prepared by FORVIS, a copy of which Report is attached hereto as **Exhibit C**. After discussion, Director Bedee moved that the Bookkeeper's Report be approved, and the checks and wires reviewed by the Board be authorized for payment, as discussed. Director Grotte seconded said motion, which unanimously carried.

STORM WATER MANAGEMENT PLAN ("SWMP")

The Board deferred consideration of any matters related to the District's Storm Water Management Plan.

ANNUAL MAINTENANCE FOR ARBITRAGE ANALYSIS REPORT

Mr. Skinner presented to and reviewed with the Board an Annual Maintenance and Arbitrage Analysis Report ("Report") from Municipal Risk Management Group, L.L.C.

("MRMG") dated March 20, 2023, a copy of which Report is attached hereto as **Exhibit D**, relative to arbitrage rebate and/or yield restriction regulations in connection with the District's various outstanding bond issues. In connection therewith, Mr. Skinner presented to and reviewed with the Board a proposed engagement letter from Arbitrage Compliance Services, Inc. ("ACS"), attached hereto as **Exhibit E**, for preparation of arbitrage compliance computations as required by the Internal Revenue Service and relative to the District's \$12,150,000 Unlimited Tax Levee Improvement Bonds, Series 2018. After discussion of the matter, Director Kazmierczak moved that the Board (i) approve the engagement of ACS for said arbitrage rebate services per the terms of the engagement letters, subject to the receipt of ACS' Texas Ethics Commission ("TEC") Form 1295, (ii) the Chairman be authorized to execute the engagement letter on behalf of the Board and the District, and (iii) SPH be authorized to acknowledge ACS' TEC Form 1295 with the TEC. Director Bedee seconded said motion, which unanimously carried.

Mr. Skinner discussed with the Board that the District potentially may owe rebate payments to the Internal Revenue Service in the current interest rate market as to interest earnings on bond proceeds compared to lower rates at which recent bonds were sold, and advised that MRMG is monitoring same for the District.

DISCUSSION REGARDING COMMISSIONER DEXTER L. MCCOY EVENT

Mr. Skinner advised the Board that Commissioner Dexter L. McCoy plans to host an event on Tuesday, April 18, 2023, beginning at 6:00 p.m. at The Club of New Territory, which conflicts with the special meeting to be held beginning at 5:30 p.m. at the City Hall of the City of Sugar Land. He advised that Director Picazo will coordinate alternative meeting dates and options with Commissioner McCoy's office.

FINANCIAL MANAGEMENT PLAN

Regarding the District's application to Federal Emergency Management Agency ("FEMA") for assistance through the Hazard Mitigation Grant Program ("HMGP") administered through the Texas Department of Emergency Management, Mr. Martin reported that the District received an award letter dated March 23, 2023 from Texas Division of Emergency Management ("TDEM") (the "Award Letter") awarding \$59,9255,000.00 (with the 75% Federal Share being \$44,943,750.00, and the 25% District Share being \$14,981,250.00) from FEMA for Phase II of said HMGP for financial assistance in construction of the Brazos River Bank Erosion Control Project. In connection therewith, Mr. Skinner presented to and reviewed with the Board the provisions of the Award Letter and the proposed Grant Terms and Conditions (the "Grant Agreement"). Mr. Skinner also discussed with the Board the District's project financing options and issues associated therewith. After discussion on the matter, Director Kazmierczak moved to approve the Award Letter and Grant Agreement and authorize the Chairman to execute same on behalf of the District and the Board. Director Bedee seconded said motion, which unanimously carried.

Director Grotte advised Mr. Cassidy of the projected construction timeline for said project relative to the planned closure of the soccer fields and other recreational facilities.

OPERATIONS AND MAINTENANCE REPORTS

Mr. Perry presented to and reviewed with the Board a written Operations and Maintenance Report dated April 6, 2023, regarding maintenance performed on levee and drainage facilities throughout the District. A copy of such Operations and Maintenance Report is attached hereto as **Exhibit F**. Following discussion, Director Grotte moved to authorize LMS to perform repairs to a sinkhole at Lakewind Lake at an amount not to exceed \$15,000, subject to Mr. Perry confirming that the NTRCA will be responsible for fifty-percent (50%) of the total cost of the repairs, per the Detention Pond Maintenance Agreement between the District and the NTRCA. Director Picazo seconded said motion, which unanimously carried.

Mr. Marriott presented to and reviewed with the Board the Operations Report for the month of March 2023, relative to the District's Reclaimed Water System. A copy of such Operations Report is attached hereto as **Exhibit G**.

CAPITAL IMPROVEMENTS PROJECTS

Mr. Martin next presented to and discussed with the Board the Project Manager's Activity Report dated April 6, 2023, a copy of which report is attached hereto as **Exhibit H**.

Messrs. Duncan and Panuska conducted the Hazard Mitigation Plan Planning Kick-Off Meeting related to the renewal of the District's Hazard Mitigation Plan. Attached hereto as **Exhibit I** is the Hazard Mitigation Plan Update Planning Kick-off Meeting agenda.

Mr. Mudd presented to and discussed with the Board the Engineering Report dated April 6, 2023, a copy of which is attached hereto as **Exhibit J**. Regarding the construction of the additional Stormwater Pump Station in the Crescent Ridge subdivision (the "Stormwater Pump Station Project"), following discussion, Director Kazmierczak moved to approve: (i) Pay Estimate No. 8 (\$598,500.00) and Change Order No. 1 (\$21,513.76) from NBG Constructors, Inc., as recommended by LJA. Director Bedee seconded said motion, which unanimously carried.

Regarding the External Drainage Channel Erosion Control Project, Director Kazmierczak moved to authorize the Chairman of the Board to execute a Verification of Interrogatories from CS Britton, and future written discovery responses, as recommended by litigation counsel. Director Bedee seconded said motion, which unanimously carried.

ATTORNEY'S REPORT

The Board next considered the attorney's report. In connection therewith, Mr. Skinner reminded the Board that cybersecurity training is required annually by Chapter 2054, Texas Government Code, and should be completed by August 31, 2023. He requested that the directors submit their cybersecurity training certificates to SPH upon completion of the training course.

WEBSITE AND COMMUNICATION MATTERS

Ms. Hartwell presented to and reviewed with the Board Touchstone's Communications Report, a copy of which is attached hereto as **Exhibit K**.

CLOSED SESSION

The Board concurred that a Closed Session would not be required in connection with the matters discussed at the meeting.

FUTURE AGENDA ITEMS

The Board considered items for placement on future agendas. The Board instructed Mr. Skinner as to the matters to place on the April 18, 2023, meeting agenda.

ADJOURNMENT

There being no further business to come before the Board, on motion made by Director Hanig, seconded by Director Bedee and carried unanimously, the meeting was adjourned.

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Secretary
Board of Directors

LIST OF ATTACHMENTS TO MINUTES

EXHIBIT A	Tax Assessor/Collector Report
EXHIBIT B	Resolution Authorizing an Additional Penalty on Delinquent Real Property Taxes
EXHIBIT C	Bookkeeper's Report
EXHIBIT D	Annual Maintenance and Arbitrage Analysis Report
EXHIBIT E	ACS Engagement Letter
EXHIBIT F	LMS Operation and Maintenance Report
EXHIBIT G	SE Operations Report
EXHIBIT H	MSA Report
EXHIBIT I	Hazard Mitigation Plan Update Planning Kick-off Meeting agenda
EXHIBIT J	LJA Engineering
EXHIBIT K	Communications Report

FBLID 7 - Hazard Mitigation Plan Update

Posted: April 13, 2023

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All Posts



LID 7

AECOM

Fort Bend County Levee Improvement District No. 7 Hazard Mitigation Plan Update

APRIL 18, 2023

NOTICE:
LID 7 is updating our 2018 HMP. We anticipate the following opportunities for public involvement:

Tentative Schedule

- Public Meeting for Information on the HMP Update (April 18)
- 2023 HMP (Draft) Uploaded to LID 7 Website for Public Comment (April 24)
- HMP Update Status Meeting (May 4)
- Public Meeting for Draft HMP (May 16)
- Submit HMP for Agency Review (May 26)

UPDATE:

A draft of the hazard mitigation plan update is now available.

Hazard Mitigation Plan Update 2023
(Draft)

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

NOTICE OF SPECIAL PUBLIC MEETING

Notice is hereby given to all interested members of the public that the Board of Directors (the "Board") of the above captioned District will hold a special public meeting at City Hall of the City of Sugar Land, Texas, 2700 Town Center Boulevard, Sugar Land, Texas 77479, said address being an official meeting place of the District.

The meeting will be held on **Tuesday, April 18, 2023, at 5:30 P.M.**

The Board shall consider and discuss the following matters and take any action necessary or appropriate with respect to such matters:

1. **PUBLIC COMMENTS;**
2. **GENERAL, ADMINISTRATIVE AND FINANCIAL MANAGEMENT;**
 - A. Financial Management Plan and implementation of same, including bond funding, change of use of construction funds, and grant funding; status of FEMA Hazard Mitigation Grant Program (administered through TDEM) related to Brazos River Bank Erosion Control Project, and Flood Infrastructure Fund Financial Commitment from Texas Water Development Board for Detention and Drainage Improvements and Facilities;
 - (i) Status of Hazard Mitigation Plan Update;
 - B. Discussion regarding scope of services rendered by Mike Stone Associates, Inc.
3. **CAPITAL IMPROVEMENT PROJECTS,** including consideration of Task Order(s) proposed by Mike Stone Associates, Inc., AECOM Technical Services, Inc., or LJA Engineering, Inc.
 - A. Brazos River Bank Erosion Control Project, including:
 - (i) Project Manager's Report; and
 - (ii) Status of acquisition of land east of Grand Parkway Bridge at the request of New Territory Residential Community Association, Inc. ("NTRCA");
 - B. External Drainage Channel Erosion Control Project, including:
 - (i) Project Manager's Report; and
 - (ii) Resolution of issues related to repairing erosion failure of channel improvements, including related lawsuit against design engineer and contractors; financing of said repairs; consider change orders and pay estimates regarding same;

- C. New Stormwater Pump Station Project, including:
 - (i) Status of financing and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders;
- D. Detention and Drainage Improvements and Facilities, including:
 - (i) Status of design, financing and scheduling; and
 - (ii) Site access and acquisition;
- E. Reclaimed Water Project, including:
 - (i) Status of design and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders; acceptance of Texas Ethics Commission Form 1295, and any related storm-water permits;
- F. Flood protection improvements for northern boundary, including status of preliminary engineering report;
- G. Review of plans for improvements submitted by developers/builders;

4. **ATTORNEY'S REPORT;**

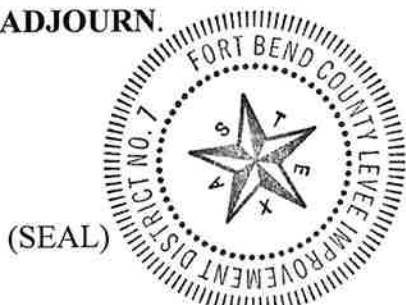
5. **WEBSITE AND COMMUNICATIONS MATTERS;**

6. **CLOSED SESSION** – The Board reserves the right to adjourn to Closed Session at any time during the course of this meeting in accordance with the Texas Open Meetings Act, including Texas Government Code Section 551.071 (Consultation with Attorney regarding Pending or Contemplated Litigation or Matters Protected by Attorney-Client Privilege); and Section 551.072 (Deliberations regarding Acquisition of Real Property Interests);

7. **RECONVENE IN OPEN SESSION** – The Board will reconvene in Open Session, and if necessary, take action on any agenda item discussed in Closed Session;

8. **ANNOUNCEMENTS / FUTURE AGENDA;** and

9. **ADJOURN.**



SCHWARTZ, PAGE & HARDING, L.L.P.

By: Christopher T. Skinner
 Christopher T. Skinner
 Attorney for the District

Persons with disabilities who plan to attend this meeting and would like to request auxiliary aids or services are requested to contact the District's attorney at (713) 623-4531 at least three business days prior to the meeting so that appropriate arrangements can be made.

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

Minutes of Special Meeting of Board of Directors
April 18, 2023

The Board of Directors (the "Board") of Fort Bend County Levee Improvement District No. 7 (the "District") met in special session at the City Hall of the City of Sugar Land, Texas, 2700 Town Center Boulevard, Sugar Land, Fort Bend County, Texas, 77479, an official meeting place of the Board, on April 18, 2023, in accordance with the duly posted Notice of Special Public Meeting, and the roll was called of the duly constituted officers and members of the Board, as follows:

Cindy Picazo, Chairman
Gerald Kazmierczak, Vice-Chairman
Nathan Bedee, Secretary
Jeffrey Hanig, Assistant Secretary
James R. Grotte, Director

and all of said persons were present, thus constituting a quorum.

Also present were: Phil Martin and Mike Stone of Mike Stone & Associates, Inc. ("MSA"); Kane Mudd of LJA Engineering, Inc. ("LJA"); Tyson Duncan, Jeff Masek and Ed Panuska of AECOM Technical Services, Inc. ("AECOM"); Calep Estes and Angie Hartwell of Touchstone District Services, LLC ("Touchstone"); and Christopher Skinner and Matthew Reed of Schwartz, Page & Harding, L.L.P. ("SPH").

The Chairman called the meeting to order and declared it open for such business as might regularly come before the Board.

PUBLIC COMMENTS

The Board began by opening the meeting for public comments. No public comments were offered.

GENERAL, ADMINISTRATIVE AND FINANCIAL MANAGEMENT

Messrs. Martin and Mudd reported on the status of the District's applications for financial assistance from various governmental entities for capital improvement projects. Mr. Duncan presented shareholder meeting slides regarding the District's renewal of its Hazard Mitigation Plan.

Mr. Martin presented for discussion a proposed Task Order No. 12 from MSA to provide additional management services to the District. Following discussion, the Board deferred consideration of said Task Order No. 12 at this time.

CAPITAL IMPROVEMENT PROJECTS

Mr. Martin presented to and reviewed with the Board the Project Manager's Activity Report dated April 18, 2023, prepared by MSA, a copy of which report is attached hereto as **Exhibit A**.

Mr. Mudd presented to and reviewed with the Board an Engineering Report dated April 18, 2023, prepared by LJA, a copy of which report is attached hereto as **Exhibit B**.

Regarding the Brazos River Bank Erosion Control project, following discussion, Director Kazmierczak moved to authorize AECOM to advertise for bids for the construction of improvements related to said project. Director Bedee seconded said motion, which unanimously carried.

ATTORNEY'S REPORT

The Board next considered the attorney's report. In connection therewith, Mr. Skinner advised that he has no additional items that have not already been discussed.

WEBSITE AND COMMUNICATION MATTERS

The Board authorized Touchstone to prepare and post on the District's website an update on construction of drainage and detention improvements and facilities within the District.

CLOSED SESSION

The Board concurred that a Closed Session would not be required in connection with the matters discussed at the meeting.

FUTURE AGENDA ITEMS

The Board considered items for placement on future agendas. The Board instructed Mr. Skinner as to the matters to place on the May 4, 2023, meeting agenda.

ADJOURNMENT

There being no further business to come before the Board, on motion made by Director Bedee, seconded by Director Hanig and carried unanimously, the meeting was adjourned.




Secretary, Board of Directors

LIST OF ATTACHMENTS TO MINUTES

- | | |
|-----------|------------------------|
| EXHIBIT A | MSA Activity Report |
| EXHIBIT B | LJA Engineering Report |



AECOM

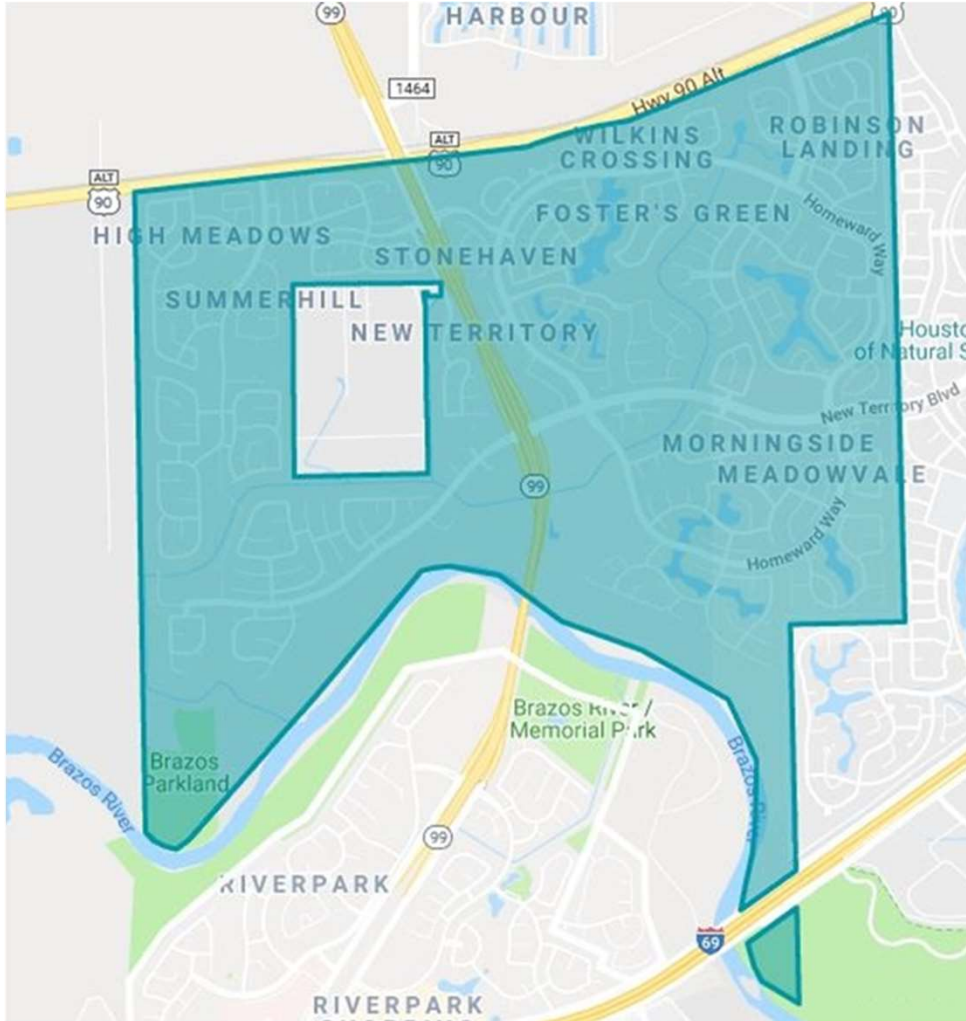
An aerial photograph of a flooded area, likely a river or bayou, with a bridge crossing it. The water is a muddy brown color, and the surrounding area is filled with green trees and vegetation. In the background, some residential or commercial buildings are visible. The bridge has a few vehicles on it, and there are some construction or maintenance vehicles near the right side of the bridge.

Fort Bend County Levee Improvement District No. 7 Hazard Mitigation Plan Update

Stakeholder Meeting

April 24, 2023

INTRODUCTIONS



- Fort Bend County Levee Improvement District No. 7 (LID 7)
- Participating Stakeholders

Organization
New Territory Residential Community Association
City of Sugar Land
City of Sugar Land Police Department
City of Sugar Land Emergency Management Coordinator
Fort Bend County Emergency Operations
Fort Bend County
Fort Bend County Drainage District
Fort Bend County Toll Road Authority
FBC LID 2
FBC LID 17
FBC LID 11
FBC LID 10
FBC MUD 121
Brazos River Authority

GOALS FOR MEETING

- Notify the stakeholders of LID 7's hazard mitigation planning efforts
- Update the stakeholders on mitigation actions under consideration by LID 7
- Discuss opportunities for coordination or collaboration
- Review schedule for remaining steps in hazard mitigation plan update process



HAZARD MITIGATION PLAN (HMP) UPDATE

- First iteration of the LID 7 HMP was created in consultation with the public and relevant stakeholders throughout 2018. Approved by FEMA in December 2018.
- HMP updates required every five years by FEMA in order to maintain funding eligibility
- Supports better understanding of hazards and risks, and how both have changed since HMP's original iteration
- Previous Plan included the following hazards:
 - Flooding
 - Hurricane/Tropical Storm
 - Levee Failure
- Provides update on status of previous mitigation activities included; identifies news mitigation activities for future consideration



Local Mitigation Planning Handbook

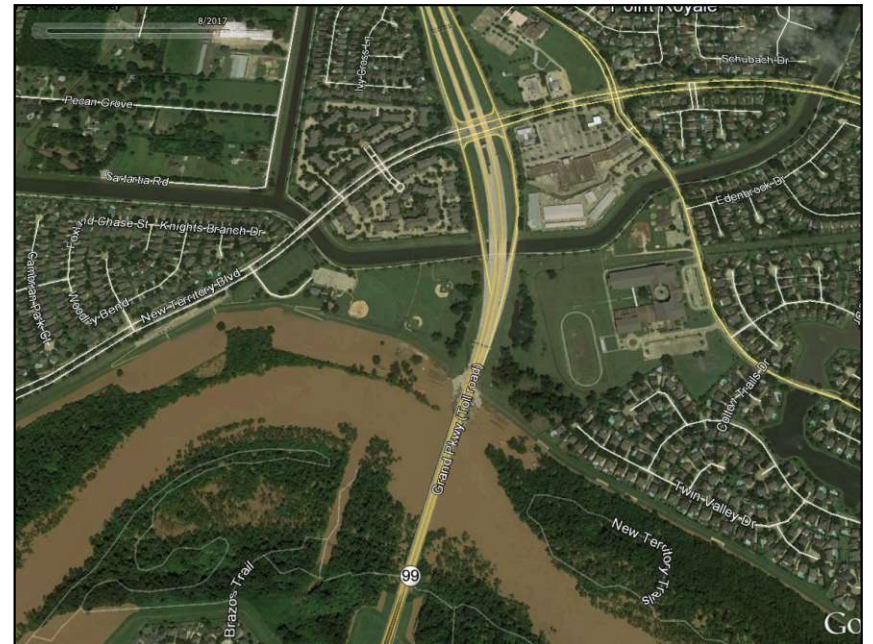
March 2013



FEMA

PAST DISASTERS

- May 7th Flash Flooding (2019)
- Hurricane Harvey (2017)
- Tax Day Flood (2016)
- Memorial Day Floods (2015 and 2016)



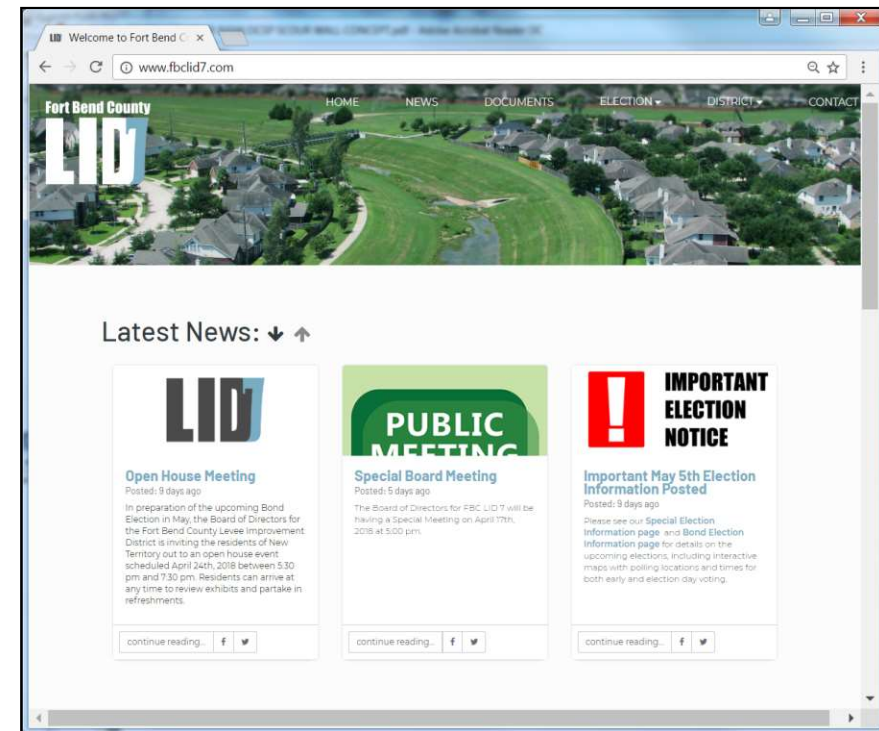
MITIGATION ACTIVITIES

Capital Projects

- Brazos River Bank Stabilization
- North Levee Closure
- Pump Station / Detention Improvements
- External Channel Erosion Repair

Other Activities

- Communication Improvements
- Temporary Protection Measures



LID 7 HAZARD MITIGATION PLAN UPDATE

- 2018 Iteration Contained 13 Mitigation Activities

2018 Mitigation Action Updates					
Action #	Action / Description	Hazard	Original Estimated Cost	Original Timeframe	Status
1	Pump Station Electrical Improvements	Flood, Hurricane, & Tropical Storms	\$100,000-\$500,000	1 - 2 years	Completed
2	Northeast / Northwest Levee Improvements	Flood, Hurricane, & Tropical Storms, Levee Failure	\$3,000,000	1 - 3 years	Started
3	Outfall Channel Erosion Control Project	Flood, Hurricane, & Tropical Storms, Levee Failure	\$3,000,000	1 - 2 years	Started
4	Procure Additional Temporary Pumping Capacity	Flood, Hurricane, & Tropical Storms	<\$500,000	1 - 2 years	Completed
5	Maintain Ownership of Tiger Dams	Flood, Hurricane, & Tropical Storms, Levee Failure	<\$500,000	1 - 2 years	Completed
6	Integrate Emergency Notification System Through City of Sugar Land	Flood, Hurricane, & Tropical Storms, Levee Failure	<\$100,000	1 - 2 years	N/A
7	Maintain Website to Disseminate Public Information	Flood, Hurricane, & Tropical Storms, Levee Failure	<\$100,000	1 - 2 years	Completed
8	North Levee Closure Project	Flood, Hurricane, & Tropical Storms, Levee Failure	\$15,000,000	1 - 5 years	Started
9	Pump Station Capacity Enhancement Project	Flood, Hurricane, & Tropical Storms	\$7,000,000	1 - 5 years	Started
10	Internal Detention Basin Project	Flood, Hurricane, & Tropical Storms	\$7,000,000	1 - 5 years	Started
11	Brazos River Erosion Control Project	Flood, Hurricane, & Tropical Storms, Levee Failure	\$55,000,000	1 - 5 years	Started
12	Raise the Existing Levee	Flood, Hurricane, & Tropical Storms, Levee Failure	\$25,000,000	5 - 10 years	N/A
13	Drainage System Capacity Restoration	Flood, Hurricane, & Tropical Storms	\$3,000,000	5 - 10 years	Have not started

- Additional Mitigation Activities Proposed for 2023 Update

New Mitigation Actions for 2023				
Action #	Action / Description	Hazard	Cost	Timeframe
1	Pump Station in High Meadows	Flood, Hurricane, & Tropical Storms	TBD	5 - 10 years

SCHEDULE

- Stakeholder Meeting – **April 24th, 2023 2:30 pm**
- Revise and post Draft HMP according to stakeholder comments – **Week of April 24th**
- HMP Update Status Meeting – **May 4th**
- Public Meeting for Draft HMP – **May 16th**
- Finalize HMP and Submit to TDEM – **May 26th**



OPPORTUNITIES FOR PUBLIC INPUT

- Review and comment on Draft HMP (posted on the LID 7 website)
- Discussion / comment cards at Public Meeting (May 16)
- Discussion with LID 7 Directors or the Planning Team
- Continued discussion at Board Meetings until Final HMP is officially adopted



DISCUSSION / QUESTIONS

ed.panuska@aeecom.com
tyson.duncan@aeecom.com

<http://www.fbclid7.com/>

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

Minutes of Meeting of Board of Directors
May 4, 2023

The Board of Directors (the "Board") of Fort Bend County Levee Improvement District No. 7 (the "District") met in regular session at the City Hall of the City of Sugar Land, Texas, 2700 Town Center Boulevard, Sugar Land, Fort Bend County, Texas, 77479, an official meeting place of the Board, on May 4, 2023, in accordance with the duly posted Notice of Public Meeting, and the roll was called of the duly constituted officers and members of the Board, as follows:

Cindy Picazo, Chairman
Gerald Kazmierczak, Vice-Chairman
Nathan Bedee, Secretary
Jeffrey Hanig, Assistant Secretary
James R. Grotte, Director

and all of said persons were present, except Director Hanig, thus constituting a quorum.

Also present were: Phil Martin of Mike Stone Associates, Inc. ("MSA"); Kyle Kraus of LJA Engineering, Inc. ("LJA"); Ed Panuska and Tyson Duncan of AECOM Technical Services, Inc. ("AECOM"); Brittany Keeswood of Assessment of the Southwest, Inc. ("ASW"); Jeff Perry of Levee Management Services, LLC ("LMS"); Rick Marriott of Si Environmental, LLC ("SE"); Calep Estes and Angie Hartwell of Touchstone District Services, LLC ("Touchstone"); Sherri Greenwood of FORVIS, LLP ("FORVIS"); Alence Poudel of the City of Sugar Land Engineering Department; Michael Cassidy, resident of the District and President of the New Territory Residential Communication Association, Inc. ("NTRCA"); Susheem Mehta, a District resident and prospective Director; other members of the public; and Christopher Skinner and Matthew Reed of Schwartz, Page & Harding, L.L.P. ("SPH").

The Chairman called the meeting to order and declared it open for such business as might regularly come before the Board.

PUBLIC COMMENTS

No public comments were offered.

MINUTES

As the next order of business, the Board considered approving the draft minutes of the Board meetings held on April 6, 2023, and April 18, 2023. Mr. Reed noted revisions to be made to the minutes of the April 6, 2023 meeting. After discussion, Director Grotte moved to approve the draft minutes for the April 6, 2303 meeting, as revised, and the April 18, 2023 meeting, as written. Director Kazmierczak seconded said motion, which carried unanimously.

DIRECTOR RESIGNATION

There was next presented to the Board the resignation of Jeffrey Hanig as a Director of the District and as Assistant Secretary of the Board, to be effective immediately. Upon motion duly made by Director Kazmierczak, seconded by Director Bedee and unanimously carried, said resignation was accepted.

ACCEPTANCE OF OFFICIAL BOND, STATEMENT OF APPOINTED OFFICER, AFFIDAVIT OF CURRENT DIRECTOR, ELECTION NOT TO DISCLOSE CERTAIN INFORMATION AND OATH OF OFFICE

The Board next considered the acceptance of the Qualification Statement, Official Bond, Oath of Office, Affidavit of Current Director and Election Not to Disclose Certain Information for Susheem Mehta. In that regard, Mr. Mehta presented his Statement of Appointed Officer, Official Bond, Oath of Office, Affidavit of Current Director and Election Not to Disclose Certain Information, then took his Oath of Office. It was then moved by Director Picazo, seconded by Director Kazmierczak and unanimously carried, that the Board accept said Statement of Appointed Officer, Official Bond, Oath of Office, Affidavit of Current Director and Election Not to Disclose Certain Information and declare Susheem Mehta to be duly appointed and a qualified Director of the District (Director Precinct 3) to serve for the remainder of Director Hang's term ending the first Saturday in May, 2024.

PREPARATION AND MAINTENANCE OF LOCAL GOVERNMENT OFFICERS LIST

Mr. Skinner next advised the Board that, pursuant to amendments to Chapter 176 of the Texas Local Government Code, the District is required to maintain a list of Local Government Officers, which includes the members of the Board and the District's Investment Officers in connection with statutory changes in conflict of interest disclosure requirements. After discussion on the matter, Director Picazo moved that the District prepare and maintain a list of local government officers, as required by law. Director Kazmierczak seconded said motion, which unanimously carried.

DISTRICT REGISTRATION FORM

The Board next considered approving a District Registration Form. Mr. Skinner explained that levee improvement districts are required to file names, mailing addresses, officer positions and the terms of office of appointed or re-elected directors with the Texas Commission on Environmental Quality (the "TCEQ") within thirty days (30) after an election or appointment. He advised that, with the Board's approval, SPH will complete the District Registration Form to reflect Director Mehta's term of office and file same with the TCEQ. After further discussion of the matter, Director Picazo moved that the Board authorize SPH to complete the District Registration Form, as discussed, and file same with the TCEQ. Director Kazmierczak seconded said motion, which unanimously carried.

OPEN GOVERNMENT TRAINING FOR DIRECTOR

Mr. Skinner discussed with the Board the open government training requirements for public officials. Mr. Skinner advised that public officials, including directors of a levee

improvement district, must complete separate training courses regarding the Texas Open Meetings Act ("OMA") and the Texas Public Information Act ("PIA"). Mr. Skinner presented and reviewed with the Board a Memorandum prepared by SPH which summarizes the training requirements. Mr. Skinner advised that the deadline for public officials to complete their training is the 90th day after they either take their oath of office or otherwise assume their responsibilities as a public official. Mr. Skinner noted that the Texas Attorney General has prepared a video which satisfies the training requirements for both the OMA and PIA, and a hyper-link to said video is included in said memorandum. Mr. Skinner further noted that it is the responsibility of Director Mehta to complete his training by the deadline.

CONFLICTS DISCLOSURE STATEMENT REPORTING REQUIREMENTS

Mr. Skinner discussed with the Board the conflicts disclosure statement reporting requirements for officers of certain local governmental entities, including levee improvement district directors, pursuant to Chapter 176 of the Local Government Code. Mr. Skinner advised the Board that Director Mehta had been presented with a memorandum and questionnaire prepared by SPH summarizing the conflicts disclosure requirements and that he had responded to the questions listed therein.

TAX ASSESSOR-COLLECTOR REPORT

Ms. Keeswood presented to and reviewed with the Board the Tax Assessor-Collector Report ("TAC Report") for the period ended April 30, 2023, a copy of which TAC Report is attached hereto as **Exhibit A**, including the disbursements presented for payment from the District's tax account and a list of delinquent taxpayers. After discussion, Director Bedee moved that the TAC Report be approved and that the disbursements identified therein be approved for payment from the District's tax account. Director Kazmierczak seconded said motion, which unanimously carried.

DELINQUENT TAX COLLECTIONS REPORT

The Board deferred consideration of the Delinquent Tax Report from Perdue, Brandon, Fielder, Collins & Mott L.L.P. ("Perdue"). Mr. Skinner informed the Board that the report is presented quarterly and the next report should come for the June regular meeting.

BOOKKEEPER'S REPORT

Ms. Greenwood presented to and reviewed with the Board a Bookkeeper's Report, dated May 4, 2023, prepared by FORVIS, a copy of which Report is attached hereto as **Exhibit B**. After discussion, Director Bedee moved that the Bookkeeper's Report be approved, and the checks and wires reviewed by the Board be authorized for payment, as discussed. Director Kazmierczak seconded said motion, which unanimously carried.

UNCLAIMED PROPERTY REPORT

The Board deferred consideration of an Unclaimed Property Report as of March 1, 2023 and the filing of same with the Texas Comptroller of Public Accounts pending completion of said report.

STORM WATER MANAGEMENT PLAN ("SWMP")

The Board deferred consideration of any matters related to the District's Storm Water Management Plan.

FINANCIAL MANAGEMENT PLAN

It was noted this matter would be discussed under Capital Improvements Projects later in the meeting.

OPERATIONS AND MAINTENANCE REPORTS

Mr. Perry presented to and reviewed with the Board a written Operations and Maintenance Report dated May 4, 2023, regarding maintenance performed on levee and drainage facilities throughout the District. A copy of such Operations and Maintenance Report is attached hereto as **Exhibit C**. Mr. Perry advised the Board that he has confirmed that the NTRCA will pay for fifty-percent (50%) of the total cost of the repairs to a sinkhole at Lakewind Lake, per the Detention Pond Maintenance Agreement between the District and the NTRCA.

Mr. Marriott presented to and reviewed with the Board the Operations Report for the month of April 2023, relative to the District's Reclaimed Water System. A copy of such Operations Report is attached hereto as **Exhibit D**.

CAPITAL IMPROVEMENTS PROJECTS; RENEWAL OF FEMA HAZARD MITIGATION PLAN

Mr. Martin next presented to and discussed with the Board the Project Manager's Activity Report dated May 4, 2023, a copy of which report is attached hereto as **Exhibit E**.

Mr. Duncan reported on the status of the renewal of the District's Hazard Mitigation Plan ("HMP"). Mr. Duncan then presented to and reviewed with the Board a draft of the HMP Update, prepared by AECOM, a copy of which is attached hereto as **Exhibit F**. He noted that AECOM plans to hold a public meeting on the renewal of the District's HMP at the May 16, 2023, special Board meeting.

Mr. Kraus presented to and discussed with the Board the Engineering Report dated May 4, 2023, a copy of which is attached hereto as **Exhibit G**. Regarding the construction of the additional Stormwater Pump Station in the Crescent Ridge subdivision (the "Stormwater Pump Station Project"), following discussion, Director Kazmierczak moved to approve Pay Estimate No. 9 in the amount of \$769,500.00 from NBG Constructors, Inc., as recommended by LJA. Director Bedee seconded said motion, which unanimously carried.

Regarding the External Drainage Channel Erosion Control Project, Mr. Skinner reported on scheduling for mediation and trial for the related litigation matter.

ATTORNEY'S REPORT

The Board next considered the attorney's report. In connection therewith, Mr. Skinner advised that he had nothing further of a legal nature to discuss with the Board at this time.

WEBSITE AND COMMUNICATION MATTERS

Ms. Hartwell provided an update as to website and communications matters.

CLOSED SESSION

The Board concurred that a Closed Session would not be required in connection with the matters discussed at the meeting.

FUTURE AGENDA ITEMS

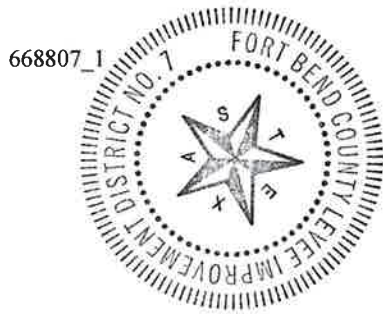
The Board considered items for placement on future agendas. The Board instructed Mr. Skinner as to the matters to place on the May 16, 2023, meeting agenda.

ADJOURNMENT

There being no further business to come before the Board, on motion made by Director Bedee, seconded by Director Picazo and carried unanimously, the meeting was adjourned.



Secretary
Board of Directors



LIST OF ATTACHMENTS TO MINUTES

EXHIBIT A	Tax Assessor/Collector Report
EXHIBIT B	Bookkeeper's Report
EXHIBIT C	LMS Operation and Maintenance Report
EXHIBIT D	SE Operations Report
EXHIBIT E	MSA Report
EXHIBIT F	Draft Hazard Mitigation Plan
EXHIBIT G	LJA Engineering

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

NOTICE OF SPECIAL PUBLIC MEETING

Notice is hereby given to all interested members of the public that the Board of Directors (the "Board") of the above captioned District will hold a special public meeting at the City Hall of the City of Sugar Land, Texas, 2700 Town Center Boulevard, Sugar Land, Texas 77479, said address being an official meeting place of the District.

The meeting will be held on **Tuesday, May 16, 2023, at 5:30 P.M.**

The Board shall consider and discuss the following matters and take any action necessary or appropriate with respect to such matters:

1. **PUBLIC COMMENTS;**
2. **GENERAL, ADMINISTRATIVE AND FINANCIAL MANAGEMENT;**
 - A. Financial Management Plan and implementation of same, including bond funding, change of use of construction funds, and grant funding;
 - B. Status of FEMA Hazard Mitigation Grant Program (administered through TDEM) related to Brazos River Bank Erosion Control Project, including:
 - (i) Public hearing on update of District's Hazard Mitigation Plan; and
 - (ii) Consider authorizing submission of Antiquities Permit Application;
 - C. Status of Flood Infrastructure Fund Financial Commitment from Texas Water Development Board for Detention and Drainage Improvements and Facilities; and
 - D. Discussion regarding scope of services rendered by Mike Stone Associates, Inc.;
3. **CAPITAL IMPROVEMENT PROJECTS**, including consideration of Task Order(s) proposed by Mike Stone Associates, Inc., AECOM Technical Services, Inc., or LJA Engineering, Inc.
 - A. Brazos River Bank Erosion Control Project, including:
 - (i) Project Manager's Report;
 - (ii) Discussion of project status and milestones;
 - (iii) Consider AECOM's proposal for construction materials testing; and
 - (iv) Status of acquisition of land east of Grand Parkway Bridge at the request of New Territory Residential Community Association, Inc. ("NTRCA");
 - B. External Drainage Channel Erosion Control Project, including:
 - (i) Project Manager's Report; and
 - (ii) Resolution of issues related to repairing erosion failure of channel improvements, including related lawsuit against design engineer and


contractors; financing of said repairs; consider change orders and pay estimates regarding same;

- C. New Stormwater Pump Station Project, including:
 - (i) Status of financing and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders;
 - D. Detention and Drainage Improvements and Facilities, including:
 - (i) Status of design, financing and scheduling; and
 - (ii) Site access and acquisition;
 - E. Reclaimed Water Project, including:
 - (i) Status of design and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders; acceptance of Texas Ethics Commission Form 1295, and any related storm-water permits; and
 - F. Flood protection improvements for northern boundary, including status of preliminary engineering report;
4. **ATTORNEY'S REPORT;**
- A. Ratify all action taken at Board meeting on May 4, 2023;
5. **WEBSITE AND COMMUNICATIONS MATTERS;**
6. **CLOSED SESSION** – The Board reserves the right to adjourn to Closed Session at any time during the course of this meeting in accordance with the Texas Open Meetings Act, including Texas Government Code Section 551.071 (Consultation with Attorney regarding Pending or Contemplated Litigation or Matters Protected by Attorney-Client Privilege); and Section 551.072 (Deliberations regarding Acquisition of Real Property Interests);
7. **RECONVENE IN OPEN SESSION** – The Board will reconvene in Open Session, and if necessary, take action on any agenda item discussed in Closed Session;
8. **ANNOUNCEMENTS / FUTURE AGENDA;** and
9. **ADJOURN.**



SCHWARTZ, PAGE & HARDING, L.L.P.

By:


Christopher T. Skinner
Attorney for the District

Persons with disabilities who plan to attend this meeting and would like to request auxiliary aids or services are requested to contact the District's attorney at (713) 623-4531 at least three business days prior to the meeting so that appropriate arrangements can be made.

Fort Bend County Levee Improvement District No. 7

Notice of Public Hearing on Hazard Mitigation Plan Update

The purpose of Fort Bend County Levee Improvement District No. 7 (“LID 7”) is to construct and maintain certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in New Territory from flooding from the Brazos River. LID 7 is in the process of updating the District’s Hazard Mitigation Plan. The updated plan will identify local policies and actions for reducing risk and future losses from natural hazards. To remain eligible for certain federal funding associated with natural hazards, the plan must be updated every five years.

Numerous other local governmental stakeholders are assisting LID 7 in the Hazard Mitigation Plan Update. However, it is also vital and very helpful that LID 7 have public input regarding the updating of the Hazard Mitigation Plan in all respects, including the identification of natural hazards, mitigation goals, strategies, and possible mitigation actions.

LID 7 is inviting the public to participate and provide input into the updating of the Hazard Mitigation Plan in one or both of the following ways:

1. By reviewing the Hazard Mitigation Plan Update that can be found on the LID 7 website: <http://www.fbclid7.com/>
2. By attending a Public Hearing that is scheduled for Tuesday, May 16, 2023, at 5:30 p.m. at the Sugar Land City Hall, 2700 Town Center Blvd N, Sugar Land, TX 77479. At the Public Hearing there will be an opportunity for any member of the public to review the draft Hazard Mitigation Plan, and to discuss mitigation strategies.

LID 7 appreciates and thanks all persons and other local governmental entities who are assisting and providing input regarding the update of the LID’s Hazard Mitigation Plan.

Fort Bend County Levee Improvement District No. 7 Notice of Public Hearing on Hazard Mitigation Plan Update

Posted: May 9, 2023

Share ▾

All Posts

The purpose of Fort Bend County Levee Improvement District No. 7 ("LID 7") is to construct and maintain certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in New Territory from flooding from the Brazos River. LID 7 is in the process of updating the District's Hazard Mitigation Plan. The updated plan will identify local policies and actions for reducing risk and future losses from natural hazards. To remain eligible for certain federal funding associated with natural hazards, the plan must be updated every five years.

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1. By reviewing the Hazard Mitigation Plan Update that can be found on the LID 7 website: <http://www.fbclid7.com/>
2. By attending a Public Hearing that is scheduled for **Tuesday, May 16, 2023, at 5:30 p.m.** at the **Sugar Land City Hall, 2700 Town Center Blvd N, Sugar Land, TX 77479**. At the Public Hearing there will be an opportunity for any member of the public to review the draft Hazard Mitigation Plan, and to discuss mitigation strategies.

LID 7 appreciates and thanks all persons and other local governmental entities who are assisting and providing input regarding the update of the LID's Hazard Mitigation Plan.

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

Minutes of Special Meeting of Board of Directors May 16, 2023

The Board of Directors (the "Board") of Fort Bend County Levee Improvement District No. 7 (the "District") met in special session at the City Hall of the City of Sugar Land, Texas, 2700 Town Center Boulevard, Sugar Land, Fort Bend County, Texas, 77479, an official meeting place of the Board, on May 16, 2023, in accordance with the duly posted Notice of Special Public Meeting, and the roll was called of the duly constituted officers and members of the Board, as follows:

Cindy Picazo, Chairman
Gerald Kazmierczak, Vice-Chairman
Nathan Bedee, Secretary
James R. Grotte, Director
Susheem Mehta, Director

and all of said persons were present, thus constituting a quorum.

Also present were: Phil Martin and Mike Stone of Mike Stone & Associates, Inc. ("MSA"); Kane Mudd of LJA Engineering, Inc. ("LJA"); Tyson Duncan, Jeff Masek and Ed Panuska of AECOM Technical Services, Inc. ("AECOM"); Calep Estes and Angie Hartwell of Touchstone District Services, LLC ("Touchstone"); and Christopher Skinner and Matthew Reed of Schwartz, Page & Harding, L.L.P. ("SPH").

The Chairman called the meeting to order and declared it open for such business as might regularly come before the Board.

PUBLIC COMMENTS

The Board began by opening the meeting for public comments. No public comments were offered.

GENERAL, ADMINISTRATIVE AND FINANCIAL MANAGEMENT

Messrs. Martin and Mudd reported on the status of the District's applications for financial assistance from various governmental entities for capital improvement projects.

PUBLIC HEARING ON UPDATE OF DISTRICTS HAZARD MITIGATION PLAN

Mr. Duncan presented shareholder meeting slides regarding the District's renewal of its Hazard Mitigation Plan and discussed next steps in the process. After discussion with the Board there were no public comments and the hearing was closed.

CAPITAL IMPROVEMENT PROJECTS

Mr. Martin presented to and reviewed with the Board the Project Manager's Activity Report dated May 16, 2023, prepared by MSA, a copy of which report is attached hereto as **Exhibit A**.

Messrs. Martin and Stone presented to and discussed with the Board a draft Task Order No. 12 setting forth additional General Management and Project Management services offered by MSA. After discussion, the Board instructed Messrs. Stone and Martin to revise Task Order No. 12, as discussed for consideration at the Board's regular meeting on June 1.

Mr. Mudd presented to and reviewed with the Board an Engineering Report dated May 16, 2023, prepared by LJA, a copy of which report is attached hereto as **Exhibit B**. Regarding the construction of an additional Stormwater Pump Station in the Crescent Ridge subdivision (the "Stormwater Pump Station Project"), following discussion, Director Kazmierczak moved to (i) authorize the Chairman to execute a revised agreement with CenterPoint Energy relative to relocation of transformers for said project at LJA's recommendation, and (ii) authorize the Chairman to execute an agreement with Enchanted Rock for construction of communications and trip generator for said project at LJA's recommendation. Director Bedee seconded said motion, which unanimously carried.

ATTORNEY'S REPORT

The Board next considered the attorney's report. In connection therewith, Mr. Skinner advised that he has no additional items that have not already been discussed.

The Board next considered ratifying its prior approval of all action taken at the Board meeting held on May 4, 2023. Following discussion, Director Bedee moved to ratify the Board's prior approval of all action taken at the Board meeting held on May 4, 2023 in all respects. Director Picazo seconded said motion, which unanimously carried.

WEBSITE AND COMMUNICATION MATTERS

The Board authorized Touchstone to prepare and post on the District's website an update on construction of drainage and detention improvements and facilities within the District.

CLOSED SESSION

The Chairman announced at 6:50 p.m. that the Board would convene in Closed Session pursuant to Texas Government Code Sections 551.071 and 551.072. Those in attendance, with the exception of the Board and Messrs. Skinner and Reed, exited at this time.

The Board reconvened in Regular Session at 6:59 p.m.

FUTURE AGENDA ITEMS

The Board considered items for placement on future agendas. The Board instructed Mr. Skinner as to the matters to place on the June 1, 2023, meeting agenda.

ADJOURNMENT

There being no further business to come before the Board, on motion made by Director Bedee, seconded by Director Picazo and carried unanimously, the meeting was adjourned.

/s/ Nathan Bedee
Secretary, Board of Directors

LIST OF ATTACHMENTS TO MINUTES

- | | |
|-----------|------------------------|
| EXHIBIT A | MSA Activity Report |
| EXHIBIT B | LJA Engineering Report |

PUBLIC MEETING SIGN-IN SHEET



Fort Bend County Levee Improvement District No. 7
Hazard Mitigation Update Plan Public Meeting

Date: May 16, 2023
Location: City of Sugar Land City Hall

NAME	ADDRESS	TELEPHONE	E-MAIL
Tyson Duncan	AECOM	512-547-9756	tyson.duncan@aecom.com
Genaro Hernandez	LID 7	281-658-4248	Ahazn1ernandez@fbcld7.com
Jim Groth	LID 7	713-494-4821	JGroth@fbcld7.com
Sushem Mehta	LID 7	713-203-0315	smetha@fbcld7.com
Angie Harbuckell	Touchstone D.S.	832-454-0500	a.harbuckell@touchstonedistrictservices.com
Colep Estes	Touchstone DS	281-917 5768	C.Estes@touchstonedistrictservices.com
Mike Stone	MSAi	713-899-6720	Mike.Stone@Mike.Stone.Associates.com
NATE BERGEE	FBC LID 7	281-804-9649	nbergee@fbcld7.com
CINDY RIAZO	FBC LID 7	713-410-2066	cpriazod@fbcld7.com
Phil Martin	MSAi	713-574-5261	pmartin@mikestoneassociates.com
Matt Reed	SPH	713-623-4531	mreed@spuller.com
Chriskiner	11 11	11 11	ckiner@spuller.com
Jeff Masek	AECOM	713-875-9337	jeff.masek@aecom.com



AECOM

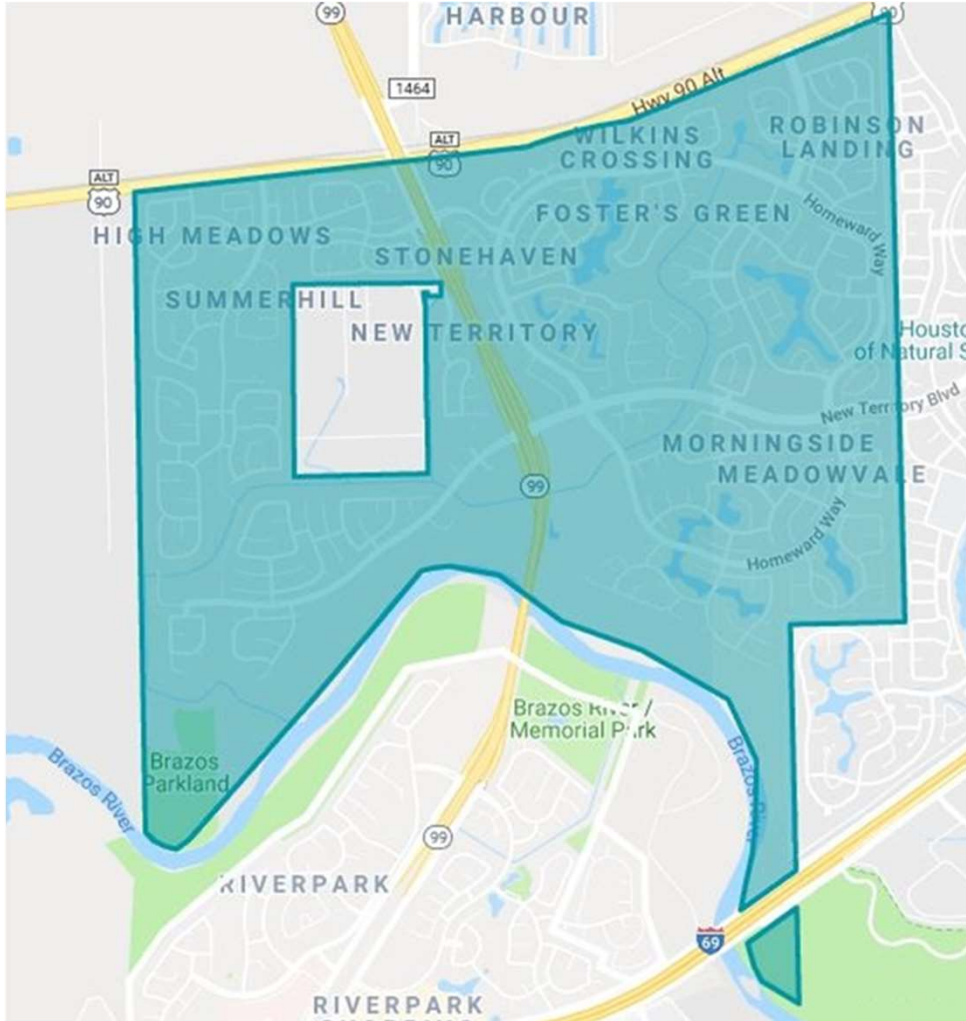
The background of the slide is an aerial photograph showing a wide, muddy-brown river or floodplain. A concrete bridge spans across the water, with several vehicles visible on it. The surrounding area is densely populated with green trees, and some residential or commercial buildings are visible in the distance under a clear sky.

Fort Bend County Levee Improvement District No. 7 Hazard Mitigation Plan Update

Public Meeting

May 16, 2023

INTRODUCTIONS



- Fort Bend County Levee Improvement District No. 7 (LID 7)
- Participating Stakeholders

Organization
New Territory Residential Community Association
City of Sugar Land
City of Sugar Land Police Department
City of Sugar Land Emergency Management Coordinator
Fort Bend County Emergency Operations
Fort Bend County
Fort Bend County Drainage District
Fort Bend County Toll Road Authority
FBC LID 2
FBC LID 17
FBC LID 11
FBC LID 10
FBC MUD 121
Brazos River Authority

GOALS FOR MEETING

- Notify the public of LID 7's hazard mitigation planning efforts
- Update the public on mitigation actions under consideration by LID 7
- Solicit input from the public
- Review schedule for remaining steps in hazard mitigation plan update process



HAZARD MITIGATION PLAN (HMP) UPDATE

- First iteration of the LID 7 HMP was created in collaboration with the public and relevant stakeholders throughout 2018. Approved by FEMA in December 2018.
- HMP updates required every five years by FEMA in order to maintain funding eligibility
- Supports better understanding of hazards and risks, and how both have changed since HMP's original iteration
- Previous Plan included the following hazards:
 - Flooding
 - Hurricane/Tropical Storm
 - Levee Failure
- Provides update on status of previous mitigation activities included; identifies news mitigation activities for future consideration



Local Mitigation Planning Handbook

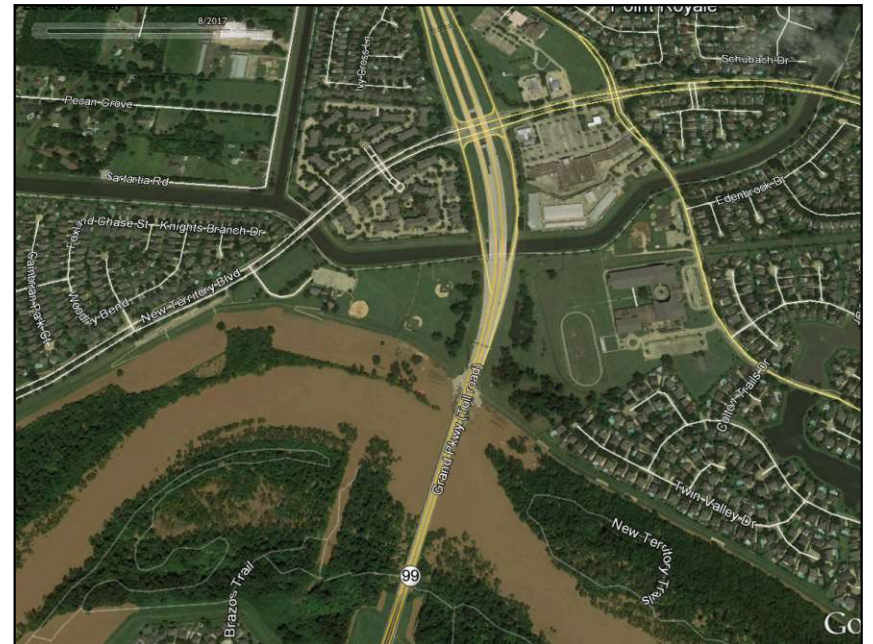
March 2013



FEMA

PAST DISASTERS

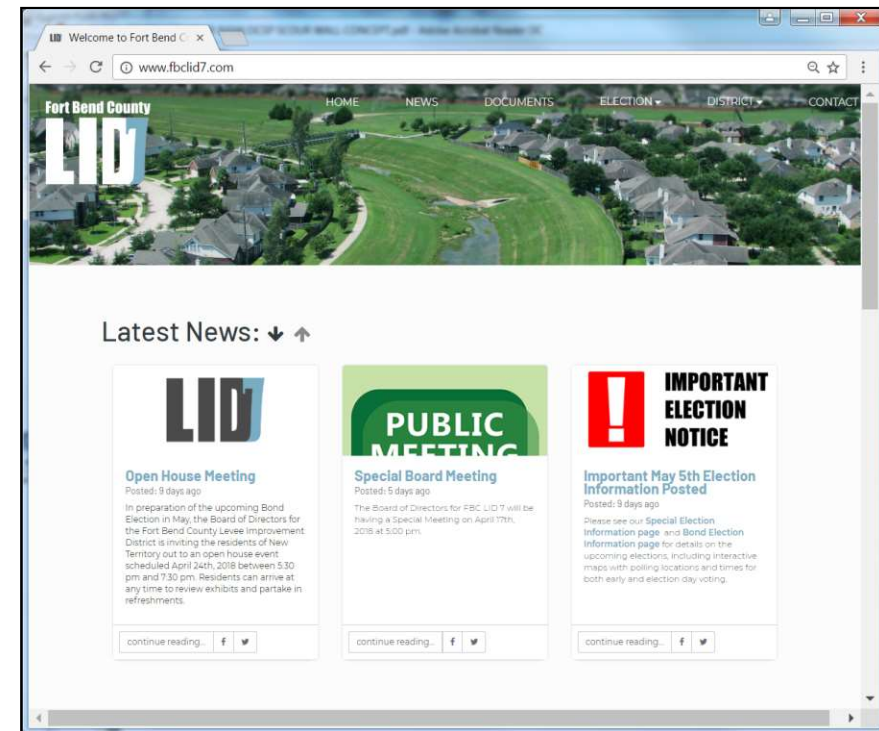
- May 7th Flash Flooding (2019)
- Hurricane Harvey (2017)
- Tax Day Flood (2016)
- Memorial Day Floods (2015 and 2016)



ONGOING MITIGATION ACTIVITIES

Capital Projects

- Brazos River Bank Stabilization
- North Levee Closure
- Pump Station / Detention Improvements
- External Channel Erosion Repair



LID 7 HAZARD MITIGATION PLAN UPDATE

<https://www.fbclid7.com/documents>



Fort Bend County
Levee Improvement District No. 7
Hazard Mitigation Plan Update 2023

FBCLID7

2023 Hazard Mitigation Plan

i

Executive Summary

The Fort Bend County Levee Improvement District No. 7 ("the District") undertook development of this update to its Hazard Mitigation Plan (Plan) because of the increasing awareness that natural hazards, especially flood hazards and the potential for levee failure, may affect people and property in the area. The District was created under the provisions of Article XVI, Section 59 of the Texas Constitution, and operates pursuant to Chapters 49 and 57 of the Texas Water Code, as amended, and Chapter 7808 of the Texas Special District Local Laws Code. The District was created to construct certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, which is part of the City of Sugar Land, from flooding from the Brazos River.

The existing Hazard Mitigation Plan was reviewed and revised to expand upon District vulnerabilities to hazards and outline mitigation actions that help to reduce or avoid the impacts of hazards. Approval of the Plan Update will keep the District eligible for federal mitigation grant program funds administered by the State of Texas Division of Emergency Management (TDEM) and the Texas Water Development Board (TWDB). In this Plan Update, the Mitigation Planning Committee (MPC) re-assessed hazard vulnerabilities, reviewed the status of mitigation actions proposed in its original Hazard Mitigation Plan from 2018, and looked at what future mitigation actions need to be taken based on the vulnerabilities of the District and the residents within the boundary of the District. **Figure 1** shows the planning area for this Hazard Mitigation Plan.

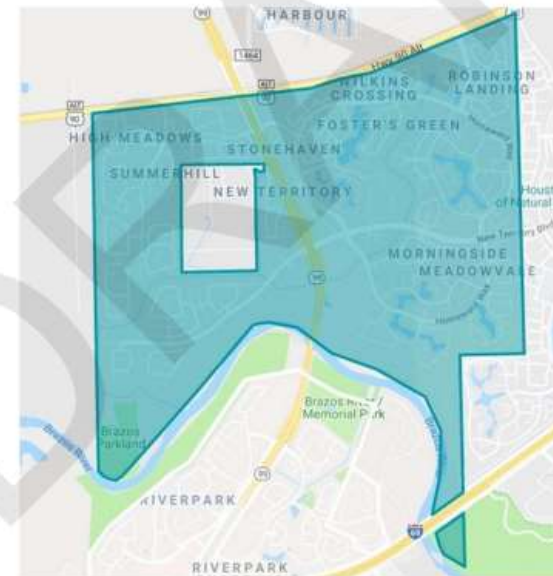


Figure 1 – Hazard Mitigation Study Area, Fort Bend County Levee Improvement District No. 7

DRAFT

April 2023

AECOM

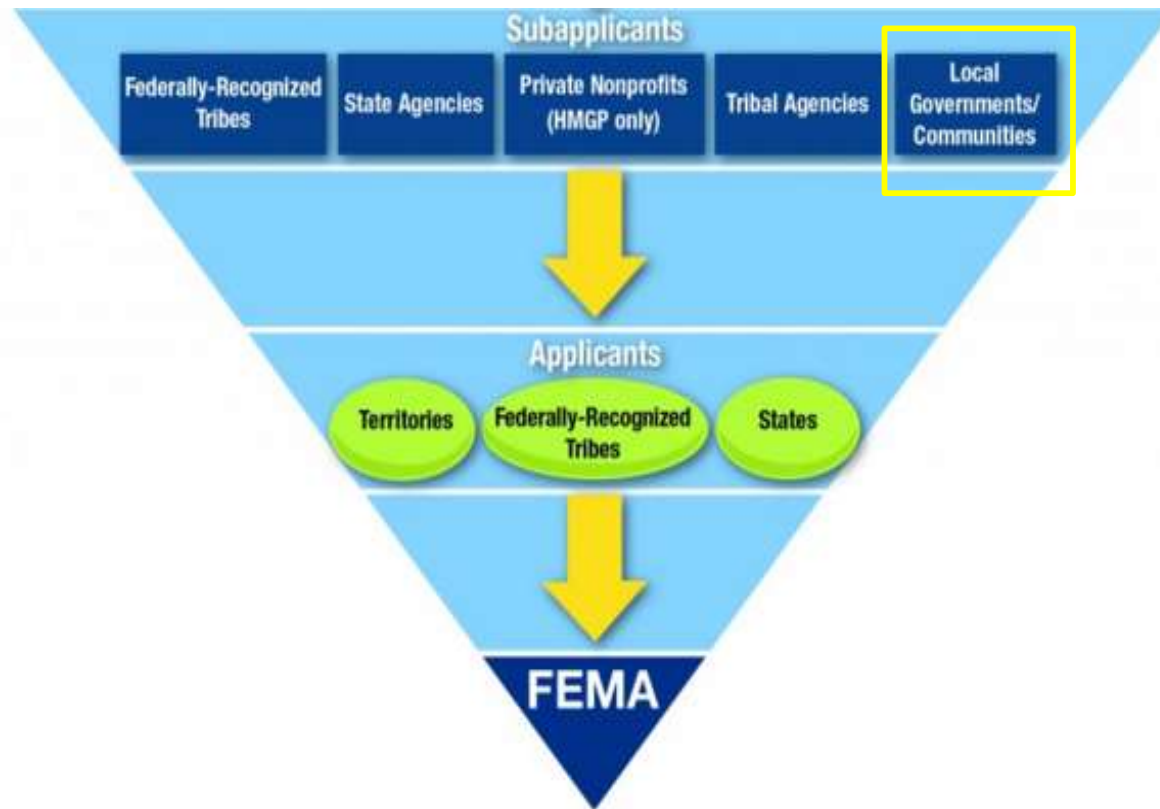
LID 7 HAZARD MITIGATION PLAN UPDATE

- 2018 Iteration Contained 13 Mitigation Activities
- 2023 Proposed Mitigation Activities

2023 Proposed Mitigation Actions				
Action #	Action / Description	Hazard	Estimated Cost	Timeframe
1	North / Northeast / Northwest Levee Improvements	Flood, Hurricane, & Tropical Storms, Levee Failure	\$25,200,000	Ongoing
2	Outfall Channel Erosion Control Project	Flood, Hurricane, & Tropical Storms, Levee Failure	\$5,000,000	Ongoing
3	Pump Station Capacity Enhancement Project	Flood, Hurricane, & Tropical Storms	\$28,000,000	Ongoing
4	Internal Detention Basin Project	Flood, Hurricane, & Tropical Storms	13,800,000	Ongoing
5	Brazos River Erosion Control Project	Flood, Hurricane, & Tropical Storms, Levee Failure	\$60,000,000	Ongoing
6	Drainage System Capacity Restoration	Flood, Hurricane, & Tropical Storms	\$4,200,000	5 - 10 years
7	Pump Station in High Meadows	Flood, Hurricane, & Tropical Storms	TBD	5 - 10 years

HMP – PROJECT FUNDING

Funding Process For Potential Mitigation Projects



SCHEDULE

- Review and comment on Draft HMP (posted on the LID 7 website)
- Discussion / comment cards at Public Meeting (today)
- Tentative - Online survey posted to LID 7 website, open until **May 26th**.
- Finalize HMP and Submit to TDEM – **May 31st**



OPPORTUNITIES FOR PUBLIC INPUT

- Review and comment on Draft HMP (posted on the LID 7 website)
- Discussion / comment cards at Public Meeting (today)
- Tentative - Online Survey (runs until May 26th)
- Continued discussion at Board Meetings until Final HMP Update is officially adopted



DISCUSSION / QUESTIONS

ed.panuska@aeecom.com
tyson.duncan@aeecom.com

<http://www.fbclid7.com/>

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

NOTICE OF PUBLIC MEETING

Notice is hereby given to all interested members of the public that the Board of Directors (the "Board") of the above captioned District will hold a regular public meeting at the City Hall of The City of Sugar Land, Texas, 2700 Town Center Boulevard, Sugar Land, Fort Bend County, Texas, 77479, said address being an official meeting place of the District.

The meeting will be held on **Thursday, June 1, 2023, at 5:30 P.M.**

The Board shall consider and discuss the following matters and take any action necessary or appropriate with respect to such matters:

1. **PUBLIC COMMENTS;**
2. **GENERAL, ADMINISTRATIVE AND FINANCIAL MANAGEMENT;**
 - A. Review and approve the minutes of the May 4, 2023, and May 16, 2023, Board meetings;
 - B. Tax Assessor-Collector report, including status of delinquent tax accounts, authorizing the payment of invoices presented, approving tax refunds and approving the transfer of accounts to the uncollectible roll;
 - C. Report and legal action taken by the District's delinquent tax collection attorneys, including authorizing the initiation of lawsuits, foreclosure proceedings, installment agreements, and filing of proofs of claim;
 - D. Bookkeeper's report and services, including financial and investment reports and authorizing the payment of invoices presented;
 - E. Approval of Unclaimed Property Report(s) as of March 1, 2023, and authorize Bookkeeper and/or Tax Assessor-Collector to file Report(s) with State Comptroller prior to July 1, 2023;
 - F. Compliance with EPA Phase II Small MS4 General Permit; conduct required training related to District's Storm Water Management Plan;
 - G. Consider approval of Task Order No. 12 from Mike Stone Associates, Inc. for General Manager services and Project Manager services; acceptance of related TEC Form 1295; adoption of Resolution Delegating Authority to General Manager and Project Manager to Approve Certain Maintenance and Repair Projects and Change/Work Orders;

- H. Financial Management Plan and implementation of same, including bond funding, change of use of construction funds, and grant funding;
- I. Status of FEMA Hazard Mitigation Grant Program (administered through TDEM) related to Brazos River Bank Erosion Control Project;
 - (i) Public hearing on update of District's Hazard Mitigation Plan;
- J. Status of Flood Infrastructure Fund Financial Commitment from Texas Water Development Board for Detention and Drainage Improvements and Facilities;
- K. Authorize completion, execution and filing with the Secretary of State of Voting System Annual Filing Form relative to District elections;
- L. Request from Records Management Officer to destroy notes and audio/video recordings of Board meetings from February 15, 2022, to February 2, 2023;
- M. Authorize annual submission of updated contact information and/or descriptive information regarding District facilities that qualify for critical load status to the County Office of Emergency Management, Public Utility Commission, and the Division of Emergency Management of the Governor, relative to compliance with §13.1396, Texas Water Code; and
- N. Report regarding activities of Flood Management Committee of Fort Bend County Economic Development Council;

3. **OPERATIONS AND MAINTENANCE REPORTS;**

- A. Levee, drainage, and pump station facilities; mowing/maintenance of External Channel; status of repairs to fencing, gates, walking-path concrete, and sinkhole repair at Lakewind Lake; and
- B. Reclaimed water system;

4. **CAPITAL IMPROVEMENT PROJECTS,** including consideration of Task Order(s) proposed by Mike Stone Associates, Inc., AECOM Technical Services, Inc., or LJA Engineering, Inc.;

- A. Brazos River Bank Erosion Control Project, including:
 - (i) Project Manager's Report, including project status and milestones;
 - (ii) Consider authorizing submission of Antiquities Permit Application;
 - (iii) Consider AECOM's proposal for construction materials testing; and
 - (iv) Status of acquisition of land east of Grand Parkway Bridge at the request of New Territory Residential Community Association, Inc.;
- B. External Drainage Channel Erosion Control Project, including:
 - (i) Project Manager's Report; and

- (ii) Resolution of issues related to repairing recent erosion, failure of channel improvements and financing of said repairs; consider change orders and pay estimates regarding same;
 - C. New Stormwater Pump Station Project, including:
 - (i) Status of financing and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders;
 - D. Detention and Drainage Improvements and Facilities, including:
 - (i) Status of design, financing and scheduling; and
 - (ii) Site access and acquisition;
 - E. Reclaimed Water Project, including:
 - (i) Status of financing and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders, acceptance of Texas Ethics Commission Form 1295, and any related storm-water permits; and
 - F. Flood protection improvements for northern boundary, including status of preliminary engineering report;
5. **ATTORNEY'S REPORT**, including:
- A. Status of compliance with annual cybersecurity training as required by Chapter 2054, Texas Government Code, and authorize any required reporting to the Texas Department of Information and Resources;
6. **WEBSITE AND COMMUNICATIONS MATTERS;**
7. **CLOSED SESSION** – The Board reserves the right to adjourn to Closed Session at any time during the course of this meeting in accordance with the Texas Open Meetings Act, including Texas Government Code Section 551.071 (Consultation with Attorney regarding Pending or Contemplated Litigation or Matters Protected by Attorney-Client Privilege); and Section 551.072 (Deliberations regarding Acquisition of Real Property Interests);
8. **RECONVENE IN OPEN SESSION** – The Board will reconvene in Open Session, and if necessary, take action on any agenda item discussed in Closed Session;
9. **ANNOUNCEMENTS / FUTURE AGENDA;** and
10. **ADJOURN.**



SCHWARTZ, PAGE & HARDING, L.L.P.

By: Christopher T. Skinner/gg
Christopher T. Skinner
Attorney for the District

Persons with disabilities who plan to attend this meeting and would like to request auxiliary aids or services are requested to contact the District's attorney at (713) 623-4531 at least three business days prior to the meeting so that appropriate arrangements can be made.

Fort Bend County LID 7 - Hazard Mitigation Plan Update - Public Survey

Posted: May 30, 2023

Share ▾

All Posts

The purpose of Fort Bend County Levee Improvement District No. 7 ("LID 7") is to construct and maintain certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in New Territory from flooding from the Brazos River. LID 7 is in the process of updating the District's Hazard Mitigation Plan. The updated plan will identify local policies and actions for reducing risk and future losses from natural hazards. To remain eligible for certain federal funding associated with natural hazards, the plan must be updated every five years.

Numerous other local governmental stakeholders are assisting LID 7 in the Hazard Mitigation Plan Update. However, it is also vital and very helpful that LID 7 have public input regarding the updating of the Hazard Mitigation Plan in all respects, including the identification of natural hazards, mitigation goals, strategies, and possible mitigation actions.

LID 7 is inviting the public to participate and provide input into the updating of the Hazard Mitigation Plan through the following anonymous survey:

Hazard Mitigation Plan Update - Public Survey

SURVEY RESULTS



Fort Bend County LID 7 - Hazard Mitigation Plan Update - Public Survey

The purpose of Fort Bend County Levee Improvement District No. 7 ("LID 7") is to construct and maintain certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in New Territory from flooding from the Brazos River.

LID 7 is undergoing a process to update its Hazard Mitigation Plan (HMP). The HMP is updated every five years, with the goal to save lives and property through the reduction of hazard vulnerability. During this planning project, county, municipal, and regional leaders will work in tandem to identify risks, assess capabilities, and formulate a strategy to reduce disaster vulnerability in our community.

Public participation and feedback is a vital part of the hazard mitigation planning process. Fort Bend County LID 7 has developed this survey to assist in providing residents an outlet to contribute to the plan update. This survey is anonymous and will be used to develop portions of the plan. The draft version of the 2023 HMP Update has been posted to the LID 7 website, [located here](#).

Please take just a few minutes to fill out this survey. Your response helps make the community more resilient to a disaster.

We thank you in advance for your cooperation and participation.

Have you ever experienced or been impacted by a natural disaster in your current community?

☐ Yes

☐ No

...

In your opinion, what are the top three hazards facing your community? (Select three)

☐ Coastal Erosion

☐ Drought

☐ Earthquakes

☐ Expansive Soils

☐ Extreme Heat

☐ Floods

☐ Hailstorms

☐ Hurricanes and Tropical Storms

☐ Land Subsidence

☐ Levee Failure

☐ Lightning

☐ Pandemic

☐ Severe Winter Storms

☐ Thunderstorm Winds

☐ Tornadoes

☐ Wildfires

How concerned are you about the possibility of your community being affected by a natural disaster?

- ☐ Not concerned
- ☐ Somewhat concerned
- ☐ Very concerned

In your household, has anyone done any of the following disaster preparedness activities? (Select all that apply)

- ☐ Talked about what to do in case of an emergency or natural disaster
- ☐ Prepared an Emergency Plan
- ☐ Attended a course dealing with emergency preparedness
- ☐ Made an emergency kit or assembled emergency supplies

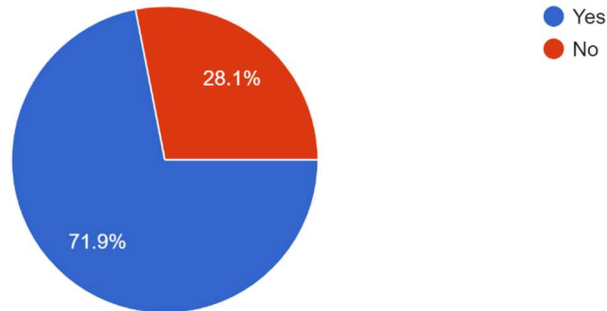
Are there any other comments you would like to include regarding FBCLID7's Hazard Mitigation Planning strategies and hazards possibly affecting your local community?

Long answer text

PUBLIC SURVEY RESULTS

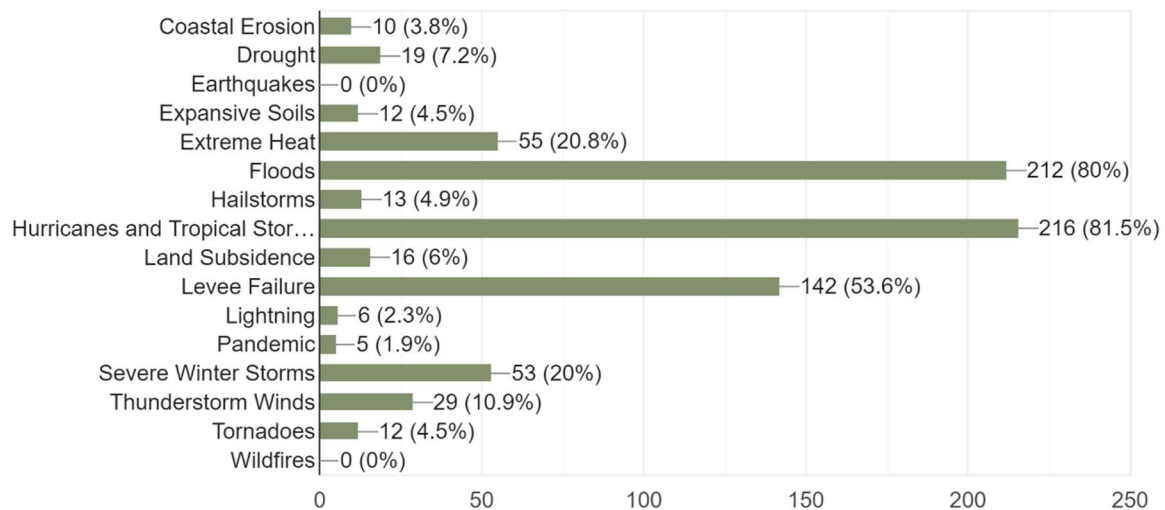
Have you ever experienced or been impacted by a natural disaster in your current community?

260 responses



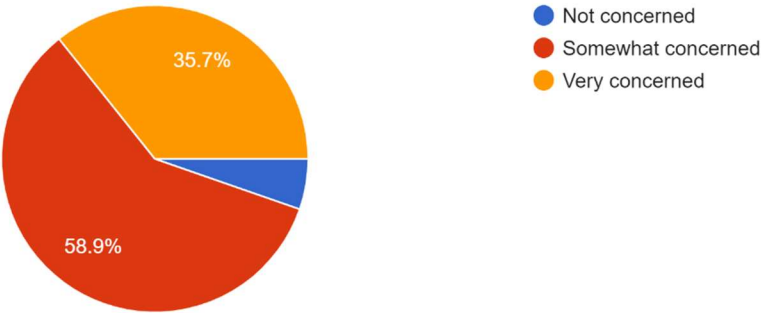
In your opinion, what are the top three hazards facing your community? (Select three)

265 responses



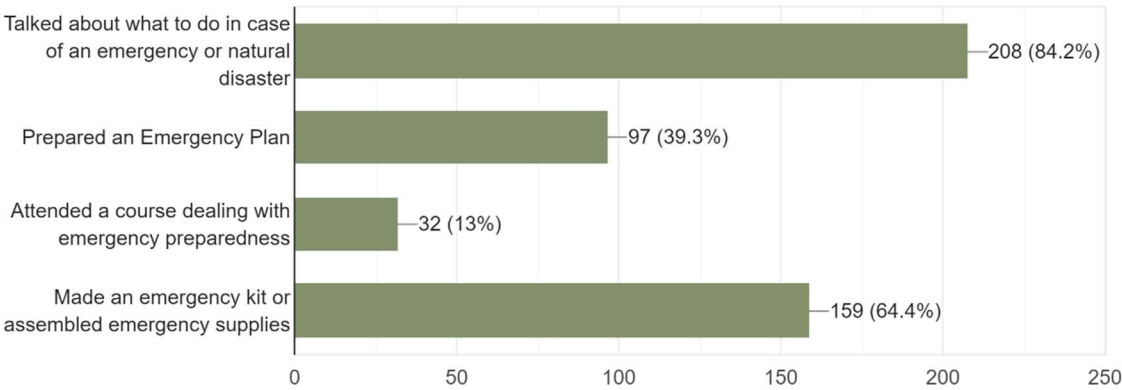
How concerned are you about the possibility of your community being affected by a natural disaster?

263 responses



In your household, has anyone done any of the following disaster preparedness activities? (Select all that apply)

247 responses



Are there any other comments you would like to include regarding FBCLID7's Hazard Mitigation Planning strategies and hazards possibly affecting your local community?

No

None

No

Nah

Please continue efforts to complete and communicate benefits of on-going mitigation projects.

We have only lived in the area for three years.

Sewers get stuck with dead leaves ..promoting flash flooding

Maybe keep New Territory residents aware of what's going on and provide useful information through the New Territory FB Page. I find this page to be very useful and have found a lot of neighborhood resources, solutions through this page.

Na

Prevent soil erosion around banks of Brazos River in New Territory

The main flooding hazard for New Territory is from the Brazos River via backup into the drainage systems. The second flooding hazard is due to an extreme rain event which overwhelms the internal drainage and pump systems.

I get major flooding in front of my house numerous times from water not being able to flow out fast enough and as a result I have two vehicles totaled out and as well as two guests came to visit for dinner one night. This is a TERRIBLE ongoing issue.

NO

Very concerned about stopping and controlling the erosion of the Brazos River banks and the installation of supports for the river banks and levee. It is of critical importance that the erosion is addressed and construction commences

Flood mitigation - so that we don't need to purchase flood insurance each year.

Would like to see faster progress on the Brazos River erosion containment/fixing project. The loss of the river banks is quite concerning.

The Brazos river erosion is quite rapid and concerning. I hope faster progress can be made on shoring up its banks.

Focus on maintaining the levees.

Rapid communication of up-to-date information via text, email, social media etc., is always critical in an emergency

It seems Like LID 7 is "doing" a lot of things but cant "complete" anything! The river is eroding more and more of our community and the Lid 7 can't seem to complete anything. They hide behind attorneys instead of being open with our residents. We are not much safer from a hurricane flood than we were before the big flood. Our lake is STILL being filled with city water \$\$\$\$ instead of the water recycling they started many years ago. If they would simply talk our residents outside of the crazy barriers they put up maybe we would have better confidence in them. But I do not! I wish SL or someone with clout would step in and oversee what feels like their self-serving agendas.

Erosion on the Brazos River

Spending so much money on this LID plan and we have not seen any actual results.

Consider electrical reliability as a hazard not just weather damage. Fort bend needs a next generation nuclear plant like NuScale to power homes and businesses because the state fails to do so.

Quarterly updates to HMP

LID 7 has failed to deliver levee redundancy where there's a high risk of the existing levee being damaged or destroyed. The river bank erosion project has experienced substantial delays that, along with ongoing erosion, have resulted ever increasing risks of levee failure. No sense of urgency or concern have been raised by the LID 7 board of directors, leading to inaction regarding mitigation of these risks to life and property in New Territory.

New Territory hasn't flooded but we were within inches of flooding during Harvey.

Show residents a map of what has flooded before and where it has flooded at.

NAH

Just to reduce the chances of neighborhood flooding like happened with Harvey

Need to have high volume water pumps in working condition during flooding. These have to be operational 24x7 during high rains and flooding

Close follow up of contractors for on time delivery of new pump station and Brazos erosion project

I am concerned with erosion and possible rise of the Brazos River near New Territory.

Review the community's pending disaster warning procedure for any potential updates and improvements

You can't protect everyone from everything, levees can only be so high and only so many places.

My major concern is the Brazos River. It needs to be dredged (clean out sediment and made deeper) to maintain maximum flow to the gulf. Any engineer knows that $\text{Volume} = \text{Velocity} \times \text{Area}$. Maintaining a clean and deep channel will increase both variables.

Focus on strategy for no flooding in homes during heavy rain storms, hurricanes, etc.

The Brazos bank erosion should be a top priority to address.

Keep storm drains clear to avoid flooding home closest to them

Concerned about river bank erosion

Experience many power outages in New Territory subdivision. No warning alerts when electricity is out

My major concern is the slow progress the LID7 is having with Northeast & Northwest Levee Improvements. Erosion control along the Brazos River bank is important, but our biggest threat to flooding is the vulnerable North side of New Territory with no levee protection. A 5-10 year expectancy to completion is unacceptable and tantamount to "dragging your feet".

Management of Brazos River risks is a priority. Nice add-on to support recreation opportunities along the river such as the mountain bike trails and the currently-washed-out kayak launch under the HWY59 overpass.

Please work fast.

There appears to be a notable concern with regard to soil erosion in the vicinity of or below the bridge situated on Highway 99.

Use hurricane Harvey as a base line for planning. Water was at the top of the levee from the Brazos and heavy downpours flooded NT. Reserve pump capacity should be at least 25% more than current amount. Hwy 90A and the bayou on the North side are weak locations. Subsidence over the last 20 years has lowered the levees. One trickle can erode the levee quickly.

I am happy the Harvey wake up call has improved the pumping capacity and that there are plans to work on the levee on the north side. Thank you.

There is not much more that can be done.

I'm pleased with the improvements that have been made and future plans.

Audible warning system independent of other alerts, e.g., texts on cell phone

Make sure disabled seniors are taken care of

No.

Complete the Harvey flood mitigation projects. Especially the north levee .

High level Planning alone does not help. Detailed execution steps and time when these execution steps are to be taken and who will take them is equally important. Also important who will provide equipment to mitigate the hazard.

It's taken way too long to make the necessary changes needed to prevent the possibility of future flooding in New Territory and the surrounding areas and to make repairs to the river bank in order to protect protect our levee. In the meantime we have lost so much of the land that was a buffer between our levee and the Brazos River. Hopefully that can still be remedied.

Fix the levee. It's long overdue. I'm sure there are reasons and excuses why it's not fixed, but we have been vulnerable far too long. Just get it done and get it done now.

Why after the forced evacuation of New Territory due to the lack of a levee to the North and the approval of a bond to build levee has the LID Board not started the build?

I have attended a few LID7 meetings on Brazos River erosion mitigation. I am confident in the competence and commitment of the organization. Thank you. Great work.

I thought after Harvey, the LID was going to make the levy conforming and yet nothing has been done.

Information regarding the hazard issues

Welcome to the 2023 Hurricane Season. A mitigation report is only legal bureaucratic boilerplate if the ACTION takes so long that the predictable levee failure takes place while politicians fiddle. Root cause analysis is missing in this report, it's clearly not a feature of the bureaucratic report boilerplate, but in a post-incident investigation into the destruction of 4000+ homes in New Territory, all of the causes will be found and publicized. The Stavinoha bridge construction is the most immediate man-made cause of the current riverbank erosion problem. If action isn't taken soon, the effort to protect the levee will be conducted as an emergency, in the rain, facing a flooded Brazos, from the top of the levee. The effort will fail. What can the people of New Territory do to expedite the erosion control action? What politician is the problem?

Prioritize completion of Brazos River bank protection adjacent to New Territory.

Booklets on the above at the family level would be useful

We have emergency supplies stockpiled. I also work for FBC

I think you're working on the right things it's just taking soooooooo long.

Based on our mandatory evacuation during Hurricane Harvey for fear of a levy failure, there should be a focus on reinforcing the existing levy, or finding a way to mitigate the Brazos river flood stage threats in another way.

I would expect that New Territory will create a strategy for distributing Fort Bend's Hazard plan to us and information on how it can be applied to our neighborhood.

Secure the levees so we never have to evacuate again.

I am concerned that the erosion control work seems to be going very slow, and there appears no emergency plan to temporarily raise levee (e.g., Rapid Dam, Quick Dam, etc.)

It seems very dangerous how Brazos River at Hwy99 the land slide or land is getting eaten up the flood water. I hope there will be a wall built soon.

pumping station power go off

Lower the costs it's way too expensive!

I remember 2-3 years ago LID 7 came out plan n said it will cost about \$1500 plus will cost per house. This was regarding flood due to erosion. This is very expensive. Flood Insurance quite cheaper than this price. I think nobody will accept similar plan.

Very , very concerned about ercot's handling of our grid/blackouts and the brazos flooding (and what comes after that).

Thank you for your work

Panuska, Ed

From: Panuska, Ed
Sent: Monday, February 12, 2024 2:26 PM
To: bart.rosebure@fortbendisd.com
Subject: Fort Bend County LID #7 - Hazard Mitigation Plan Update
Attachments: Fort Bend County LID7 - DRAFT Hazard Mitigation Plan Update Oct2023.pdf

Bart,

As discussed on the phone a few minutes ago, please see below for information regarding the Hazard Mitigation Plan Update.

I'm working with AECOM to help the Fort Bend County Levee Improvement District #7 (FBCLID7) to update their FEMA Hazard Mitigation Plan (HMP). FBCLID7 constructs certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, part of the City of Sugar Land, from flooding from the Brazos River. This HMP update process, conducted every five years, is an opportunity to examine the potential hazards that could affect residents, businesses, and organizations in the area.

As part of the HMP, we are reaching out to various organizations in the area (academia, business development, nonprofits, etc) in an effort to coordinate, collect feedback, and ensure that the needs of the community as a whole are being considered and protected. A copy of the HMP Draft Update is attached.

The goal of the HMP is to identify projects that can reduce damages from future hazards. The HMP will include a risk assessment and a hazard mitigation strategy. The primary hazards of concern in the LID include Levee Failure, Flooding, and Hurricanes/Tropical storms.

As part of the coordination process, we have reached out to your organization with a few questions:

- 1) Has your organization ever experienced or been impacted by a natural disaster in your current community? (Yes/No)
- 2) In your organizations opinion, what are the top environmental hazards facing your community? (Choose up to three)
- 3) How concerned is your organization about the possibility of your community being affected by a natural disaster? (Not concerned, somewhat concerned, very concerned)
- 4) Are there any other comments you would like to include regarding FBCLID7's Hazard Mitigation Planning strategies and hazards possibly affecting your local community or organization?

Thank you for your assistance in helping to provide feedback related to hazard mitigation; please let me know if you have any questions or general feedback regarding the HMP.

Ed Panuska, PE
Civil Engineer, Water Resources

Panuska, Ed

From: Panuska, Ed
Sent: Monday, February 12, 2024 2:40 PM
To: juliette@fortbendcc.org
Subject: Fort Bend County Levee Improvement District #7 - FEMA Hazard Mitigation Plan Update
Attachments: Fort Bend County LID7 - DRAFT Hazard Mitigation Plan Update Oct2023.pdf

Juliette,

Hello, my name is Ed Panuska, I'm working with AECOM to help the Fort Bend County Levee Improvement District #7 (FBCLID7) to update their FEMA Hazard Mitigation Plan (HMP). FBCLID7 constructs certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, part of the City of Sugar Land, from flooding from the Brazos River. This HMP update process, conducted every five years, is an opportunity to examine the potential hazards that could affect residents, businesses, and organizations in the area.

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Ed Panuska, PE
Civil Engineer, Water Resources

Panuska, Ed

From: Panuska, Ed
Sent: Monday, February 12, 2024 3:12 PM
To: info@fbwc.org
Subject: FEMA Hazard Mitigation Plan Update Coordination - Fort Bend County Levee Improvement District #7
Attachments: Fort Bend County LID7 - DRAFT Hazard Mitigation Plan Update Oct2023.pdf

Hello, my name is Ed Panuska, I'm working with AECOM to help the Fort Bend County Levee Improvement District #7 (FBCLID7) to update their FEMA Hazard Mitigation Plan (HMP). FBCLID7 constructs certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, part of the City of Sugar Land, from flooding from the Brazos River. This HMP update process, conducted every five years, is an opportunity to examine the potential hazards that could affect residents, businesses, and organizations in the area.

As part of the HMP, we are reaching out to various organizations in the area (academia, business development, nonprofits, etc) in an effort to coordinate, collect feedback, and ensure that the needs of the community as a whole are being considered and protected. A copy of the HMP Draft Update is attached.

The goal of the HMP is to identify projects that can reduce damages from future hazards. The HMP will include a risk assessment and a hazard mitigation strategy. The primary hazards of concern in the LID include Levee Failure, Flooding, and Hurricanes/Tropical storms.

As part of the coordination process, we have reached out to your organization with a few questions:

- 1) Has your organization ever experienced or been impacted by a natural disaster in your current community? (Yes/No)**
- 2) In your organizations opinion, what are the top environmental hazards facing your community? (Select up to three)**
- 3) How concerned is your organization about the possibility of your community being affected by a natural disaster? (Not concerned, somewhat concerned, very concerned)**
- 4) Are there any other comments you would like to include regarding FBCLID7's Hazard Mitigation Planning strategies and hazards possibly affecting your local community or organization?**

Thank you for your assistance in helping to provide feedback related to hazard mitigation; please let me know if you have any questions or general feedback regarding the HMP.

Ed Panuska, PE
Civil Engineer, Water Resources
D +1-281-675-3532

Panuska, Ed

From: Adam Yates <adam@fortbendhope.org>
Sent: Tuesday, February 13, 2024 9:32 AM
To: Panuska, Ed
Subject: Re: FEMA Hazard Mitigation Plan Update - Fort Bend County Levee Improvement District #7

This Message Is From an Untrusted Sender

You have not previously corresponded with this sender.

Report Suspicious

Ed,

Thanks for reaching out. The following answers are for Fort Bend Hope:

1. Our organization has never itself been affected by a natural disaster though our clients have.
2. The biggest hazards facing our community are flooding and tropical systems.
3. I am somewhat concerned about a natural disaster as most of our clients are lower income and are, almost definitely, not properly insured.

Thanks,

Adam

Adam Yates
Executive Director
Fort Bend Hope

On Mon, Feb 12, 2024 at 2:53 PM Panuska, Ed <ed.panuska@aecom.com> wrote:

Hello, my name is Ed Panuska, I'm working with AECOM to help the Fort Bend County Levee Improvement District #7 (FBCLID7) to update their FEMA Hazard Mitigation Plan (HMP). FBCLID7 constructs certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, part of the City of Sugar Land, from flooding from the Brazos River. This HMP update process, conducted every five years, is an opportunity to examine the potential hazards that could affect residents, businesses, and organizations in the area.

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Thank you for your assistance in helping to provide feedback related to hazard mitigation; please let me know if you have any questions or general feedback regarding the HMP.

Ed Panuska, PE
Civil Engineer, Water Resources

Panuska, Ed

From: Panuska, Ed
Sent: Monday, February 12, 2024 3:18 PM
To: info@secondmile.org
Subject: FEMA Hazard Mitigation Plan Update - Fort Bend County Levee Improvement District #7
Attachments: Fort Bend County LID7 - DRAFT Hazard Mitigation Plan Update Oct2023.pdf

Hello, my name is Ed Panuska, I'm working with AECOM to help the Fort Bend County Levee Improvement District #7 (FBCLID7) to update their FEMA Hazard Mitigation Plan (HMP). FBCLID7 constructs certain levee and drainage improvements to provide protection to the land and improvements of residential and commercial property owners in the New Territory subdivision, part of the City of Sugar Land, from flooding from the Brazos River. This HMP update process, conducted every five years, is an opportunity to examine the potential hazards that could affect residents, businesses, and organizations in the area.

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- 3) How concerned is your organization about the possibility of your community being affected by a natural disaster? (Not concerned, somewhat concerned, very concerned)**
- 4) Are there any other comments you would like to include regarding FBCLID7's Hazard Mitigation Planning strategies and hazards possibly affecting your local community or organization?**

Thank you for your assistance in helping to provide feedback related to hazard mitigation; please let me know if you have any questions or general feedback regarding the HMP.

Ed Panuska, PE
Civil Engineer, Water Resources

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

NOTICE OF SPECIAL PUBLIC MEETING

Notice is hereby given to all interested members of the public that the Board of Directors (the "Board") of the above captioned District will hold a special public meeting at The Club of New Territory, 1200 Walker School Road, Sugar Land, Texas 77479, said address being an official meeting place of the District.

The meeting will be held on *Tuesday, May 21, 2024, at 5:30 P.M.*

The Board shall consider and discuss the following matters and take any action necessary or appropriate with respect to such matters:

1. **PUBLIC COMMENTS;**
2. **GENERAL, ADMINISTRATIVE AND FINANCIAL MANAGEMENT;**
 - A. Financial Management Plan and implementation of same, including grant funding; status of FEMA Hazard Mitigation Grant Program (administered through TDEM) related to Brazos River Bank Erosion Control Project, and Flood Infrastructure Fund Financial Commitment from Texas Water Development Board for Detention and Drainage Improvements and Facilities;
 - (i) Consider approval of Resolution Adopting 2024 Hazard Mitigation Plan Update;
 - B. Report regarding status of activities of Fort Bend Flood Management Committee;
 - C. Order Establishing Meeting Place of Board of Directors Outside the District;
3. **CAPITAL IMPROVEMENT PROJECTS,** including consideration of Task Order(s) proposed by Mike Stone Associates, Inc., AECOM Technical Services, Inc., or LJA Engineering, Inc.
 - A. Brazos River Bank Erosion Control Project, including:
 - (i) Project Manager's Report, including project status and milestones;
 - (ii) Status of construction, including approval of any pay estimates and change orders; and
 - (iii) Status of acquisition of land east of Grand Parkway Bridge at the request of the New Territory Residential Community Association, Inc.;
 - B. External Drainage Channel Erosion Control Project, including:
 - (i) Project Manager's Report;
 - C. New Stormwater Pump Station Project, including:
 - (i) Status of financing and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders;

- D. Detention and Drainage Improvements and Facilities, including:
 - (i) Status of financing and scheduling; and
 - (ii) Status of construction, including approval of any pay estimates and change orders;
 - E. Reclaimed Water Project, including:
 - (i) Status of construction, including approval of any pay estimates and change orders; and
 - F. Flood protection improvements for northern boundary;
- 4. **ATTORNEY'S REPORT;**
 - 5. **WEBSITE AND COMMUNICATIONS MATTERS;**
 - 6. **CLOSED SESSION** – The Board reserves the right to adjourn to Closed Session at any time during the course of this meeting in accordance with the Texas Open Meetings Act, including Texas Government Code Section 551.071 (Consultation with Attorney regarding Pending or Contemplated Litigation or Matters Protected by Attorney-Client Privilege); and Section 551.072 (Deliberations regarding Acquisition of Real Property Interests);
 - 7. **RECONVENE IN OPEN SESSION** – The Board will reconvene in Open Session, and if necessary, take action on any agenda item discussed in Closed Session;
 - 8. **ANNOUNCEMENTS / FUTURE AGENDA;** and
 - 9. **ADJOURN.**

(SEAL)



SCHWARTZ, PAGE & HARDING, L.L.P.

By:

Christopher T. Skinner
Attorney for the District

Persons with disabilities who plan to attend this meeting and would like to request auxiliary aids or services are requested to contact the District's attorney at (713) 623-4531 at least three business days prior to the meeting so that appropriate arrangements can be made.

FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7

Minutes of Special Meeting of Board of Directors May 21, 2024

The Board of Directors (the "Board") of Fort Bend County Levee Improvement District No. 7 (the "District") met in special session at The Club of New Territory, 1200 Walker School Road, Sugar Land, Texas 77479, an official meeting place of the Board, on May 21, 2024, in accordance with the duly posted Notice of Special Public Meeting, and the roll was called of the duly constituted officers and members of the Board, as follows:

Cindy Picazo, Chairman
Gerald Kazmierczak, Vice-Chairman
Nathan Bedee, Secretary
Susheem Mehta, Assistant Secretary
James R. Grotte, Director

and all of said persons were present, thus constituting a quorum.

Also present were: Phil Martin and Caitlin Cox of Mike Stone & Associates, Inc. ("MSA"); Craig Kalkomey and Kane Mudd of LJA Engineering, Inc. ("LJA"); Calep Estes and Angie Hartwell of Touchstone District Services, LLC ("Touchstone"); Bill Glass of Enhanced Energy Services of America, LLC ("Enhanced"); Michael Walker, Executive Director of the New Territory Residential Community Association, Inc. ("NTRCA"); Katrina Chapman, Richard Chapman, Loren Haskins, and John Shelton, members of the public and residents of the District; and Christopher Skinner of Schwartz, Page & Harding, L.L.P. ("SPH").

The Chairman called the meeting to order and declared it open for such business as might regularly come before the Board.

PUBLIC COMMENTS

The Board began by opening the meeting for public comments. Mr. Glass discussed his communications with Constellation Energy regarding efforts to provide electricity services at the pump station, and he responded to questions from the Board.

RESOLUTION ADOPTING HAZARD MITIGATION PLAN

In connection with the grant funding for the Brazos River Bank Erosion Control Project, Mr. Martin reported that the Federal Emergency Management Agency ("FEMA") has approved the District's draft Hazard Mitigation Plan ("HMP"). He recommended the Board approve a Resolution Adopting the 2024 HMP (the "Resolution"); a copy of said Resolution is attached hereto as **Exhibit A**. After discussion on the matter, it was moved by Director Bedee, seconded by Director Grotte and unanimously carried, that (i) the Board adopt the Resolution, effective on the date of final approval by FEMA, and (ii) the Chairman and Secretary be authorized to execute the Resolution on behalf of the Board and the District.

FLOOD MANAGEMENT COMMITTEE OF FORT BEND COUNTY ECONOMIC DEVELOPMENT COUNCIL

Mr. Martin and Director Kazmierczak provided the Board with an update regarding membership structure of the Fort Bend levee Coalition, organized under and part of Fort Bend Chamber of Commerce (the "FBCC"). In that regard, Mr. Martin presented to and reviewed with the Board levels of membership and related costs. Following discussion, Director Kazmierczak moved to approve payment to the FBCC in the amount of \$10,820 for Chairman's Circle membership at the FBCC, including said coalition. Director Bedee seconded said motion, which unanimously carried.

MEETING PLACE OUTSIDE DISTRICT

As the next order of business, the Board considered adoption of an Order Establishing Meeting Place of Board of Directors Outside the District at Fort Bend Chamber of Commerce located at 445 Commerce Green Blvd, Sugar Land, Texas 77478. Following discussion, Director Grotte moved to approve the Order Establishing Meeting Place of Board of Directors Outside the District; a copy of such Order is attached hereto as **Exhibit B**. Director Kazmierczak seconded said motion, which unanimously carried.

CAPITAL IMPROVEMENT PROJECTS

Mr. Martin presented to and reviewed with the Board the Project Manager's Activity Report dated May 21, 2024, prepared by MSA, attached hereto as **Exhibit C**.

Mr. Mudd next presented to and reviewed with the Board an Engineering Report dated March 19, 2024, prepared by LJA, included with **Exhibit D**.

Regarding the construction of the additional Stormwater Pump Station in the Crescent Ridge subdivision (the "Stormwater Pump Station Project"), following discussion, Director Bedee moved to approve Pay Estimate No. 21 in the amount of \$247,142.70 from NBG Constructors, Inc., as recommended by LJA. Director Grotte seconded said motion, which unanimously carried.

Regarding the Detention and Drainage Improvements and Facilities project, following discussion, Director Bedee moved to approve Pay Estimate No. 4 from Harris Construction, LLC in the amount of \$404,739.90, as recommended by LJA. Director Grotte seconded said motion, which unanimously carried.

ATTORNEY'S REPORT

The Board next considered the attorney's report. In connection therewith, Mr. Skinner advised that he has no additional items that have not already been discussed.

WEBSITE AND COMMUNICATION MATTERS

The Board authorized Touchstone to prepare and post on the District's website an update on construction of drainage and detention improvements and facilities within the District.

CLOSED SESSION

The Board concurred that a Closed Session would not be required in connection with the matters discussed at the meeting.

FUTURE AGENDA ITEMS

The Board considered items for placement on future agendas.

ADJOURNMENT

There being no further business to come before the Board, on motion made by Director Bedee, seconded by Director Kazmierczak and carried unanimously, the meeting was adjourned.



A handwritten signature in dark ink, appearing to be "M. A. L.", written over a horizontal line.

Secretary, Board of Directors

APPENDIX C:
ADOPTION RESOLUTION
FOR THE DISTRICT

**RESOLUTION OF THE BOARD OF DIRECTORS OF
FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 7
ADOPTING THE 2024 HAZARD MITIGATION PLAN**

WHEREAS, Fort Bend County Levee Improvement District No. 7 (the “District”) recognizes the threat that natural hazards, especially flood hazards, may detrimentally impact people and property in the District; and

WHEREAS, the District’s Mitigation Planning Committee has created the District’s Hazard Mitigation Plan, dated May 21, 2024, and effective on the date of final approval by the Federal Emergency Management Agency, pursuant to the Flood Mitigation Assistance Program (44 CFR 78.6), the Hazard Mitigation and Pre-Disaster Mitigation Programs (44 CFR Parts 201 and 206), the process outlined in materials prepared by the Federal Emergency Management Agency, and under the authority derived from Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; and

WHEREAS, the District’s Hazard Mitigation Plan, dated May 21, 2024, and effective on the date of final approval by the Federal Emergency Management Agency, identifies mitigation goals and actions to reduce or eliminate long term risk to people and property within the District from the impacts of possible future hazards and disasters; and

WHEREAS, adoption of the Hazard Mitigation Plan by the District demonstrates its commitment to hazard mitigation and achieving the goals outlined in the District’s Hazard Mitigation Plan, dated May 21, 2024, and effective on the date of final approval by the Federal Emergency Management Agency.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Fort Bend County Levee Improvement District No. 7 that the attached Fort Bend County Levee Improvement District No. 7 Hazard Mitigation Plan dated May 21, 2024, and effective on the date of final approval by the Federal Emergency Management Agency, be and hereby is adopted.

The District hereby finds and declares that written notice of the date, hour, place and subject of the meeting at which this Resolution was adopted was properly and timely posted, and that such meeting was open to the public as required by law at all times during which this Resolution and the subject matter hereof were discussed, considered and formally acted upon, all in accordance with and as required by the Open Meetings Act, Chapter 551, Texas Government Code, as amended.

PASSED AND ADOPTED this the 21st day of May, 2024.

FORT BEND COUNTY LEVEE
IMPROVEMENT DISTRICT NO. 7

By: _____

Chairman, Board of Directors

ATTEST:

By: _____

Secretary, Board of Directors

APPENDIX D:
FEMA APPROVAL LETTER



FEMA

July 24, 2024

Jennifer Charlton-Faia, Deputy State Hazard Mitigation Officer
Texas Division of Emergency Management
P.O. Box 285
Del Valle, TX 78617-9998

RE: Approval of the Fort Bend County Levee Improvement District #7, Texas Single
Jurisdiction Hazard Mitigation Plan

Dear Jennifer Charlton-Faia:

This office has concluded its review of the referenced plan and we are pleased to provide our approval of this plan in meeting the criteria set forth by 44 CFR § 201.6. By receiving this approval, eligibility for the Hazard Mitigation Assistance Grants will be ensured for five years from the date of this letter, expiring on July 23, 2029.

This approval does not demonstrate approval of projects contained in the plan. This office has provided the enclosed Local Hazard Mitigation Planning Tool with reviewer's comments, to further assist the community in refining the plan going forward. Please advise the referenced community of this approval.

If you have any questions, please contact David Freeborn, HM Community Planner, at (940) 898-5323.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald C. Wanhanen".

Ronald C. Wanhanen
Chief, Risk Analysis Branch

Enclosures: Approved Participants

cc: Anne Lehnick

Approved Participants

Attached is the list of approved participating governments included in the July 24, 2024 review of the referenced Hazard Mitigation plan.

Community Name
1) Fort Bend County Levee Improvement District #7

Local Mitigation Plan Review Tool

Plan Information		
Title of Plan	Fort Bend County Levee Improvement District No. 7 Hazard Mitigation Plan Update 2023	
Date of Plan	October 2023	
Local Point of Contact		
Title	Phil Martin – Fort Bend County LID No. 7 Program Manager	
Agency	Fort Bend County Levee Improvement District No. 7	
Email	pmartin@mikestoneassociates.com	
Additional Point of Contact		
Title	Tyson Duncan – Fort Bend County LID No. 7 Project Engineer	
Agency	Fort Bend County Levee Improvement District No. 7 (Consultant)	
Email	tyson.duncan@aecom.com	
Review Information		
State Review		
State Reviewer(s)		Date:
FEMA Review		
FEMA Reviewer(s) and Title	David Freeborn	Date: 7/24/2024
Date Received in FEMA Region 6	7/24/2024	
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved	7/24/2024	

Multi-Jurisdictional Summary Sheet

#	Jurisdiction Name	Requirements Met (Y/N)							
		A. Planning Process	B. Risk Assessment	C. Mitigation Strategy	D. Plan Maintenance	E. Plan Update	F. Plan Adoption	G. HHPD Requirements	H. State Requirements
1	Fort Bend County LID #7	Y	Y	Y	Y	Y	Y	N/A	N/A
2									
3									
4									
5									
6									
7									
8									
9									
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20									

Plan Review Checklist

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been “met” or “not met.” FEMA completes the “required revisions” summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is “not met.” Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process.

If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

Element A: Planning Process

Element A Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))		
A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan’s development, as well as who was involved?	Section 1 – PDF Pages 7-11 Appendix A – PDF Pages 40-41	Y
A1-b. Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?	Section 1 – PDF Pages 7-11 Appendix A – PDF Pages 40-41	Y
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))		
A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?	Section 1 – PDF Pages 7-11 Appendix B – PDF Pages 43-114	Y
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))		
A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?	Section 1 – PDF Pages 7-11 Appendix B – PDF Pages 43-114	Y
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))		

Element A Requirements	Location in Plan (section and/or pagenumber)	Met Y/N
A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?	Section 1.5 – PDF Page 11	Y
Element A Required Revisions		
Required Revision:		

Element B: Risk Assessment

Element B Requirements	Location in Plan (section and/or pagenumber)	Met Y/N
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))		
B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	Section 2 – PDF Pages 14-17	Y
B1-b. Does the plan include information on the location of each identified hazard?	Section 2 – PDF Pages 21-33	Y
B1-c. Does the plan describe the extent for each identified hazard?	Section 2 – PDF Pages 21-33	Y
B1-d. Does the plan include the history of previous hazard events for each identified hazard?	Section 2 – PDF Pages 18-20, 22-33	Y
B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?	Section 2 – PDF Page 16, 21-33	Y
B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?	N/A	
B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))		
B2-a. Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?	Section 2 – PDF Pages 24-33	Y
B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?	Section 2 – PDF Pages 16-33	Y
B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by	Section 2.6.7 – PDF Page 30	Y

Element B Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
floods?		
Element B Required Revisions		
Required Revision:		

Element C: Mitigation Strategy

Element C Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))		
C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?	Section 1 – PDF Pages 7-8	Y
C1-b. Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?	Section 1 – PDF Pages 7-8	Y
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C2-a. Does the plan contain a narrative description or a table/list of their participation activities?	Section 1 – PDF Pages 7-8	Y
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))		
C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?	Section 3 – PDF Pages 34-35	Y
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?	Section 3 – PDF Pages 37-38 Appendix F – PDF Pages 122-128	Y
C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?	Section 3 – PDF Pages 37-38 Appendix F – PDF Pages 122-128	Y
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction?(Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))		
C5-a. Does the plan describe the criteria used for prioritizing actions?	Section 3 – PDF Pages 36-37	Y

Element C Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?	Section 3 – PDF Page 38	Y
Element C Required Revisions		
Required Revision:		

Element D: Plan Maintenance

Element D Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))		
D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?	Section 1 – PDF Pages 12-13	Y
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))		
D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?	Section 1 – PDF Pages 12-13	Y
D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.	Section 1 – PDF Pages 12-13	Y
D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?	Section 1 – PDF Pages 12-13	Y
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))		
D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?	Section 1 – PDF Pages 12-13	Y
D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?	Section 1 – PDF Pages 12-13	Y
D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?	Section 1 – PDF Pages 12-13	N/A

Element D Requirements	Location in Plan (section and/or pagenumber)	Met Y/N
Element D Required Revisions		
Required Revision:		

Element E: Plan Update

Element E Requirements	Location in Plan (section and/or pagenumber)	Met Y/N
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))		
E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved?	Section 2.3 – PDF Page 18 Section 3.4 – PDF Pages 35-36 Section 1.8 – PDF Page 13	Y
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))		
E2-a. Does the plan describe how it was revised due to changes in community priorities?	Section 3 – PDF Page 34	Y
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?	Section 3.4 – PDF Pages 35-36	Y
E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?	Section 1.8 – PDF Page 13	Y
Element E Required Revisions		
Required Revision:		

Element F: Plan Adoption

Element F Requirements	Location in Plan (section and/or pagenumber)	Met Y/N
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F1-a. Does the participant include documentation of adoption?	Appendix C – PDF Page 122	Y
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted The plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F2-a. Did each participant adopt the plan and provide documentation of that adoption?	N/A	N/A
Element F Required Revisions		
Required Revision:		

Element G: High Hazard Potential Dams (Optional)

HHPD Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and Technical information for HHPDs?		
HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?	N/A	
HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?	N/A	
HHPD2. Did the plan address HHPDs in the risk assessment?		
HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?	N/A	
HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?	N/A	
HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?		
HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?	N/A	
HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?	N/A	
HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?		
HHPD4-a. Does the plan describe specific actions to address HHPDs?	N/A	
HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?	N/A	
HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?	N/A	
HHPD Required Revisions		
Required Revision:		

Element H: Additional State Requirements (Optional)

Element H Requirements	Location in Plan (section and/or pagenummer)	Met Y/N
This space is for the State to include additional requirements		

Plan Assessment

These comments can be used to help guide your annual/regularly scheduled updates and the next plan update.

[Element A. Planning Process](#)

[Element B. Risk Assessment](#)

[Element C. Mitigation Strategy](#)

[Element D. Plan Maintenance](#)

[Element E. Plan Update](#)

[Element G. HHPD Requirements \(Optional\)](#)

[Element H. Additional State Requirements \(Optional\)](#)

APPENDIX E: SOURCES

Sources¹

Table 4 – 2010 Population of Plan Area: US Census Bureau

Table 5 – Declared Emergencies and Major Disasters in Fort Bend County: FEMA, Disaster Declaration Summary Database

Table 6 – Classification of Tropical Cyclones: NCEI Storm Events Database

Table 7 – Saffir/Simpson Hurricane Scale: NCEI Storm Events Database

Table 8 – Historical Hurricane and Tropical storm Events in Fort Bend County from 1998-2023: NCEI Storm Events Database

Figure 4 – Depth of Precipitation for 100-Year Storm for 7-Day Duration in Texas: USGS Rainfall Atlas

Figure 5 – Historical Hurricanes and Tropical Storms in Fort Bend County: NOAA

Figure 6 – Effective Floodplains: FEMA

Figure 7 – Depth of Precipitation for 100-Year, 6-Hour Duration: USGS Rainfall Atlas

Appendix G – Risk Comparison Report: FEMA National Risk Index

Note¹ – If a source is not listed in this appendix, it is assumed that the Table or Figure was created based on District data and created specifically for this plan.

APPENDIX F:
MITIGATION ACTION WORKSHEETS

Mitigation Action #1	
Proposed Action:	North / Northeast / Northwest Levee Improvements
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure Projects

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms, Levee Failure
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$25,200,000
Potential Funding Sources:	Bond Funds / Operating Funds / Grant Funding
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	Ongoing – in preliminary design, completion expected in 5-10 years

COMMENTS
<p>The existing levee system surrounds the community on three sides, but the fourth (north) side does not have levee protection as it ties into higher ground. In an extreme event it is possible that the water level in the Brazos River or Bullhead Bayou could rise enough that water could begin to spill around the ends of the existing levee, resulting in potential flooding in the community. The purpose of this mitigation action is to reduce the risk of flood waters entering the community along the north side, as well as at the northeast and northwest corners of the district, during a severe flood event by closing the levee system, thereby protecting the community on all sides. The proposed action would construct levees or floodwalls along the northern edge of the district, tying into the existing levees which currently terminate at US-90A.</p>
<p>Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)</p>
<p>Socially Acceptable = 4; Technically Feasible = 4; Administratively Possible = 4; Politically Acceptable = 4; Legal = 4; Economically Sound = 4; and Environmentally Sound = 4</p>

Mitigation Action #2	
Proposed Action:	Outfall Channel Erosion Control Project
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure Projects
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms, Levee Failure
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$4,200,000
Potential Funding Sources:	Grant Funding / Bond Funds
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	Ongoing
COMMENTS	
<p>High flows in the outfall channel during recent storm events, including Hurricane Harvey in 2017, have caused significant erosion in the downstream section of the outfall channel, prior to its discharge into the Brazos River. Continued erosion of the channel could cause damage to the adjacent levee. This action will serve to repair the damage from Harvey and protect the channel from erosion during future high-flow events using natural channel design principles.</p>	
<p>Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)</p>	
<p>Socially Acceptable = 5; Technically Feasible = 5; Administratively Possible = 5; Politically Acceptable = 5; Legal = 5; Economically Sound = 4; and Environmentally Sound = 4</p>	

Mitigation Action #3	
Proposed Action:	Pump Station Capacity Enhancement Project
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure projects
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$9,800,000
Potential Funding Sources:	Grant Funding / Bond Funds
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	Ongoing – Anticipated completion in December 2023
COMMENTS	
<p>The District proposes to construct a second pump station to improve performance of the internal drainage system in events where gravity discharge is restricted, and the community relies on pumping capacity to keep internal water levels at an acceptable level. This would reduce street ponding and the potential for structural flooding during extreme events</p>	
<p>Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)</p>	
<p>Socially Acceptable = 5; Technically Feasible = 4; Administratively Possible = 4; Politically Acceptable = 4; Legal = 4; Economically Sound = 3; and Environmentally Sound = 4</p>	

Mitigation Action #4	
Proposed Action:	Internal Detention Basin Project
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure projects
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$9,800,000
Potential Funding Sources:	Grant Funding / Bond Funds
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	Ongoing – In plan approval phase, expected construction by December 2023.
COMMENTS	
<p>The District proposes to construct new detention capacity within the community. This could be in the form of a new detention basin, or by increasing storage capacity within existing channels or lakes. This would reduce street ponding and potential for structure flooding during extreme events.</p>	
<p>Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)</p>	
<p>Socially Acceptable = 4; Technically Feasible = 4; Administratively Possible = 4; Politically Acceptable = 4; Legal = 4; Economically Sound = 4; and Environmentally Sound = 4</p>	

Mitigation Action #5	
Proposed Action:	Brazos River Erosion Control Project
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure projects
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms, Levee Failure
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$60,000,000
Potential Funding Sources:	Grant Funding / Bond Funds
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	Ongoing – Expected completion October 2024
COMMENTS	
<p>Significant erosion of the Brazos River bank has occurred near the Grand Parkway bridge during recent storm events. The current minimum distance from the bank to the levee is approximately 200 feet, and over 180 feet of bank has been lost in the past 3 years. This mitigation action would prevent future erosion and loss of river bank that could lead to levee failure and the potential for flooding throughout New Territory during a future extreme flood event on the Brazos River. The action will utilize river training structures, engineered scour protection, and armored slopes to divert energy away from the outer bank, reduce scour potential, and prevent continued bank erosion.</p>	
<p>Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)</p>	
Socially Acceptable = 5; Technically Feasible = 4; Administratively Possible = 3; Politically Acceptable = 4; Legal = 4; Economically Sound = 4; and Environmentally Sound = 4	

Mitigation Action #6	
Proposed Action:	Drainage System Capacity Restoration
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure projects

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms, Levee Failure
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	\$4,200,000
Potential Funding Sources:	Grant Funding / Bond Funds
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	5 - 10 years

COMMENTS
At some point in the future, it may be necessary to remove sediments deposited within the existing conveyance system. This deposition occurs naturally over time but can lead to reduced conveyance capacity which can impact performance of the drainage system. Removal of these sediments would improve performance of the drainage system.
Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies) Socially Acceptable = 4; Technically Feasible = 4; Administratively Possible = 4; Politically Acceptable = 4; Legal = 4; Economically Sound = 4; and Environmentally Sound = 3

Mitigation Action #7	
Proposed Action:	Pump Station in High Meadows
BACKGROUND INFORMATION	
Jurisdiction/Location:	FBCLID7
Risk Reduction Benefit:	Flood risk reduction for benefitted properties
Type of Action (<i>Local Plans and Regulations, Structure and Infrastructure projects, Natural System Protection, or Education and Awareness</i>)	Structure and Infrastructure projects
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Flood, Hurricane & Tropical Storms, Levee Failure
Effect on New/Existing Buildings:	Reduce risk to existing and future structures
Priority (High, Moderate, Low):	High
Estimated Cost:	TBD
Potential Funding Sources:	Grant Funding / Bond Funds
Lead Agency/Department Responsible:	FBCLID7
Implementation Schedule:	5 - 10 years
COMMENTS	
<p>The District proposes to construct a pump station in High Meadows to protect infrastructure and supplement gravity drainage systems during storm events, helping to reduce flood levels. During extreme storm events, the additional pumping capacity would reduce the risk for structural flooding within the District.</p>	
<p>Additional Considerations: The following STAPLEE criteria were evaluated on a scale of 1 to 5 indicating the extent to which this action satisfies each consideration. (1= Does Not Satisfy 3 = Moderately Satisfies 5 = Strongly Satisfies)</p>	
<p>Socially Acceptable = 4; Technically Feasible = 4; Administratively Possible = 3; Politically Acceptable = 4; Legal = 4; Economically Sound = 4; and Environmentally Sound = 4</p>	

APPENDIX G:
FEMA NATIONAL RISK INDEX REPORT

National Risk Index



June 01, 2023

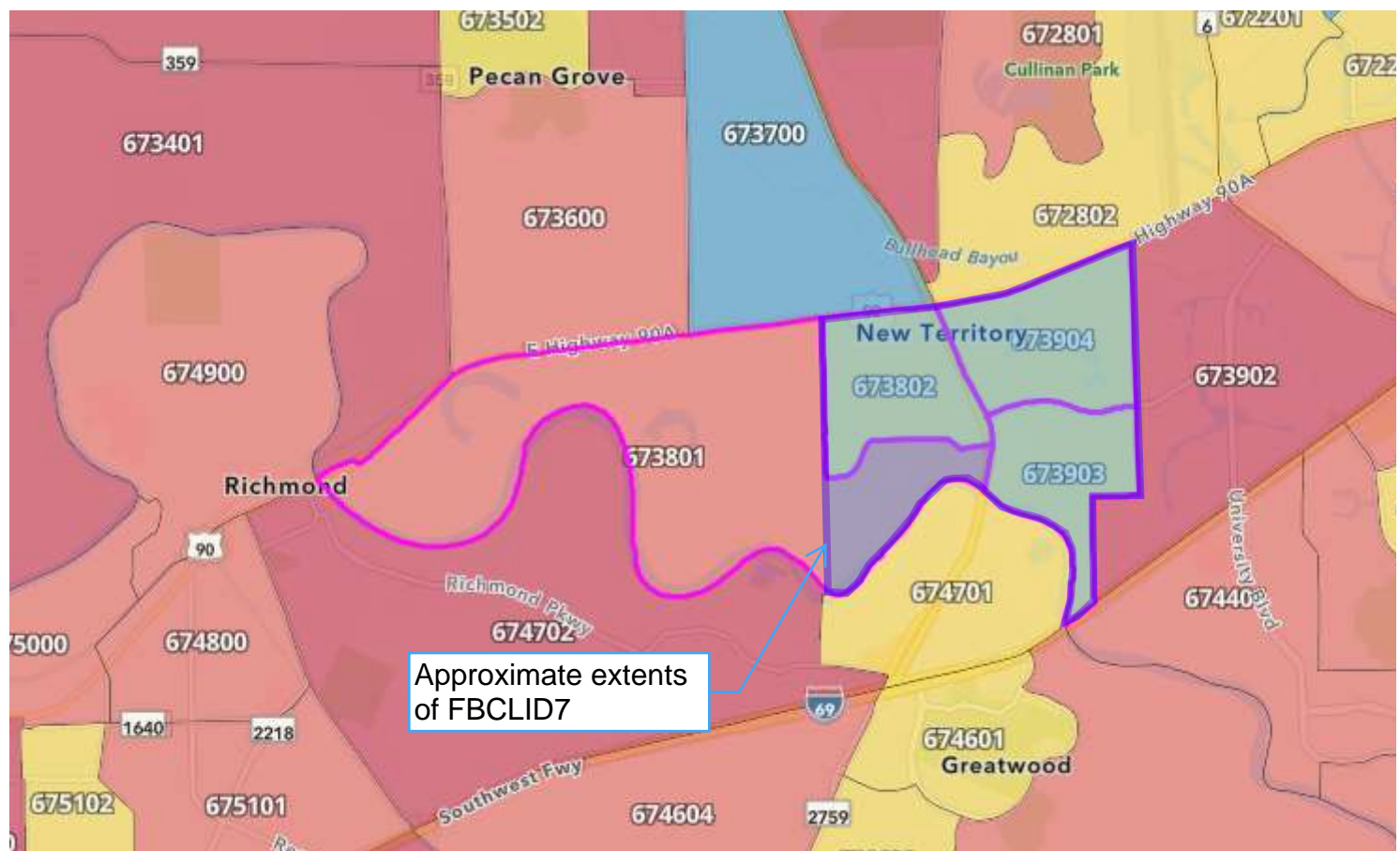
Risk Comparison Report

Use this report to determine how risk factors in selected communities compare to each other. Click a community name in any table below to open an individual risk profile report for that community and review its risk factors in more detail.

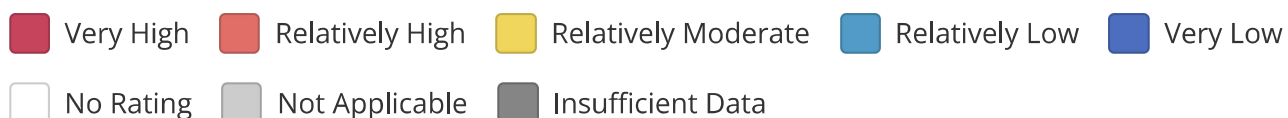
While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Risk Index



Risk Index Legend



Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673801	TX	\$2,494,608	Relatively Low	Relatively Moderate	1.02	\$2,534,883	91.06
2	Census tract 48157673904	TX	\$2,124,617	Very Low	Relatively Moderate	0.77	\$1,638,898	83.19
3	Census tract 48157673802	TX	\$1,511,100	Relatively Low	Relatively Moderate	1.03	\$1,562,578	82.1
4	Census tract 48157673903	TX	\$1,458,116	Very Low	Relatively Moderate	0.81	\$1,179,303	75.25

Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's relative risk for only that hazard type.

Avalanche

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
	Census tract 48157673801	TX	N/A	Relatively Low	Relatively Moderate	1.02	N/A	N/A
	Census tract 48157673802	TX	N/A	Relatively Low	Relatively Moderate	1.03	N/A	N/A
	Census tract 48157673903	TX	N/A	Very Low	Relatively Moderate	0.81	N/A	N/A
	Census tract 48157673904	TX	N/A	Very Low	Relatively Moderate	0.77	N/A	N/A

Coastal Flooding

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
	Census tract 48157673801	TX	N/A	Relatively Low	Relatively Moderate	1.02	N/A	N/A
	Census tract 48157673802	TX	N/A	Relatively Low	Relatively Moderate	1.03	N/A	N/A
	Census tract 48157673903	TX	N/A	Very Low	Relatively Moderate	0.81	N/A	N/A
	Census tract 48157673904	TX	N/A	Very Low	Relatively Moderate	0.77	N/A	N/A

Cold Wave

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$15,340	Relatively Low	Relatively Moderate	1.03	\$15,863	82.72
2	Census tract 48157673904	TX	\$14,217	Very Low	Relatively Moderate	0.77	\$10,966	77.88
3	Census tract 48157673801	TX	\$8,467	Relatively Low	Relatively Moderate	1.02	\$8,604	74.8
4	Census tract 48157673903	TX	\$8,629	Very Low	Relatively Moderate	0.81	\$6,979	72.1

Drought

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673801	TX	\$129	Relatively Low	Relatively Moderate	1.02	\$131	77.04
	Census tract 48157673802	TX	\$0	Relatively Low	Relatively Moderate	1.03	\$0	0
	Census tract 48157673903	TX	\$0	Very Low	Relatively Moderate	0.81	\$0	0
	Census tract 48157673904	TX	\$0	Very Low	Relatively Moderate	0.77	\$0	0

Earthquake

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$1,537	Relatively Low	Relatively Moderate	1.03	\$1,589	12.92
2	Census tract 48157673904	TX	\$1,957	Very Low	Relatively Moderate	0.77	\$1,509	12.41
3	Census tract 48157673801	TX	\$1,455	Relatively Low	Relatively Moderate	1.02	\$1,478	12.19
4	Census tract 48157673903	TX	\$1,358	Very Low	Relatively Moderate	0.81	\$1,098	9.63

Hail

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$7,071	Relatively Low	Relatively Moderate	1.03	\$7,312	68.43
2	Census tract 48157673904	TX	\$7,635	Very Low	Relatively Moderate	0.77	\$5,889	65.95
3	Census tract 48157673801	TX	\$4,276	Relatively Low	Relatively Moderate	1.02	\$4,345	62.38
4	Census tract 48157673903	TX	\$4,873	Very Low	Relatively Moderate	0.81	\$3,941	61.22

Heat Wave

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$2,183	Relatively Low	Relatively Moderate	1.03	\$2,258	29.23
2	Census tract 48157673904	TX	\$2,015	Very Low	Relatively Moderate	0.77	\$1,554	25.45
3	Census tract 48157673801	TX	\$1,193	Relatively Low	Relatively Moderate	1.02	\$1,212	23.28
4	Census tract 48157673903	TX	\$1,221	Very Low	Relatively Moderate	0.81	\$988	21.74

Hurricane

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673904	TX	\$1,564,333	Very Low	Relatively Moderate	0.77	\$1,206,703	90.4
2	Census tract 48157673802	TX	\$1,082,536	Relatively Low	Relatively Moderate	1.03	\$1,119,415	89.73
3	Census tract 48157673903	TX	\$1,073,206	Very Low	Relatively Moderate	0.81	\$867,993	87.56
4	Census tract 48157673801	TX	\$780,585	Relatively Low	Relatively Moderate	1.02	\$793,188	86.86

Ice Storm

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$647	Relatively Low	Relatively Moderate	1.03	\$669	19.95
2	Census tract 48157673904	TX	\$612	Very Low	Relatively Moderate	0.77	\$472	15.4
3	Census tract 48157673801	TX	\$359	Relatively Low	Relatively Moderate	1.02	\$364	12.44
4	Census tract 48157673903	TX	\$374	Very Low	Relatively Moderate	0.81	\$302	10.63

Landslide

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673903	TX	\$1,819	Very Low	Relatively Moderate	0.81	\$1,471	70.98
2	Census tract 48157673801	TX	\$287	Relatively Low	Relatively Moderate	1.02	\$291	50.56
	Census tract 48157673802	TX	\$0	Relatively Low	Relatively Moderate	1.03	\$0	0
	Census tract 48157673904	TX	\$0	Very Low	Relatively Moderate	0.77	\$0	0

Lightning

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$24,451	Relatively Low	Relatively Moderate	1.03	\$25,284	88.31
2	Census tract 48157673904	TX	\$24,077	Very Low	Relatively Moderate	0.77	\$18,572	81.48
3	Census tract 48157673801	TX	\$13,131	Relatively Low	Relatively Moderate	1.02	\$13,343	72.96
4	Census tract 48157673903	TX	\$14,291	Very Low	Relatively Moderate	0.81	\$11,558	68.92

Riverine Flooding

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673801	TX	\$1,486,400	Relatively Low	Relatively Moderate	1.02	\$1,510,398	98.97
2	Census tract 48157673904	TX	\$173,190	Very Low	Relatively Moderate	0.77	\$133,596	87.86
3	Census tract 48157673903	TX	\$143,268	Very Low	Relatively Moderate	0.81	\$115,873	86.51
4	Census tract 48157673802	TX	\$36,951	Relatively Low	Relatively Moderate	1.03	\$38,210	72.94

Strong Wind

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$9,648	Relatively Low	Relatively Moderate	1.03	\$9,977	49.44
2	Census tract 48157673904	TX	\$9,699	Very Low	Relatively Moderate	0.77	\$7,482	43.83
3	Census tract 48157673801	TX	\$5,585	Relatively Low	Relatively Moderate	1.02	\$5,675	38.82
4	Census tract 48157673903	TX	\$6,054	Very Low	Relatively Moderate	0.81	\$4,896	36.34

Tornado

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$320,736	Relatively Low	Relatively Moderate	1.03	\$331,662	88.13
2	Census tract 48157673904	TX	\$317,737	Very Low	Relatively Moderate	0.77	\$245,097	80.86
3	Census tract 48157673801	TX	\$182,916	Relatively Low	Relatively Moderate	1.02	\$185,869	73.89
4	Census tract 48157673903	TX	\$197,385	Very Low	Relatively Moderate	0.81	\$159,642	70.11

Tsunami

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
	Census tract 48157673801	TX	N/A	Relatively Low	Relatively Moderate	1.02	N/A	N/A
	Census tract 48157673802	TX	N/A	Relatively Low	Relatively Moderate	1.03	N/A	N/A
	Census tract 48157673903	TX	N/A	Very Low	Relatively Moderate	0.81	N/A	N/A
	Census tract 48157673904	TX	N/A	Very Low	Relatively Moderate	0.77	N/A	N/A

Volcanic Activity

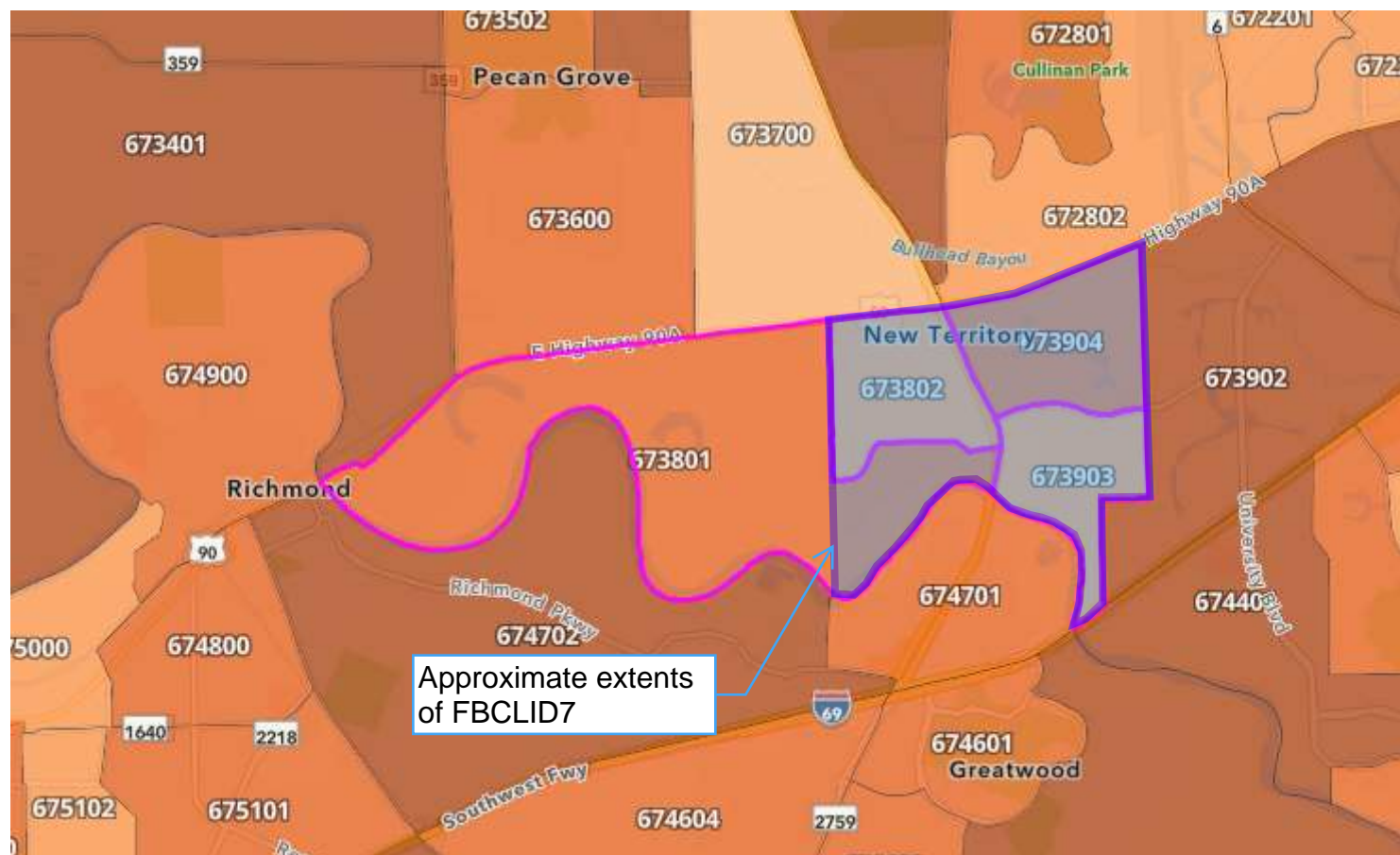
Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
	Census tract 48157673801	TX	N/A	Relatively Low	Relatively Moderate	1.02	N/A	N/A
	Census tract 48157673802	TX	N/A	Relatively Low	Relatively Moderate	1.03	N/A	N/A
	Census tract 48157673903	TX	N/A	Very Low	Relatively Moderate	0.81	N/A	N/A
	Census tract 48157673904	TX	N/A	Very Low	Relatively Moderate	0.77	N/A	N/A

Wildfire

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673801	TX	\$4,471	Relatively Low	Relatively Moderate	1.02	\$4,543	80.06
2	Census tract 48157673802	TX	\$261	Relatively Low	Relatively Moderate	1.03	\$270	46.84
3	Census tract 48157673903	TX	\$115	Very Low	Relatively Moderate	0.81	\$93	35.5
4	Census tract 48157673904	TX	\$68	Very Low	Relatively Moderate	0.77	\$53	31.39

Rank	Community	State	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Score
1	Census tract 48157673802	TX	\$9,738	Relatively Low	Relatively Moderate	1.03	\$10,070	85.62
2	Census tract 48157673904	TX	\$9,079	Very Low	Relatively Moderate	0.77	\$7,004	80.2
3	Census tract 48157673801	TX	\$5,354	Relatively Low	Relatively Moderate	1.02	\$5,440	75.65
4	Census tract 48157673903	TX	\$5,522	Very Low	Relatively Moderate	0.81	\$4,466	72.02

Expected Annual Loss measures the expected loss each year due to natural hazards.



Expected Annual Loss Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- No Expected Annual Losses
- Not Applicable
- Insufficient Data

Rank	Community	State	EAL Value	Score
1	Census tract 48157673801	TX	\$2,494,608	92.92
2	Census tract 48157673904	TX	\$2,124,617	90.71
3	Census tract 48157673802	TX	\$1,511,100	84.7
4	Census tract 48157673903	TX	\$1,458,116	83.95

Expected Annual Loss for Hazard Types

Expected Annual Loss scores for hazard types are calculated using data for only a single hazard type, and reflect a community's relative expected annual loss for only that hazard type.

Avalanche

Rank	Community	State	EAL Value	Score
	Census tract 48157673801	TX	N/A	--
	Census tract 48157673802	TX	N/A	--
	Census tract 48157673903	TX	N/A	--
	Census tract 48157673904	TX	N/A	--

Coastal Flooding

Rank	Community	State	EAL Value	Score
	Census tract 48157673801	TX	N/A	--
	Census tract 48157673802	TX	N/A	--
	Census tract 48157673903	TX	N/A	--
	Census tract 48157673904	TX	N/A	--

Cold Wave

Rank	Community	State	EAL Value	Score
1	Census tract 48157673802	TX	\$15,340	83.9
2	Census tract 48157673904	TX	\$14,217	82.9
3	Census tract 48157673903	TX	\$8,629	76.0
4	Census tract 48157673801	TX	\$8,467	75.8

Drought

Rank	Community	State	EAL Value	Score
1	Census tract 48157673801	TX	\$129	77.4
	Census tract 48157673802	TX	\$0	0.0
	Census tract 48157673903	TX	\$0	0.0
	Census tract 48157673904	TX	\$0	0.0

Earthquake

Rank	Community	State	EAL Value	Score
1	Census tract 48157673904	TX	\$1,957	16.0
2	Census tract 48157673802	TX	\$1,537	13.2
3	Census tract 48157673801	TX	\$1,455	12.6
4	Census tract 48157673903	TX	\$1,358	12.0

Hail

Rank	Community	State	EAL Value	Score
1	Census tract 48157673904	TX	\$7,635	70.7
2	Census tract 48157673802	TX	\$7,071	69.8
3	Census tract 48157673903	TX	\$4,873	65.5
4	Census tract 48157673801	TX	\$4,276	64.0

Heat Wave

Rank	Community	State	EAL Value	Score
1	Census tract 48157673802	TX	\$2,183	30.4
2	Census tract 48157673904	TX	\$2,015	29.5
3	Census tract 48157673903	TX	\$1,221	25.0
4	Census tract 48157673801	TX	\$1,193	24.8

Hurricane

Rank	Community	State	EAL Value	Score
1	Census tract 48157673904	TX	\$1,564,333	93.5
2	Census tract 48157673802	TX	\$1,082,536	90.2
3	Census tract 48157673903	TX	\$1,073,206	90.1
4	Census tract 48157673801	TX	\$780,585	87.2

Ice Storm

Rank	Community	State	EAL Value	Score
1	Census tract 48157673802	TX	\$647	20.7
2	Census tract 48157673904	TX	\$612	19.8
3	Census tract 48157673903	TX	\$374	13.6
4	Census tract 48157673801	TX	\$359	13.2

Landslide

Rank	Community	State	EAL Value	Score
1	Census tract 48157673903	TX	\$1,819	75.4
2	Census tract 48157673801	TX	\$287	50.9
	Census tract 48157673802	TX	\$0	0.0
	Census tract 48157673904	TX	\$0	0.0

Lightning

Rank	Community	State	EAL Value	Score
1	Census tract 48157673802	TX	\$24,451	90.6
2	Census tract 48157673904	TX	\$24,077	90.4
3	Census tract 48157673903	TX	\$14,291	78.2
4	Census tract 48157673801	TX	\$13,131	75.7

Riverine Flooding

Rank	Community	State	EAL Value	Score
1	Census tract 48157673801	TX	\$1,486,400	99.2
2	Census tract 48157673904	TX	\$173,190	91.4
3	Census tract 48157673903	TX	\$143,268	89.8
4	Census tract 48157673802	TX	\$36,951	73.7

Strong Wind

Rank	Community	State	EAL Value	Score
1	Census tract 48157673904	TX	\$9,699	51.2
2	Census tract 48157673802	TX	\$9,648	51.1
3	Census tract 48157673903	TX	\$6,054	42.1
4	Census tract 48157673801	TX	\$5,585	40.7

Tornado

Rank	Community	State	EAL Value	Score
1	Census tract 48157673802	TX	\$320,736	90.6
2	Census tract 48157673904	TX	\$317,737	90.4
3	Census tract 48157673903	TX	\$197,385	78.2
4	Census tract 48157673801	TX	\$182,916	76.2

Tsunami

Rank	Community	State	EAL Value	Score
	Census tract 48157673801	TX	N/A	--
	Census tract 48157673802	TX	N/A	--
	Census tract 48157673903	TX	N/A	--
	Census tract 48157673904	TX	N/A	--

Volcanic Activity

Rank	Community	State	EAL Value	Score
	Census tract 48157673801	TX	N/A	--
	Census tract 48157673802	TX	N/A	--
	Census tract 48157673903	TX	N/A	--
	Census tract 48157673904	TX	N/A	--

Wildfire

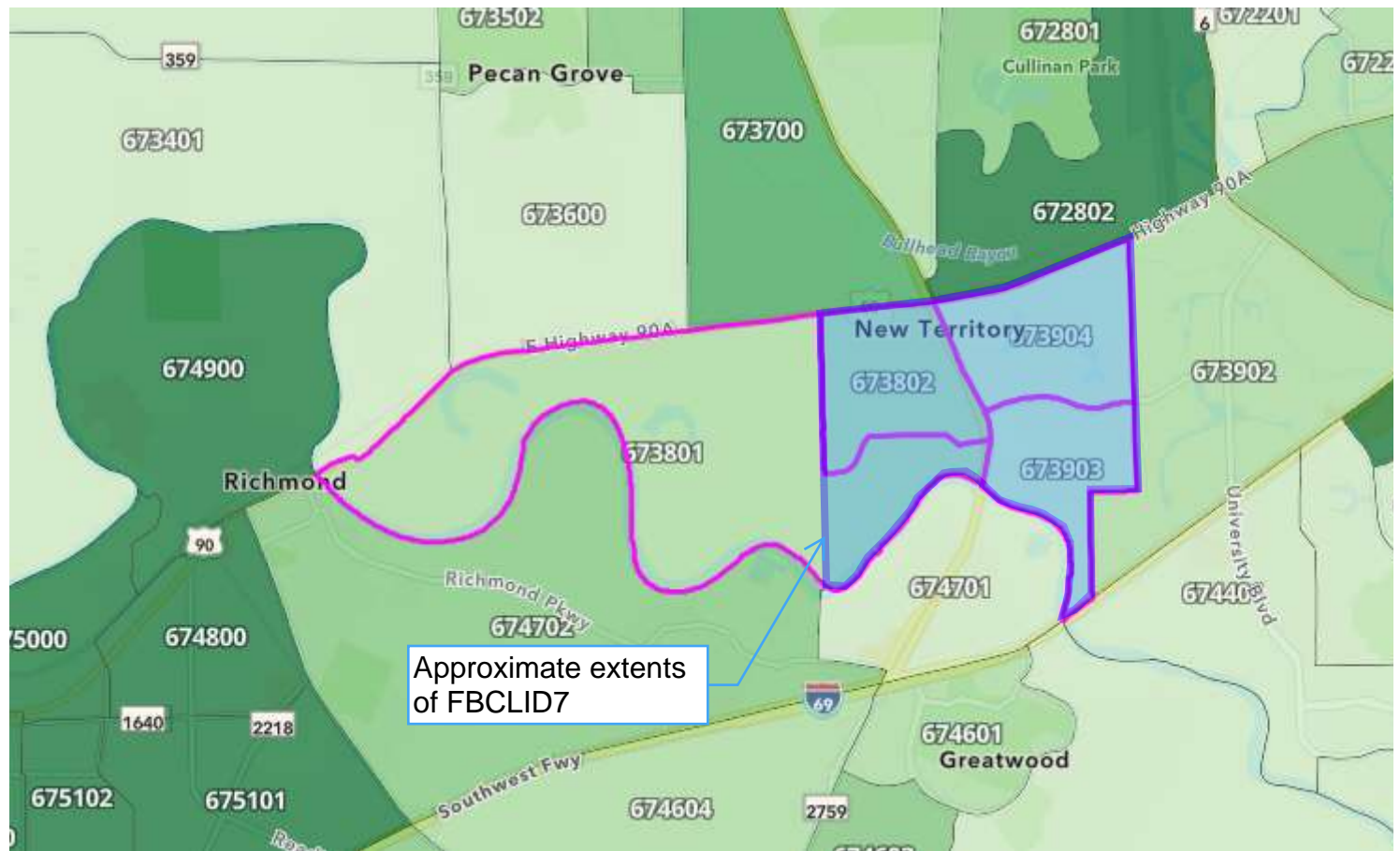
Rank	Community	State	EAL Value	Score
1	Census tract 48157673801	TX	\$4,471	80.4
2	Census tract 48157673802	TX	\$261	47.6
3	Census tract 48157673903	TX	\$115	38.5
4	Census tract 48157673904	TX	\$68	33.9

Winter Weather

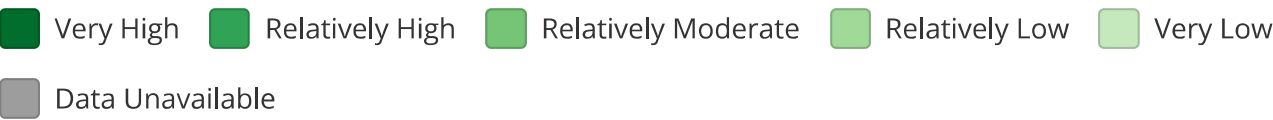
Rank	Community	State	EAL Value	Score
1	Census tract 48157673802	TX	\$9,738	87.0
2	Census tract 48157673904	TX	\$9,079	86.0
3	Census tract 48157673903	TX	\$5,522	78.0
4	Census tract 48157673801	TX	\$5,354	77.4

Social Vulnerability

Social Vulnerability measures the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood.



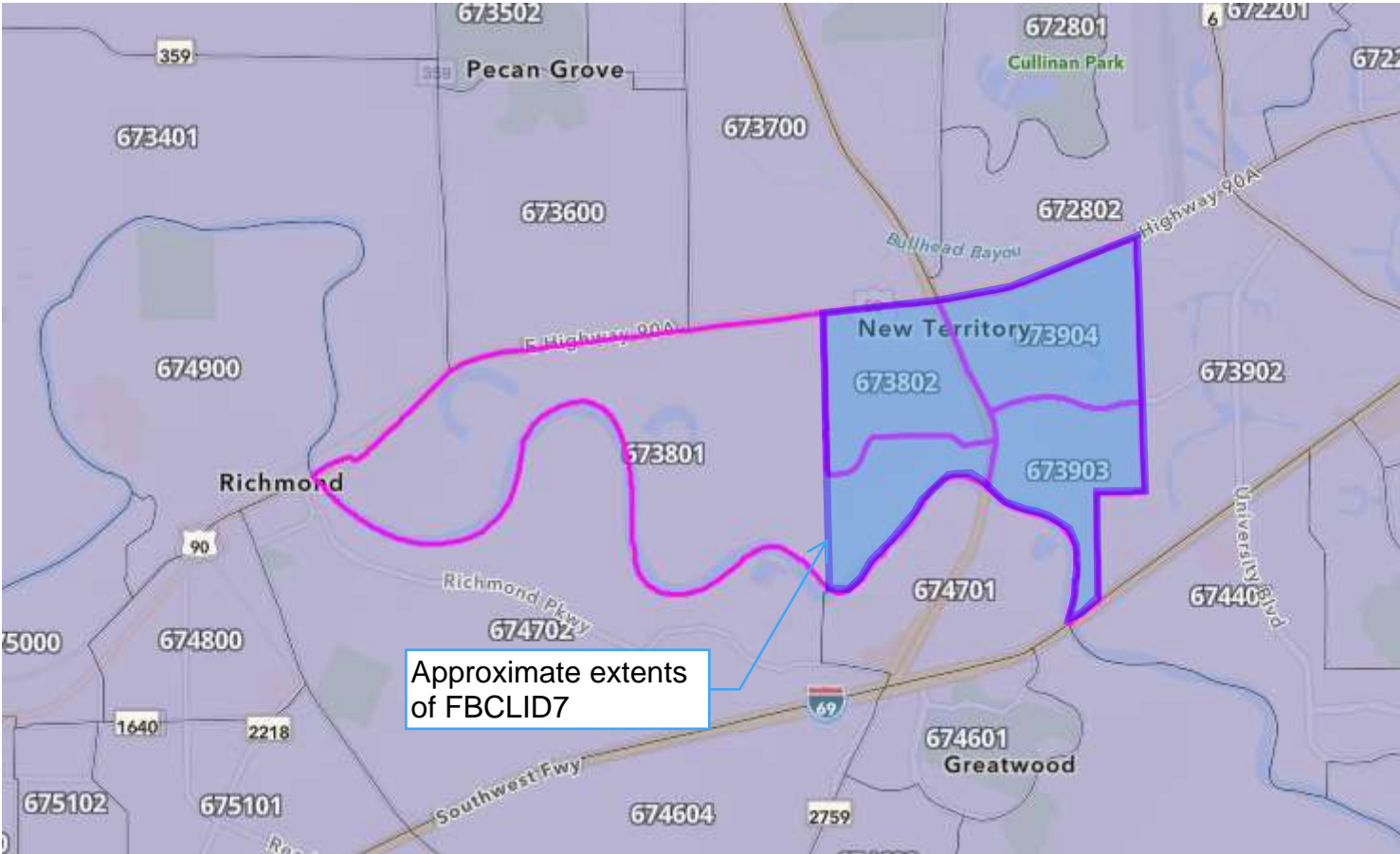
Social Vulnerability Legend



Rank	Community	State	Rating	Score
1	Census tract 48157673802	TX	Relatively Low	37.8
2	Census tract 48157673801	TX	Relatively Low	35.4
3	Census tract 48157673903	TX	Very Low	12.6
4	Census tract 48157673904	TX	Very Low	9.7

Community Resilience

Community Resilience measures a community's ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions.



Community Resilience Legend

Very High

Relatively High

Relatively Moderate

Relatively Low

Very Low

Data Unavailable

Rank	Community	State	Rating	Score
1	Census tract 48157673801	TX	Relatively Moderate	44.3
1	Census tract 48157673802	TX	Relatively Moderate	44.3
1	Census tract 48157673903	TX	Relatively Moderate	44.3
1	Census tract 48157673904	TX	Relatively Moderate	44.3

About the National Risk Index

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at hazards.fema.gov/nri/map.

Visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Calculating the Risk Index

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability and Community Resilience:

$$\text{Risk Index} = \text{Expected Annual Loss} \times \text{Social Vulnerability} \div \text{Community Resilience}$$

Risk Index scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit hazards.fema.gov/nri/determining-risk.

Calculating Expected Annual Loss

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios for 18 hazard types:

$$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

Expected Annual Loss scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit hazards.fema.gov/nri/expected-annual-loss.

Calculating Social Vulnerability

Social Vulnerability is measured using the Social Vulnerability Index (SVI) published by the Centers for Disease Control and Prevention (CDC).

For more information, visit hazards.fema.gov/nri/social-vulnerability.

Calculating Community Resilience

Community Resilience is measured using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit hazards.fema.gov/nri/community-resilience.

How to Take Action

There are many ways to reduce natural hazard risk through mitigation. Communities with high National Risk Index scores can take action to reduce risk by decreasing Expected Annual Loss due to natural hazards, decreasing Social Vulnerability, and increasing Community Resilience.

For information about how to take action and reduce your risk, visit hazards.fema.gov/nri/take-action.

Disclaimer

The National Risk Index (the Risk Index or the Index) and its associated data are meant for planning purposes only. This tool was created for broad nationwide comparisons and is not a substitute for localized risk assessment analysis. Nationwide datasets used as inputs for the National Risk Index are, in many cases, not as accurate as available local data. Users with access to local data for each National Risk Index risk factor should consider substituting the Risk Index data with local data to recalculate a more accurate risk index. If you decide to download the National Risk Index data and substitute it with local data, you assume responsibility for the accuracy of the data and any resulting data index. Please visit the [Contact Us](#) page if you would like to discuss this process further.

The methodology used by the National Risk Index has been reviewed by subject matter experts in the fields of natural hazard risk research, risk analysis, mitigation planning, and emergency management. The processing methods used to create the National Risk Index have produced results similar to those from other natural hazard risk analyses conducted on a smaller scale. The breadth and combination of geographic information systems (GIS) and data processing techniques leveraged by the National Risk Index enable it to incorporate multiple hazard types and risk factors, manage its nationwide scope, and capture what might have been missed using other methods.

The National Risk Index does not consider the intricate economic and physical interdependencies that exist across geographic regions. Keep in mind that hazard impacts in surrounding counties or Census tracts can cause indirect losses in your community regardless of your community's risk profile.

Nationwide data available for some risk factors are rudimentary at this time. The National Risk Index will be continuously updated as new data become available and improved methodologies are identified.

The National Risk Index Contact Us page is available at hazards.fema.gov/nri/contact-us.