

GALVESTON COUNTY CONSOLIDATED DRAINAGE DISTRICT (GCCDD) HAZARD MITIGATION PLAN UPDATE



**PUBLIC PRESENTATION
MAY 6, 2025**



AGENDA

1. Hazard Mitigation, Hazard Mitigation Planning and Updating the Plan
2. Updating the Plan - Who is involved
3. What is in the Plan
4. How can the Public help

A landscape photograph showing a green field in the background, a small stream or ditch in the middle ground, and a concrete barrier in the foreground. The sky is overcast and grey. A dark blue rectangular box with a white border is overlaid on the center of the image, containing white text.

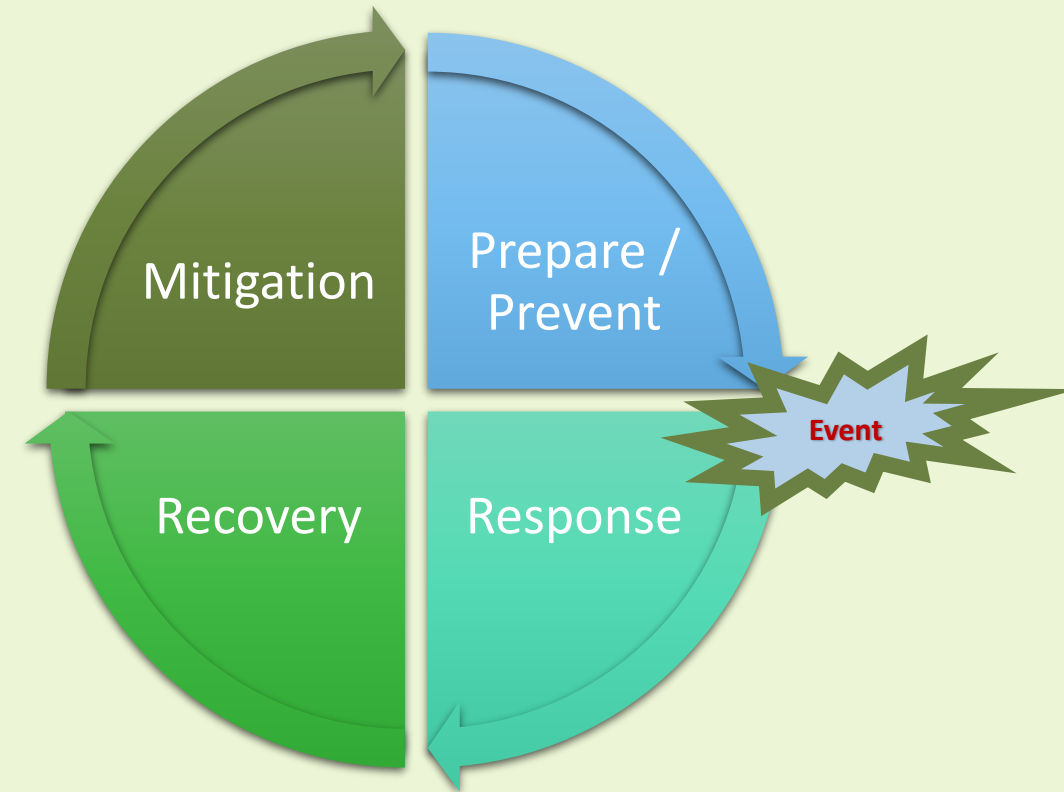
WHAT IS HAZARD MITIGATION AND HAZARD MITIGATION PLANNING?

HAZARD MITIGATION

- Actions taken to help reduce or eliminate long-term risks caused by hazards or disasters.
- Aims to protect people and property and minimize impact of disasters by implementing sustainable solutions.
- Mitigation is most effective when it is based on a comprehensive, long-term plan that is developed BEFORE a disaster occurs.
- There are several steps a community can take to help mitigate hazards – developing a Hazard Mitigation Plan (HMP) is one of them.

A HAZARD MITIGATION PLAN:

- Breaks the cycle of disaster damage, reconstruction, and repeated damage and includes long-term solutions that reduce the impact of disasters in the future;
- Identifies policies and actions that can be implemented to reduce risk and future losses from hazards and disasters; and
- Is a community-driven document that encourages the community to integrate mitigation into their day-to-day operations and decisions by aligning risk reduction with community objectives.



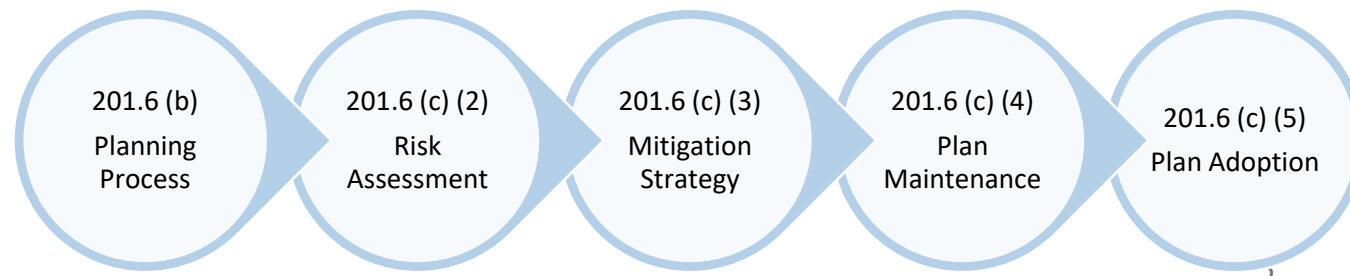


Requirements for the Plan Update

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
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?		
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?		
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?		

WHY UPDATE THE CURRENT PLAN?

- Provides a chance to review the District's mitigation priorities, strategy, goals, and actions to reduce risk and is required to be updated every five years
- Provides an opportunity to advance the previous and ongoing mitigation efforts
- Provides an opportunity to engage the whole community
- Continues to allow the District to be eligible for pre- and post-disaster mitigation funding
- Allows for chance to integrate plan with other community planning initiatives (synergies between cities, organizations, and county plans and programs)





**UPDATING THE PLAN -
WHO IS INVOLVED**

UPDATING THE PLAN – PARTNERING WITH STAKEHOLDERS AND THE COMMUNITY



Mitigation Planning Committee (MPC) – Core group responsible for making decisions, guiding the planning process, and agreeing upon the final contents of the plan.



Stakeholders – Individuals or groups that affect or can be affected by a mitigation action or policy.



Public Engagement - Input from community members can strengthen the content and outcomes of the mitigation plan.

An aerial photograph of a residential neighborhood where the streets and yards are completely submerged in floodwater. The houses have dark grey roofs, and several swimming pools are visible, some of which are partially submerged. A central text box with a white border and a dark teal background contains the text "WHAT IS IN THE PLAN?".

WHAT IS IN THE PLAN?

COMMUNITY PROFILE AND PLANNING PROCESS

Community Profile information

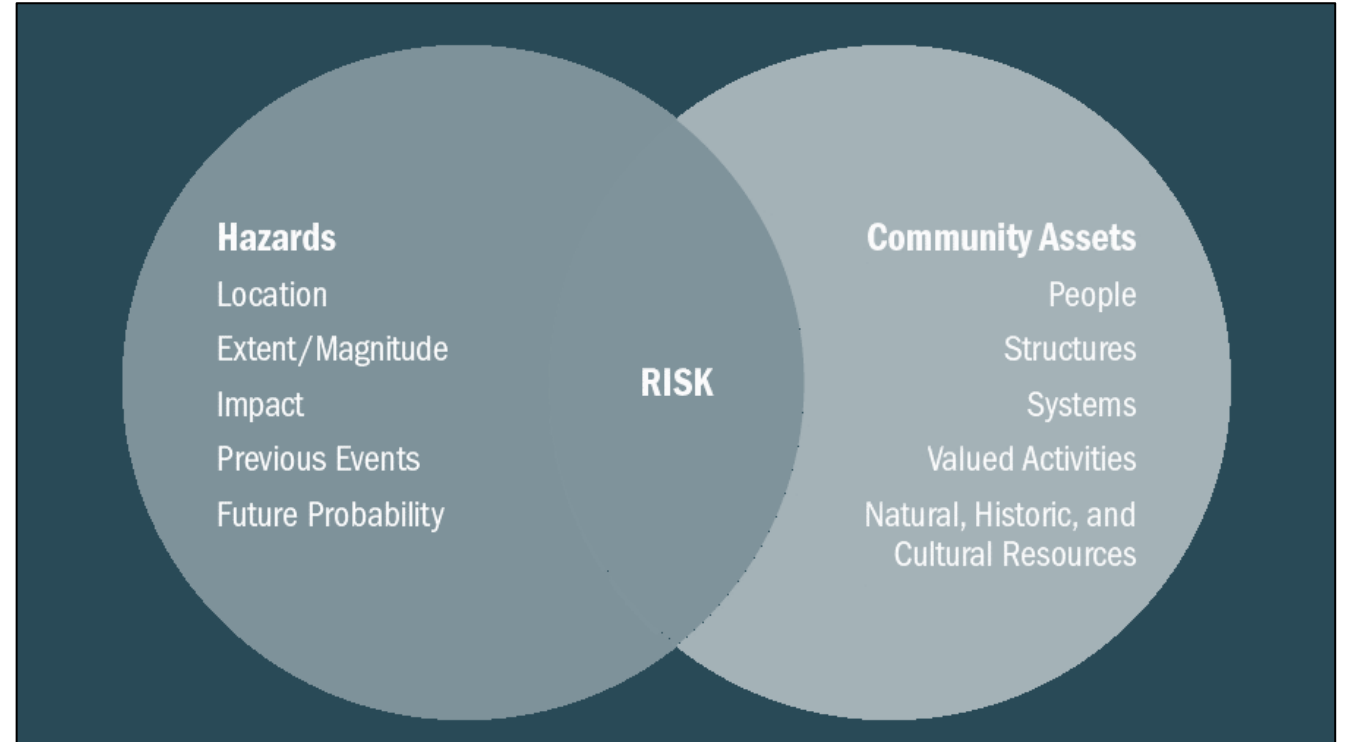
1. Planning Area defined
2. Physical characteristics
 - a. Geology
 - b. Soils and Wetlands
 - c. Climate
3. Development and Land characteristics
4. Demographics
5. GCCDD Capability Assessment

Planning Process - Record of how the plan was developed

1. Who is involved in the development of the plan
2. What information/data/analysis can be provided
3. Where can information be found or be provided
4. How is the plan developed

RISK ASSESSMENT

1. Identify hazards
2. Describe each hazard
3. Profile each hazard
 - a. Location – where it might happen in the planning area
 - b. Extent – how minor or severe it may be
 - c. Previous Events – how often and where it has happened in the past
4. Future Probability – how likely it is to occur and how it may change (frequency/intensity) in the future
5. Identify community assets
6. Analyze impacts - the effects on assets
7. Summarize vulnerability – which assets are at risk



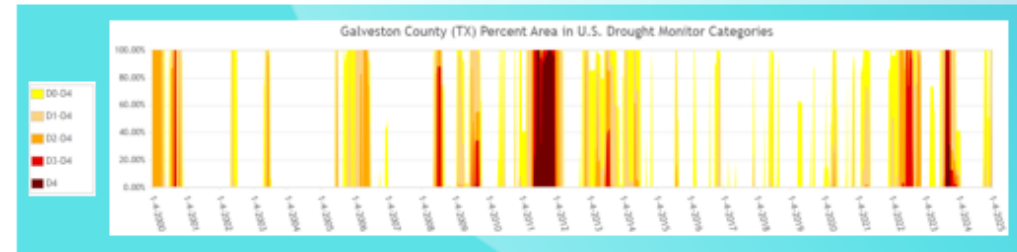
IDENTIFIED HAZARDS

2025 Hazards
Drought
Expansive Soil
Extreme Heat
Flood
Hailstorm
Hurricane/Tropical Storm
Land Subsidence
Lightning
Thunderstorm/High Wind
Tornado
Wildfire
Winter Storm

DROUGHT

- **Location** – GCCDD is susceptible to all categories of drought defined by the Palmer Drought Severity Index (PDSI). Entire area is equally at risk since drought occurs on a regional scale.
- **Extent** – Palmer Drought Severity Index (indices that indicates the prolonged and abnormal moisture deficiency) and US Drought Monitor (map released each week to show where drought is and how bad it is based on color coded classifications).
- **Previous Occurrences** – Drought.gov data recorded droughts – 2000, 2008, 2009, 2011, 2012, 2013, 2022, 2023 (8 years since 2000 of at least extreme drought)
- **Future Probability** – With 8 events over the last 24 years you could expect a drought every ~3.3 years or 33% chance per year.
- **What assets are at risk?**
- **Overall Significance**

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> • short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> • some lingering water deficits • pastures or crops not fully recovered
D1	Moderate Drought	<ul style="list-style-type: none"> • Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent • Voluntary water-use restrictions requested
D2	Severe Drought	<ul style="list-style-type: none"> • Crop or pasture losses likely • Water shortages common • Water restrictions imposed
D3	Extreme Drought	<ul style="list-style-type: none"> • Major crop/pasture losses • Widespread water shortages or restrictions
D4	Exceptional Drought	<ul style="list-style-type: none"> • Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies



Assets



People



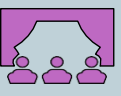
Structures



Systems

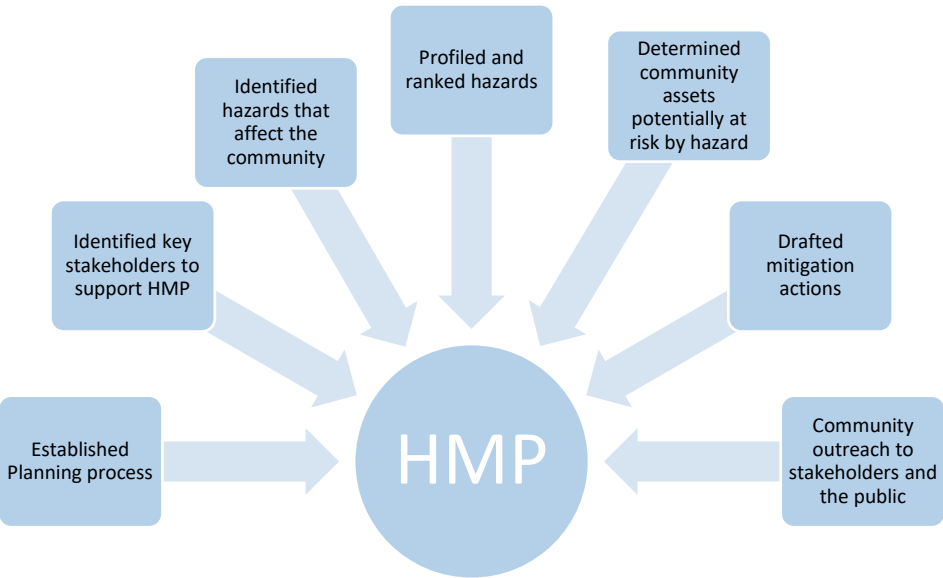


Resources



Activities

Status



Community Asset Responsibility



The District is a conservation and reclamation district and a political subdivision of the State of Texas. It was created primarily to provide drainage of overflow lands within the northwestern part of Galveston County. The District works with local, state, federal, and county agencies to maintain existing flood control systems as well as construct new, additions and modifications flood control projects.

2025 Hazard Ranked by Significance (LOW/MEDIUM/HIGH)	Community Assets Potentially at Risk by Hazard
Drought - HIGH	Vegetation, water quality, channel and ditch cracking
Expansive Soil - HIGH	Concrete, culverts, detention ponds
Extreme Heat - HIGH	Workforce, water quality, equipment
Flood - HIGH	Loss of life, damages to property, equipment, and infrastructure, Debris removal, workforce
Hailstorm - LOW	Equipment, roof, vegetation
Hurricane and Tropical Storm - HIGH	Loss of life, damages to property, equipment, and infrastructure, Debris removal, workforce
Land Subsidence - LOW	Infrastructure, change in drainage and water systems
Lightning - LOW	Workforce, power outage, damage to equipment in main building
Thunderstorm/High Wind – HIGH	Damages to property, equipment, and infrastructure, Debris removal, workforce
Tornado – LOW	Damages to property, equipment, and infrastructure, Debris removal, workforce
Wildfire – LOW	Damage to vegetation, infrastructure, buildings close to Wildfire Urban Interface (WUI)
Winter Storm - MEDIUM	Workforce, Pipes, Equipment, Infrastructure, Building, vegetation

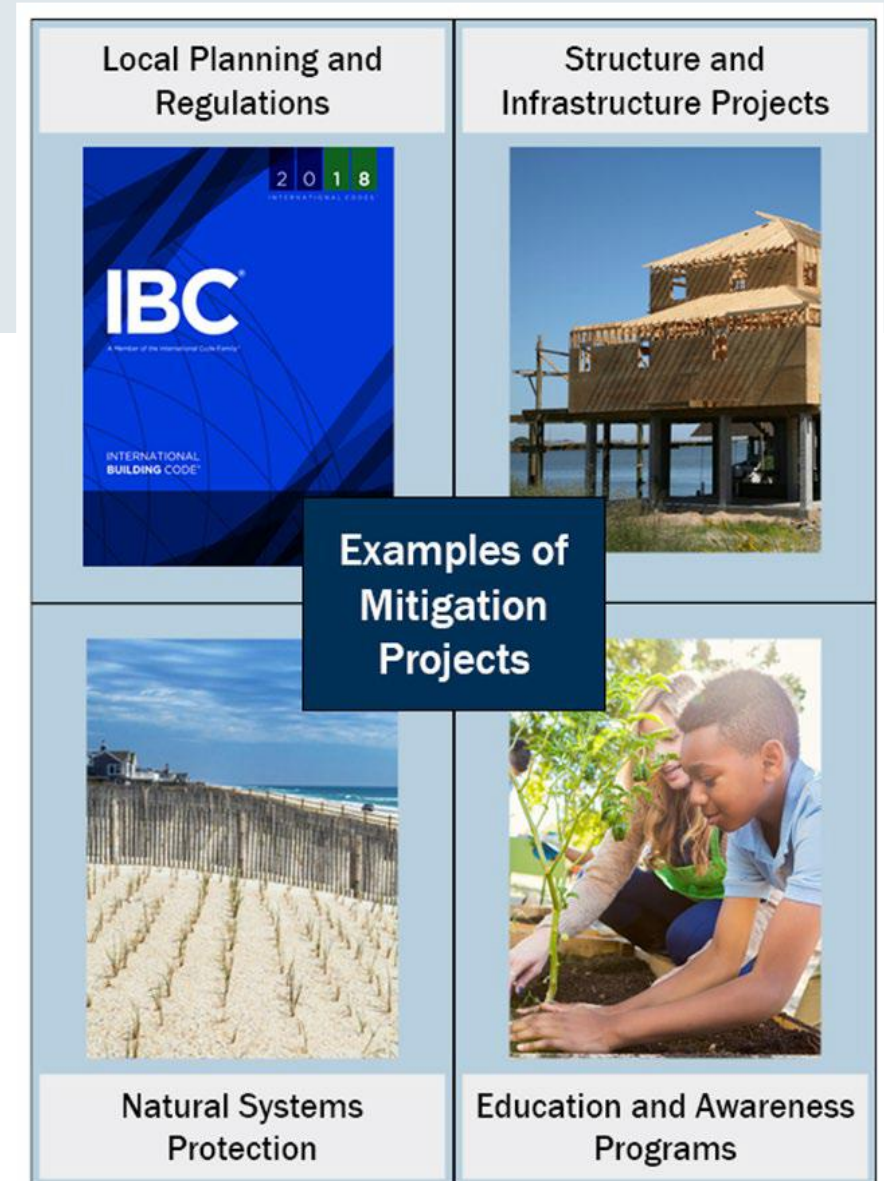
GCCDD'S MITIGATION 2025 GOALS



- 1. Protecting Public Health and Safety:** Ensure the well-being and security of the community by addressing flood-related risks.
- 2. Minimizing Losses and Raising Awareness:** Identify potential hazards, reduce citizens' and property exposure, and foster greater public knowledge and involvement in mitigation efforts.
- 3. Facilitating Sustainable Growth:** Streamline the development process to accommodate growth while addressing existing stormwater and floodplain issues and preventing the creation or worsening of new problems.
- 4. Enhancing Flood Risk Management:** Reduce flooding risks by maintaining and improving creeks, tributaries, waterways, and drainage systems.
- 5. Balancing Environmental Care with Drainage Solutions:** Strive to maintain harmony between protecting the environment and implementing effective drainage measures.
- 6. Building Strategic Partnerships:** Strengthen local and regional collaborations to develop comprehensive flood mitigation solutions.

ACTIONS TO MITIGATE HAZARDS

- For each hazard, two mitigation actions are needed.
- Mitigation actions primarily fall into four categories:
 1. Local Planning and regulations: include government authorities, polices or codes that influence the way land and buildings are developed and built.
 2. Structure and Infrastructure: involve modifying existing structures and infrastructures to protect them from a hazard or remove them from a hazard area. This could apply to public or private as well as critical infrastructure.
 3. Natural Systems Protections: can include green infrastructure and low impact development, nature-based solutions. Engineering with nature and bioengineering to incorporate natural features or processes into the built environment.
 4. Education and Awareness: actions keep residents informed about potential natural disasters.



ACTIONS BEING CONSIDERED

Generator for GCCDD owned facility
Master Drainage Plan
Establish an inspection process of the channels and creek flow when there is a County and/or State Drought Declaration
Establish a section in the GCCDD newsletter that provides residents with information regarding natural hazards and links for additional information
Establish formal procedures to support employee safety and equipment safety with the NWS issues extreme heat warnings, hailstorms, lightning, Thunderstorms, and Winterstorms
Establish an inspection process of the pipes and culverts quarterly and if after a natural hazard event that could cause shrink/swell of soil
Include in engineering design review if any area shows evidence of past expansive soil and determine if geotechnical analysis is needed
Review the types of vegetation that can support projects during natural hazard events or periods
Complete feasibility watershed study for the Lower Creek and Dickinson Bayou
Update the studies of pumps and gates identified the Clear Creek and Dickinson Bayou studies for both surge and inland flooding
Survey, Environmental analysis, and engineering design areas at Frenchmen's creek, Deepwood, and Clearview to understand best flood mitigation options
Prepare an Emergency Management Manual to provide planned support process and procedures for all hazards
Take high water marks
Install software and hardware to update gauges for flow and monitor stages
Join HGSD committees for education and awareness of subsidence and to find areas of synergies, interest and funding opportunities
Place lightning pole on main building
Provide link and information to public to support Friendswood and League City information on lightning detection for area
Harden windows of main building
Study the area to understand where potential WUI space in the planning area for wildfires
Elevation, floodproof or acquisition of homes
Future Flood reduction/flood mitigation projects
Floodplain restoration
Build an addition or standalone Emergency Management Building/Room
Purchase and Installation of cameras at locations to determine flood progression during events

Plan Maintenance



MONITORING THE PLAN

The District will monitor the mitigation actions to ensure that they are going to plan.



EVALUATING THE PLAN

The District will meet regularly, and after major natural hazard events, to evaluate how well the plan is working.



UPDATING THE PLAN

The District will continue to update the Plan every 5 years.



INTEGRATING THE PLAN

The District will integrate data, information, and actions from the HMP into other community plans and initiatives.



PUBLIC PARTICIPATION THROUGHOUT PLAN MAINTENANCE

The District is committed to public participation. Public engagement activities will align with the evaluation, monitoring, and plan update meetings as well as with large natural hazard events.

A landscape photograph showing a vast field of green vegetation in the foreground and middle ground. The sky is dark and overcast, with a faint rainbow visible in the distance. A white rectangular box is overlaid on the center of the image, containing the text.

**HOW CAN THE PUBLIC
HELP?**

HOW CAN THE PUBLIC HELP?

- Have we accurately captured the natural hazards affecting our area and their consequences (e.g., damage and disruption of services)?
- Are we missing important hazards and risks you would like to see addressed?
- Do the mitigation strategies and goals adequately respond to the hazards?
- Do you think most residents are well informed about the hazards affecting Planning area?
- Are there additional ways the GCCDD can inform residents about the risks?
- Are there actions you would like to be added to the Update?
- Take the GCCDD Hazard Mitigation Survey.



HOW TO FIND THE SURVEY

- Go to the GCCDD website:
<https://gccdd.dst.tx.us/>
- Click on Hazard Mitigation in top right of home page.
- It will take you to the Hazard Mitigation Planning section.
- To get to the survey, you can either click on the surveymonkey link:
<https://www.surveymonkey.com/r/QLM99YL>

or

Scan with your phone camera to use the QR code



- Survey has 10 questions.
- Responses will help will plan information (e.g. confirmation of hazards, understanding concerns and concern areas).
- In addition to survey, there are additional documents to help the community learn more about the plan update and the importance of hazard mitigation plans.

The screenshot shows the website for the Galveston County Consolidated Drainage District. The top navigation bar includes links for HOME, ALERTS, AGENDAS & NOTIFICATIONS, FORMS & DOCUMENTS, BOARD & STAFF, BLOG & ANNOUNCEMENTS, PROJECTS, MEDIA, BIDS, EMPLOYMENT, ELECTIONS, and HAZARD MITIGATION. The main content area features a large image of a yellow excavator and a red dump truck with the text "Hazard Mitigation Planning". Below this, a section titled "We Are Updating our Hazard Mitigation Plan" contains the following text:

The **Hazard Mitigation Plan** for the Galveston County Consolidated Drainage District is a strategic document that identifies natural hazards affecting our jurisdiction and outlines measures to reduce their impact on our communities. This plan addresses risks such as **extreme heat, expansive soils, drought, tropical storms and hurricanes, flooding, and more**, helping us prepare for and minimize damage from these events.

By improving drainage infrastructure, strengthening hazard preparedness, and implementing long-term mitigation strategies, we can enhance community resilience. **Public input is essential** to ensure the plan reflects the real concerns and experiences of residents.

Your feedback helps shape effective solutions that protect homes, businesses, and public safety from a wide range of natural hazards. Please click on or scan the code below to take a short 3-minute survey.

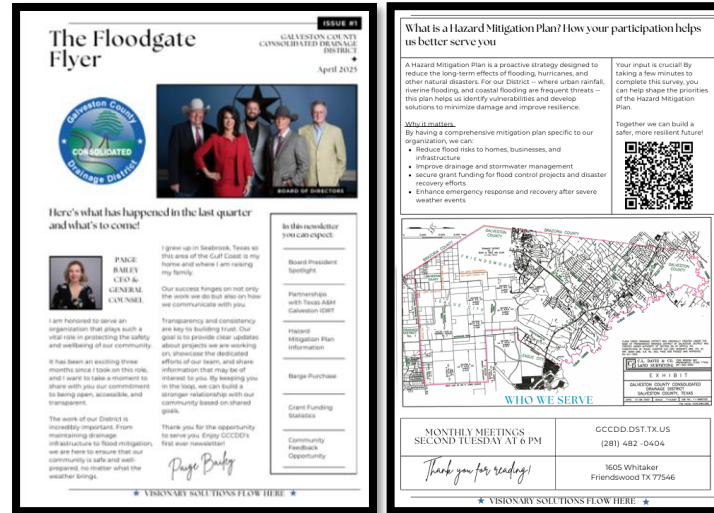
A QR code is provided for scanning, with the URL <https://www.surveymonkey.com/r/QLM99YL> below it.

Additional Documents

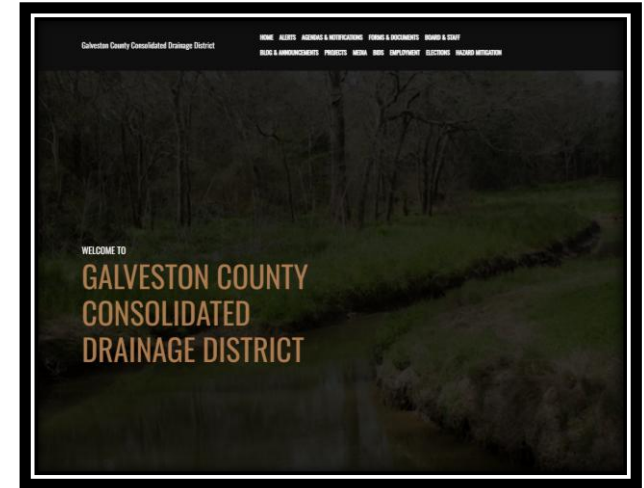
- [Hazard Mitigation Plan Flyer](#)
- [Hazard Mitigation Plan Q&A](#)
- [Hazard Mitigation Planning Fact Sheet](#)

PLACES TO FIND INFORMATION ON THE PLAN

Newsletters



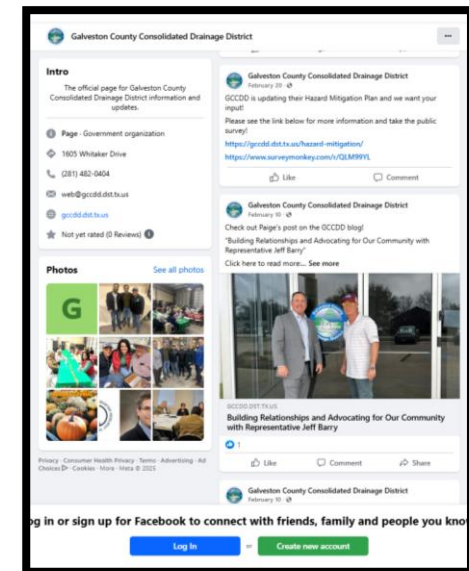
Website



Media



Social Media



THANK YOU
FOR YOUR
HELP!



HMP Update Contacts

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