

North Central Texas Annual
Combined CRS Users Group &
Elected Officials Floodplain
Seminar

July 30th, 2020

North Central Texas CRS Users Group/Elected Officials Floodplain Seminar

July 30, 2020

Virtual Meeting – Hosted by the North Central Texas Council of Governments
(NCTCOG) and the Texas Water Development Board (TWDB)

AGENDA

<u>Time</u>	<u>Topic</u>	<u>Speaker</u>
1:00p-1:10p	Welcome and Introductions	<i>Mia Brown, CFM NCTCOG</i>
1:10p-1:25p	Overview of Flood Activities and New Initiatives at the TWDB	<i>Saul Nuccitelli, P.E., CFM TWDB</i>
1:25p-1:50p	Flood Mitigation Assistance	<i>Kathy Hopkins, CFM, CTCM TWDB</i>
1:50p-2:20p	Floodplain Management and NFIP Outreach	<i>Yi Chan, CFM TWDB</i>
2:20p-2:35p	Break	
2:35p-3:05p	Flood Mapping and Base Level Engineering	<i>Jacque Hayes, CFM TWDB</i>
3:05p-3:55p	Flood Planning	<i>Reem Zoun, P.E., CFM James Bronikowski, P.E., CFM Morgan White, CFM TWDB</i>
3:55p-4:00p	Meeting Wrap-Up	

If you have any questions regarding the meeting or agenda items, please contact
Mia Brown: (817) 695-9227; MBBrown@nctcog.org

NCTCOG would like to extend a special thank you to the Texas Water Development Board (TWDB) for participating in this event, the Texas Floodplain Management Association (TFMA) for their support and partnership, and the Federal Emergency Management Agency (FEMA) for grant funding to hold this and other trainings for our communities.

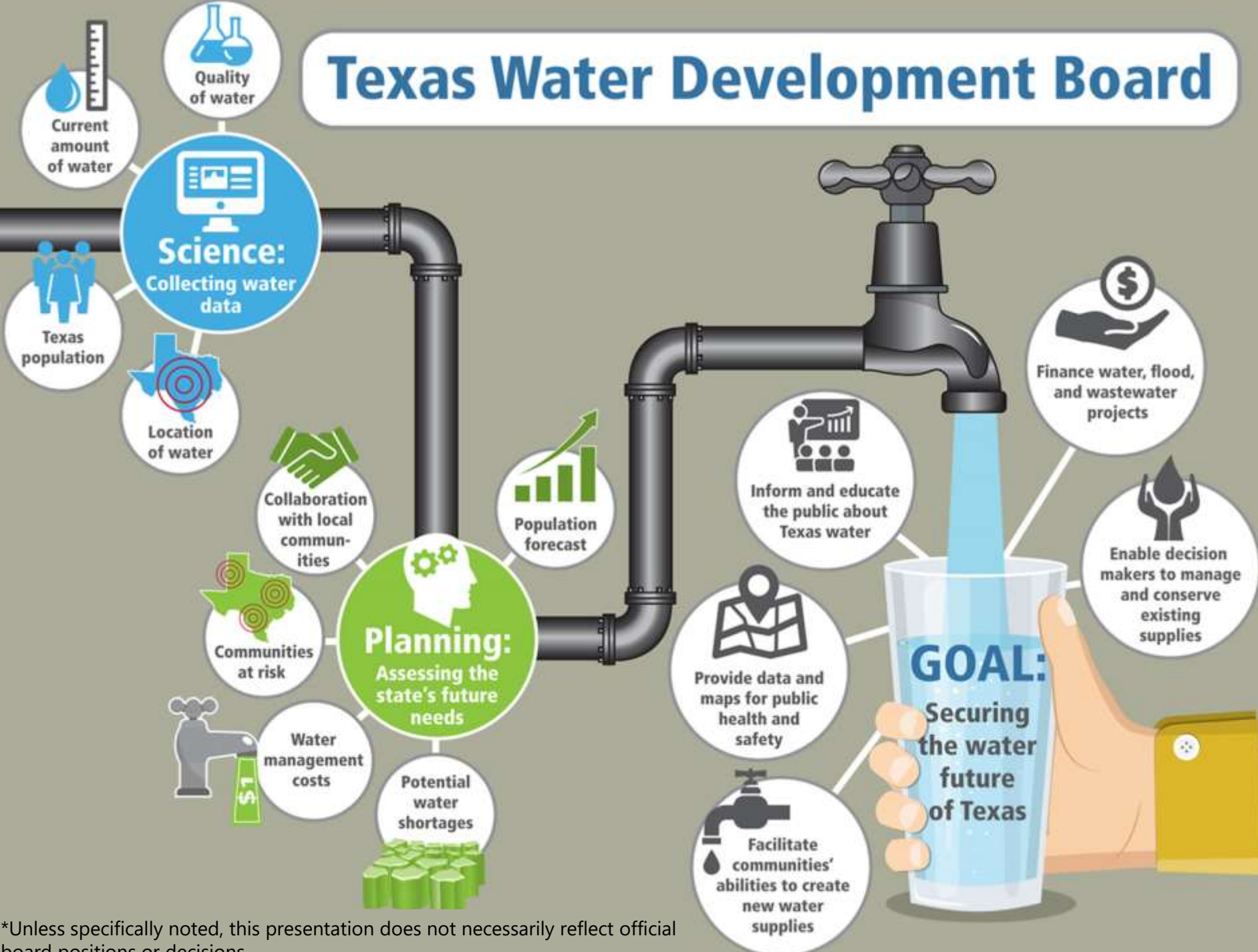
If you plan to attend this public meeting and you have a disability that requires special arrangements at the meeting, please contact Barbara Bradford by phone at (817) 695-9231 or by email at BBradford@nctcog.org 72 hours in advance of the meeting. Reasonable accommodations will be made to assist your needs.

Overview of Flood Activities and New Initiatives at the TWDB



North Central Texas Council of Governments
CRS Users Group/Elected Officials Floodplain Seminar
July 30, 2020

Texas Water Development Board



*Unless specifically noted, this presentation does not necessarily reflect official board positions or decisions.

TWDB Flood Responsibilities

State grants for flood protection planning

FEMA's Flood Mitigation Assistance (FMA) Grant Program

Pre-2015

State coordinator for National Flood Insurance Program (NFIP)

Statewide mapping partner in FEMA's Cooperating Technical Partner (CTP) Program

TWDB Flood Responsibilities

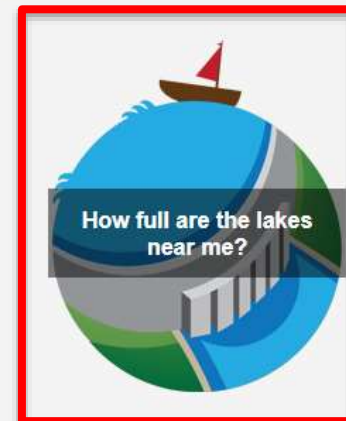
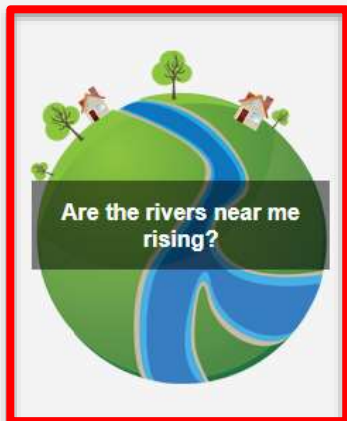
Flood Gage
Network

Texmesonet.org

Post 2015

Texasflood.org

State Flood
Assessment



TEXAS FLOOD.org

What to Do? Before, During, and After a Flood

Texas is no stranger to flood. With its diverse geography and extensive, hurricane-prone coastline, the state frequently leads the nation not only in structural damage but also in loss of lives related to flooding events. Given the deadly nature of floods and the rapid timeframe in which they can occur, being ready for the next event is essential. We list the most critical steps to take in each stage of the flood

What to Do? Before, After, and During a Flood

- What is a flood?
- Before a Flood
- During a Flood
- After a Flood

Flood Protection Grant Programs

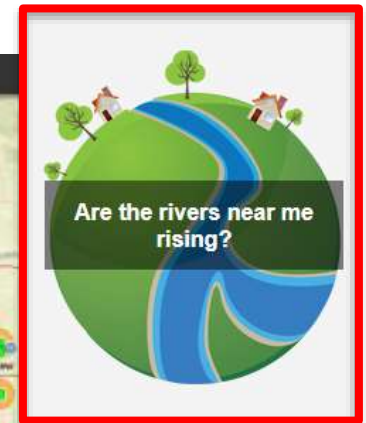
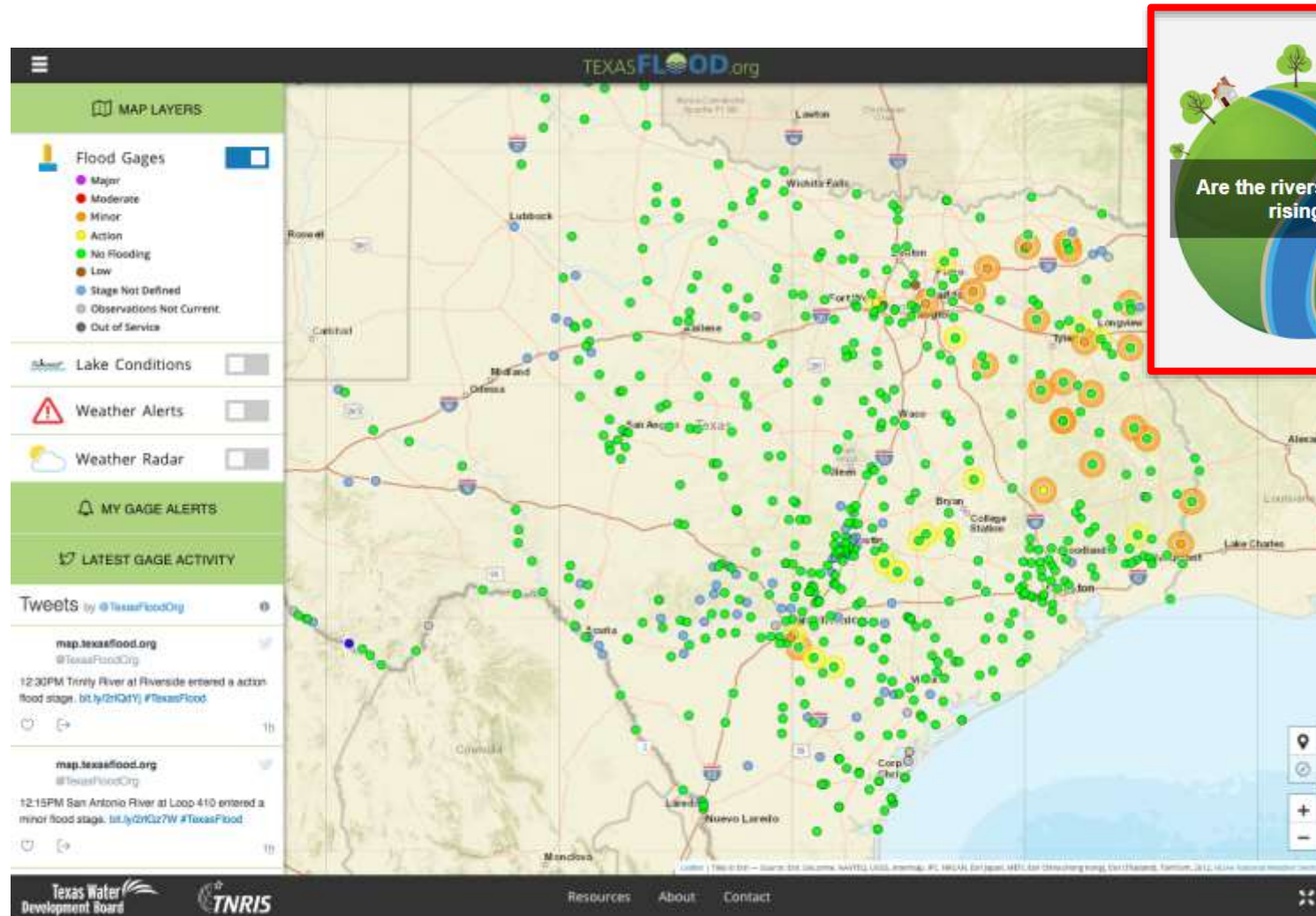
National Flood Insurance Program (NFIP)

Workshop & Training

Community Resources

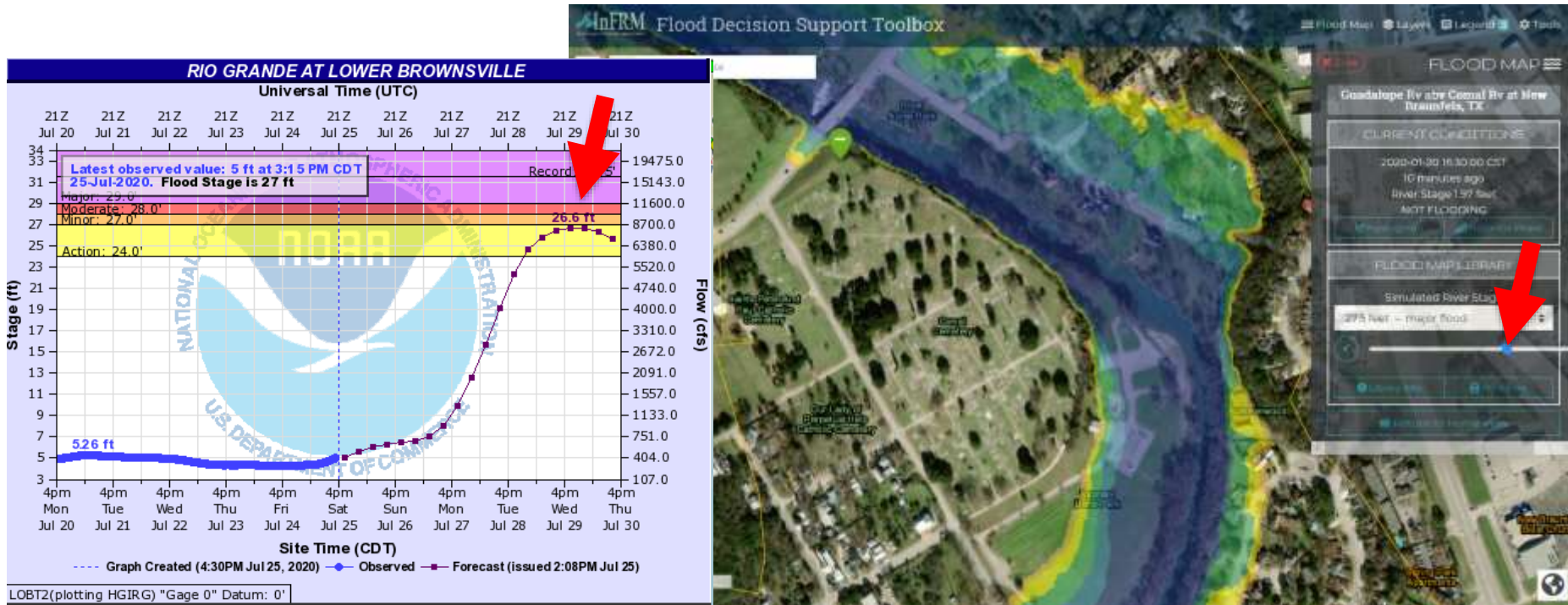
Flood Mitigation Planning Staff

Flood Viewer: map.texasflood.org



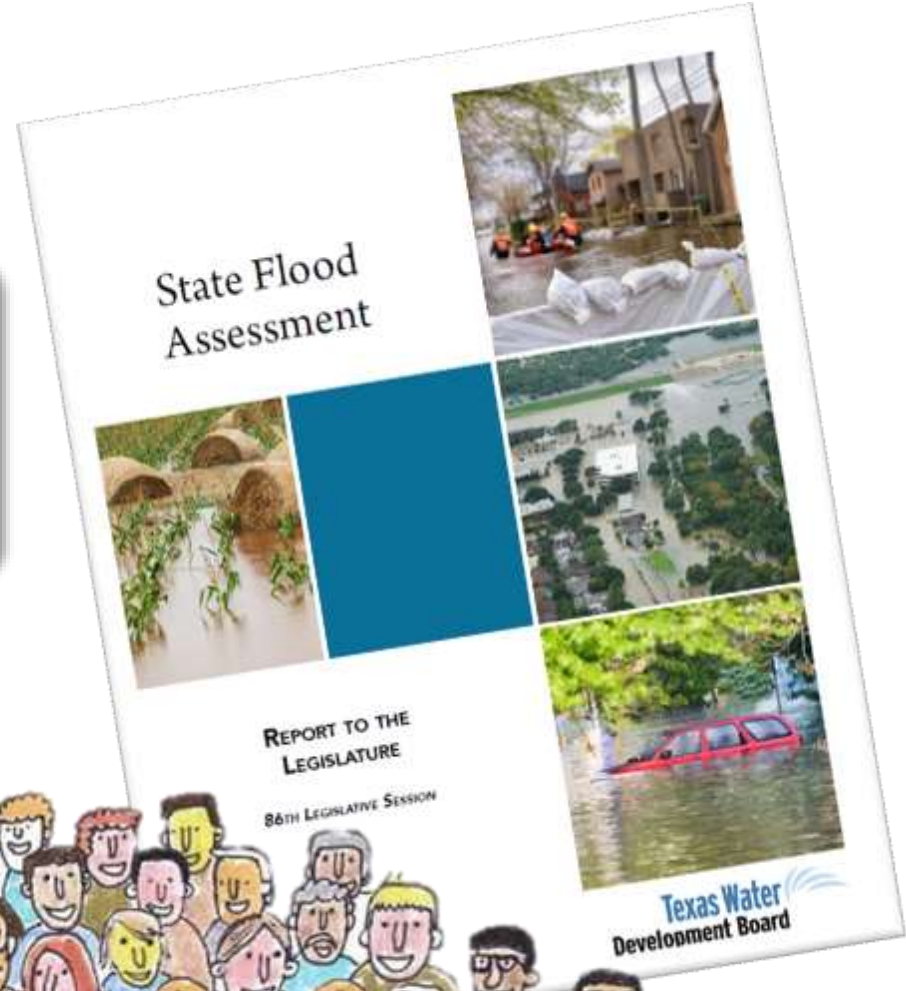
Flood Decision Support Toolbox

- Developed by InFRM
- Limited areas in TX, Reports current river stages
- Slider bar to understand change in flood depths
- TWDB and InFRM partnering on improvements





STATE FLOOD ASSESSMENT



Three Pillars of Flood Risk Management



Flood Implementation Road Show



Flood Science & Community Assistance

→ New staff

- + Saul Nuccitelli (Division Director)
- + Kathy Hopkins (Flood Grants Manager)
- + Yi Chan (NFIP State Coordinator & Community Assistance Program Manager)
- + Manuel Razo (Flood Mapping Manager)

→ Several more positions to be filled

Flood Planning Division

→ New staff

+ Reem Zoun (Division Director)

+ James Bronikowski (Planning Manager)

+ Morgan White (Planning Team Lead)

→ Several more positions to be filled

Flood Infrastructure Fund

- Prior to adoption of state flood plan in 2024, the FIF can fund drainage, flood mitigation, and flood control projects that have been developed through cooperative planning efforts.
- After adoption, *the FIF* can fund projects in the State Flood Plan.
- Approximately 280 abridged applications were received, estimated at over \$2 billion in requests for FIF funding.


Flood Information Clearinghouse

- <https://texasfloodclearinghouse.org/>
- Collaborative effort for flood funding opportunities in Texas


FLOOD INFORMATION
CLEARINGHOUSE



 Am I Eligible?

 Is My Project Eligible?

What Funding is Available?

 Submit a Request for Information Form

Attend an Event

Other Resources

Thank you.

Saul A. Nuccitelli II, PE, CFM

Director, Flood Science & Community Assistance

512-475-1749

saul.nuccitelli@twdb.texas.gov



FEMA Flood Mitigation Assistance Grant Program

Flood Mitigation Puzzle

- Elevation
- Mitigation Construction
- Dry Floodproofing
- Drainage/Localized Flood Risk Reduction Projects
- Structural and non-Structural Retrofitting
- Flood Prevention Ordinances
- Outreach
- Etc.



Flood Mitigation Assistance

Repetitive Loss and Severe Repetitive Loss Structures

Severe Repetitive Loss Properties

A severe repetitive loss property is a structure that is covered under a contract for flood insurance made available under the National Flood Insurance Program and has incurred flood-related damage for which four or more separate claim payments have been made under flood insurance coverage with the amount of each such claim (including building and contents) exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or for which at least two separate claim payments (building payments only) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

Repetitive Loss Properties

A repetitive loss property is a structure covered by a contract for flood insurance available under the National Flood Insurance Program that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25 percent of the market value of the structure at the time of each flood event; and at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

Hazard Mitigation Assistance Grant Programs Eligible Activities

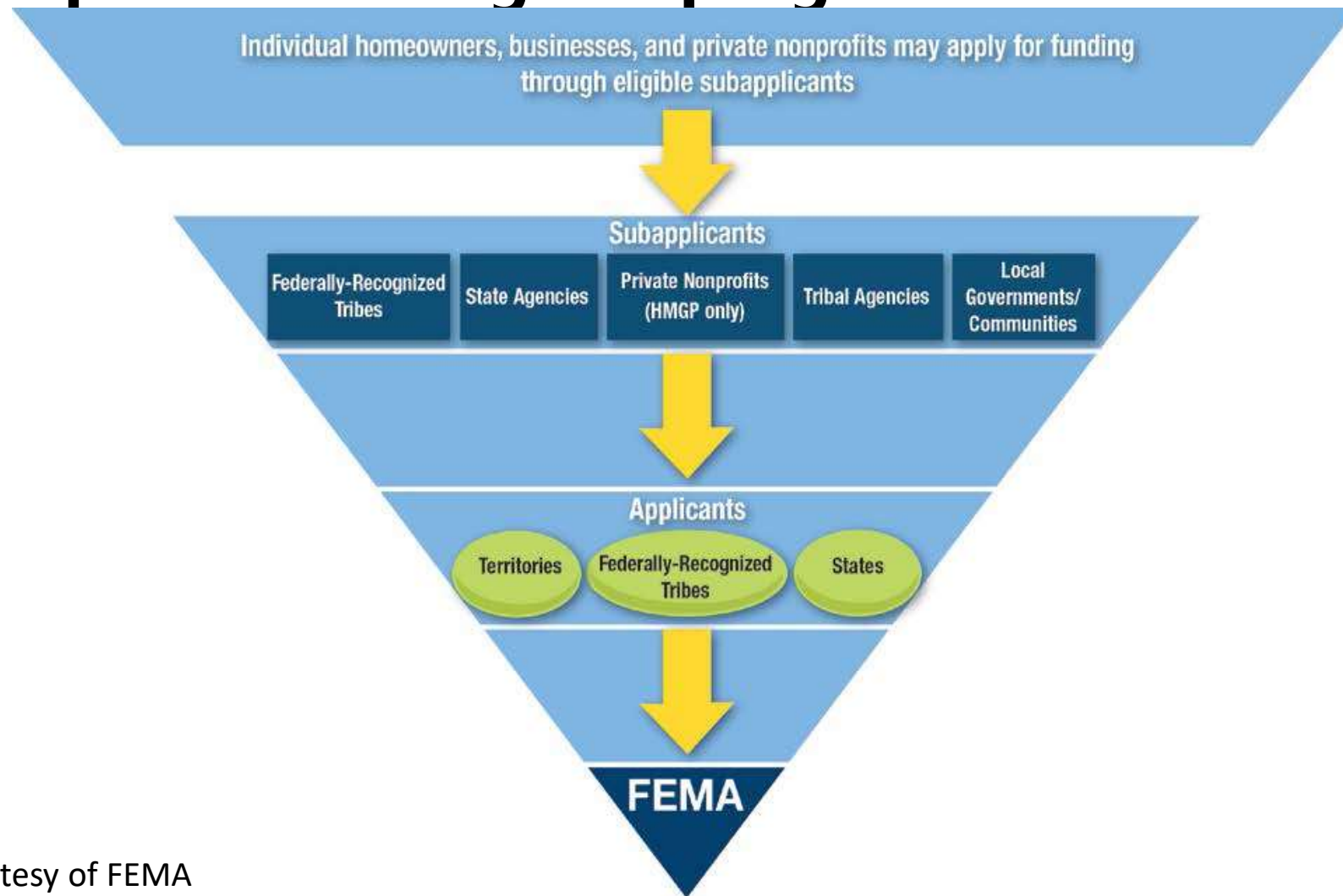


Eligible Activities	HMGP	PDM	FMA
1. Mitigation Projects	✓	✓	✓
Property Acquisition and Structure Demolition	✓	✓	✓
Property Acquisition and Structure Relocation	✓	✓	✓
Structure Elevation	✓	✓	✓
Mitigation Reconstruction	✓	✓	✓
Dry Floodproofing of Historic Residential Structures	✓	✓	✓
Dry Floodproofing of Non-Residential Structures	✓	✓	✓
Generators	✓	✓	
Localized Flood Risk Reduction Projects	✓	✓	✓
Non-Localized Flood Risk Reduction Projects	✓	✓	
Structural Retrofitting of Existing Buildings	✓	✓	✓
Non-Structural Retrofitting of Existing Buildings and Facilities	✓	✓	✓
Safe Room Construction	✓	✓	
Wind Retrofit for One- and Two-Family Residences	✓	✓	
Infrastructure Retrofit	✓	✓	✓
Soil Stabilization	✓	✓	✓
Wildfire Mitigation	✓	✓	
Post-Disaster Code Enforcement	✓		
Advance Assistance	✓		
5 Percent Initiative Projects*	✓		
Miscellaneous/Other**	✓	✓	✓
2. Hazard Mitigation Planning	✓	✓	✓
Planning-Related Activities	✓		
3. Technical Assistance			✓
4. Management Costs	✓	✓	✓

Source: Hazard Mitigation Assistance Guidance

Flood Mitigation Assistance Application Process

Participation in the grant program is 100% Voluntary



Graphic courtesy of FEMA

Funding Opportunity and Eligibility

Funding Opportunity

- Approximately \$170 Million Nationwide
- Grant Cycle – Opens around October 1, 2020 through January 31, 2021.

Eligibility Requirements

- FEMA approved Hazard Mitigation Plan
- Benefit Cost Analysis with a ratio of 1.0 or higher
- ***Structure must be covered under NFIP policy***



Graphic courtesy of FEMA

Cost Share Requirement

Classification	Federal Share	Local Share
Severe Repetitive Loss Property	100%	0%
Repetitive Loss Property	90%	10%
Insured properties, Drainage, or planning	75%	25%

**More Mitigation Measures,
More Savings**



**One dollar invested in mitigation =
six dollars U.S. saves in future costs**



Graphic courtesy of NOAA

Acquisition and Demolition



Photographs courtesy of TWDB



Photographs courtesy of TWDB



Photographs courtesy of HCFC



Photographs courtesy of TWDB



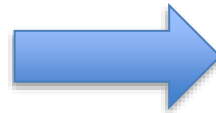
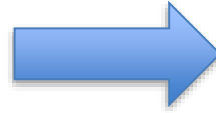
Photographs courtesy of FEMA

Acquisition and Demolition



Nothing to see here . . .
but "open spaces".

Elevation



Photographs courtesy of TWDB

Mitigation Reconstruction (AKA Demo-Rebuild)

Before

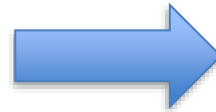


After



Source: Galveston County

Drainage Project



Photographs courtesy of TWDB

Over the last 20 years, the

Flood Mitigation Assistance Grant Program has provided

MORE THAN **\$600** MILLION

FOR **2,031** GRANTS SUPPORTING **1,516** PROJECTS.

FMA funding is available to

States, Tribes, Territories, AND Local Communities

with structures insured under the **National Flood Insurance Program.**

The **3 states**
that have received the

**MOST FMA
FUNDING AWARDS**

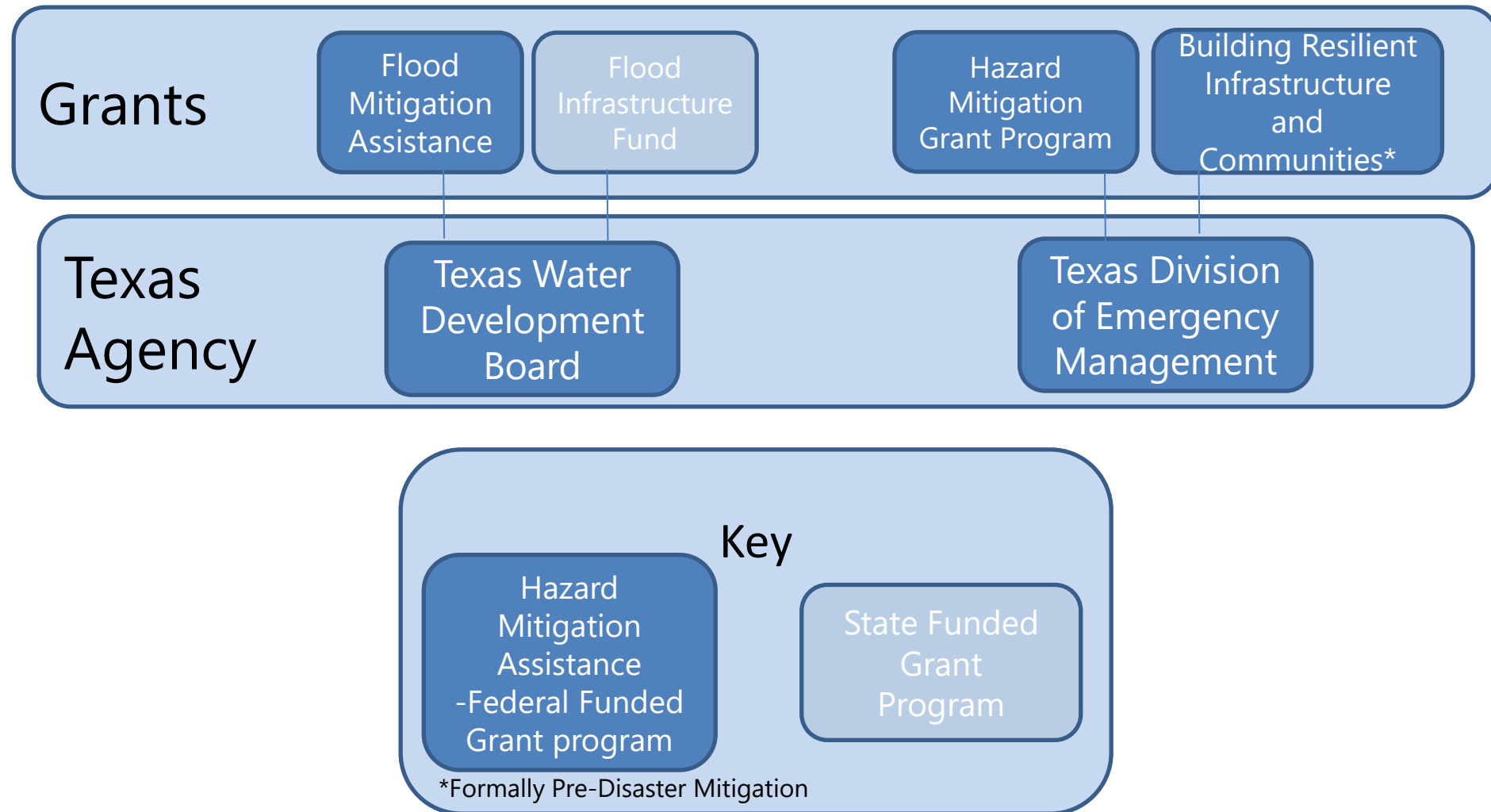
to date* include:



* Not including planning or management costs

Source: Mitigation Minute, FEMA

FEMA and State Flood Mitigation Funding



Graphic courtesy of TWDB

Flood Mitigation Assistance Grant Contact Information

Kathy Hopkins, CFM, CTCM
kathy.hopkins@twdb.texas.gov
(512) 463-6198

Niamh Gray, CFM, CTCM
niamh.gray@twdb.texas.gov
(512) 475-1514

Ivan Ortiz, CFM, CTCM
ivan.ortiz@twdb.texas.gov
(512) 463-8184

Floodplain Management and NFIP Outreach

Yi Ling Chan, CFM
NFIP State Coordinator

Overview

- Introduction to the National Flood Insurance Program (NFIP)
- The TWDB's role with FEMA
- Community Assistance Program Initiatives
- Community Rating System

** Unless specifically noted, this presentation does not necessarily reflect official Board positions or decisions.*

What is the National Flood Insurance Program?



National Flood Insurance Program (1968)

Intent: to reduce future flood damage through community floodplain management regulations and provide affordable insurance to property owners.

Provides insurance to property owners in participating communities.

Three main components:

- Insurance
- Floodplain management
- Risk identification

NFIP Agreement

Participation in the NFIP is based on an agreement between local communities and the federal government.

- Local communities agree to adopt and enforce floodplain management guidelines to reduce flood risks in the SFHA.
- The federal government agrees to make flood insurance available to the community as a financial protection against flood losses.

NFIP Roles and Responsibilities

Participation in NFIP allows communities to:

- protect life and property through ordinances
- identify areas at risk through mapping
- prohibit or restrict new development through permitting
- enable citizens to purchase flood insurance through the federal government

NFIP Roles and Responsibilities

Floodplain Management has three key partners, each with their own responsibilities:

- Federal Emergency Management Agency (FEMA)
- Local Floodplain Administrators
- State Coordinator's Office (TWDB)

NFIP Roles and Responsibilities

FEMA:

- sets national policy for floodplain regulations
- researches floodplain construction practices
- administers the flood hazard mapping program
- provides affordable flood insurance
- provides disaster assistance



NFIP Roles and Responsibilities

FEMA's Regional Offices:

- advise state coordinators and local floodplain officials
- answer questions about floodplain development and insurance
- help review new maps and data for local communities
- approve community floodplain management ordinances
- assess local community compliance with NFIP criteria

Texas is in FEMA Region VI and the office is in Denton, TX

NFIP Roles and Responsibilities

Local Floodplain Administrators:

- work with private citizens to ensure the health, economy and safety of their community
- adopt and implement ordinances that meet or exceed NFIP standards
- review all planned development activities that impact flood-prone areas
- issue floodplain development permits
- coordinate with local officials as well as state and federal representatives

NFIP Roles and Responsibilities

State Coordinator's Office provides:

- compliance assistance to local governments
- technical assistance
- NFIP enrollment
- training
- local and federal coordination
- disaster preparation and recovery

TWDB Compliance Assistance

- Compliance – non-regulatory
 - Community Assistance Visits ~15/year
 - Community Assistance Contacts ~ 340/year
 - General technical assistance ~ 250/year

Community Assistance Visit

A CAV includes:

- a review of the community's floodplain management program
- tour of the floodplain
- meeting with community officials



Courtesy of FEMA

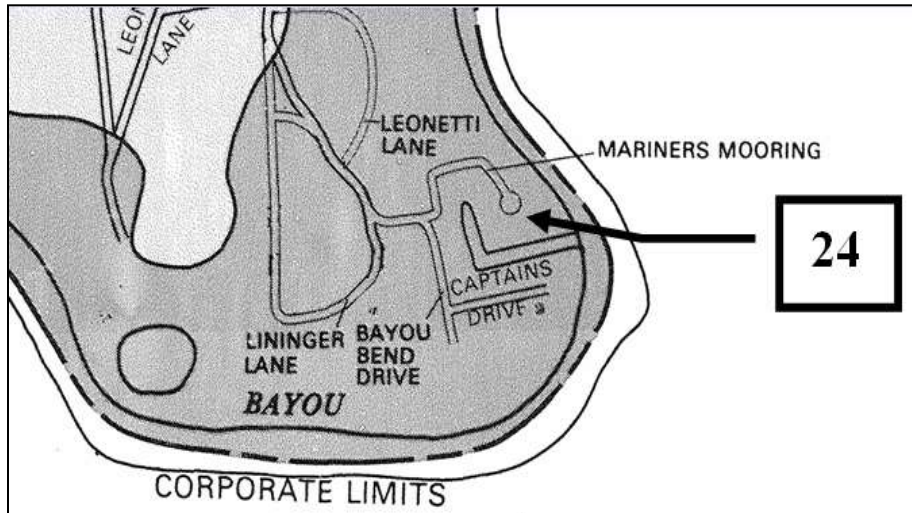
Community Assistance Visit Meeting

TWDB staff review:

- local flood damage prevention ordinances
- permit records for development in SFHAs
- substantial damage/improvement determinations
- elevation records for structures in SFHAs
- maps (FIRM, FHBM, FIS)
- variances – denied and approved

Community Assistance Visit Floodplain Tour

Tour includes floodplain areas delineated in the FIRM.



House in floodplain with habitable space below the BFE

Courtesy of TWDB Staff

Community Assistance Visit Floodplain Tour

In a special flood hazard area, check for :

- structures with lowest floor and/or enclosures below base flood elevation
- existing structures with substantial improvement
- manufactured homes
- new subdivision
- recreational vehicles

Community Assistance Visit

Floodplain Tour

In a coastal V Zone, check for structures with:

- lowest horizontal structural member below BFE
- space below lowest floor of elevated structure not free of obstructions
- equipment and utilities not elevated
- walls not meeting breakaway wall standards
- coastal erosion that puts structure at risk
- alteration of sand dunes or mangroves

Community Assistance Visit Meeting

- Discuss community concerns about
 - NFIP
 - Maps/studies
 - Flooding issues
 - Any other general floodplain management issues
- The final meeting will include TWDB or FEMA findings and a plan to strengthen the community's program

Community Assistance Contacts

Six items to be addressed in a CAC:

- floodplain management regulations
- map availability, accuracy, and recent flooding history
- development permits and review process;
- NFIP contact information review and verification
- potential deficiencies or violations; and
- any follow-up and/or community action that is needed

General Technical Assistance

TWDB staff provides technical assistance to Texas communities through:

- ordinance reviews
- mapping questions
- joining the NFIP
- special circumstances
- general programmatic or technical questions

Floodplain Management Training

TWDB offers webinar and in-person classes covering:

- General floodplain management
- Base Level Engineering
- Substantial Damage
- Community Rating System
- Elevation Certificates

<https://www.twdb.texas.gov/flood/workshop/>



Courtesy of FEMA

Post-Disaster Assistance

TWDB provides post-disaster assistance:

- visit impacted communities
- provide assistance with understanding of substantial damage and FEMA Substantial Damage Estimator tool
- help community to remain compliant with NFIP

Community Rating System

Community Rating System (CRS)

- Voluntary FEMA program that encourages NFIP-participating communities to exceed basic standards.
- CRS communities can reduce insurance rates by increments of 5%, up to 45%.

Community Rating System

CRS is a point system based on a wide range of floodplain management activities.

- Must be able to provide documentation for activities in order to receive points.
- Total points determine insurance rate discount.

Community Rating System

- All CRS communities must maintain FEMA Elevation Certificates for final construction
- Beginning January 2021, all CRS communities must adopt 1 foot of freeboard
- Communities containing Repetitive Loss properties must prepare and adopt a comprehensive flood hazard mitigation plan
- All other activities are optional

Community Rating System

- There are four categories of CRS activities with a range of points for each.
 - Public information
 - Mapping and Regulations
 - Flood damage Reduction
 - Warning and Response

Community Rating System in Texas

As of October 2019:

- there are over 68 CRS communities in Texas;
- policyholders in Texas are saving a total of \$30 million annually;
- individual policy holders have average savings of \$80 per policy;
- three communities are class 5, saving 25%.

Questions?

Yi Chan, CFM

NFIP State Coordinator

yi.chan@twdb.texas.gov

512-936-6903

Paul Gutierrez, CFM

North Texas Flood Outreach Specialist

paul.gutierrez@twdb.texas.gov

512-463-7771

Developing Base Level Engineering for Texas Watersheds: A Cooperating Technical Partners Initiative

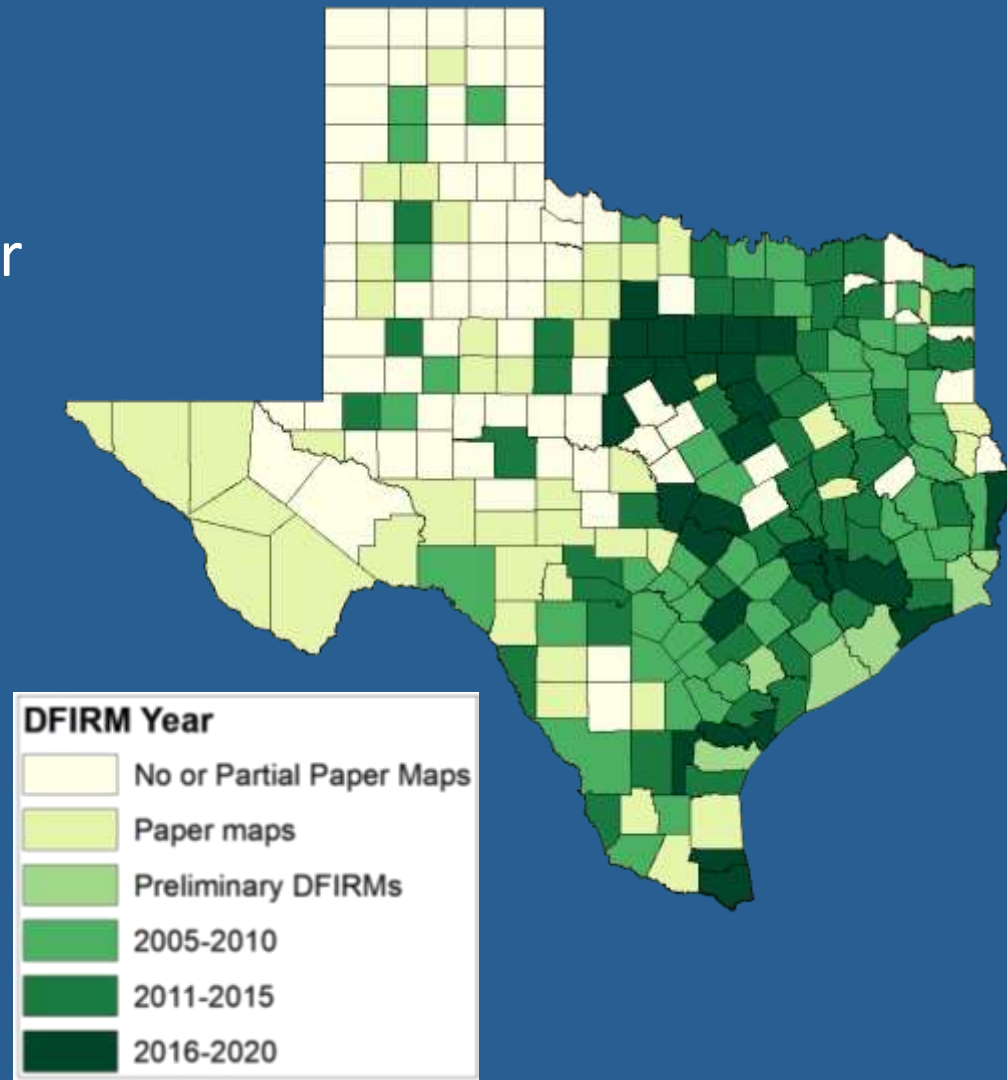
Jacquelyn Hayes

Texas Water Development Board*

*Unless specifically noted, this presentation does not necessarily reflect official Board positions or decisions.

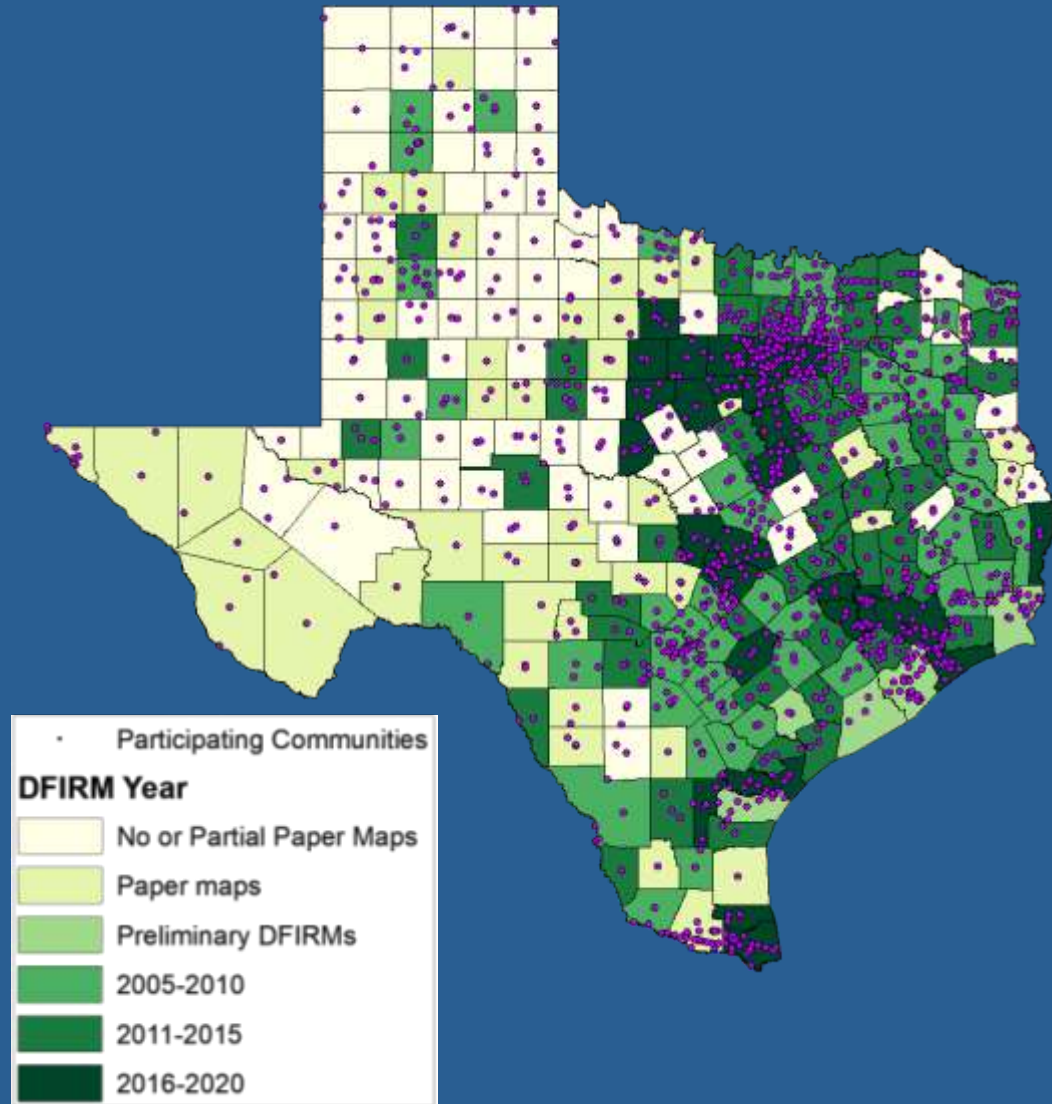
Flood Mapping Status in Texas

- Texas has 254 Counties
- 48% have no maps or are only partially mapped (paper inventory)
- 52% have Digital Flood Insurance Rate Maps (DFIRMs)
 - a number of these were created under the FEMA Map Modernization era



Participating Communities in Texas

- Texas has 1,257 communities participating in the National Flood Insurance Program (NFIP)
- ~12% of these do not have complete floodplain maps
- ~23% have either no maps or partial paper maps



*These statistics do not include Levee Improvement Districts, Drainage Districts, or Municipal Utility Districts

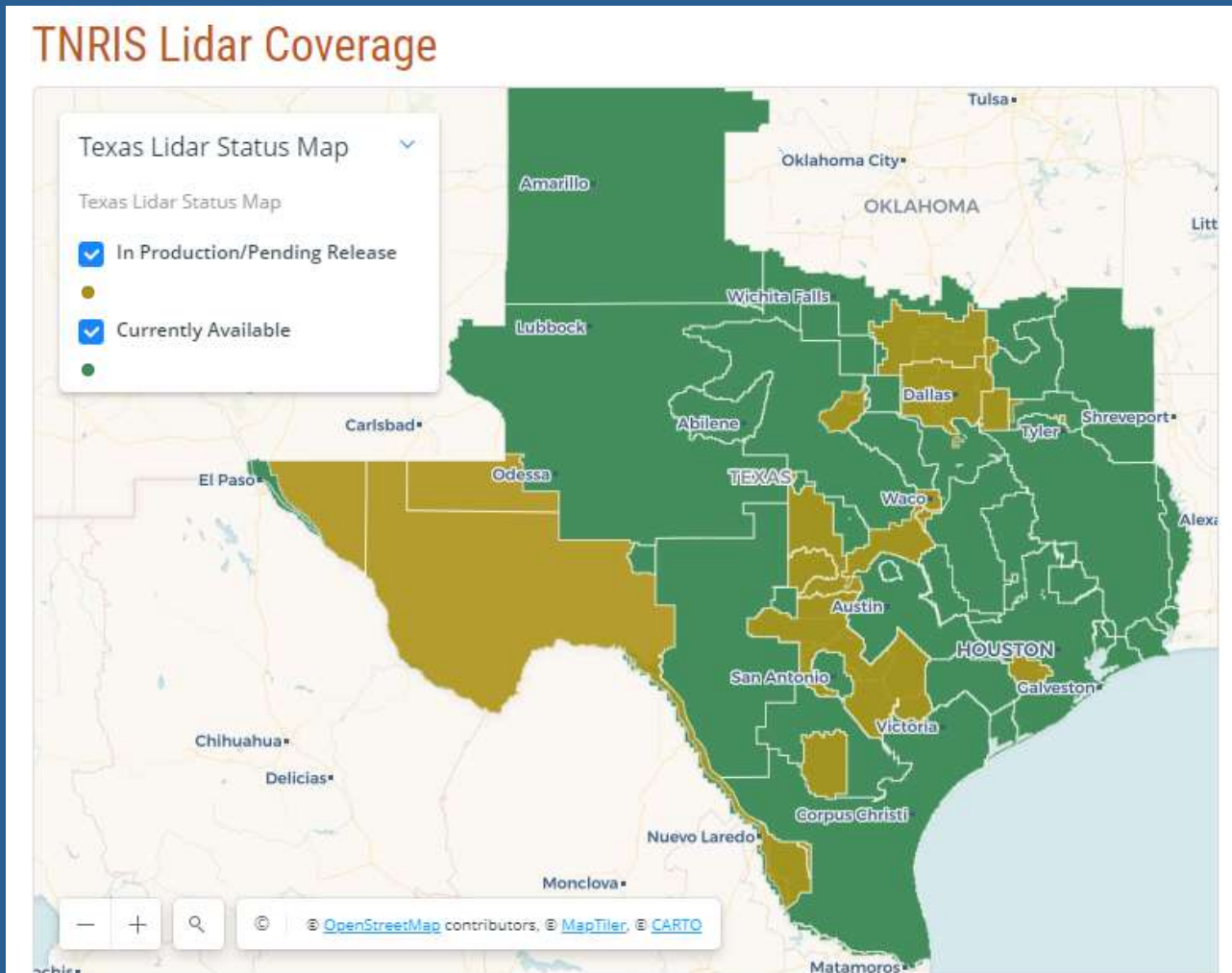
The Changing Texas Landscape

- Current and updated flood hazard information is necessary:
 - Increasing urban development
 - Texas population has increased 48% from 1997 to 2017¹
 - In 1910, 24.1% of Texas population resided in urban areas, by 2010 this had risen to 84.7%²
 - Historical spatial and temporal rainfall data
 - Atlas 14
 - Relative Sea Level Change
 - LiDAR availability

1. https://txlandtrends.org/media/qzpbz2j/texas-land-trends_status-update-and-trends-of-tx-working-lands.pdf

2. https://demographics.texas.gov/Resources/publications/2017/2017_08_21_UrbanTexas.pdf

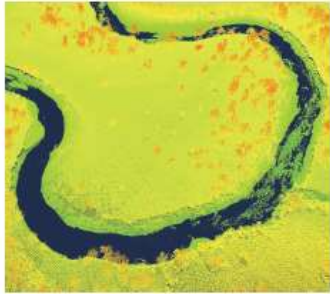
Texas Lidar Coverage



Texas Natural Resources Information System (TNRIS): <https://tnris.org/>

What is Base Level Engineering?

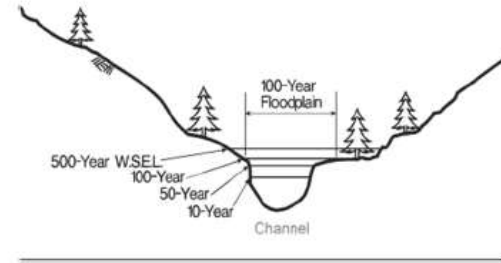
Base Level Engineering



Lidar



Hydrology



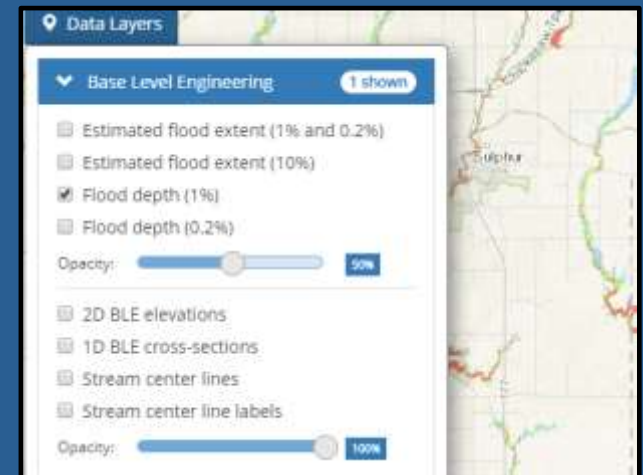
Hydraulics



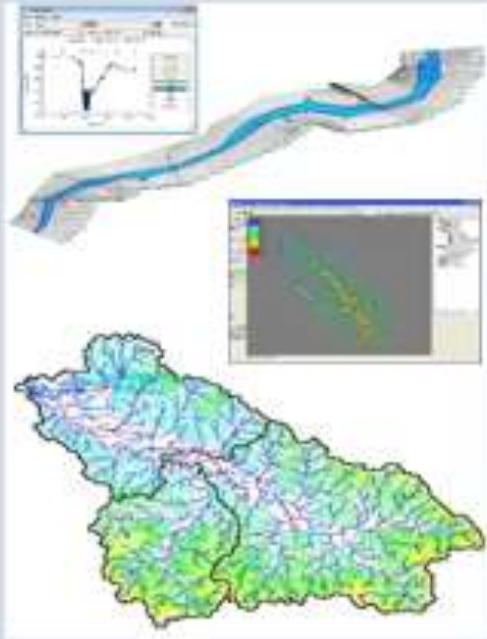
Base Level Engineering

Base Level Engineering Results

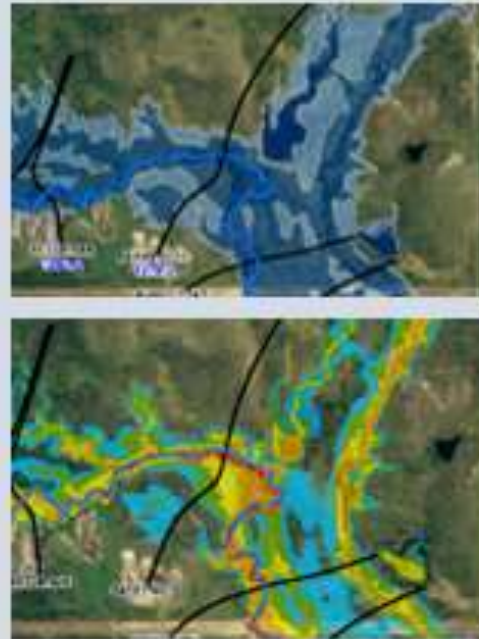
- These models create flood hazard information that meets FEMA's Standards for Flood Risk Projects.
- These results agree with a Zone A mapping designation.
- BLE is **NOT** a detailed study.
- These analyses produce large scale results covering entire watersheds which include:
 - Floodplain boundaries
 - Water surface elevation grids
 - Flood depth grids



Base Level Engineering is a programmatic evolutionary step which provides:



Credible engineering analysis and modeling for local communities and developers.



Estimation of flood extents, water surface elevations and flood depths



May be adopted as Best Available Information (BAI) by communities & inform development decisions.

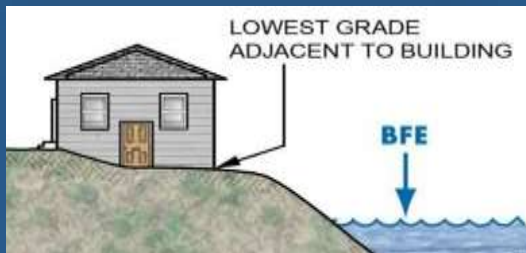
Base Level Engineering Uses



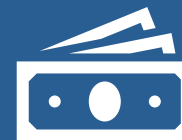
PERMITTING



**MITIGATION
PLANNING**



LOMCs



**INSURANCE
RATING**

Permitting

- BLE can be used as “best available data”
 - Where no data exists (No FIRM)
 - Where limited data exists (Zone A)
 - Where data is more conservative or similar to existing (Zone AE)
- BLE does **NOT** replace a FIRM or detailed study
 - However, data complements current Zone A areas and provides additional coverage where streams have not yet been included in the FIRM data coverage.

Mitigation Planning

- Risk Assessment
- Mitigation Strategy development
- Identifying and prioritizing mitigation projects
- Community planning, land use, and zoning
- Emergency response/recovery planning



LOMCs

- BLE can be used best available information to review against the Lowest Adjacent Grade (LAG) at site of interest

LOMA
LOMR-F

PURPOSE: Determine if a specific property/structure is in/out of the Special Flood Hazard Area (SFHA) based on effective information

RESULT: FEMA issues letter/document

TYPES: Letter of Map Amendment (LOMA), Conditional Letter of Map Amendment (CLOMA), Letter of Map Revision Based on Fill (LOMR-F), Conditional Letter of Map Revision Based on Fill (CLOMR-F)

Insurance Rating

- Has the potential to lower insurance premiums for buildings in A zones by providing BFEs
- BLE data can provide BFEs to assist the determination of these LOMC reviews for possible removal of the mandatory purchase requirement for flood insurance



BLE Benefits

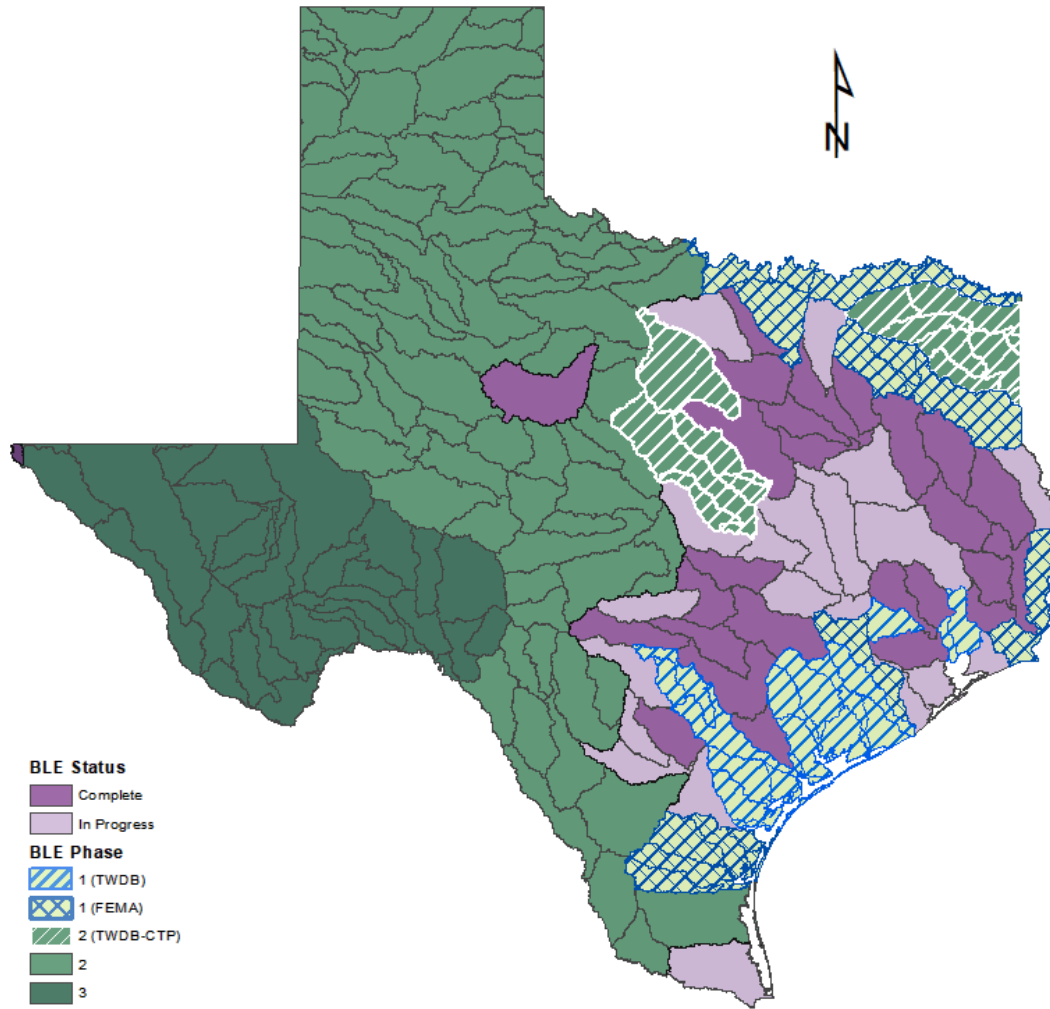
- Comprehensive picture of flood risk for entire watershed (Zone As)
- Provides modeling to support local flood mitigation strategies, projects, and initiatives
- Information to support local planning and development decisions for multiple community departments.
- Less time intensive than detailed study/FIRM update
- Increased stakeholder involvement

Statewide BLE Coverage

- Our goal is to get updated flood hazard data to Texas communities quickly
 - BLE development ~9-12 months
- Cost effective
 - Larger scale studies can build on modeling efficiencies
- Support for Regional Flood Planning Groups
 - The TWDB will be administering a new state and regional flood planning process with flood planning regions based on river basins
 - BLE data can inform decision making for the Regional Flood Planning Groups

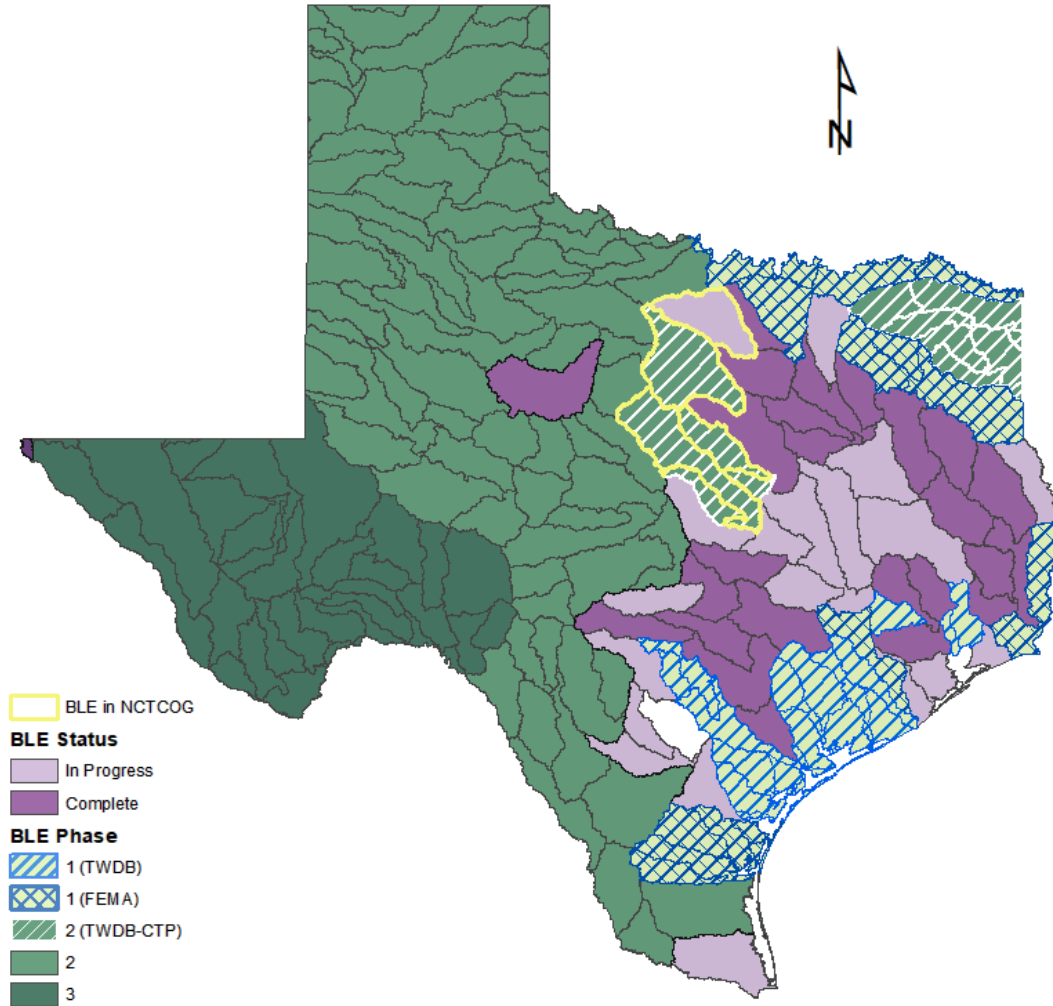
BLE Coverage in Texas

Base Level Engineering Phases

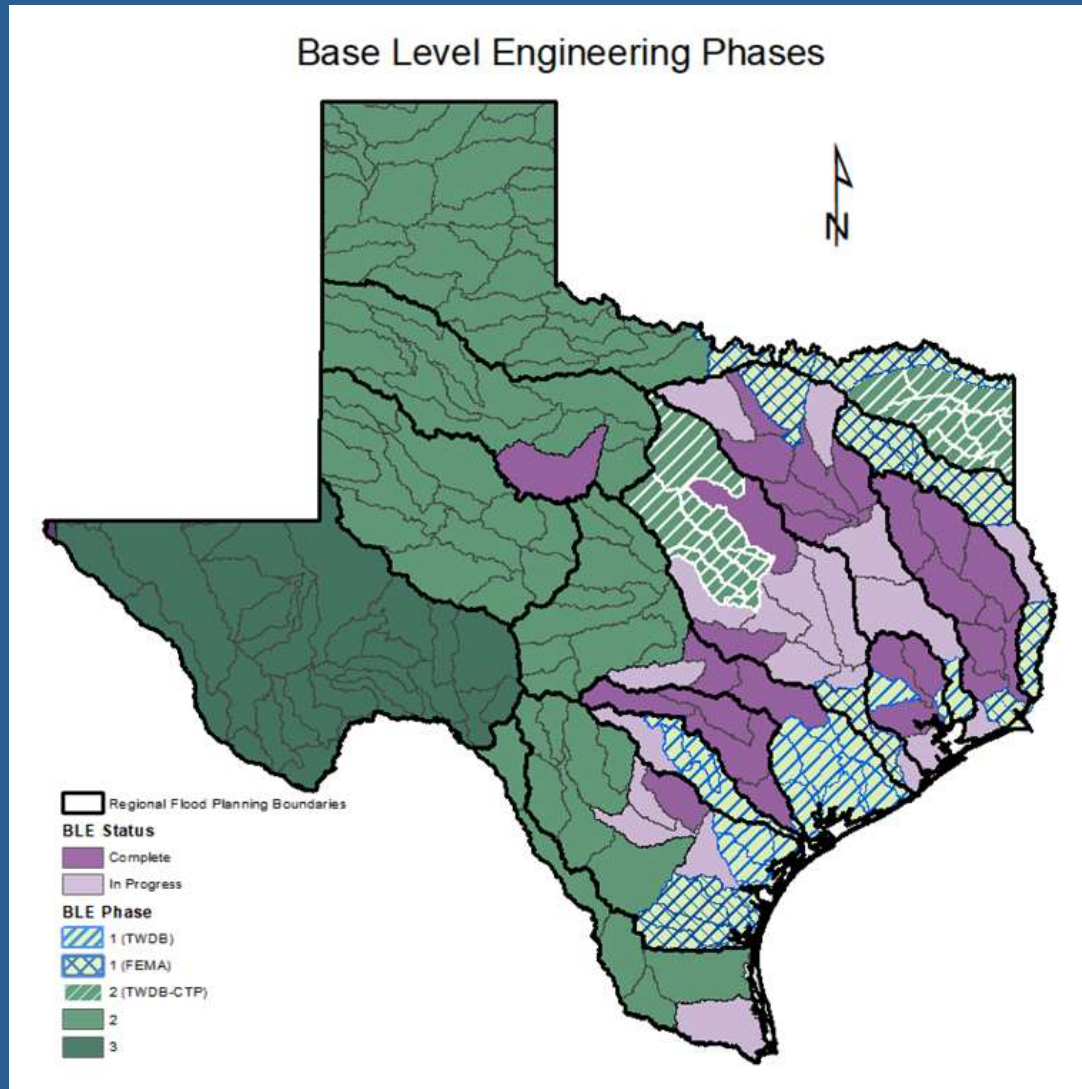


BLE within NCTCOG

Base Level Engineering Phases



Regional Flood Planning Boundaries



Estimated Base Flood Elevation Viewer

<https://webapps.usgs.gov/infrm/estBFE/>

Welcome to the

Base Level Engineering assessments are produced using high resolution ground data to create technically credible flood hazard information that may be used to expand and modernize FEMA's current flood hazard inventory.

I Want to Explore

View Base Level Engineering Data

Access all available Base Level Engineering data without GIS software.

- Click the **DATA LAYERS** button to add or remove map layers.
- Click the **LEGEND** tab to view an explanation of all data shown.
- Click the **MAP VIEW** button to open or close a second viewing window for side-by-side comparisons.

I Want to Download

Download Datasets & Models

Download the Base Level Engineering data presented in the viewer.

- Click the **DATA LAYERS** button and add the **DOWNLOADABLE DATA** layer.
- Click shaded areas in the map to open a dialog for choosing datasets to download.

What Is My Flood Risk?

Property Look Up

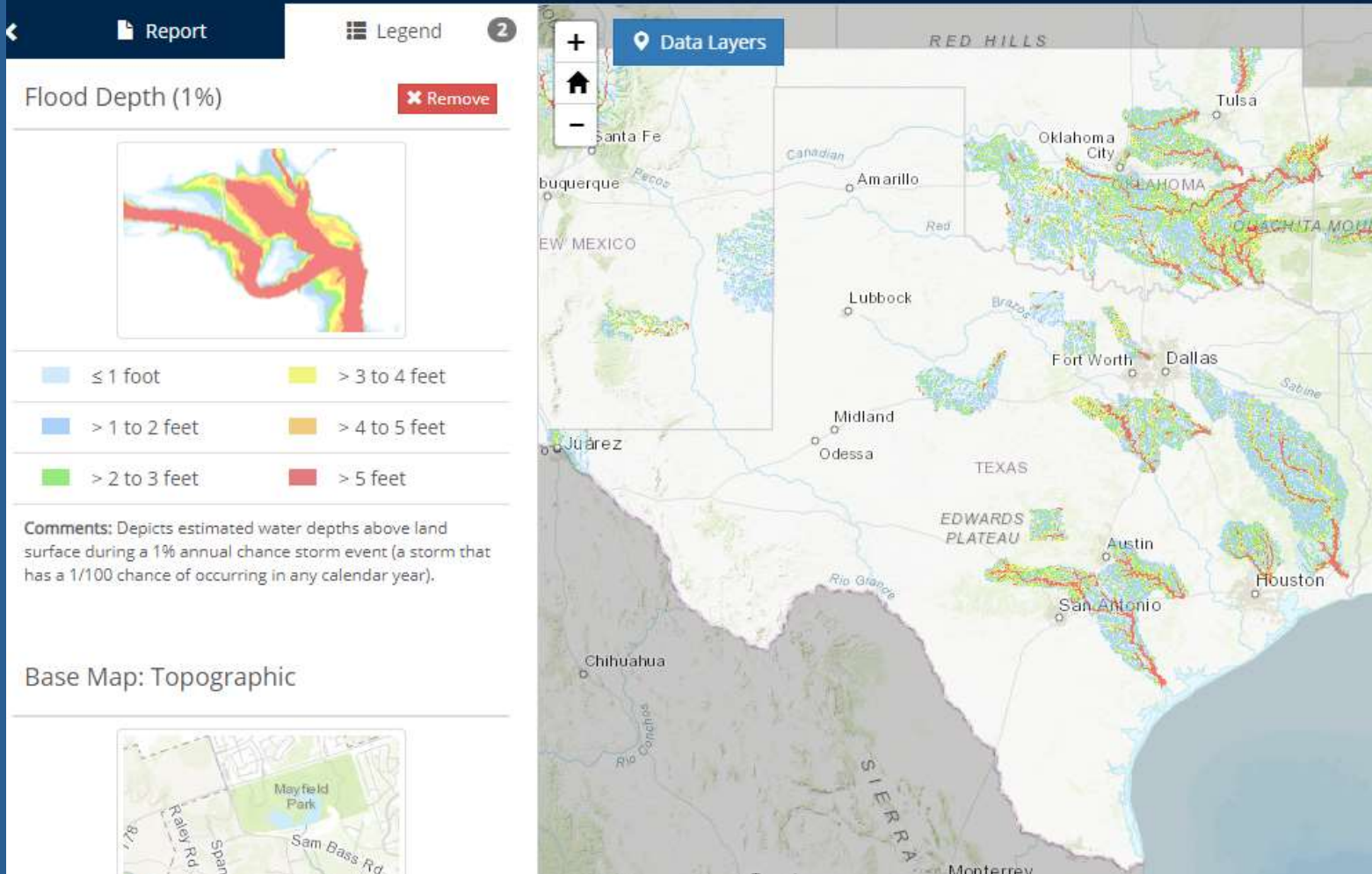
Where data is available, produce a property-specific report with estimated base flood information.

- Click the **REPORT** tab to create a flood risk report for a specific location.

Click a topic to get started!

Estimated Base Flood Elevation Viewer

Estimated Base Flood Elevation (estBFE) Viewer



Questions?

Manuel Razo, GISP, CFM
Manager, Flood Mapping
512-475-1850

manuel.razo@twdb.texas.gov

Or

Jacquelyn Hayes, CFM
GIS Specialist, Flood Mapping
512-936-2420

jacque.hayes@twdb.texas.gov

Flood Planning for the State of Texas

NCTCOG CRS Users Group/Elected Officials Floodplain Seminar

Reem Zoun, PE, CFM, Director, Flood Planning

James Bronikowski, PE, CFM, Manager, Regional Flood Planning

Morgan White, CFM, Team Lead, Regional Flood Planning

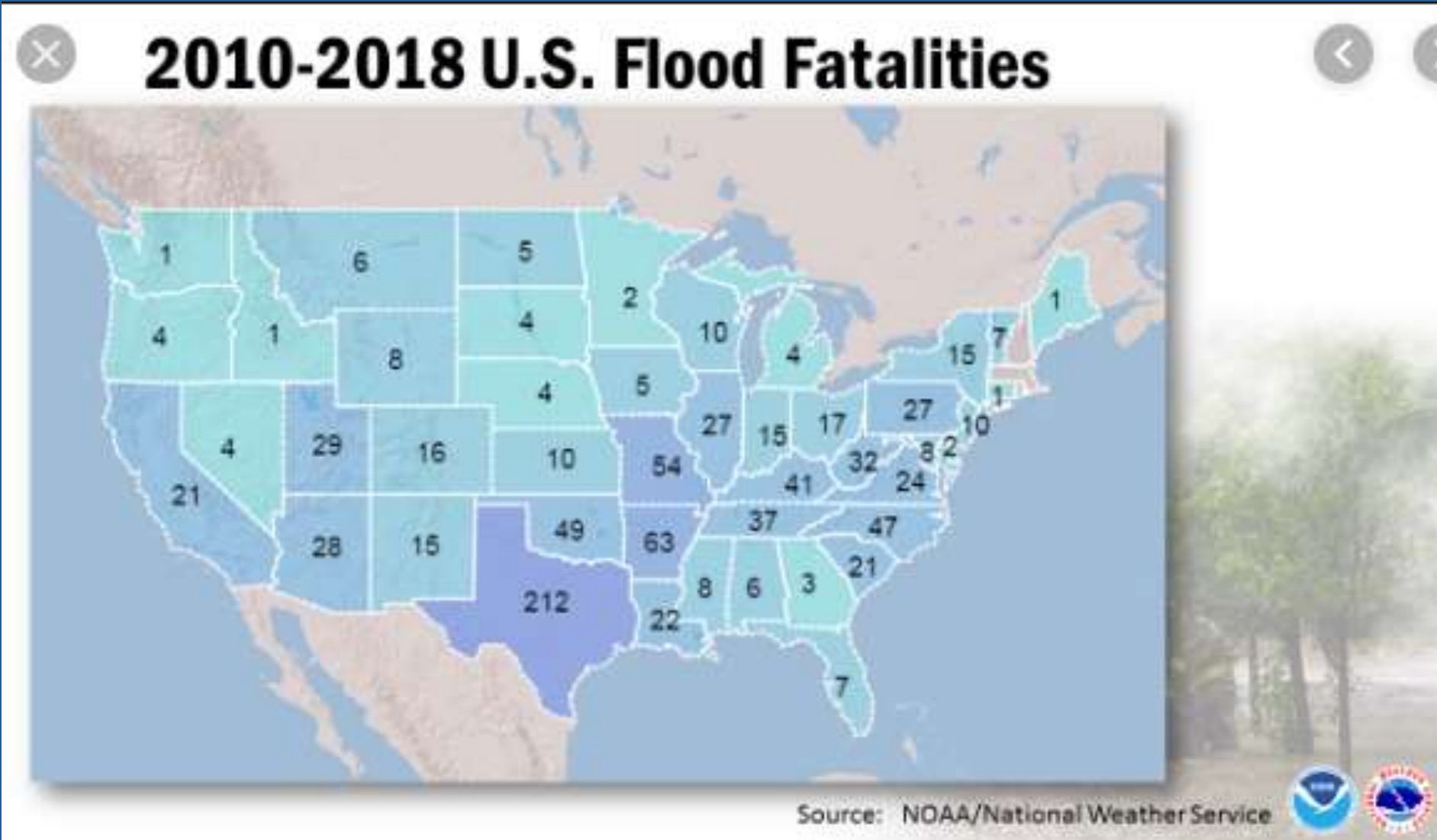
July 30, 2020

Why Flood Planning?

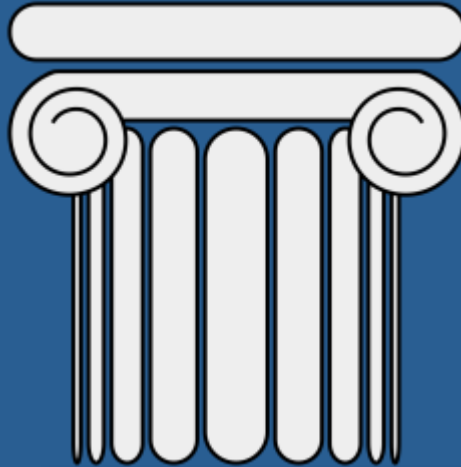
- Hurricane Harvey
 - 34 trillion gallons of rain over Texas
 - 30% of Texas population effected
 - \$125 billion in damages
 - SB 8 passed directing to statewide flood planning
- Flood preparation and protection \$\$ goes much further than recovery efforts



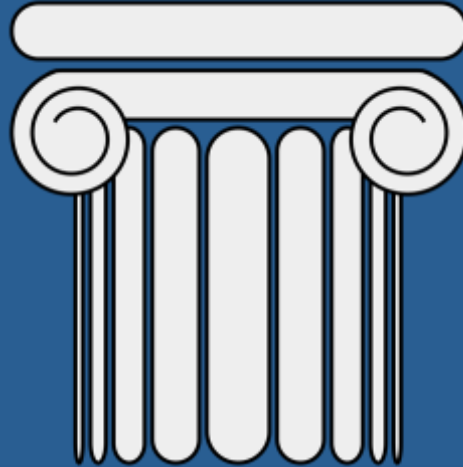
It is important...



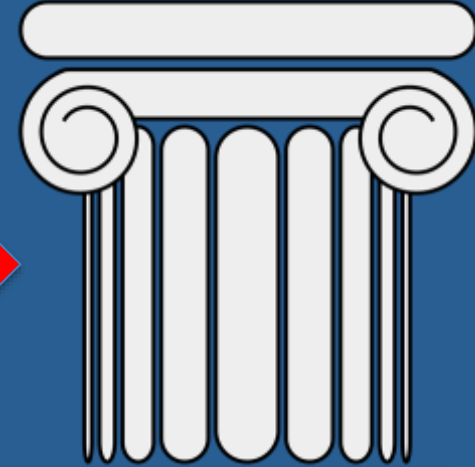
Mapping



Planning



Mitigation



TWDB Flood Risk Reduction Efforts

Regional and State Flood Planning



Outline

- Why?
 - ✓ To protect against the loss of life and property
- Where?
 - ✓ 15 Flood Planning Regions
- How?
 - ✓ Flood Planning Process
- When?
 - ✓ Timeline

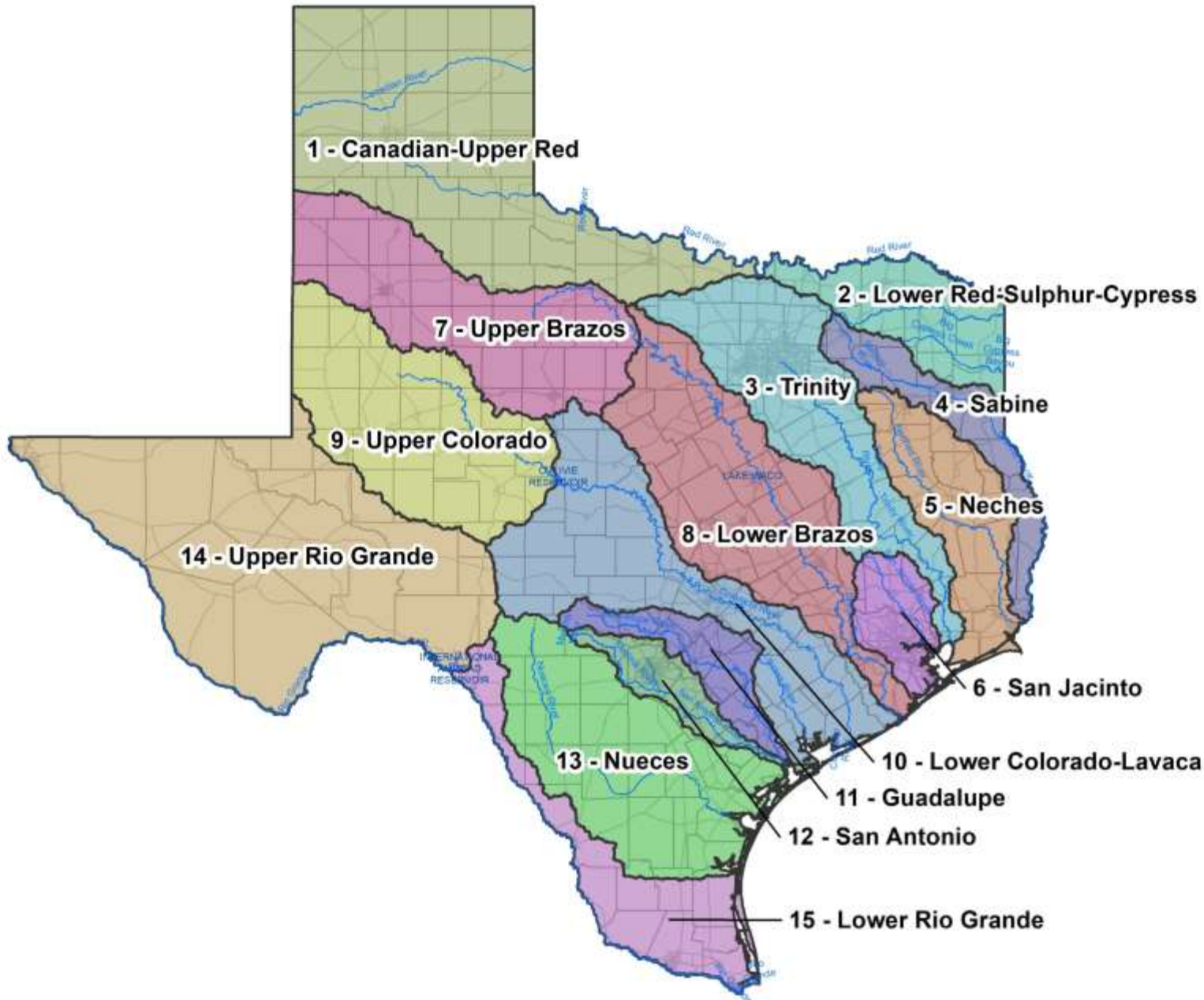
Purpose

- Protect against loss of life and property
- ‘Prevention is better than cure’ – applies to flood risk as well
- Preventing creation of new risks – water needs space to flow!
- Reducing the risk for those who are already in harms way
 - The storms we have been experiencing are larger
 - A lot of developments are done prior to regulation, 1977 for COA, 1980ish for HCFCD, level of service are 5yr capacity
- We never really fully mitigate flood risk, we reduce the risk and we prepare for it. There will always be residual risk. Understanding this is important.

Outline

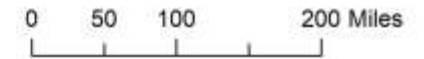
- Why?
 - ✓ To protect against the loss of life and property
- Where?
 - ✓ 15 Flood Planning Regions
- How?
 - ✓ Flood Planning Process
- When?
 - ✓ Timeline

Flood Planning Region Boundaries



Legend

- Major Roadways
- Major Rivers
- Major Reservoirs
- Flood Planning Region Boundaries**
- Canadian-Upper Red
- Guadalupe
- Lower Brazos
- Lower Colorado-Lavaca
- Lower Red-Sulphur-Cypress
- Lower Rio Grande
- Neches
- Nueces
- Sabine
- San Antonio
- San Jacinto
- Trinity
- Upper Brazos
- Upper Colorado
- Upper Rio Grande
- County Boundaries



Outline

- Why?
 - ✓ To protect against the loss of life and property
- Where?
 - ✓ 15 Flood Planning Regions
- How?
 - ✓ Flood Planning Process
- When?
 - ✓ Timeline

Overview – by the numbers..

- 15 Flood Planning Regions = 15 Regional Flood Plans
- Approximately \$20M will be allocated amongst the 15 Regional Flood Planning Groups
- 180 Voting Members (12 in each of the 15 regions)
- 150 Non-voting members (7 in each of the 15 regions)
- 1 State Flood Plan

Flood Planning Process

- Regional groups make decisions
- Collaborative Process
 - Each group will maintain 12 voting members
 - Each group by statute must maintain non-voting members from TWDB, GLO, TDEM, TCEQ, TSSWCB, and TPWD
- Public process to develop plans
- Regional plans will roll into statewide plan
- Five-year planning cycle

Regional Flood Planning

- First statewide evaluation of flood risk
- Recommendation flood management solutions
 - ✓ No negative impacts to neighboring areas
 - ✓ Consider contribution and impacts to water supply
- Plans will be based on best available science
 - ✓ Atlas 14
- Plans will be guided by SB8 rules, TAC Chapter 361 and 362, and guidance document being developed by the TWDB
- Due on January 2023

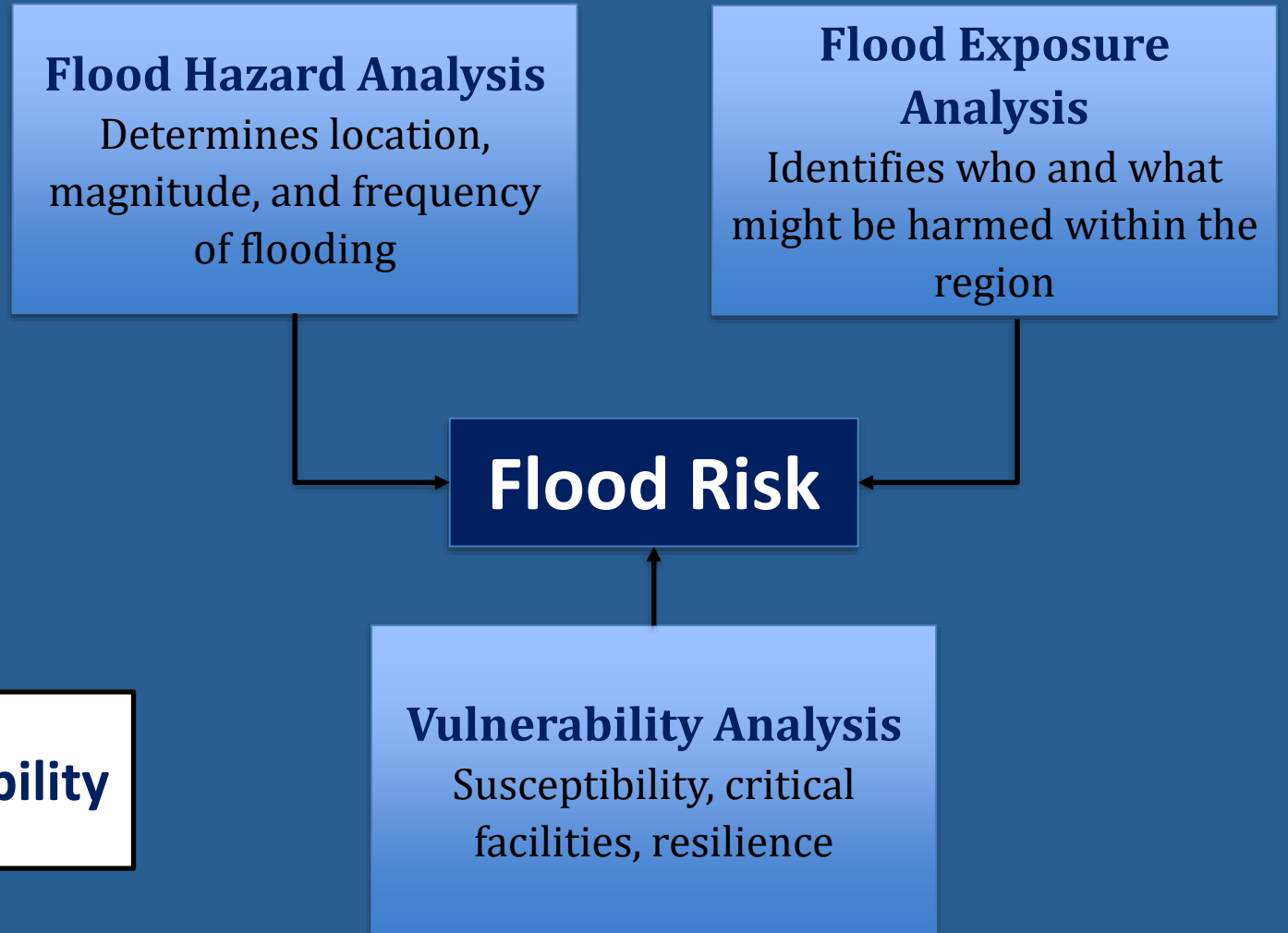
Regional Flood Plan Components

Description of:

- Flood Planning Region
- Existing Natural Flood Mitigation Features
- Constructed Major Flood Infrastructure
- Major Infrastructure and Flood Mitigation Projects currently under development

Regional Flood Plan Components (continued)

- Identify specific flood risk
- Existing Condition Flood Risk Analyses
- Future Condition Flood Risk Analyses



Risk = Hazard x Exposure x Vulnerability

Regional Flood Plan Components (continued)

Evaluation of previous and current floodplain management and recommendations for changes to floodplain management

- Recognizing the extent that previous and current practices may have increased flood risks to both current and future populations and property.
- RFPGs may also choose to adopt region-specific, minimum floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt and begin enforcing prior to the RFPG including in the RFP any FMEs, FMSs, or FMPs that are sponsored by or that will otherwise be implemented by that entity.

Regional Flood Plan Components (continued)

- Set flood mitigation and floodplain management goals
- Flood Mitigation Need Analysis

Regional Flood Plan Components (continued)

- Identify Flood Management Evaluations (FMEs)
- Identify Flood Management Strategies (FMSs)
- Identify Flood Mitigation Projects (FMPs)
 - ✓ Structural and non-structural
- Focus on both:
 1. Reducing existing flood risks to life and property
 2. Floodplain management in general to avoid increasing flood risk in the future by keeping future populations out of the way of flood flows

Regional Flood Plan Components (continued)

- Impacts of RFP
- Contributions to and Impacts on Water Supply Development
- Flood Response Information and Activities
- Administrative, Regulatory, and Legislative recommendations
- Flood Infrastructure Financing Analysis
- Implementation and comparison to previous RFP

Flood Planning Guidelines

- Guidance document is being developed by the TWDB
 - ✓ Hydrologic and Hydraulic modeling
 - ✓ Mapping
 - ✓ Benefit Cost Ratio Analysis
 - ✓ No negative impact

State Flood Plan

- Regional plans will roll into one statewide plan
- An evaluation of the condition and adequacy of flood control infrastructure on a regional basis
- Statewide ranked list of projects and strategies
- Plan will be guided by SB8 rules and TAC Chapter 362
- Due on September 2024

Outline

- Why?
 - ✓ To protect against the loss of life and property
- Where?
 - ✓ 15 Flood Planning Regions
- How?
 - ✓ Flood Planning Process
- When?
 - ✓ Timeline

Timeline

- **December 20, 2019:** Proposed regional and state flood planning rules authorized for publication in the *Texas Register*
- **April 09, 2020:** Regional Flood Planning Areas designated by the board
- **May 21, 2020:** Final flood planning ruled adopted by the board
- **May 21, 2020 – July 17, 2020:** Regional flood planning group (RFPG) initial members solicitation
- **Fall 2020:** Nomination of initial RFPG member by the Board
- **October/November 2020:** First RFPG Meetings
- **January/ February 2021:** Contract execution with the RFPG sponsors
- **Early 2021:** RFPG sponsors will solicit technical consultants
- **January 10, 2023:** First regional flood plans due to TWDB
- **September 1, 2024:** First state flood plan due to legislature

Next Steps

- TWDB is still accepting nominations for:
 - All Regions: electric-generating utilities
 - Region 1. Canadian-Upper Red: flood districts, industries, small businesses, water districts
 - Region 2. Lower Red-Sulphur-Cypress: industries
 - Region 4. Sabine: water districts, water utilities
 - Region 7. Upper Brazos: environmental interests
 - Region 9. Upper Colorado: flood districts
 - Region 13. Nueces: water utilities
- Draft contract documents, guidance manual, training materials, and flood data are being prepared for the RFPGs
- Approximately \$20M will be allocated amongst the 15 Regional Flood Planning Groups for developing the regional flood plans

More Information

- TWDB Flood Planning Website
- <http://www.twdb.texas.gov/flood/planning/index.asp>

Texas Water Development Board

Home Board Financial Assistance Water Planning Groundwater Surface Water Flood Conservation Innovative Water GIS Data

Flood Planning

The 2019 Texas Legislature and Governor Abbott greatly expanded the TWDB's role in flood planning. The TWDB will be administering a new state and regional flood planning process with flood planning regions based on river basins. The regional flood planning process will be developed, and initial regional flood planning groups formed by mid-2020; the first regional flood plans will be due in January 2023, and the first state flood plan will be due September 1, 2024.

[Sign up for e-mails on TWDB's new flood programs](#)

[Flood Infrastructure Fund and other project financial assistance programs](#)

Recent News

- [Flood Planning Region Boundaries](#)
- [Regional and State Flood Planning Rules](#)
- [Open Solicitation for Regional Flood Planning Group \(RFPFG\) Members](#)
- [Open Solicitation for Political Subdivisions to Support Regional Flood Planning Groups \(RFPFG\)](#)

Flood Planning Region Boundaries

Water for Texas Conference 2020

- What to Do? Before, During, and After a Flood
- Flood Infrastructure Fund (FIF)
- Flood Planning
 - Flood Planning Useful Links and Resources
- Regional and State Flood Planning Staff
- Flood Protection Grant Programs
- National Flood Insurance Program (NFIP)
- Floodplain Management Training
- Community Resources
- Flood Science and Community Assistance Staff

TNRIS

Questions?

Reem Zoun, PE, CFM
Director, Flood Planning
512 475 1546
reem.zoun@twdb.texas.gov

James Bronikowski, PE, CFM
Manager, Regional Flood Planning
512 475 0145
james.bronikowski@twdb.texas.gov

Morgan White, CFM
Team Lead, Regional Flood Planning
512 475 3754
morgan.white@twdb.texas.gov