

Flood 101

Texas Water Development Board

Michael Segner, MBA, CFM
State Coordinator
National Flood Insurance Program

Why am I Interested in Flood 101?

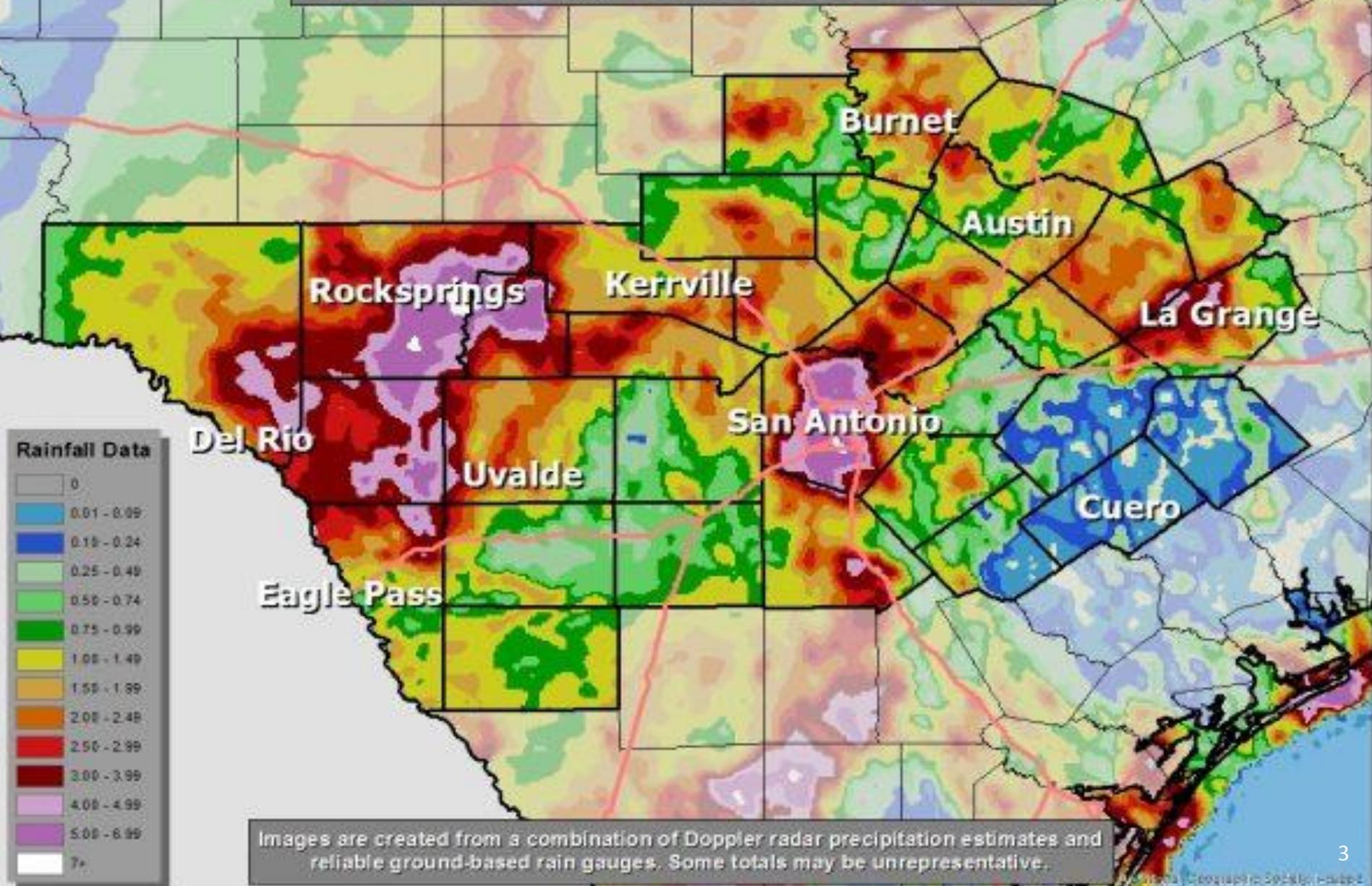
This is Texas, it rarely rains...



Stratford, Texas, 1935

Weather Channel Photo

24 Hour Rainfall Ending 8 AM Monday, September 26, 2016



Austin: May, 2015



Halloween Flood, 2013



Hurricane Ike, 2008



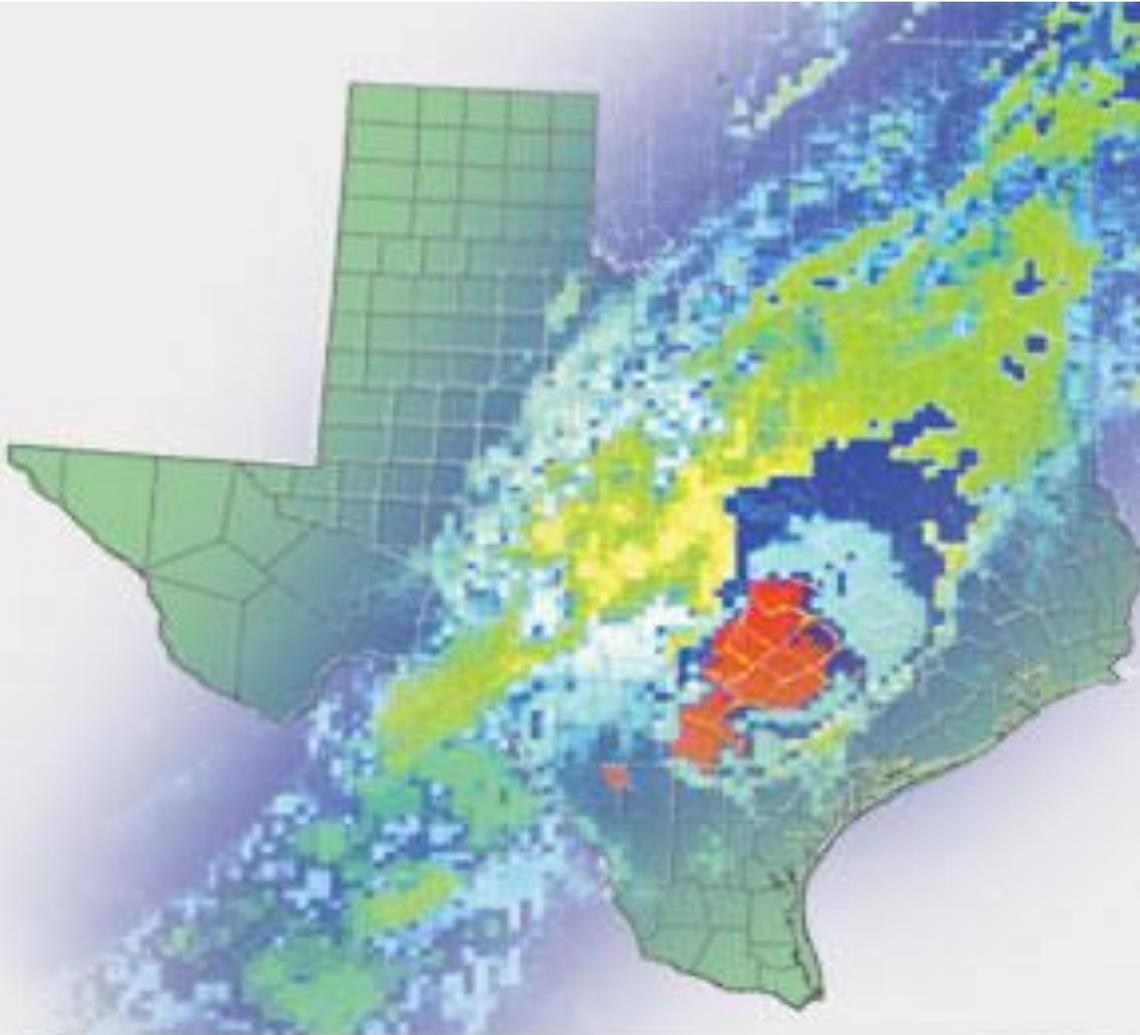
Results of Hurricane Ike, 2008



Houston: Tropical Storm Allison, 2001



Severe Storms, 1998



The storm that caused the 1998 floods in the Guadalupe River Basin covered much of the state of Texas.

Oct. 17-18, 1998
30" in 36 hours
31 lives lost
\$750 million

NOAA

Hurricane Alicia, 1983



21 deaths
\$7.3 billion

Austin, 1935



Statistics

Floods are the leading cause of death from natural disaster

- ~200 per year in the U.S.
- ~ 50% perish in vehicles in the U.S.
- Flooding causes more damage than all other natural disasters combined*

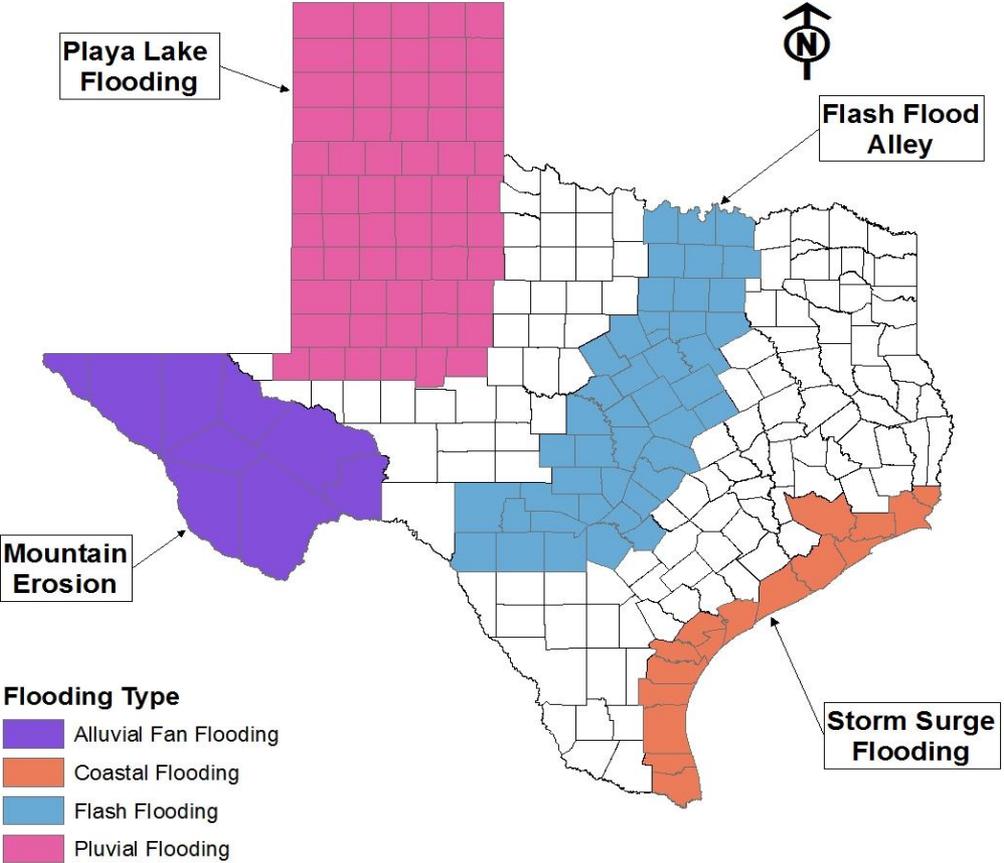
Texas leads the nation in flood-related deaths

- This is twice as much as the next highest state (California)
- ~76% perish in vehicles in Texas
- Texas ranks 2nd in nation for flood loss*

Floodsafety.com *FEMA

Texas Water
Development Board 

Texas Terrain



A River Runs Through It



The Coastline



Lubbock, Texas



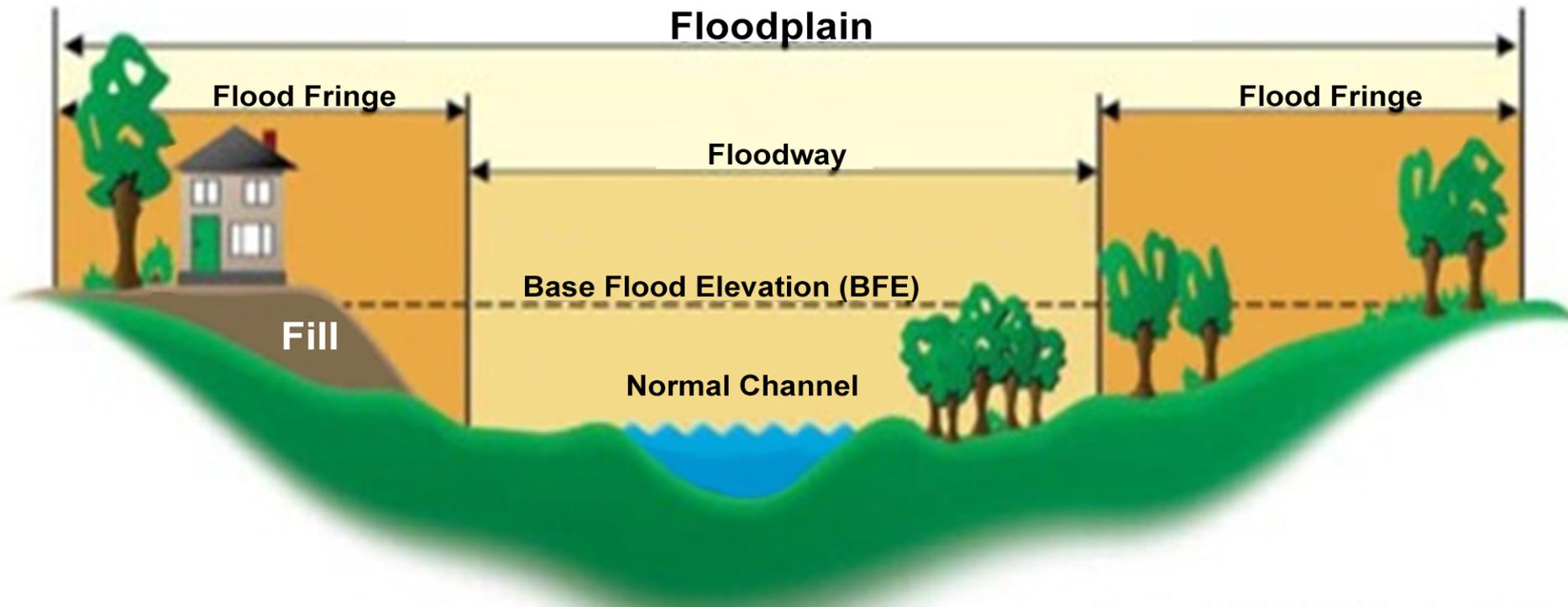
El Paso, Texas



Picture from KFOX 14 News

What is a Floodplain?

Characteristics of a Floodplain



Source: NFIP Guidebook, FEMA

A Different Look at a Floodplain



So How Does This All Fit Together?

National Flood Insurance Program

- Established by Congress in 1968
- Promotes sound land use
- Encourages communities to build smarter
- Allows federal flood insurance if:
 - Communities adopt flood ordinance/order
 - Regulations are in place to reduce flood damages

State Enabling Legislation

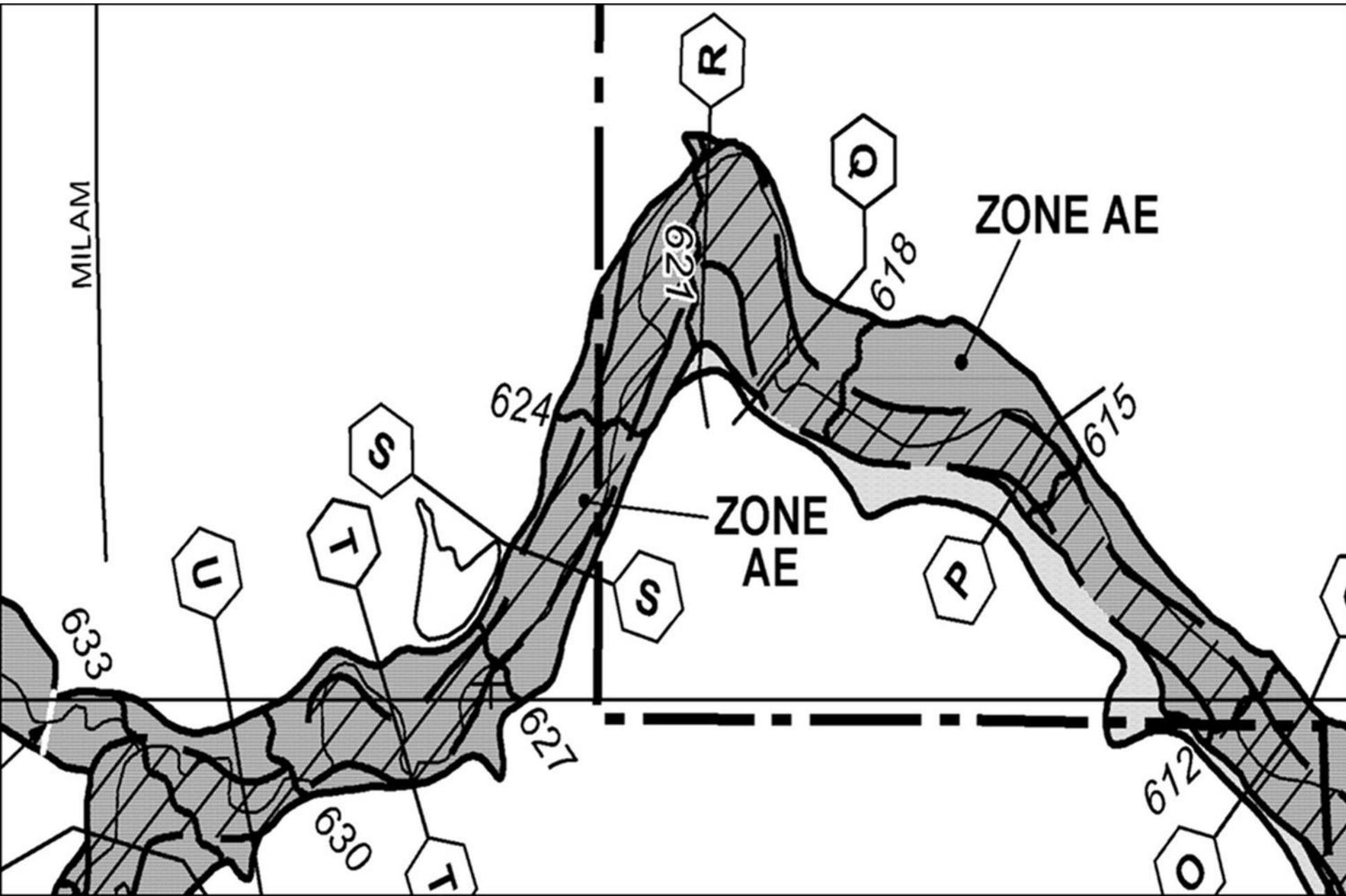
Texas Water Code, Section 16.311 – 16.324

- *...each city or county shall...be eligible to participate in the National Flood Insurance Program*
- **All** *political subdivisions are hereby authorized to ... comply with...the National Flood Insurance Program...*
- *A political subdivision may institute...for both injunctive relief and civil penalty*

Non-Emergency Conditions

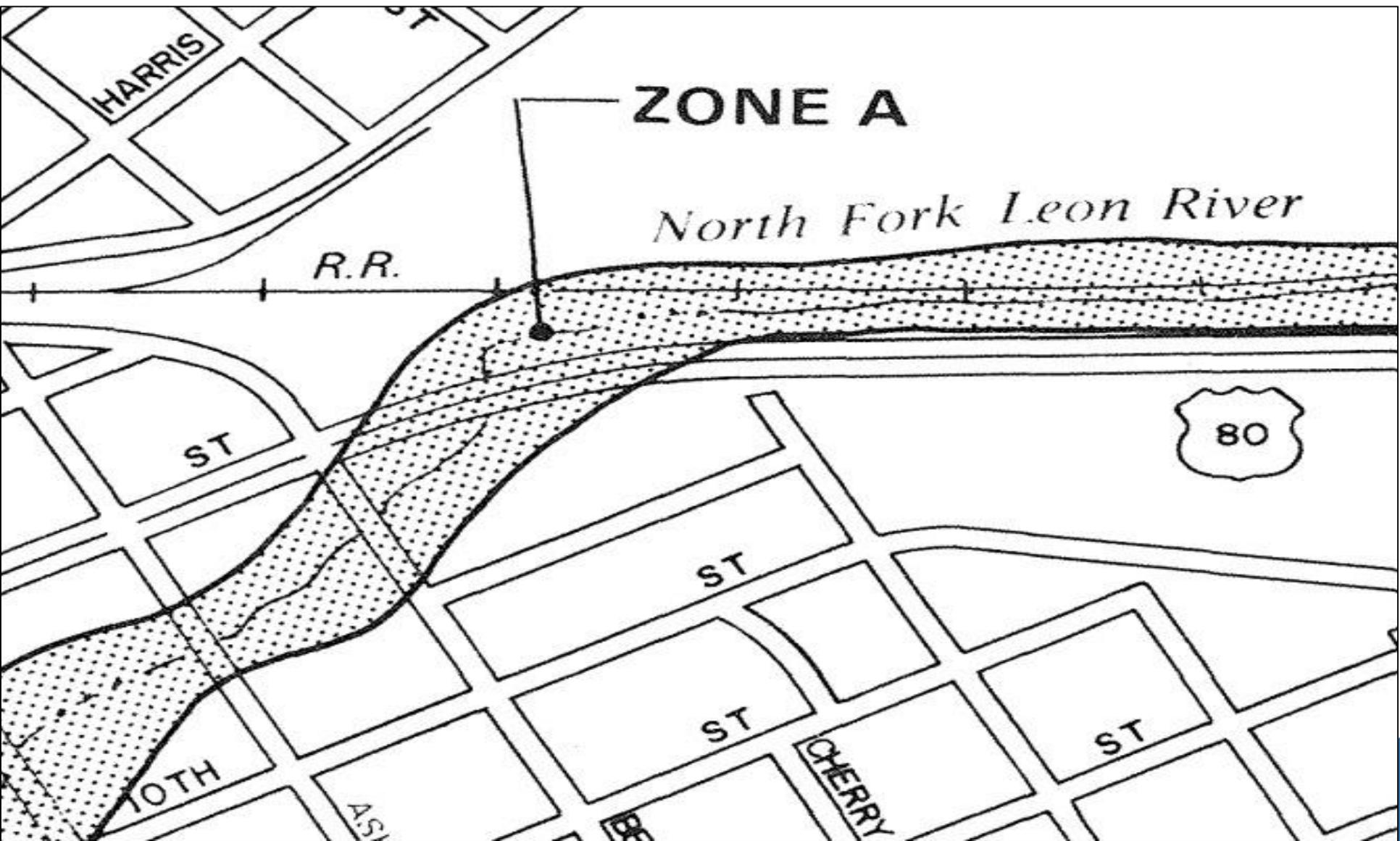
The Federal Role

Federal Emergency Management Agency





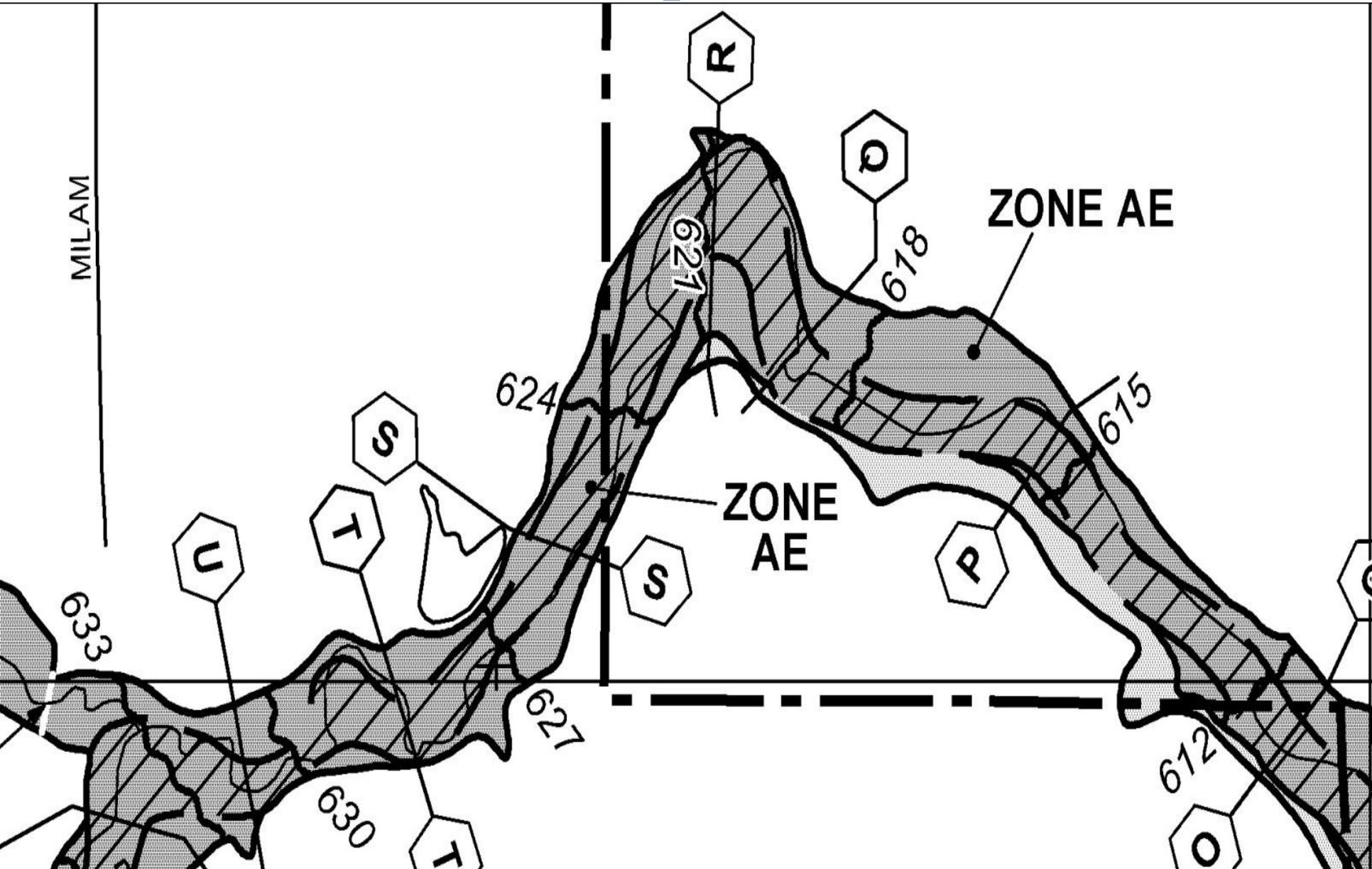
Flood Map: A Zone



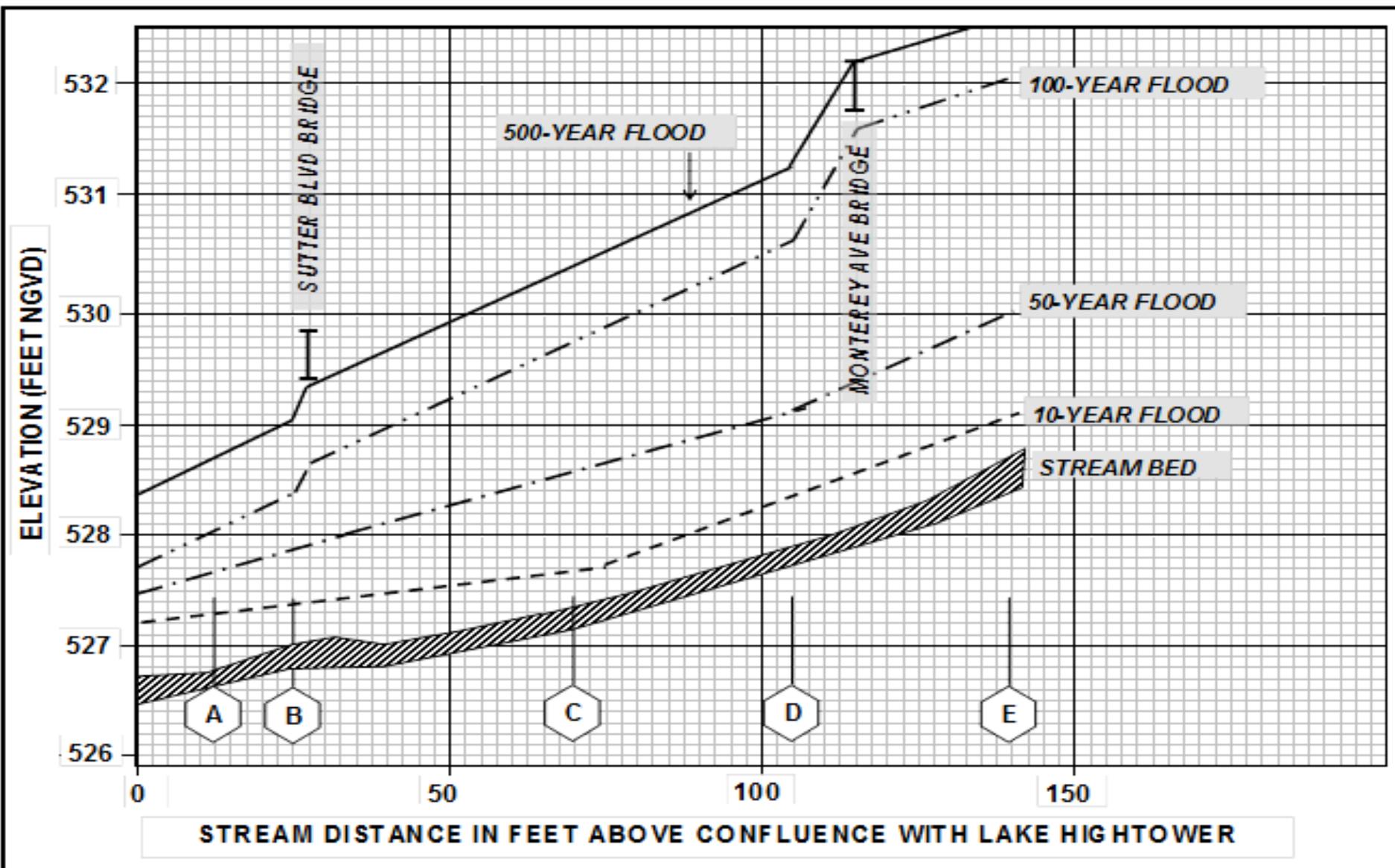
Flood Map: AE Zone



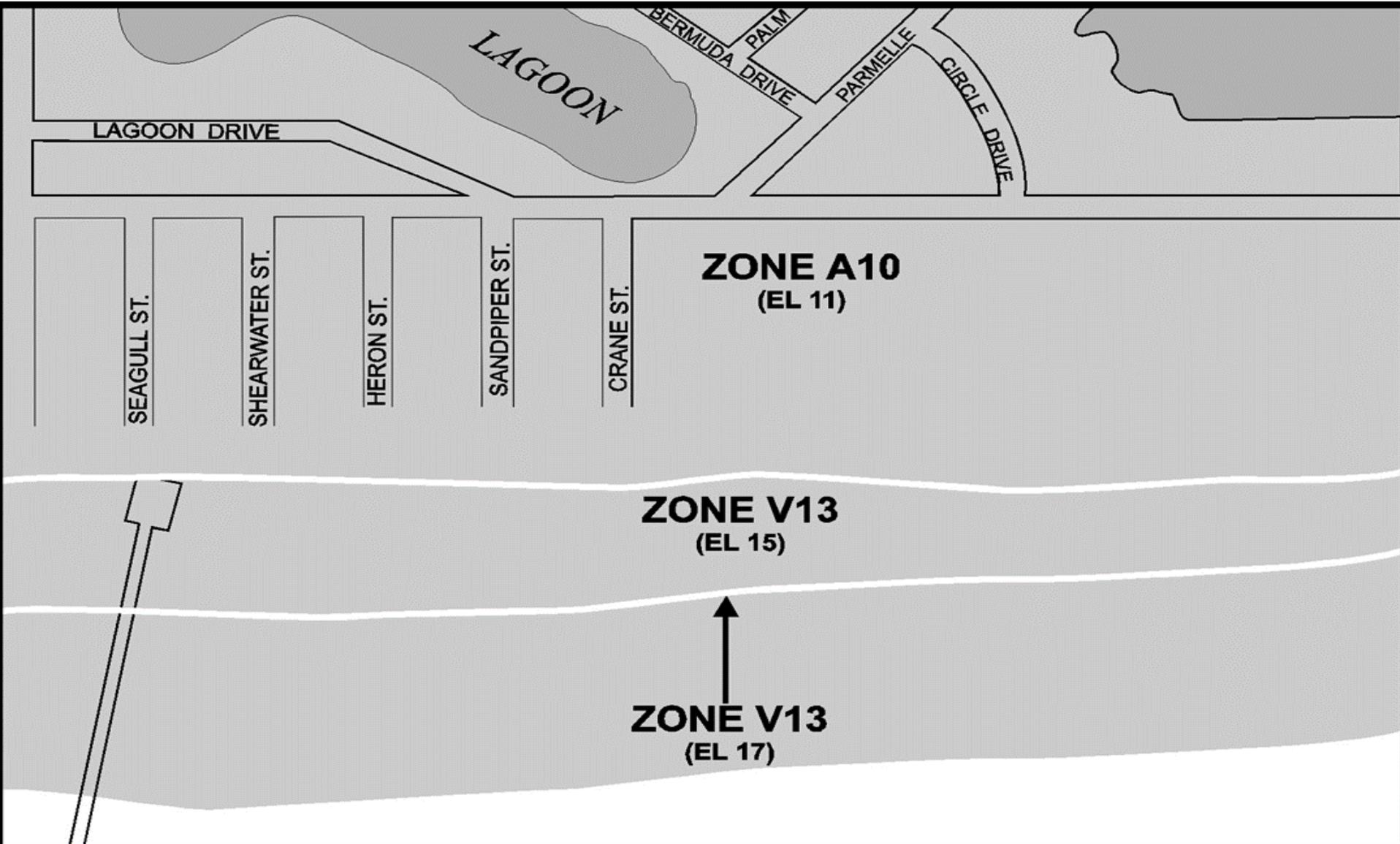
Flood Map: AE Zone



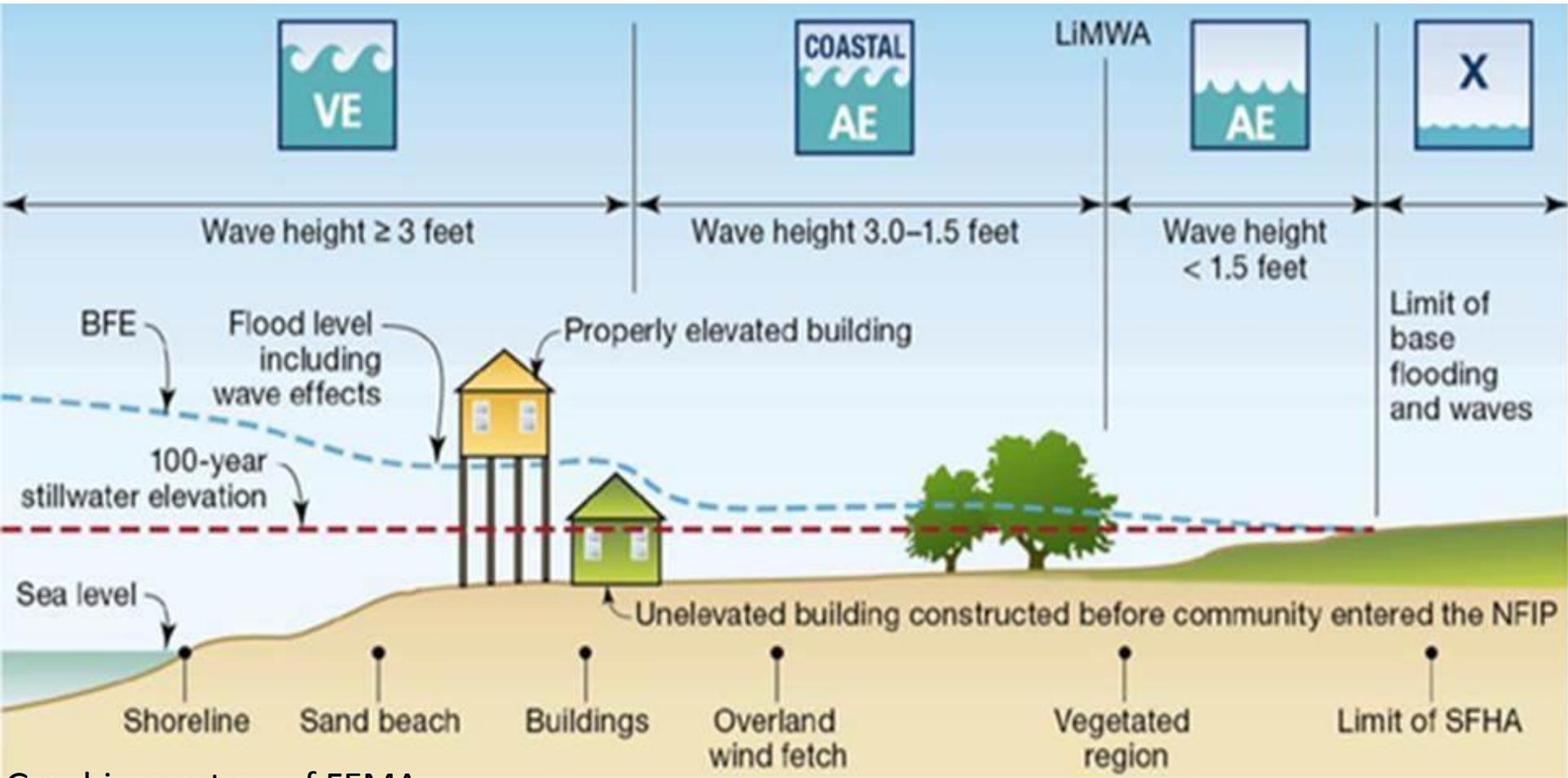
Flood Profile



Flood Map: V Zone



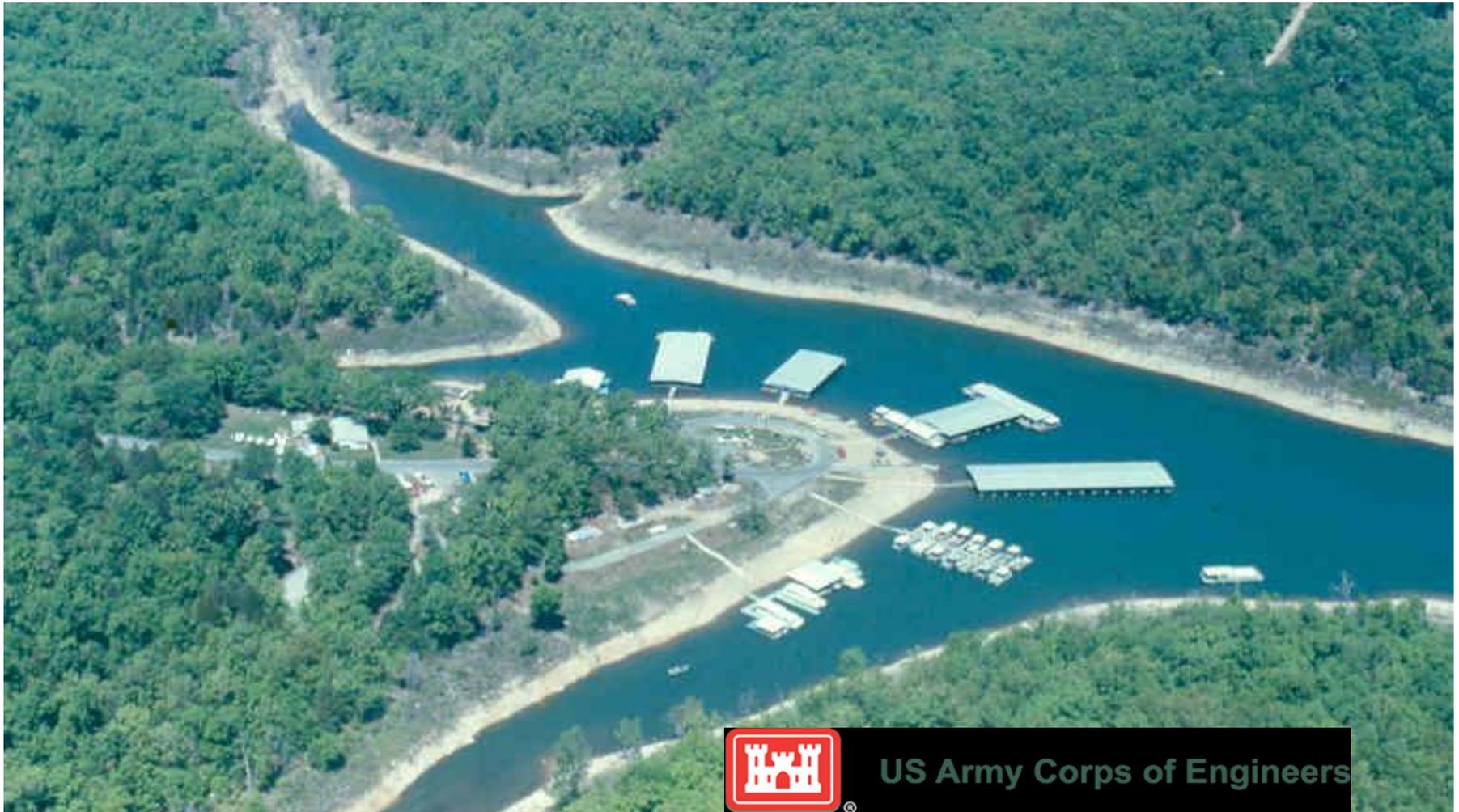
Coastal Areas



Graphic courtesy of FEMA

Other Federal Agencies

U.S. Army Corps of Engineers



US Army Corps of Engineers

U.S. Fish & Wildlife Service



U.S. Coast Guard



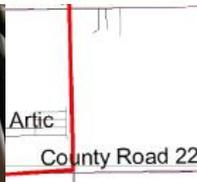
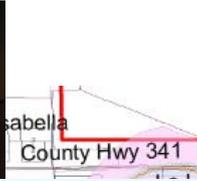
Non-Emergency Conditions

The State Role

Texas Water Development Board



Texas Water Development Board



Texas Water Development Board



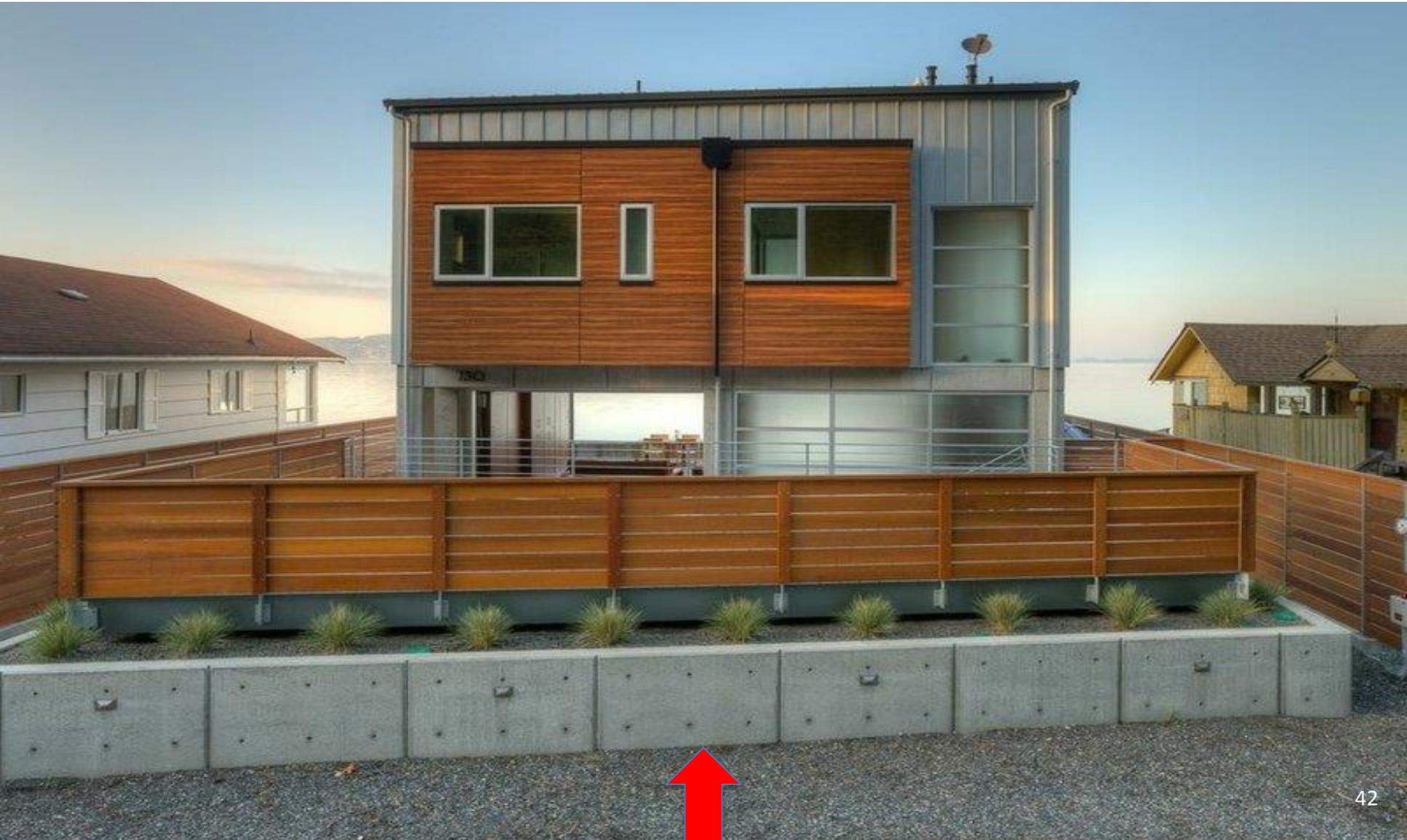
What Can Grants Help Accomplish?

Common activities; think about 'FRED':

- Flood-proof (historic or non-residential)
- Relocate/buyout
- Elevate
- Demolish

More on grants later in this presentation

Flood-Proof



Relocate/Buyout



Elevation



Demolition



Other State Agencies/Organizations



TEXAS DEPARTMENT OF AGRICULTURE
COMMISSIONER SID MILLER



TEXAS COMMISSION
ON ENVIRONMENTAL QUALITY

Texas Water
Development Board

Non-Emergency Conditions

The Local Role: Cities and Counties

Local Responsibilities

State of Texas Hazard
Mitigation Plan

2013 Update



Community Rating System 2/4

PART 2 -

SECTION 2.01 - ACCESSORY BUILDING

"Accessory building" means a structure that is incidental to, and that of the principal structure.

SECTION 2.02 - ADMINISTRATOR

"Administrator" means the Federal Emergency Management Agency.

SECTION 2.03 - BASE FLOOD ELEVATION

"Base flood" means a flood having a one percent annual chance of equalling or exceeding it in any one year. This flood is sometimes called a 100-year flood.

SECTION 2.04 - BASE FLOOD ELEVATION

"Base flood elevation" means the elevation of the water surface during the base flood.

SECTION 2.05 - BREAKAWAY WALL

"Breakaway wall" means a wall that is designed to fail under the design loading forces, without causing damage to the structure or supporting foundation systems.

SECTION 2.06 - CERTIFICATE OF COMPLIANCE

"Certificate of Compliance" means a document indicating a site is in compliance with the Flood Plain Management as of a specific date. Property Records as outlined in Section 2.01.

**BUILDING DEPARTMENT**

STOP WORK ORDER

Any person willfully destroying, mutilating, or removing this order shall be prosecuted to the fullest extent of the law.

This order has been posted under the authority granted per 780 CMR 115.

This order has been posted under the authority granted per 780 CMR R114.

ADDRESS: 76 SALEM END RD

REASON: WORK WITHOUT A PERMIT / ZONING

2/9/16 DATE CHRIS CANNON BUILDING OFFICIAL

ALAMO HEIGHTS DEVELOPMENT DEPARTMENT
City, San Antonio, TX, 78209
Phone (214) 822-5181 Fax

PERMIT APPLICATION
(FINANCE NO. 1437)

FILE NO: (See 7802) DATE: _____
Tel. No. _____
Existing/Under Footprint _____
FAC: _____
HALF-SCALE PLANS FOR THE PROPOSED CONSTRUCTION DEVELOPMENT.
Official City Use Only
WHICH: _____
7-02 __ 7-03 __ 7-08 __ 7-71 __ 7-72 __ 7-74 __ 7-75 __ 7-111
7-71 __ 7-72 __ 7-74 __ 7-75 __ 7-112 __ 7-114
BY COMMUNITY DEVELOPMENT DIRECTOR: YES NO
DATE: _____
DATE ISSUED: _____
Building Permit file; Original in FDP Master File
Permit must be started within six (6) months of the date of issuance, or must be completed within three (3) years of issuance of permit.
2

Community Rating System 3/4



Flood Preparedness

5 Tips on How to Prepare for a Flood



WHAT TO DO DURING FLOOD:

- 1 Avoid areas subject to sudden flooding.
- 2 Do not attempt to cross rivers or flowing streams where water is above the knee.
- 3 Beware of water-covered roads and bridges.
- 4 Avoid unnecessary exposure to the elements.
- 5 Do not go swimming or boating in swollen rivers.
- 6 Eat only well-cooked food. Protect leftovers against contamination.
- 7 Drink clean or preferably boiled water ONLY.



Graphics by: P000 - New Media
SOURCE: DOST-PAGASA
http://forlat.pagasa.deed.gov.ph/generis/flood/safety_rules.html

Community Rating System 4/4

5 to 45 percent reduction in flood insurance



Flood Preparation

Refer to TexasFlood.org

Demo at 2:00

Emergency Conditions

Actions During or After a Flood Event

FEMA Role

If event is declared a presidential disaster

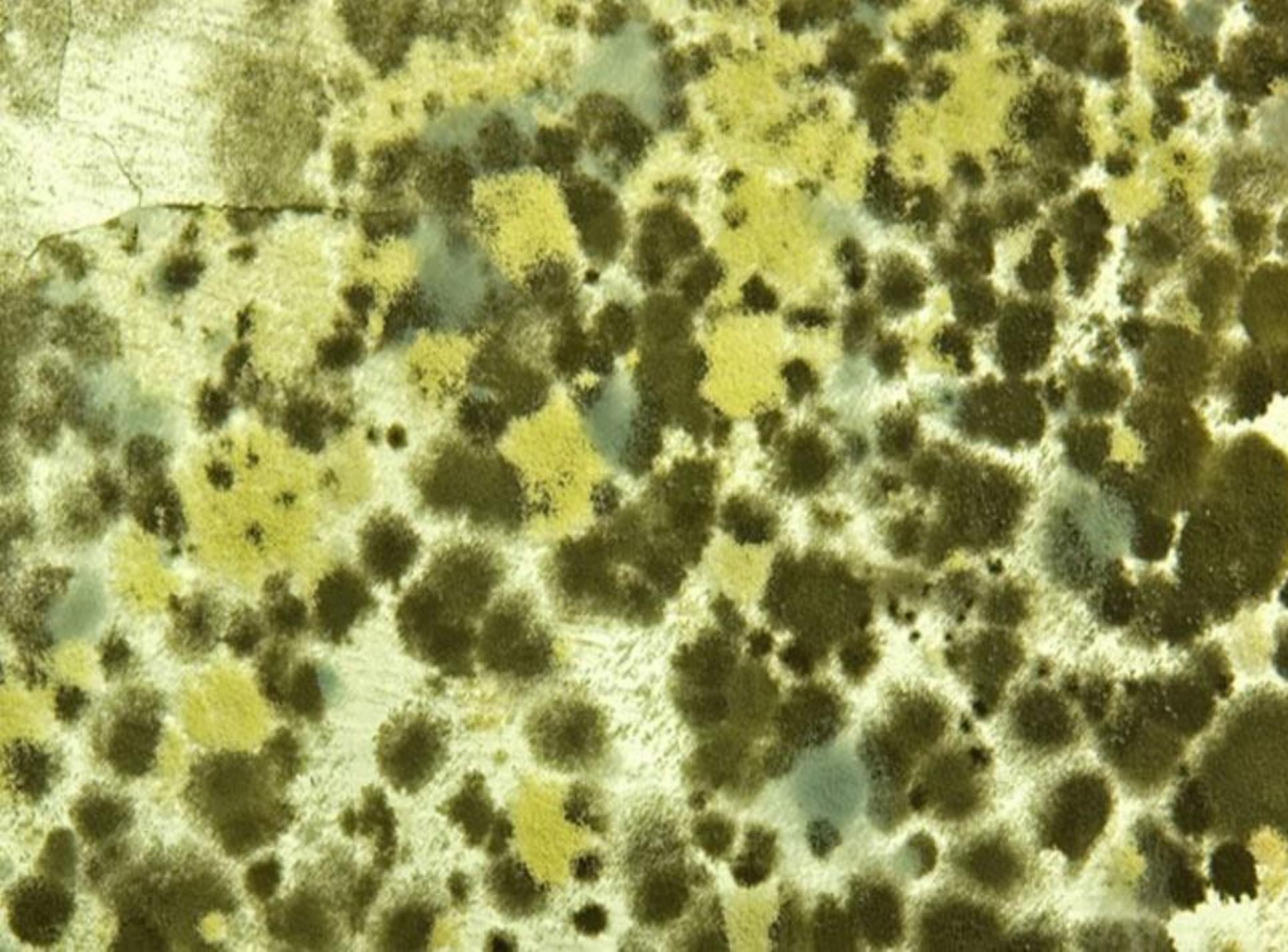
- Public assistance may be available
 - Life-saving infrastructure (eq. hospitals, electric)
 - 75% federally funded
- Individual assistance may be offered (\$33k)
 - Housing assistance
 - Other needs (medical, clothing, funeral, etc.)
- Set up a Joint Field Office, typically in Austin
- Set up Remote Field Office(s), as needed
- (Help) Conduct Substantial Damage Estimates

TWDB Role

- Contact communities
 - Mass email(s)
 - Phone call(s)
- Maintain contact with Floodplain Administrator(s)
 - TWDB is available to assist
 - TWDB answers questions
 - Provides information on the Hazard Mitigation Grants through the Texas Division of Emergency Management
- Contact FEMA representative(s)
 - Prioritize communities as needed
 - Maintain a presence at Joint Field Office

Local Role

- Take a deep breath!
- Follow the Hazard Mitigation Plan
- Inform affected homeowners
 - Do not start work on house until approved to do so
 - Safety issue (more on next slide)
 - Substantial damage estimate, as needed
 - Contact TWDB staff for guidance
- Issue permits for work, if warranted
- Apply for Hazard Mitigation Grant Program funds, if available, through Texas Division of Emergency Management

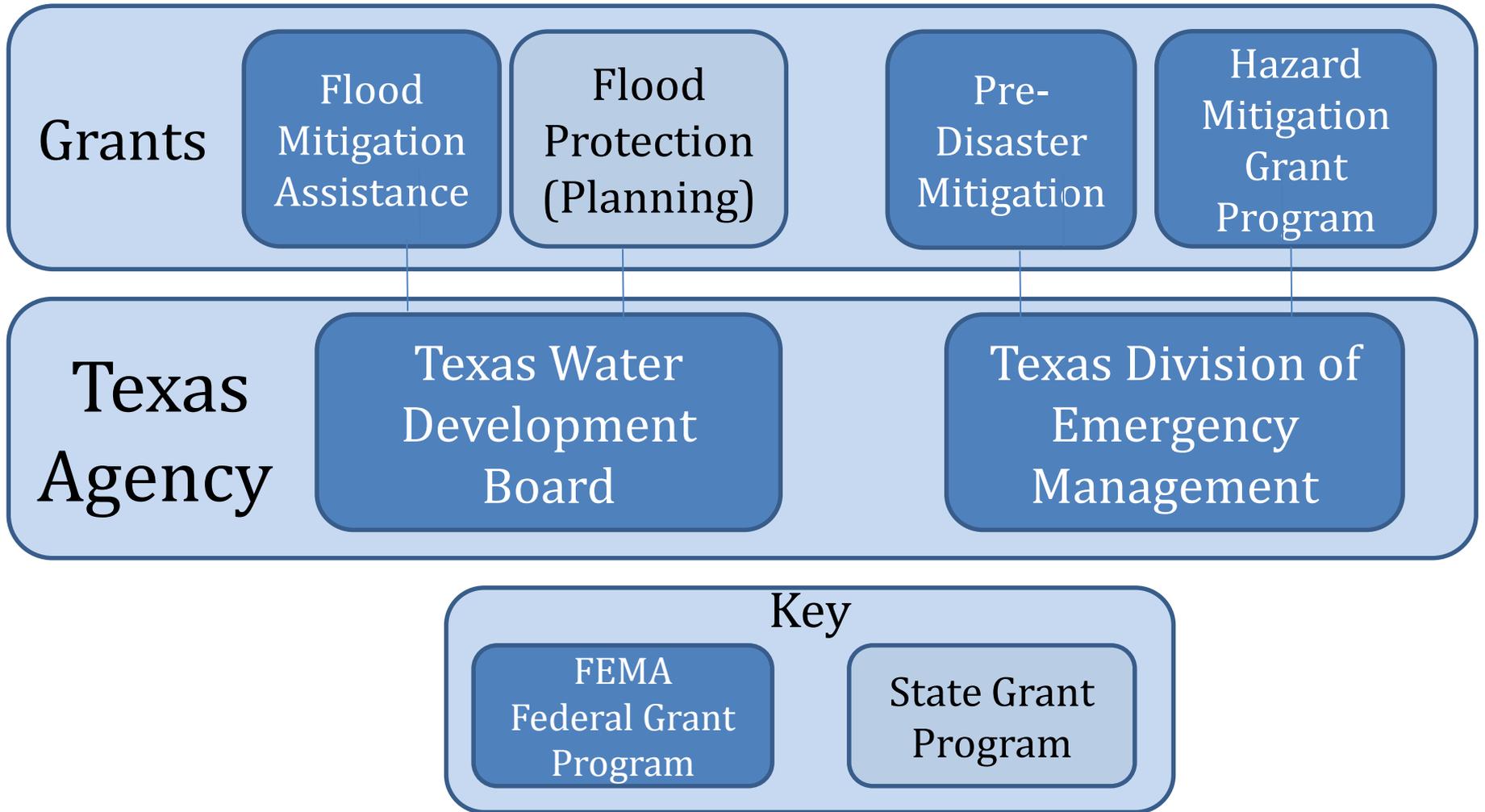


Funding Opportunities

Funding Opportunities

- FEMA Hazard Mitigation grants
- Small Business Association loans (businesses & homeowners)
- Clean Water State Revolving Fund loan
- Housing and Urban Development grants
- FEMA Flood Mitigation Assistance grants
- Flood Protection (Planning) grants
- Housing and Urban Development grants
- *Federal Register / Texas Register* will post certain funding opportunities

Grant Programs



Graphic courtesy of TWDB

Flood Protection Grant

- Introduced in 2016 as a change to the Flood Protection Planning grant
- Expanded funding opportunities to add:
 - Early warning system (Sirens, Reverse 911...)
 - Flood response (Develop plans, gage network...)
- Flood Protection Planning still an option
- \$3.5 million funded 17 projects in 2016
- Fiscal year 18 and beyond to be determined

Texas Water Development Fund

- Covers a broad range of flood control projects
 - Stormwater retention
 - Floodplain acquisition
 - Relocation of residents
 - Flood warning systems
- Low rates based on the TWDB's cost of funds (AAA bond rating)
- Terms available up to 30 years
- No annual funding cycle, apply anytime

Clean Water State Revolving Fund

- Flood mitigation added as eligible activity September 1, 2016
- Offers financing up to 155 basis points below the applicant's market interest rate
- Repayment terms up to 30 years
- Partial principal forgiveness available for disadvantaged communities and projects with **green** components

So...

There are a lot of moving parts,
with resources just a call or click away,
with multiple funding opportunities to help.

In Closing

Floodplain administration can be a challenging but rewarding role...

...even more so when it floods

- Use available resources
 - Texas Water Development Board
 - Knowledge
 - Finances
 - Grants
 - Loans
- Plan ahead
- But remember, it doesn't rain often in Texas...

Questions?

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National Flood Insurance Program

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