

Drainage & Flooding: MUD 286 & Lakewood Crossing HOA

19 June 2018



Mike Rhodes
VP MUD 286

Agenda

- Introduction
- Goals
- History
- Terms
- Drainage Maps
- The Players
- Timing
- Choices
- Resources
- Questions

Why Is This Important?

- Protect our loved ones and property



Lakewood Estates- Harvey

What is the Goal?

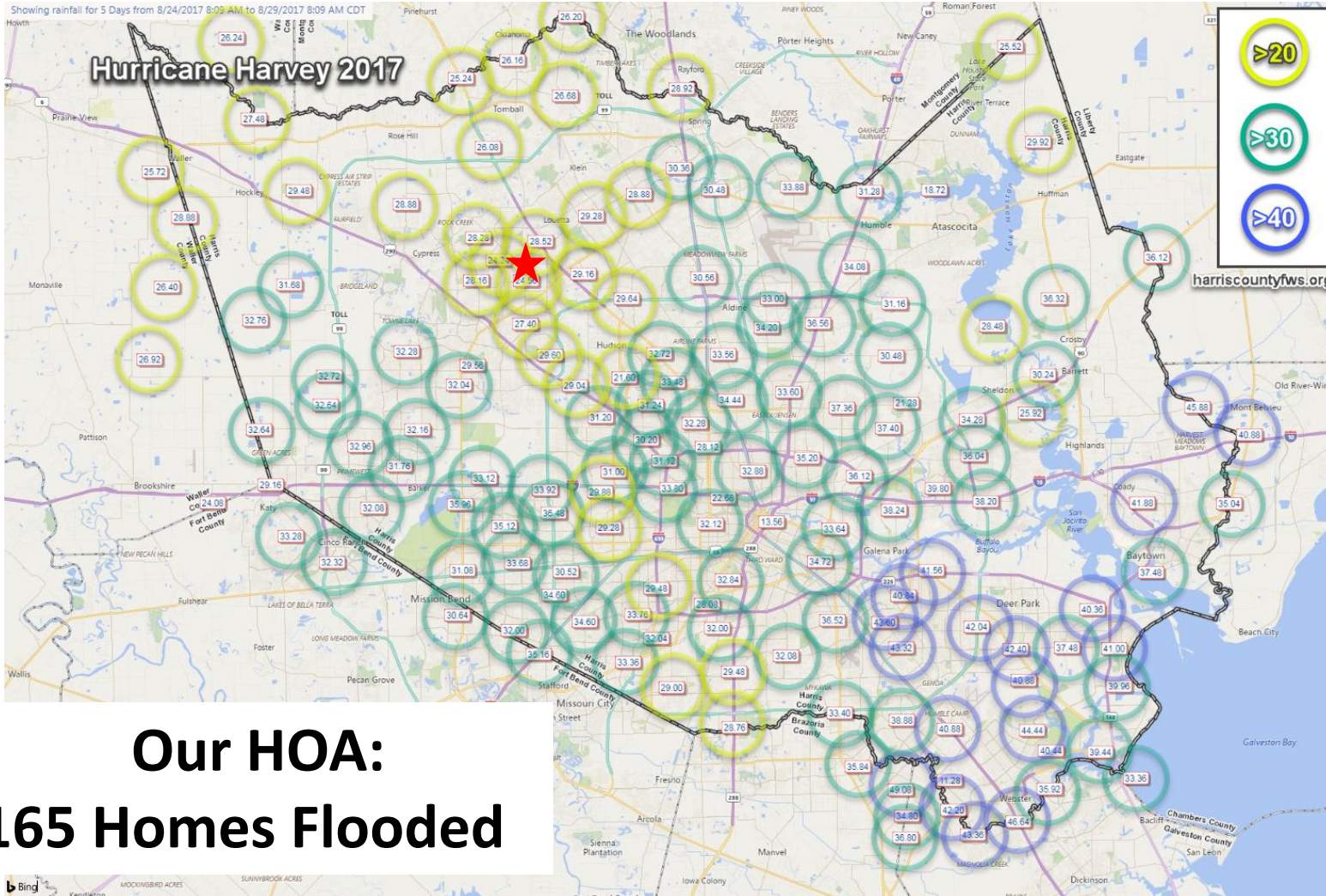
Prevent "100 year" Flooding? Mitigate "100" year Flooding?
Prevent "500 year" Flooding? Mitigate "500" year Flooding?
Prevent "1,000 year" Flooding? Mitigate "1,000" year Flooding?

Jones Road

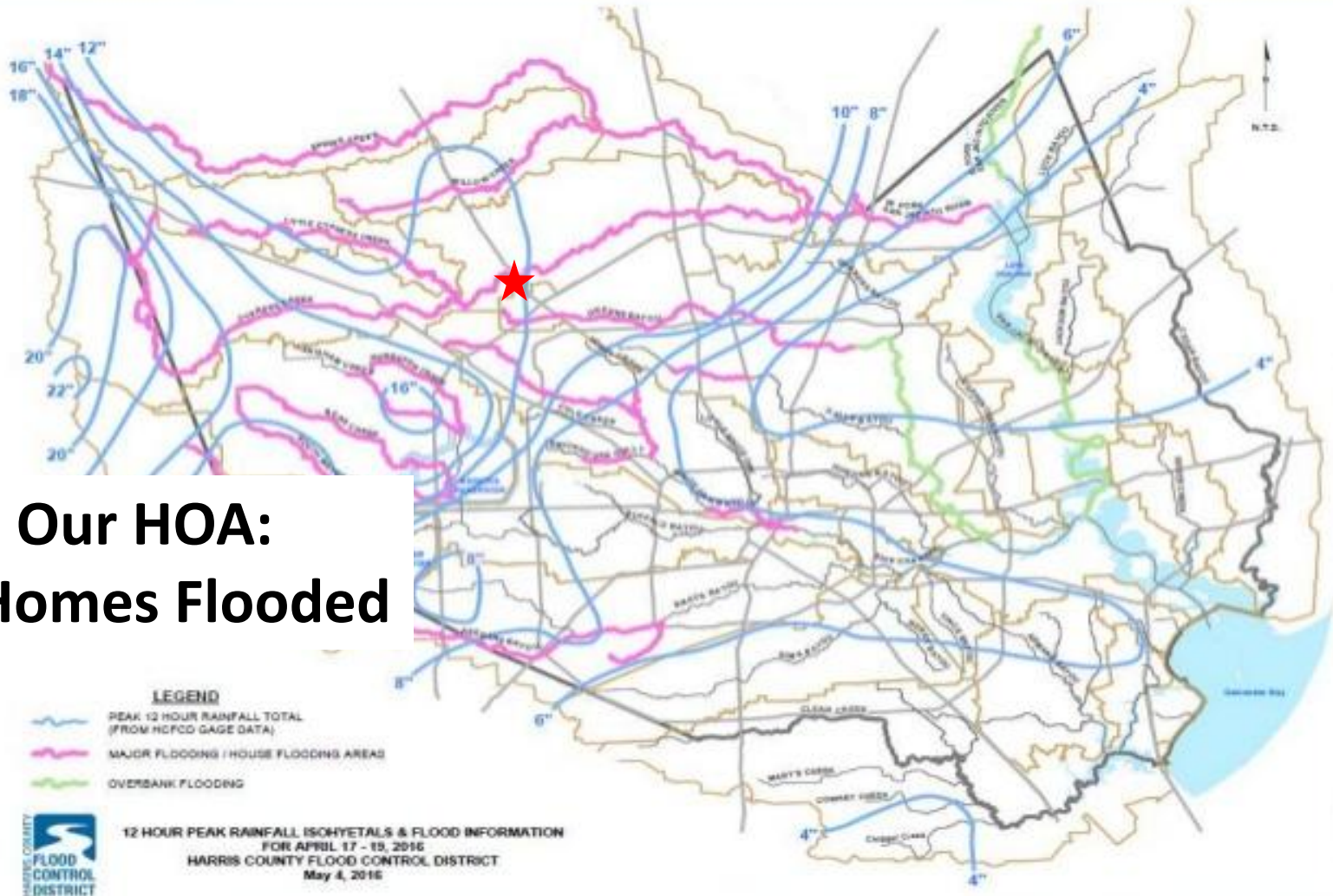
Faulkey Gully Road



Hurricane Harvey Rainfall



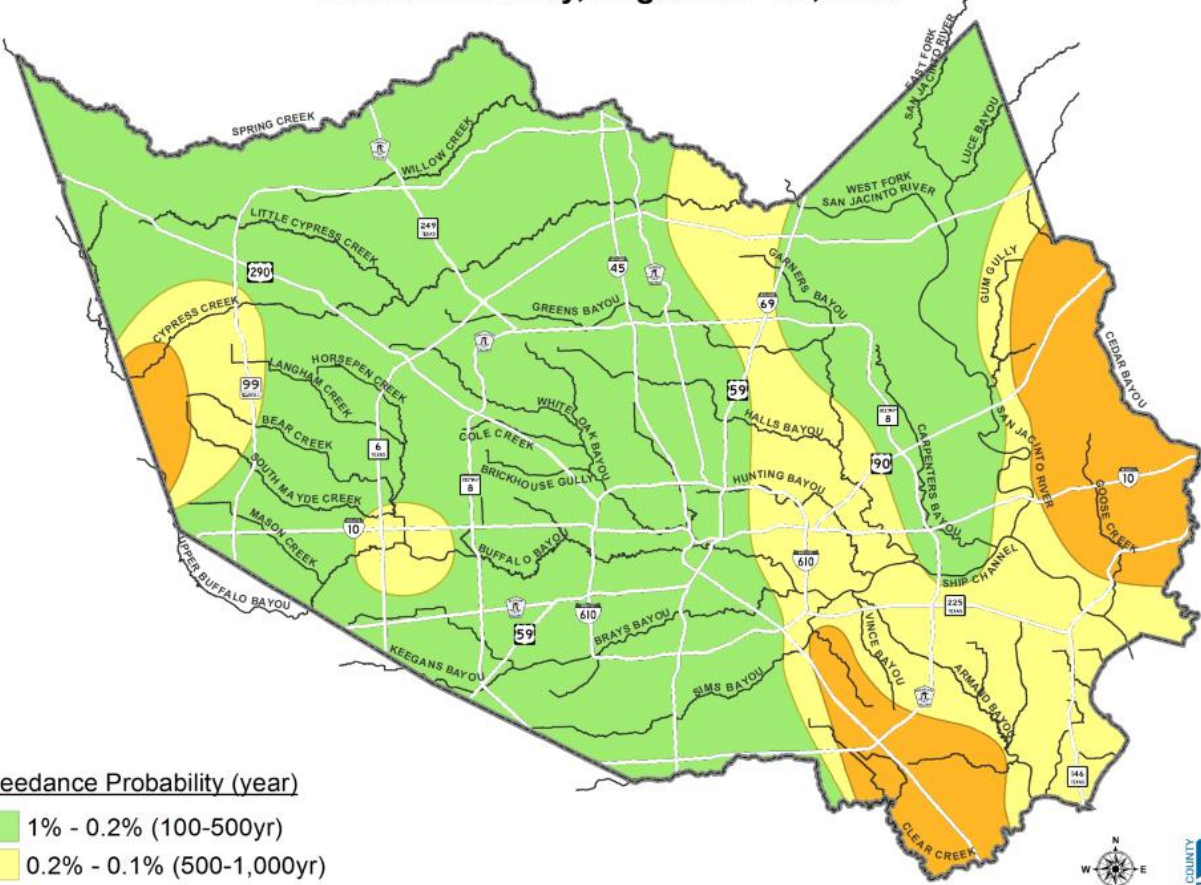
2016 Tax Day Flood



**Our HOA:
17 Homes Flooded**

One Day Peak Rainfall Frequency

One Day Peak Rainfall Frequency
Hurricane Harvey, August 25 - 29, 2017



Exceedance Probability (year)

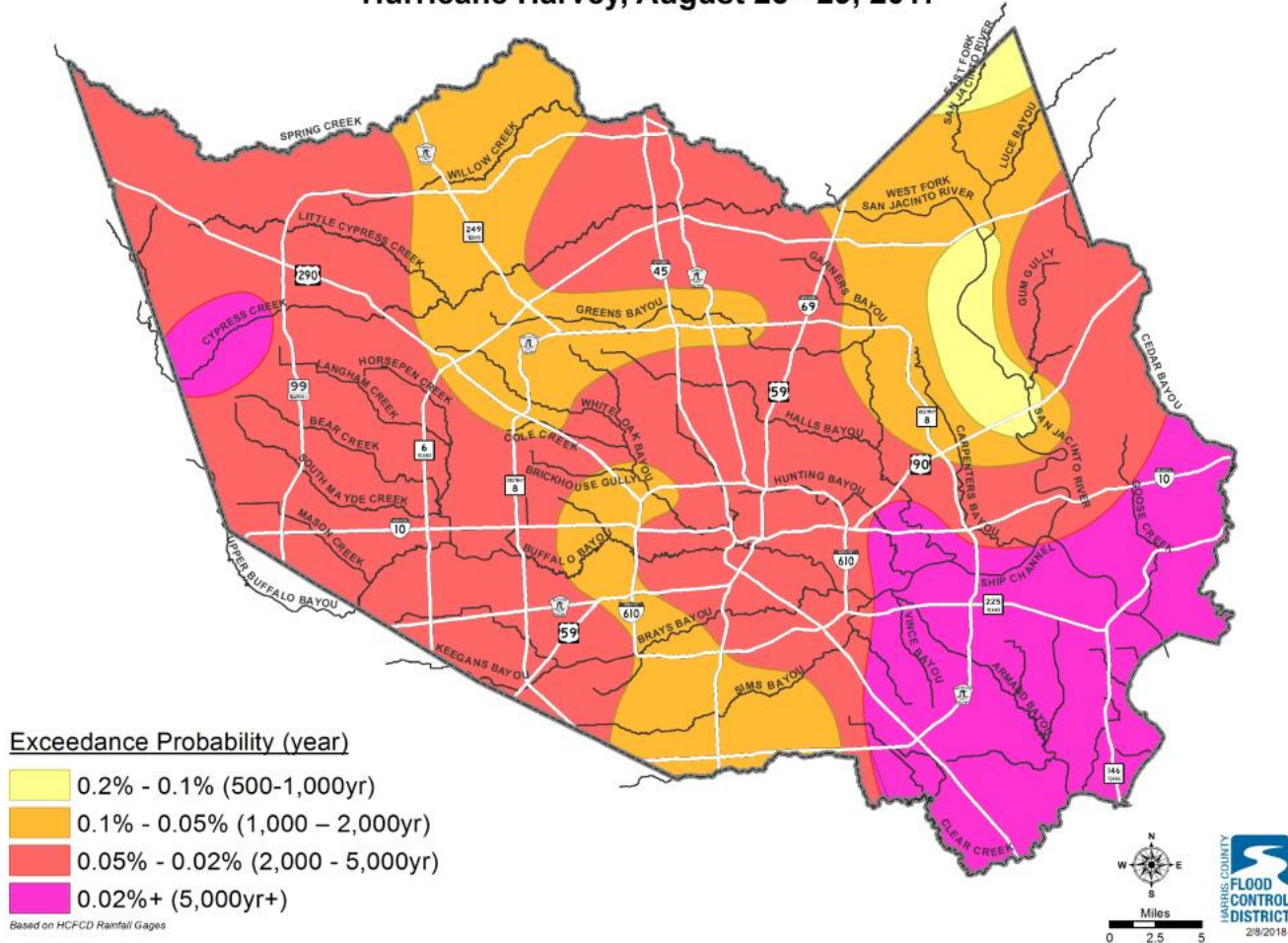
- 1% - 0.2% (100-500yr)
- 0.2% - 0.1% (500-1,000yr)
- 0.1% - 0.05% (1,000 - 2,000yr)



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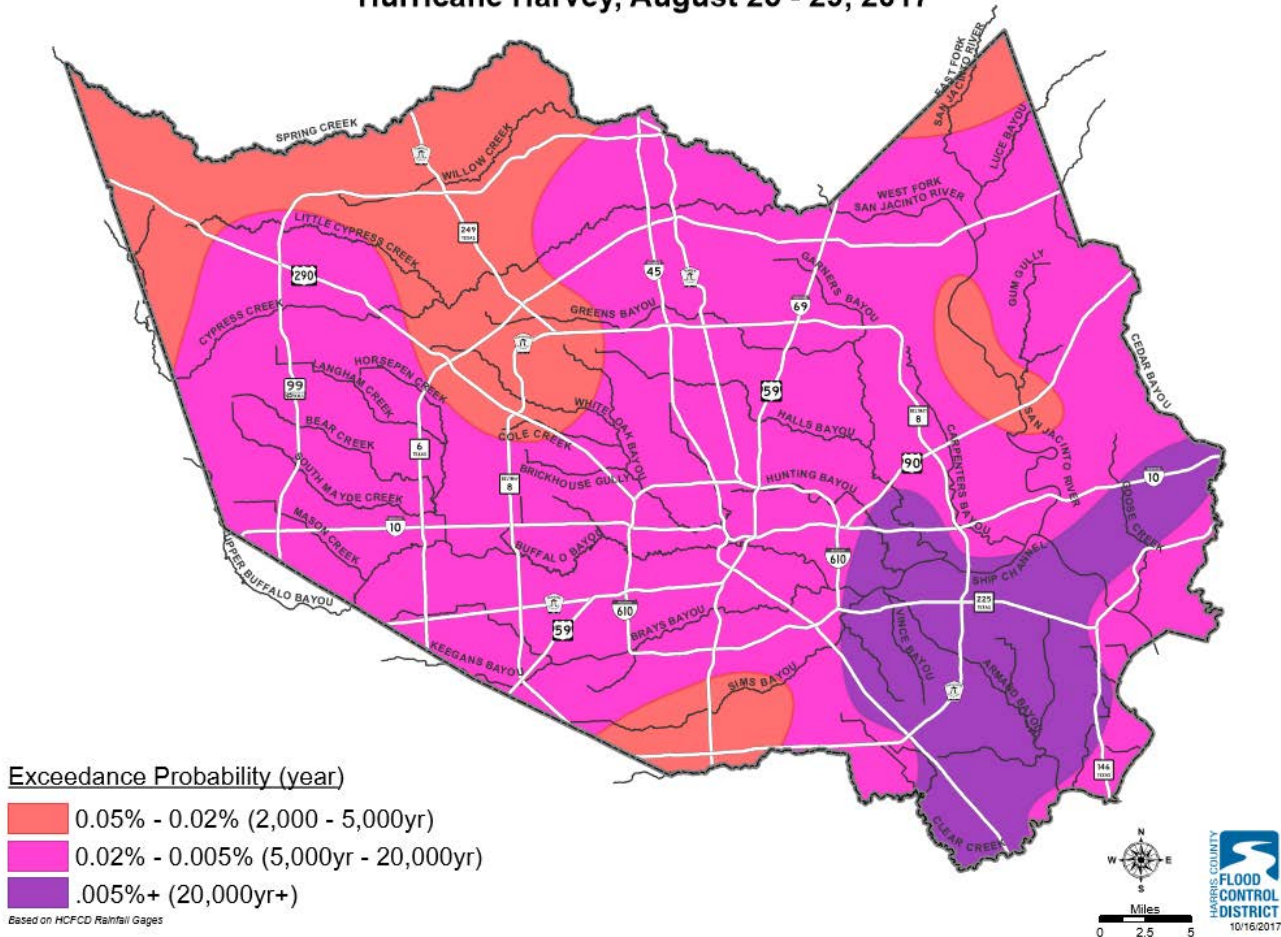
Two Day Peak Rainfall Frequency

Two Day Peak Rainfall Frequency Hurricane Harvey, August 25 - 29, 2017



Four Day Peak Rainfall Frequency

Four Day Peak Rainfall Frequency Hurricane Harvey, August 25 - 29, 2017



Terms

- Watershed-An area drained by a water system
- Floodplain-An area of “low-lying” ground adjacent to a river and subject to flooding
- Floodway-A channel built to take the floodwaters of a river
- Mitigate-Make less severe, serious or painful

- “100 year” Floodplain- 1% chance of flooding **EACH** year
- “500 Year” Floodplain- 0.2% change of flooding **EACH** year
- “1000 Year” Floodplain- 0.1% change of flooding **EACH** year

10-Year Flood: 10% Chance
100-Year Flood: 1% Chance
500-Year Flood: 0.2% Chance

What Does All This Really Mean?



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DURING ANY SINGLE YEAR:

House A:

Has a **0.2%** chance of flooding.

House B:

Has a **1%** chance of flooding.

House C:

Has a **10%** chance of flooding.

.....

.....

DURING ANY 30-YEAR MORTGAGE:

House A:

Has a **6%** chance of flooding.

House B:

Has a **26%** chance of flooding.

House C:

Has a **95%** chance of flooding.

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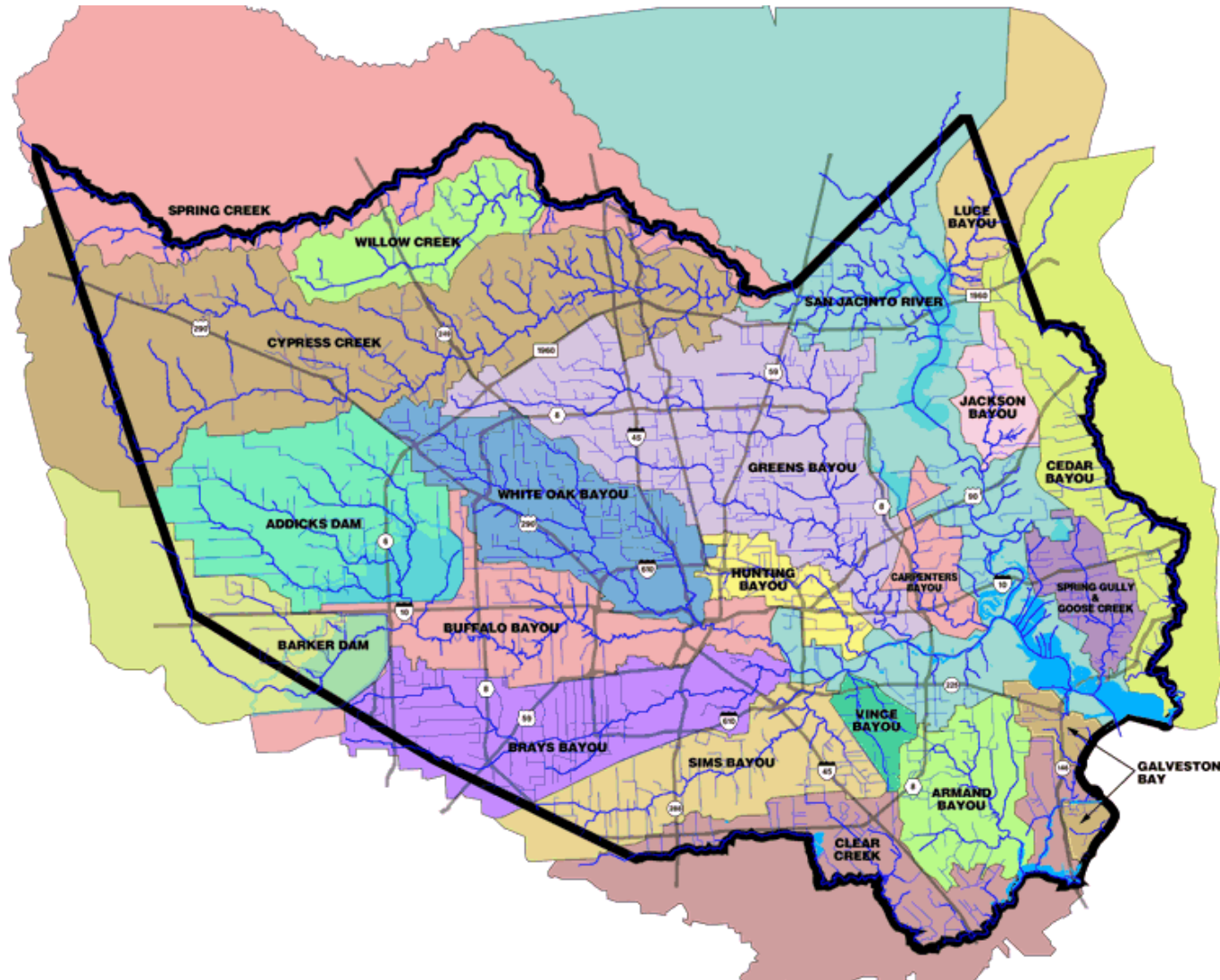
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BUT...

The deeper these houses are in the floodplains, the **WORSE** the damages will be.



Where are the Harris County Watersheds?



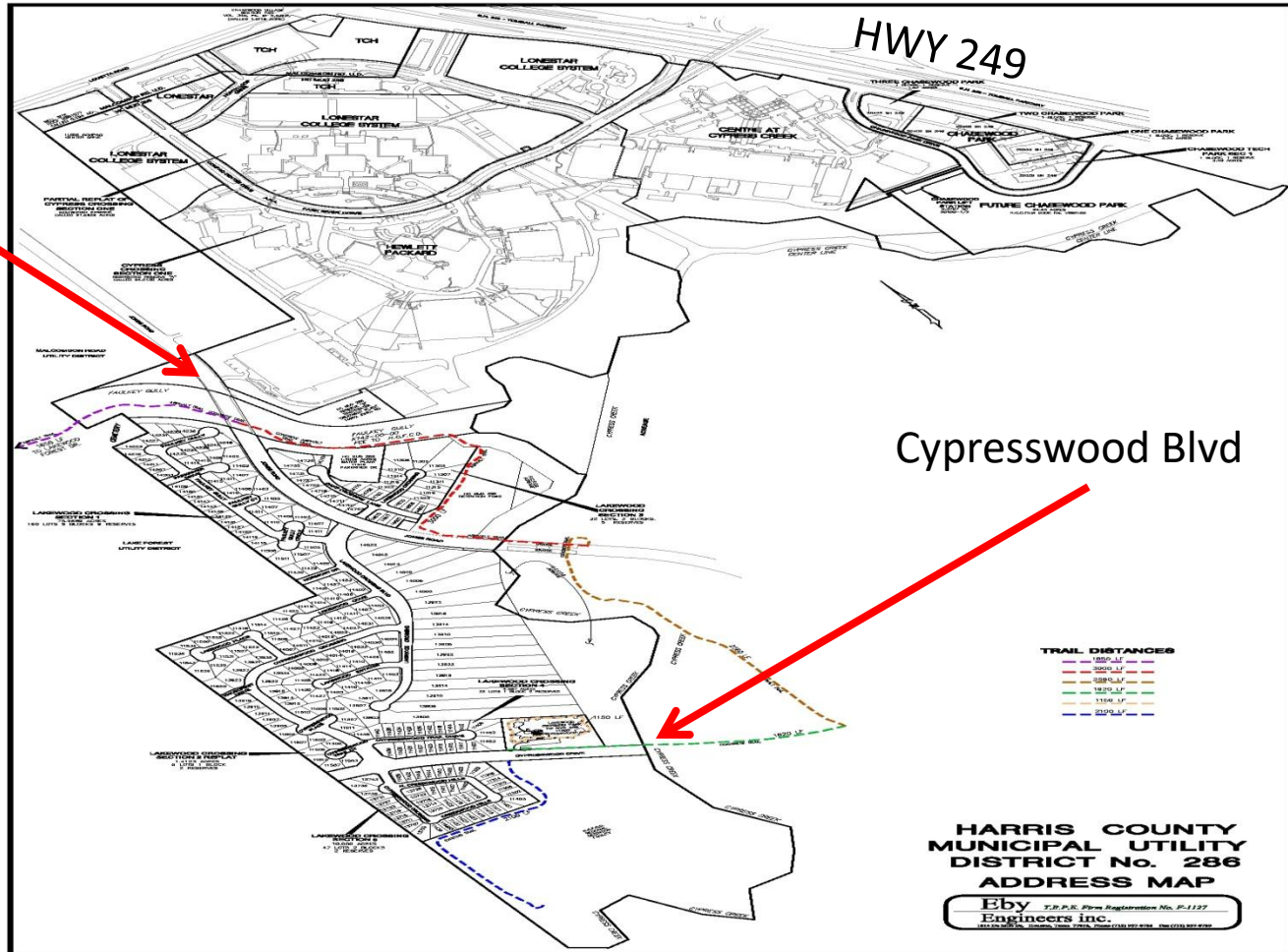
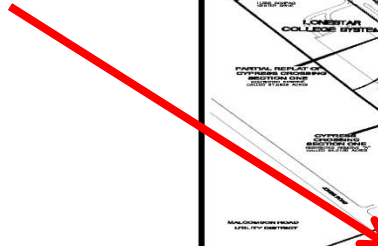
Facts About the Cypress Creek Watershed



- Located in northwestern Harris County, and extends into eastern Waller County.
- The largest of 22 watersheds in Harris County; contains 323 square miles
- Includes two primary streams – Cypress Creek and Little Cypress Creek - and 8 major tributaries

MUD 286/Lakewood Crossing HOA

Jones Road

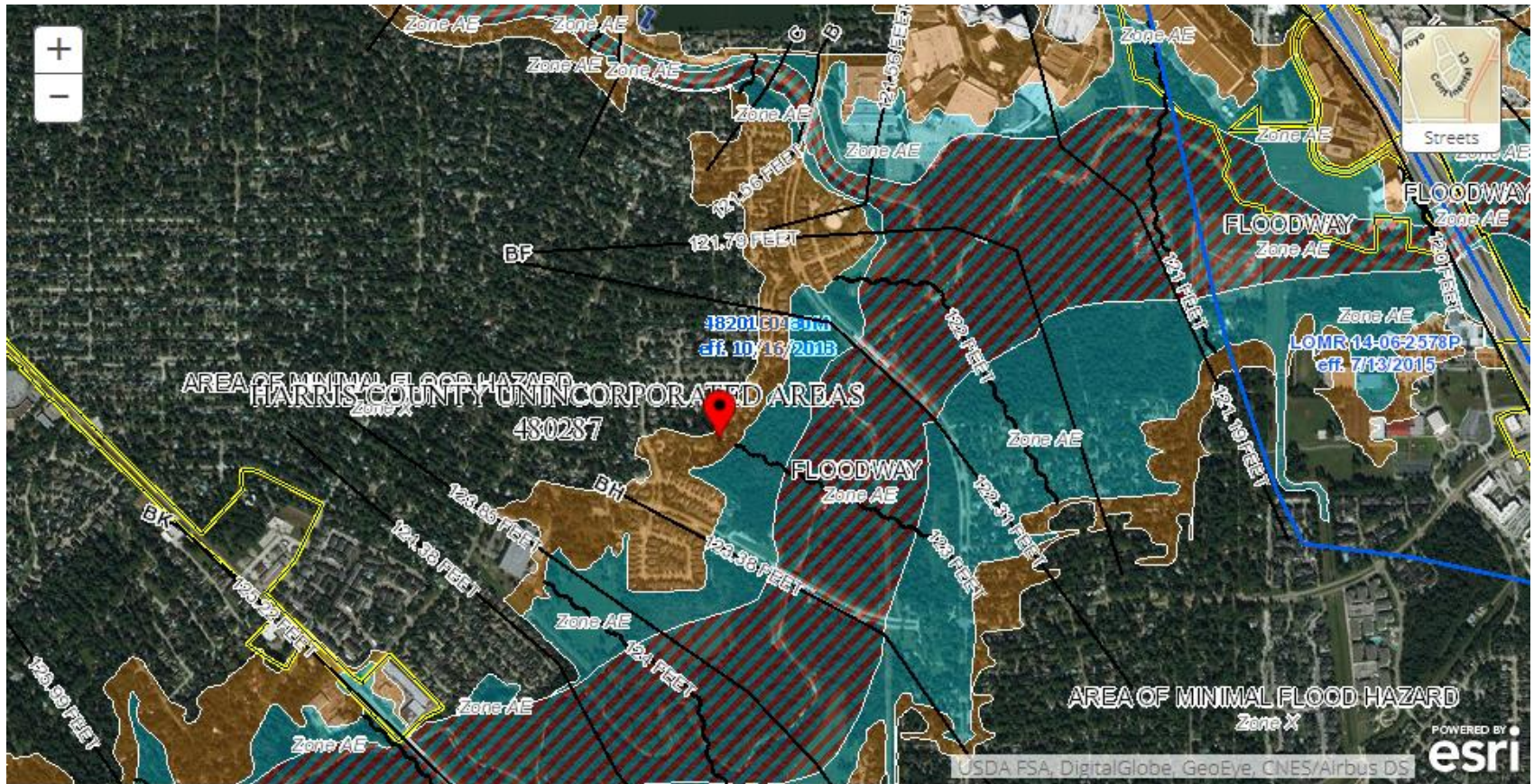


HWY 249

Cypresswood Blvd

**HARRIS COUNTY
MUNICIPAL UTILITY
DISTRICT No. 286
ADDRESS MAP**
Eby Engineers Inc.
T.E.P.E. Firm Registration No. E-1127
10000 W. 29th Street, Suite 100, Houston, TX 77055

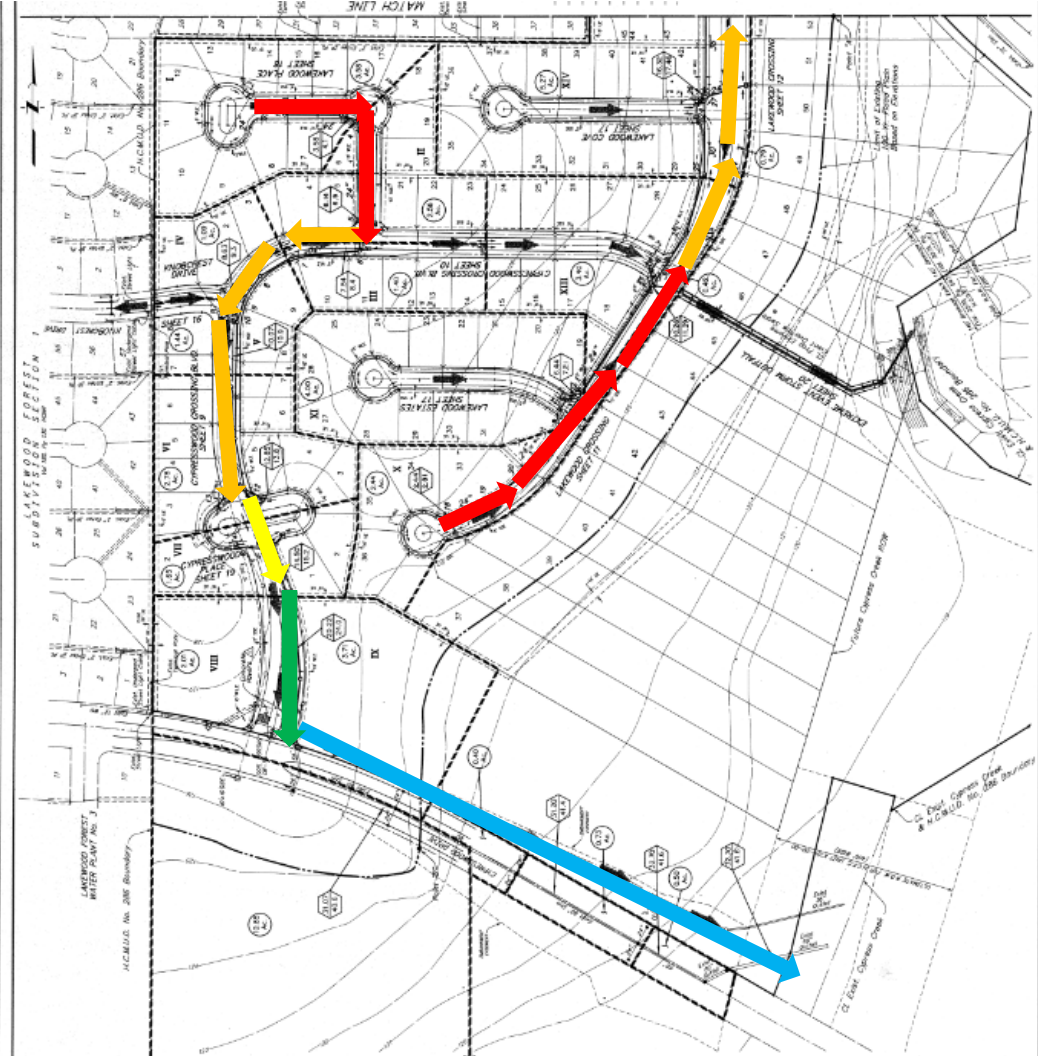
FEMA Flood Map



<p>MAP PANELS</p> <ul style="list-style-type: none"> Digital Data Available No Digital Data Available Unmapped 	<p>OTHER AREAS</p> <ul style="list-style-type: none"> Area of Minimal Flood Hazard Zone X Effective LOMRs Area of Undetermined Flood Hazard Zone D 	<p>GENERAL STRUCTURES</p> <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall 	<p>SPECIAL FLOOD HAZARD AREAS</p> <ul style="list-style-type: none"> Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR 	<p>OTHER AREAS OF FLOOD HAZARD</p> <ul style="list-style-type: none"> 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee. See Notes. Zone X Area with Flood Risk due to Levee Zone D 	<p>OTHER FEATURES</p> <ul style="list-style-type: none"> Cross Sections with 1% Annual Chance Water Surface Elevation Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature
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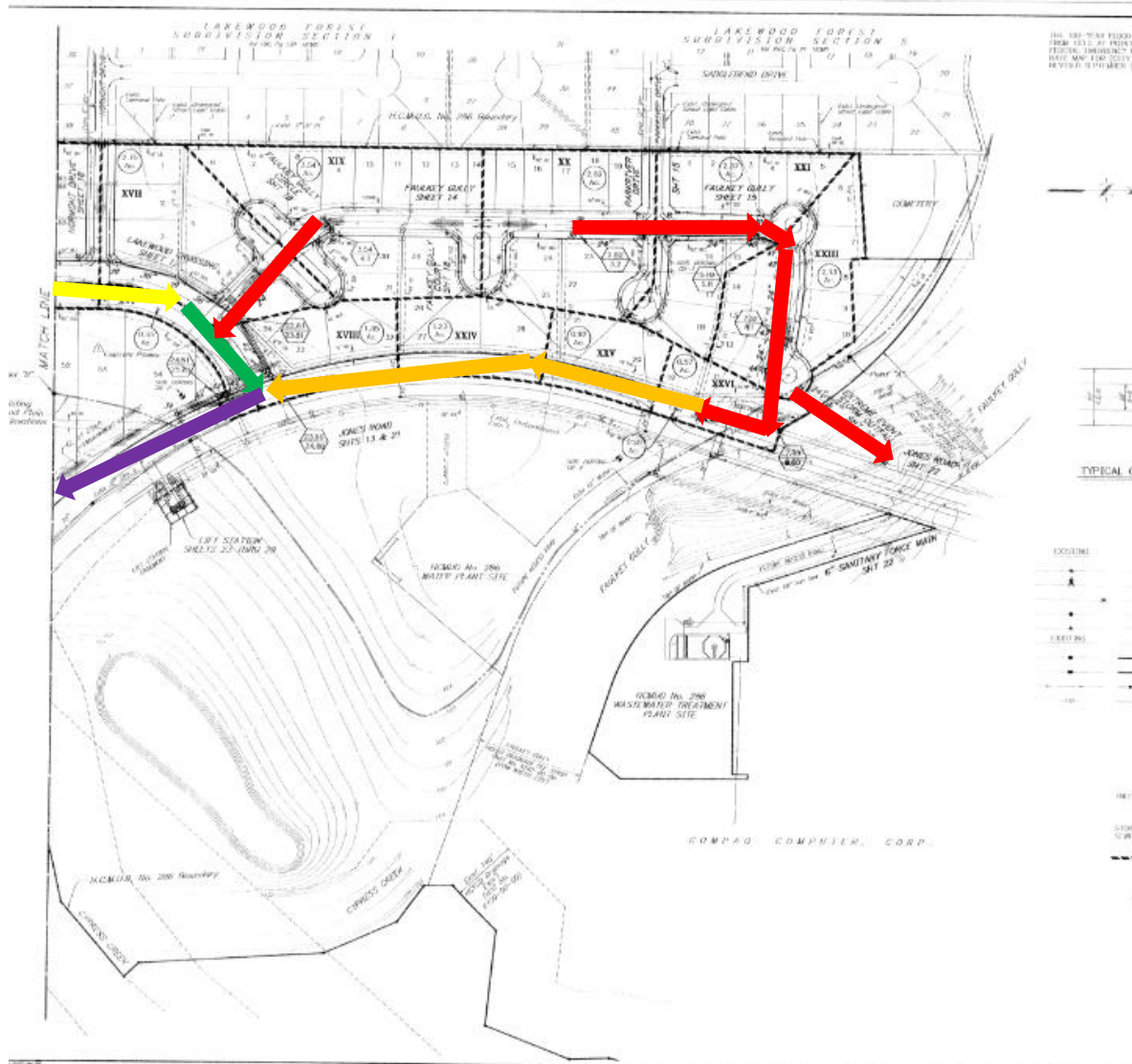
13806 Lakewood Crossing Blvd

Lakewood Crossing Storm Sewers



- Pipe Size**
- 24"
 - 30"
 - 36"
 - 42"
 - 60"

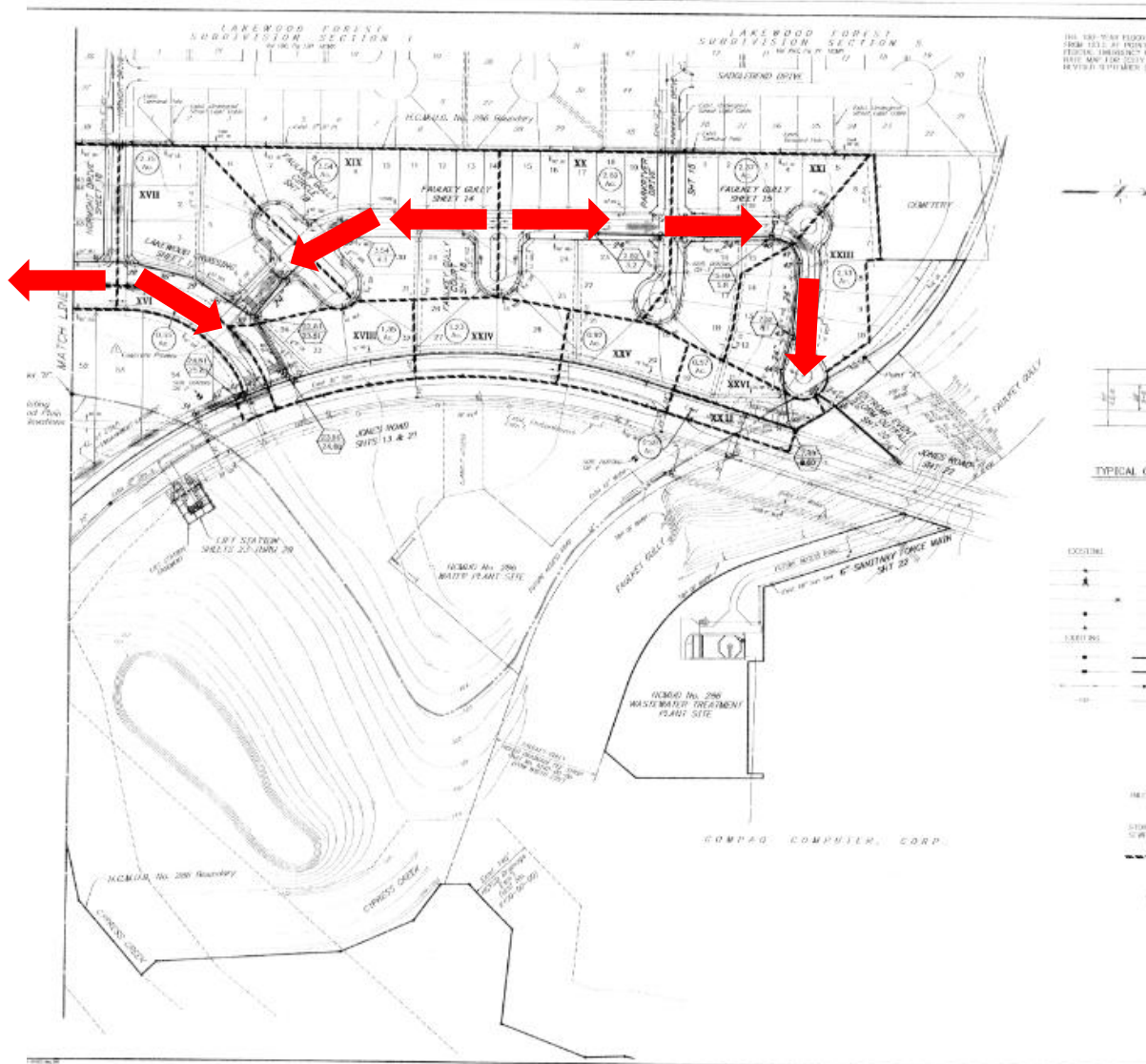
Faulkey Gully Storm Sewers



Pipe Size

- 24"
- 30"
- 36"
- 42"
- 60"
- 72"

Faulkey Gully Street Drainage



New Storm Sewer Grates



Extreme Event Outfall Swale



WHO



The Players (1 of 3)

- Harris County Flood Control District (HCFCD)
 - Provide flood damage reduction projects that work, with appropriate regard for community and natural values.
 - Devising flood damage reduction plans
 - Implementing the plans
 - Maintaining the infrastructure
- Harris County Engineering Department
 - Floodplain Management is a decision-making process that aims to achieve the wise use of the county's floodplains. "Wise use" means both reduced flood losses and protection of the natural resources and function of floodplains. Floodplain management utilizes corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.
- Harris County Commissioners Court
 - The court is responsible for no less a task than serving as the main governing body for the entire county, which includes adopting its budget, setting tax rates, calling for bond elections, building and maintaining roads and bridges, setting boundaries for voting precincts, and overseeing county courthouses, jails, libraries and parks (i.e., those libraries and parks not run by the City of Houston, such as the 7,800-acre George Bush Park in the Barker Reservoir or the Spring Branch Memorial Library in Hedwig Village).

The Players (2 of 3)

- Federal Emergency Management Agency (FEMA)
 - The Federal agency responsible for providing leadership and support to reduce loss of life and property and to protect our institutions from all types of hazards. This is accomplished through a comprehensive, risk-based, all hazards emergency management program consisting of mitigation, preparedness, response, and recovery. In relation to flooding, FEMA is the agency responsible for administering the National Flood Insurance Program (NFIP).
- Municipal Utility District (MUD)286
 - Harris County Municipal Utility District No. 286 (MUD 286) is a political subdivision of the State of Texas, serving all residents of the Lakewood Crossing Subdivision. A Municipal Utility district (“MUD”), a taxing jurisdiction formed by the Texas legislature, enables development of outlying areas *via* municipal bonds without dependence upon local cities for funding. MUD 286 operates pursuant to chapters 49 and 54 of the Texas Water Code and has the power to purchase, construct, operate and maintain all facilities, plants and improvements necessary to supply and distribute water to its customers, collect and treat wastewater, and also control and manage storm water within the boundaries of the District. MUD 286 is subject to oversight by the Texas Commission on Environmental Quality (“TCEQ”).

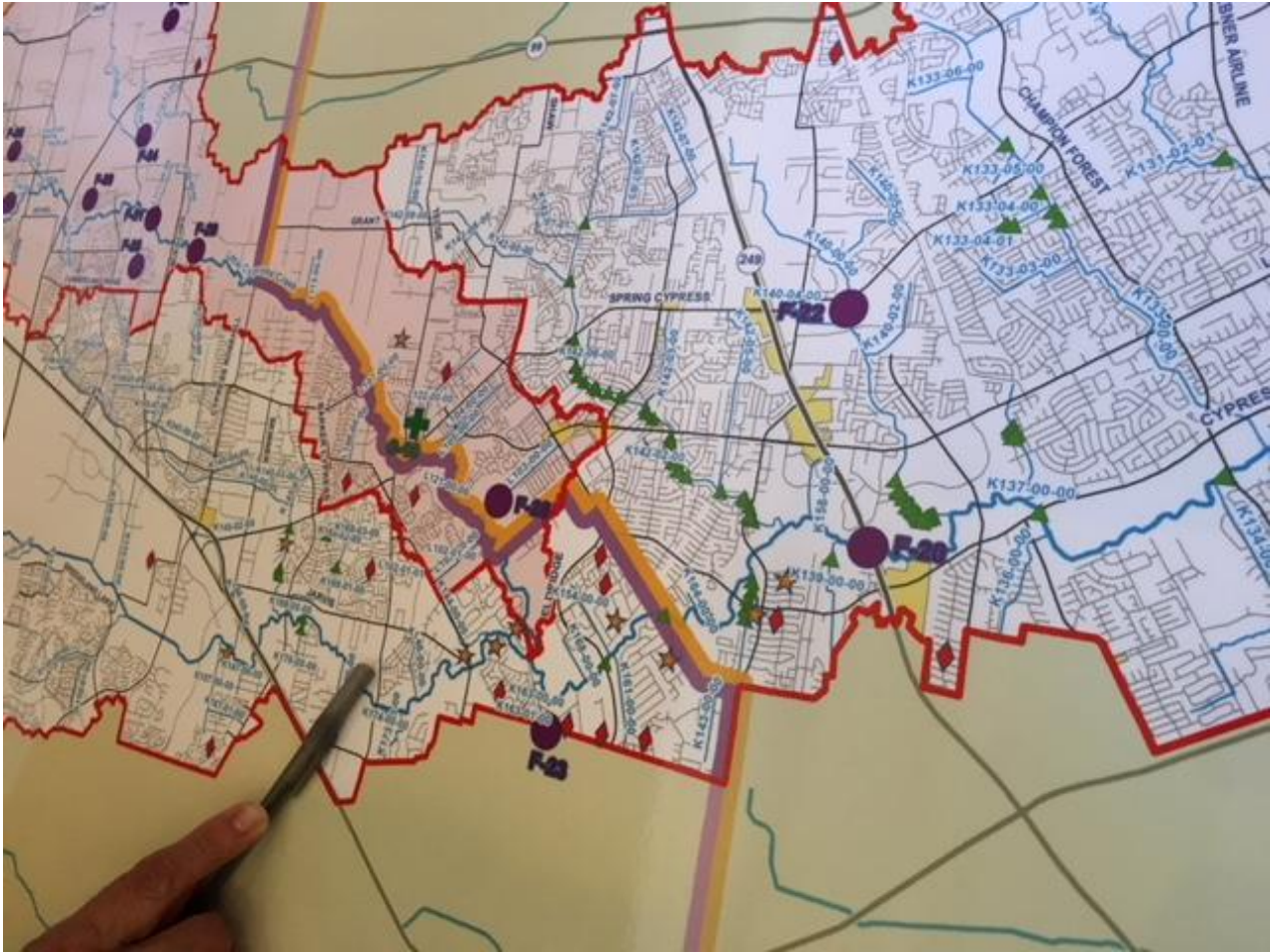
The Players (3 of 3)

- Lakewood Crossing HOA
 - Reserve funds are used for large projects such as replacements or repairs within the homeowners association. The funds usually have strict criteria for how they are to be used. The criteria is based on the HOA community rules and regulations, bylaws and accountability. Some examples of reserve fund use are:
 - Replacing fencing in HOA controlled areas
 - Major landscape projects

What's Happening Now

- Current Status
 - Harris County is not approving new residential development until new building guidelines and new floodplain maps are adopted
 - Harvey Relief Bill in Congress
 - \$2,500,000,000(?) bond proposal in August
- Studies being conducted now
 - Cypress Creek Overflow Management Plan
 - HCFCD
 - Storm drainage in our neighborhood
 - HCED
 - Videoing Cypress Creek
 - Little Cypress Creek
 - Underway now

Cypress Creek Watershed Public Meeting, June 15



Our Choices

- **Move**
 - Sell
 - Voluntary buyout
 - Abandon
- **Stay**
 - Get involved
 - **Buy Flood Insurance**
 - Keep abreast of ongoing work
 - Vote for bonds to improve flood control
 - Raise your home
 - Build a dike around your home

Resources/Contact Information

- Harris County Flood Control District
 - <https://www.hcfcd.org/>
 - <https://www.hcfcd.org/bond-program/community-input/>
 - <https://www.hcfcd.org/bond-program/community-engagement-meetings/>
 - <https://www.hcfcd.org/bondprogram>
 - Bond Program Hotline – 713-684-4107

- Harris County Engineering Department
 - <http://www.eng.hctx.net/>
 - **Floodplain Administrator:** Jesse Morales
 - jesse.morales@hcpid.org
 - Manager, Special Projects: Ross Hosket
 - Ross.hosket@hcpid.org

- Harris County Commissioners Court
 - <http://www.harriscountytexas.gov>
 - Commissioner: R. Jack Cagle
 - <https://www.hcp4.net/connect/commissioner>
 - commissionercagle@hcp4.net

Resources/Contact Information

- Voluntary Home Buyout
 - <https://www.hcfcd.org/hurricane-harvey/home-buyout-program/>
- MUD 286
 - <https://www.hcmud286.com/>
 - President, David Geaslen
- Lakewood Crossing HOA
 - President, Dan Becker

Resources/Contact Information

- Greater Houston Flood Mitigation Consortium
 - <http://www.houstonconsortium.com/>
- Cypress Creek Flood Control Coalition
 - www.ccfcc.org

Questions

