

# HCFCFCD Bond Program

and the Challenge of Managing Environmental Compliance



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Harris County Flood Control District

## GET FLOOD INSURANCE

EVERYONE NEEDS IT

Flooding conditions can occur year-round, and you do not have to live in the 100-year floodplain to be at risk.

Flood loss claims as a result of Hurricane Harvey

- Approximately 68% were outside of the FEMA mapped 100-year floodplain.

**Hurricane Season: June-Nov**  
**Flood Season: Year-round**

# Agenda

- About Harris County Flood Control District (HCFCD)
- HCFCD Bond Program
- Partner Funding
- Environmental Regulatory Compliance and Challenges
- Q&A
- Tour of HCFCD Website (time permitting)

# Harris County Flood Control District

- A special purpose district created in 1937 by the Texas Legislature
- In response to floods that devastated the Houston-area in 1929 and 1935
- Serves as a local partner to leverage federal dollars for flood damage reduction
- Harris County Commissioners Court serves as our board of directors or governing body

## Our Mission

Provide flood damage reduction projects that work, with appropriate regard for community and **natural values**.

# Harris County Watersheds

## What is a watershed?

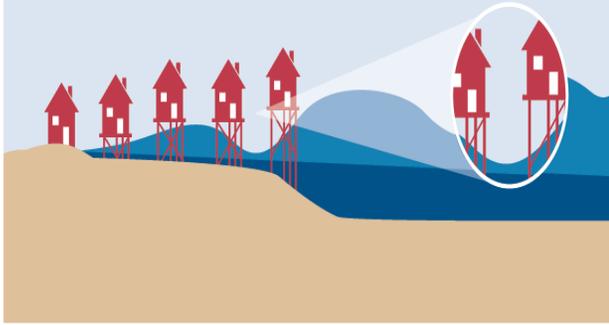
A geographical region of land or "drainage area" that drains to a common channel or outlet, mostly creeks and bayous in Harris County. Drainage of the land can occur directly into a bayou or creek, or through a series of systems that may include storm sewers, roadside ditches, and/or tributary channels.



# Why is Harris County Flood Prone?

- Prone to extreme rainfall including tropical storms, and hurricanes
- Flat, slow-draining landscape
- Clay soils that do not soak up excess rainfall quickly

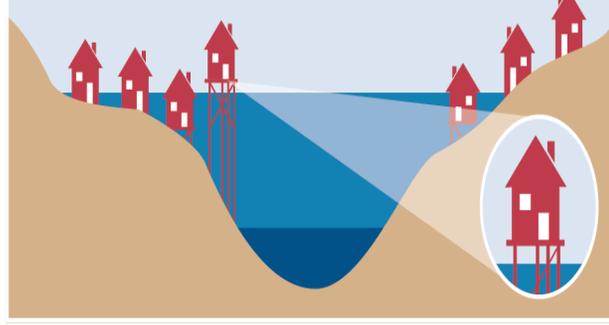
## COASTAL



### OCCURS WHERE:

- Ocean and large lake coastlines
- Tropical Storms & Hurricanes exacerbate flood chance/reach
- Storm surge likely
- Wave action possible

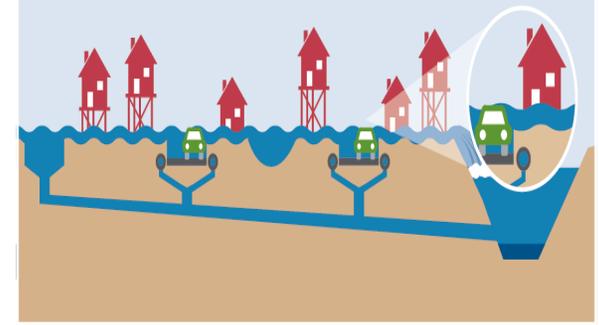
## MAJOR RIVER



### OCCURS WHERE:

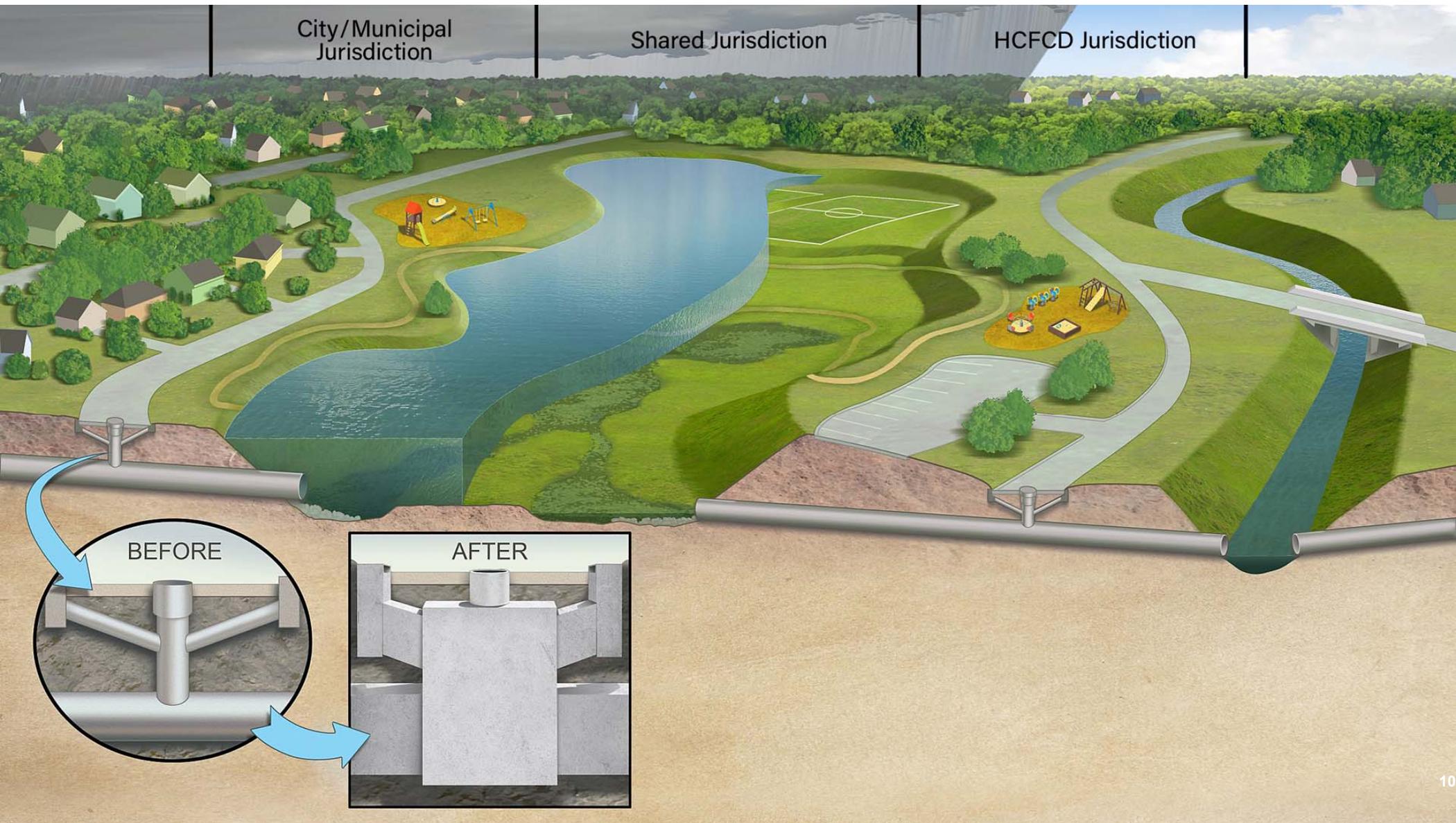
- Expansive natural floodplain
- Major Rivers and Streams
- Low-lying riverbeds
- Flood water gather and spread
- Streams drain slowly

## OVERLAND/LOCAL DRAINAGE



### OCCURS WHERE:

- Local drainage overwhelmed
- Ditches, swales, and pipe systems unable transport all flood water
- May occur ANYWHERE



# Bond Approved on August 25, 2018

## As updated May 2020

- 181 projects across all watersheds (149 initiated – fourth quarter 2020)
- 38 projects added based on community input (\$400M+)



Channel Modification



Stormwater Detention



Channel Maintenance



Storm Repair



Home Buyouts



Engineering Study



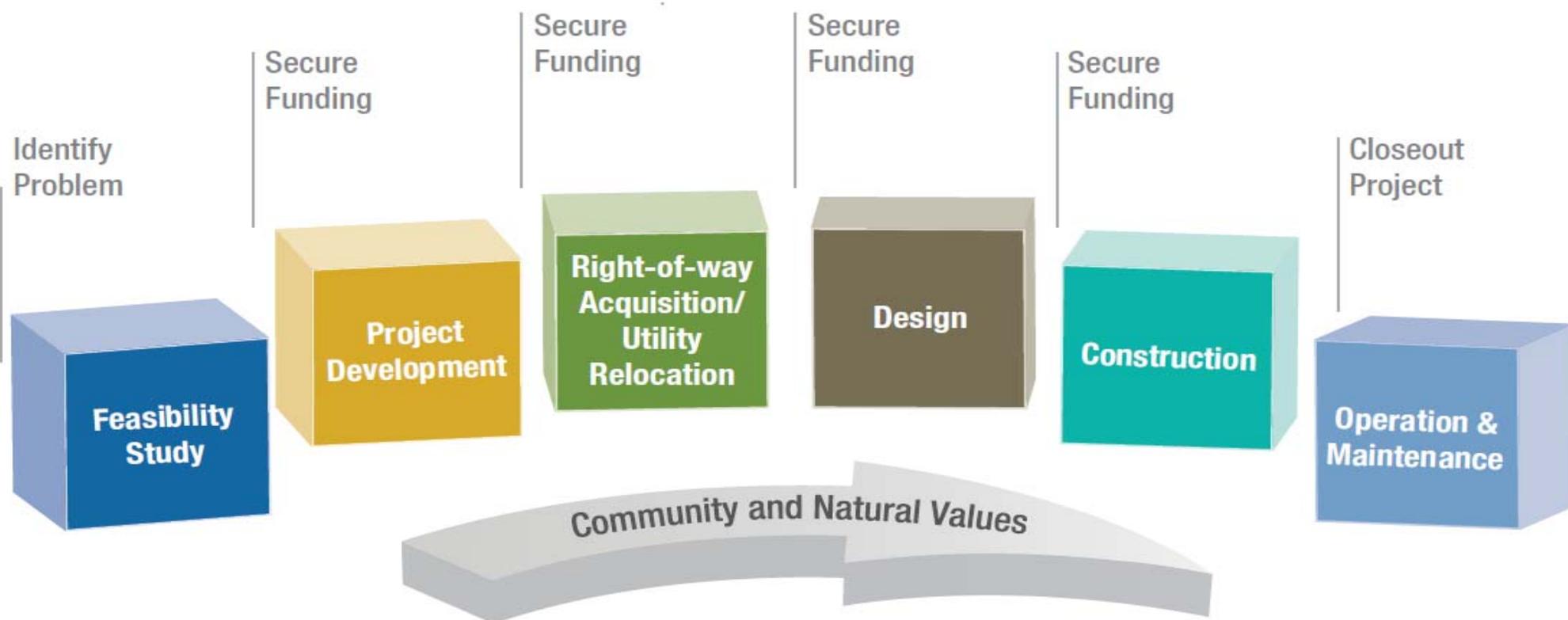
Other Jurisdiction

\$2.5B Bond funds

+ ~\$2.4B Partner funds (\$680M received)

= **~\$4.9B Total anticipated**

# Flood Damage Reduction Project Lifecycle



# Bond Progress

Status Tracker is live: <http://www.harriscountyfemt.org/cb>

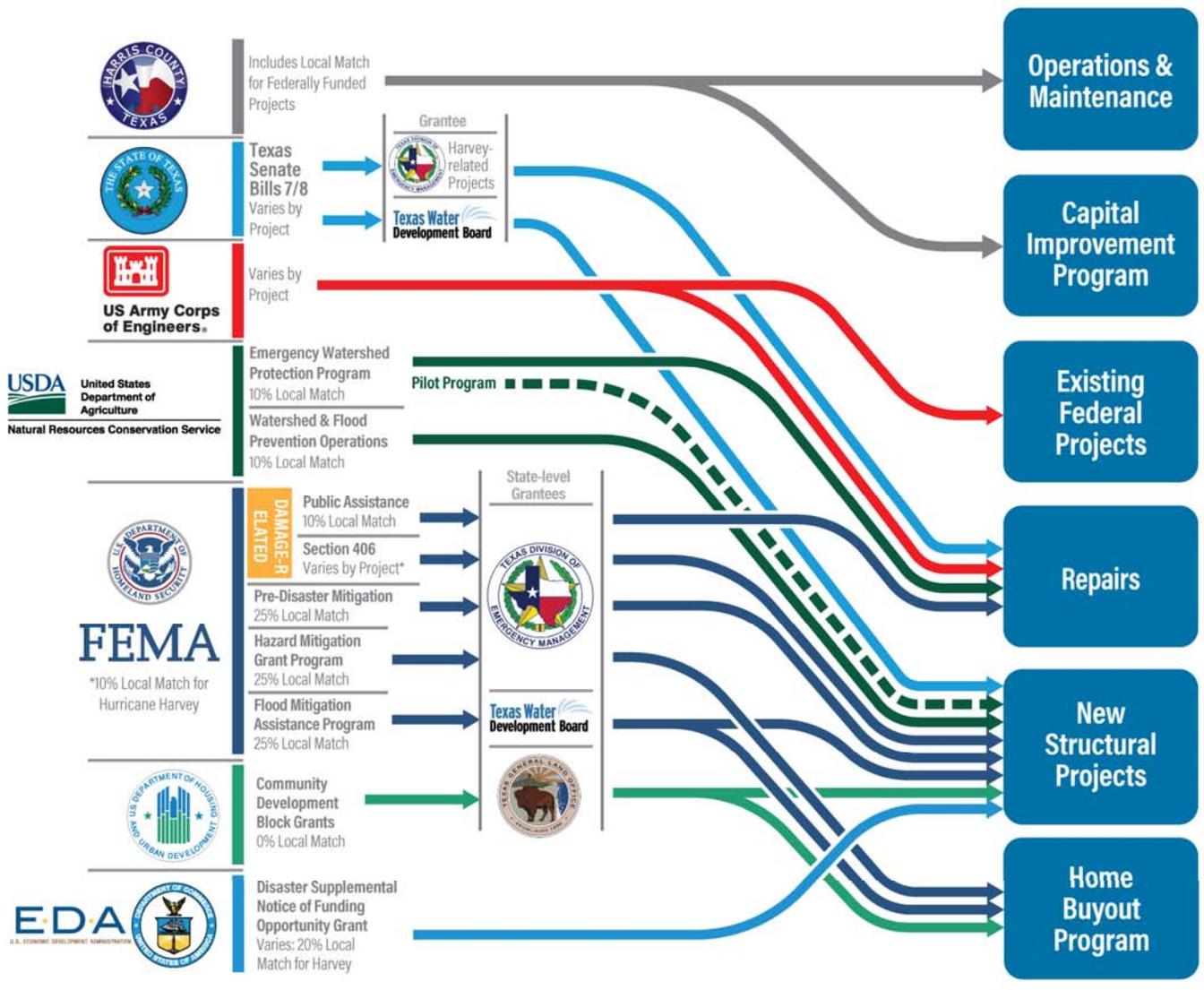
## Construction

- \$400M bid since 8/25/2018 (66 projects)
- \$371M in active construction contracts (62% complete overall)
- Closed 2020 awarding \$144M in Construction Projects
- Estimate \$520M in construction awards for 2021

## Overall – Total \$3.5 Billion in project value underway

- 160 bond projects Initiated since 8/28/2018 (88% of the portfolio)
- \$553M in authorized funds
- CIP Expenditures averaging \$40M per month

**HARRIS COUNTY**  
**FLOOD CONTROL DISTRICT**  
 funded for disaster recovery & resiliency?



# Federal Funds

## Applied for vs Awarded

- Applied for \$2.5 billion  
(plus \$588 million local share)
- Awarded \$952 million  
(plus \$336 million local share)

**Total Project Value ~ \$1.3 billion**

# Environmental Regulatory Challenges

## Are Federal Funds Involved?

- Yes – NEPA
- No – Follow the Law
- Maybe ???

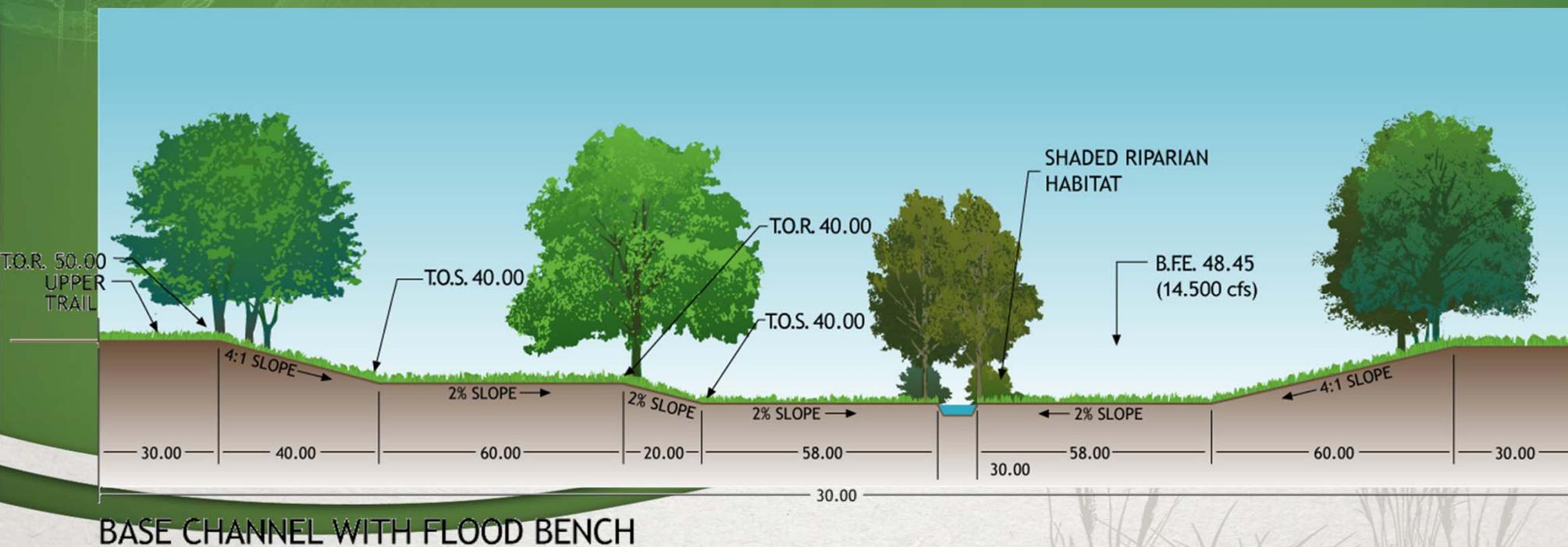
# Environmental Regulatory Challenges

## How to mitigate impacts

- Nationwide Permit(s)
- Self Compensating Mitigation
- Off-site Mitigation

# Self-Compensating

## Stream Corridor



# Environmental Regulatory Challenges

## Wetlands Credits !!

- Greens Bayou WMB
- Crosby Eastgate WMB
- Katy Hockley WMB
- Clear Creek WMB

# Mitigation Banking Sites Overview



Katy Hockley Mitigation Bank  
K700-01-00



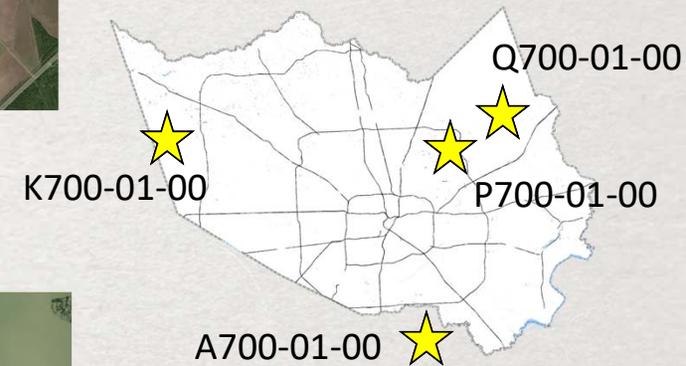
Crosby Eastgate Mitigation Bank  
Q700-01-00



Clear Creek Regional Mitigation Bank  
A700-01-00

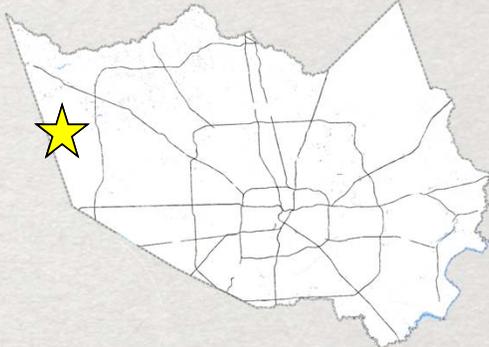
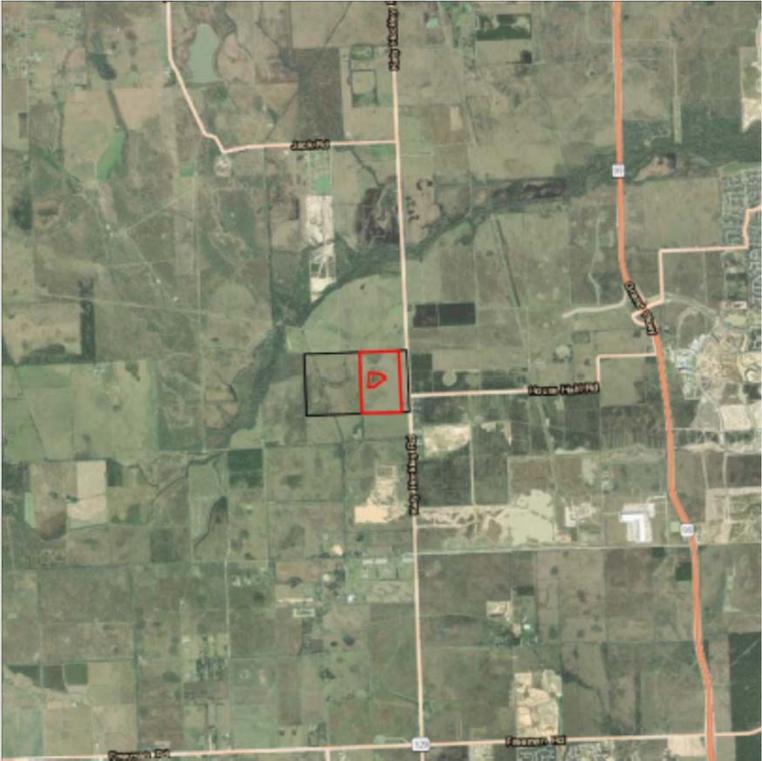


Greens Bayou Mitigation Bank  
P700-01-00



# Katy Hockley Mitigation Bank

K700-01-00  
Katy Hockley  
Mitigation Bank  
Construction Plan



# Katy Hockley Mitigation Site

Mitigation Bank wetlands will mimic existing prairie potholes that were successfully restored on the site in 2014.



## Summary & Conclusions

- More than Drainage and Flood Control
- Detention basins improve water quality and replace habitat
- Natural Stable Channel Design creates functional lift
- Mitigation banking when options constrained

# Stormwater Treatment



- Plant nutrient uptake and filtration
- Extended detention
  - Sediment settling
  - UV breakdown
- Shading of water
- Re-establishment of ecosystem services

# Questions

Go see our website!!

[www.hcfc.org](http://www.hcfc.org)

