



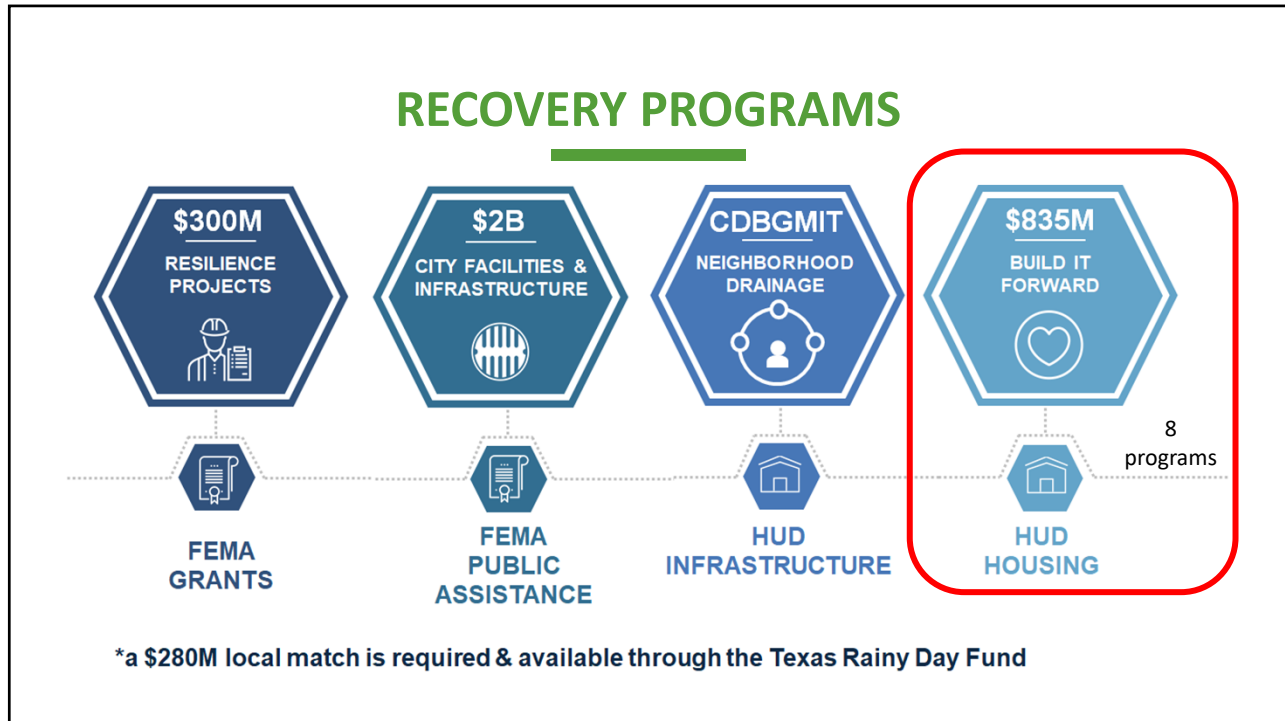
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## HURRICANE HARVEY AND ITS AFTERMATH

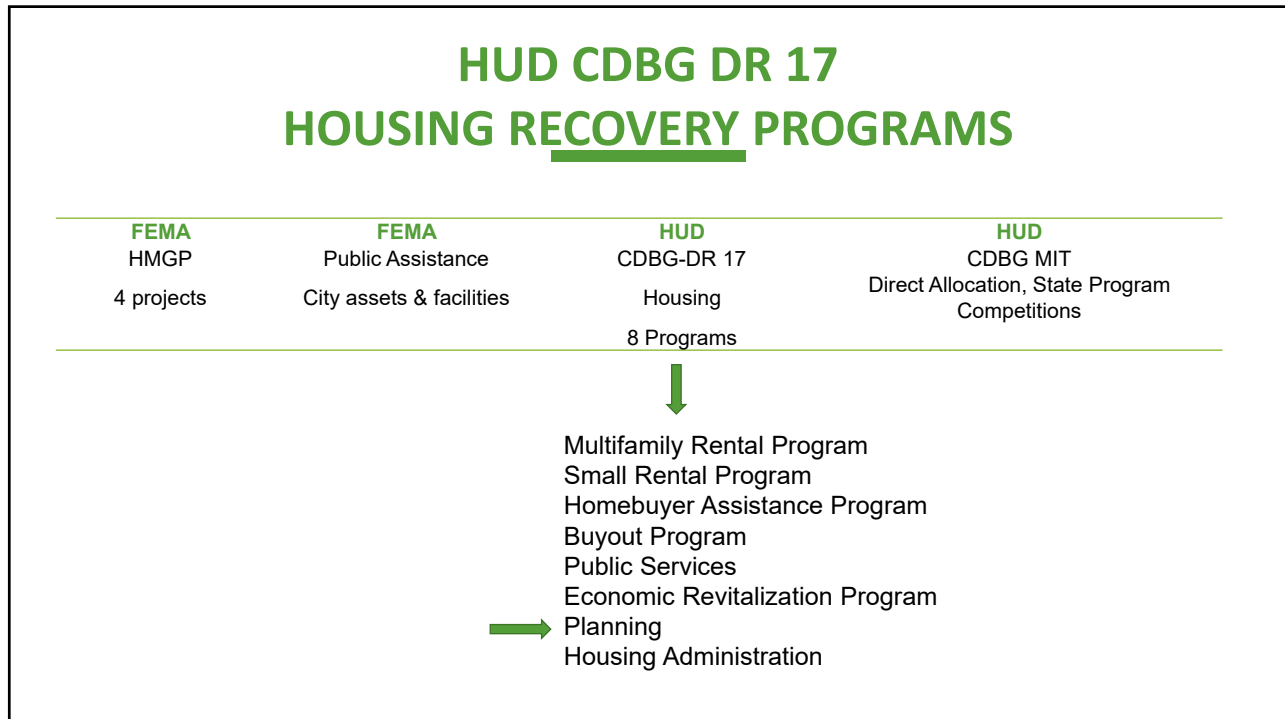


52 inches of rain in a 5-day period resulting in over 300,000 households impacted and over \$2.5B in damaged city facilities and infrastructure.

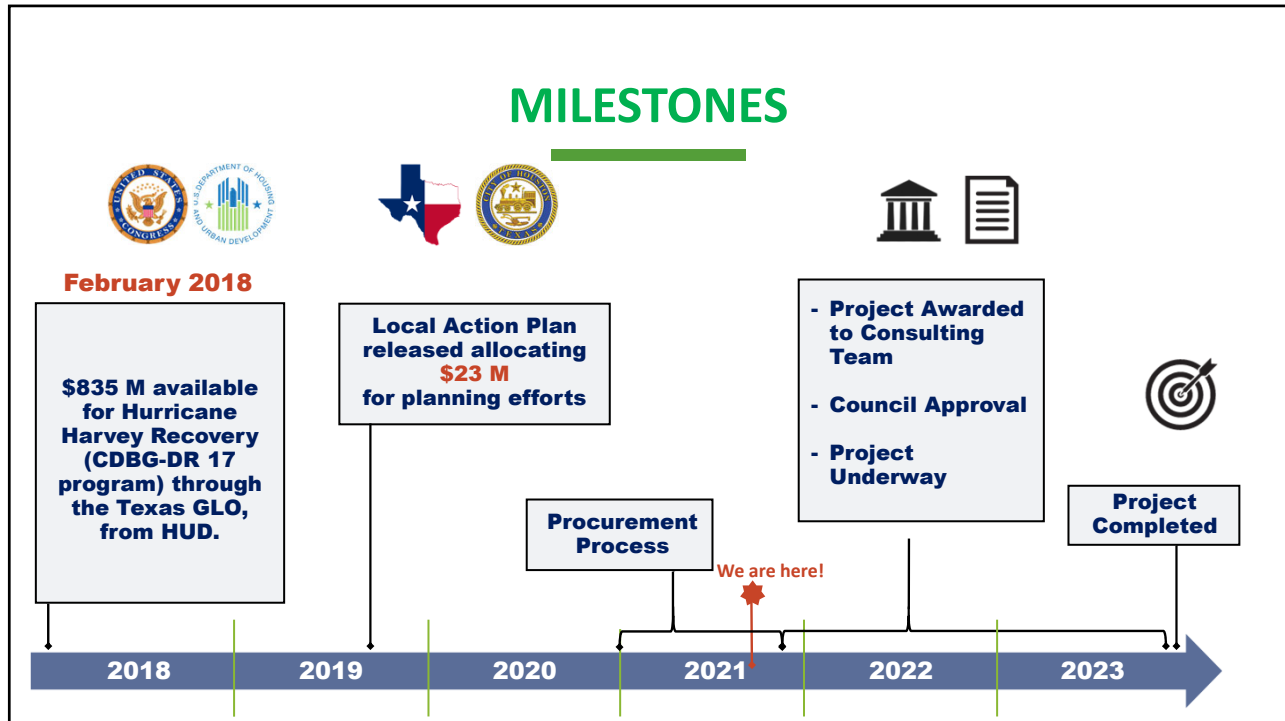
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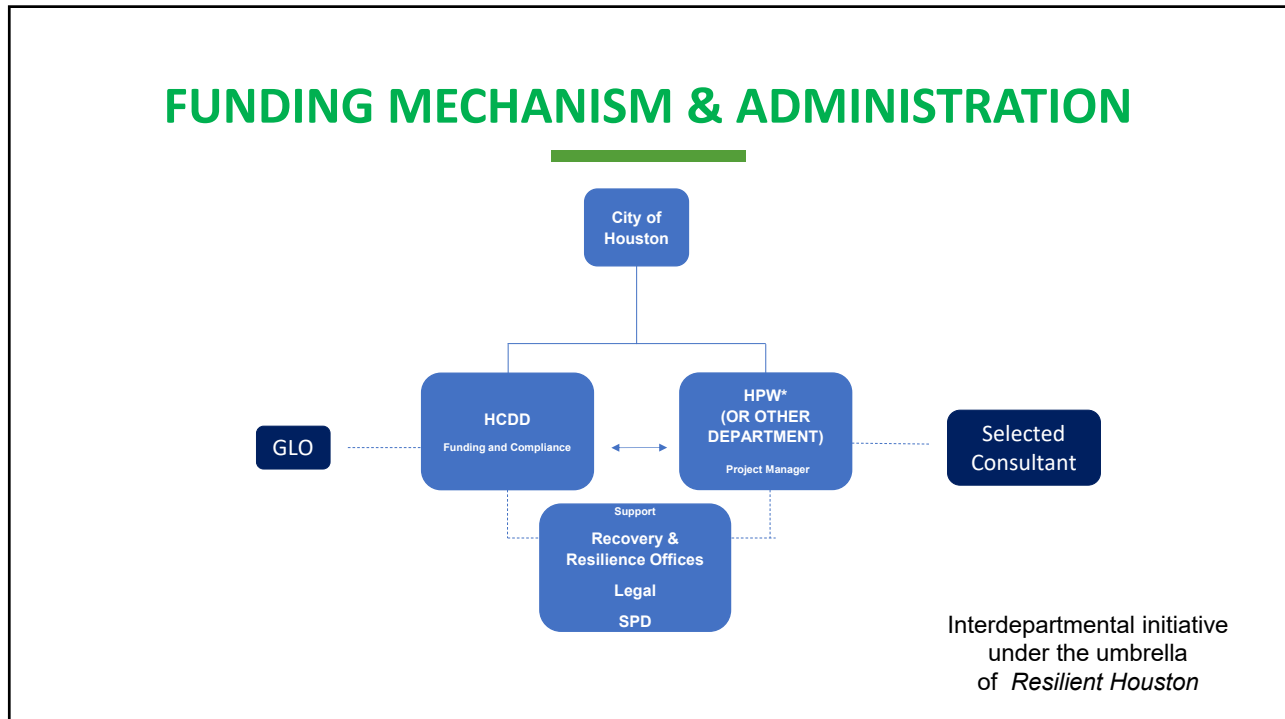
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## RESILIENCE PLANNING STUDIES THROUGH CDBG DR 17 PLANNING FUNDING

### Sidewalks



8

Make our streets 100% safe for all Houstonians.



50

Enable Houstonians to make mobility choices that improve well-being and reduce the cost of living.

### Building Codes



36

Advance and modernize building codes and standards.

### Stormwater Master Plan



27

Advance research and technology to improve water management.

Equity  
Health  
Climate  
Built Environment  
Economy

### Hazard Mitigation Plan



58

Leverage disaster recovery efforts to accelerate the implementation of resilience measures.

### Neighborhood Resilience Plans



12

Support equitable neighborhoods through community planning and programs.

### Lily Pads Plan



17

Develop "Lily Pads" to serve as Neighborhood Resilience Hubs.

### Buy In / Buy Out Plan

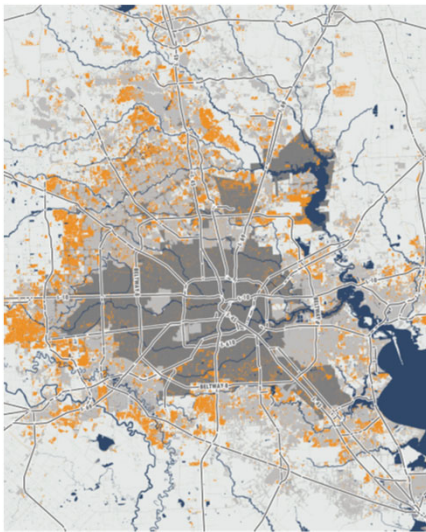


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Make room for water.

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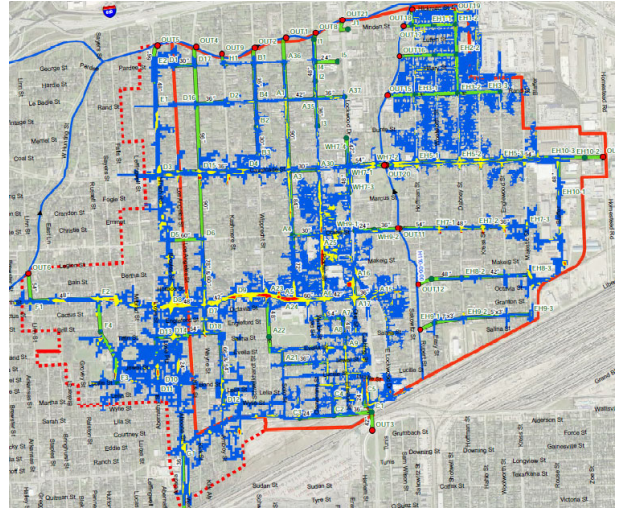
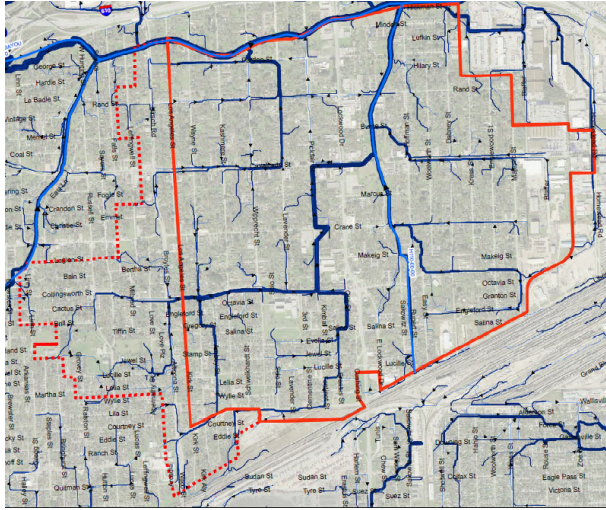
## PROJECT NEED



1. Urban flood risk is a complex issue driven by interactions between the natural and built environments, infrastructure system inadequacies, and increased development
2. Storms are becoming more intense and more frequent
3. Current project planning is based on post-event data, may not accurately identify problem areas
4. New technologies increase the capabilities for short- and long-term planning
5. Improve the ability for cooperative regional planning with HCFCD, Harris County

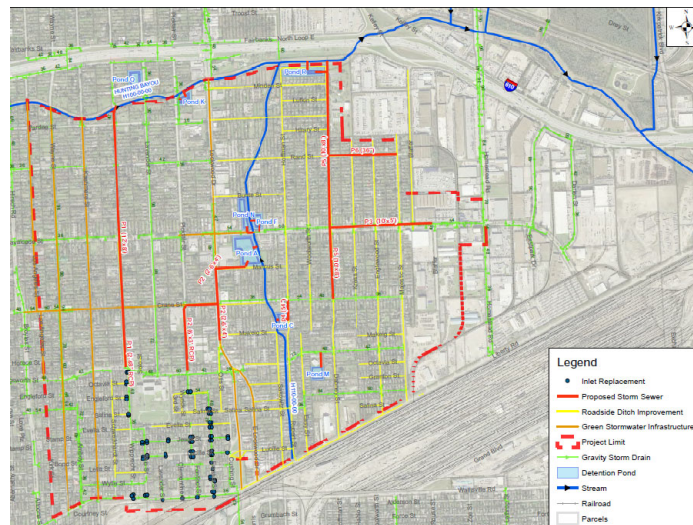
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# PROJECT NEED



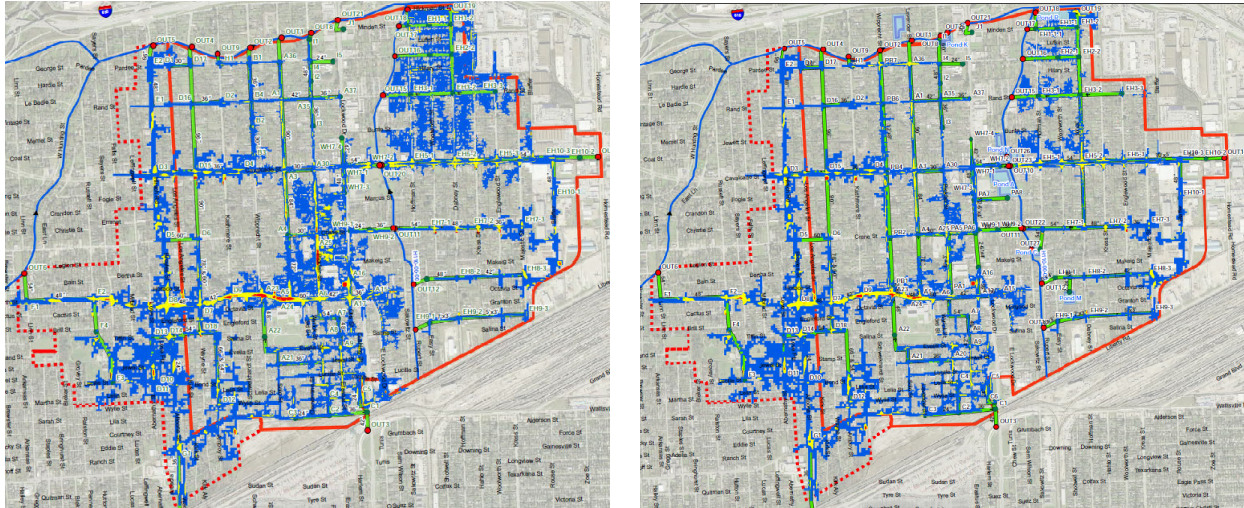
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# PROJECT NEED



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## PROJECT NEED



11

## PROJECT SCOPE

- **Task 1: Project Management**
- **Task 2: Data Collection**
  - Obtain, review, and confirm information related to existing flood mitigation and stormwater drainage infrastructure needed to develop a drainage model
- **Task 3: Model Development**
  - Develop dynamic 2-D hydrologic and hydraulic (H&H) models of the existing City drainage infrastructure.
  - Hydrologic model development
    - Basin delineation, hydrologic parameter selection, historical event validation, and frequency storm simulation.
  - Hydraulic model development
    - 1D component development including roadside ditches and storm sewers, 2D mesh creation, boundary conditions for HCFCD channels, historical event validation, and frequency storm simulation
- **Task 4: Documentation**
  - Summary report with H&H models, document summarizing the project, coordination meetings minutes, model development process, GIS model results including depth rasters for the assigned watershed, and QA/QC backup

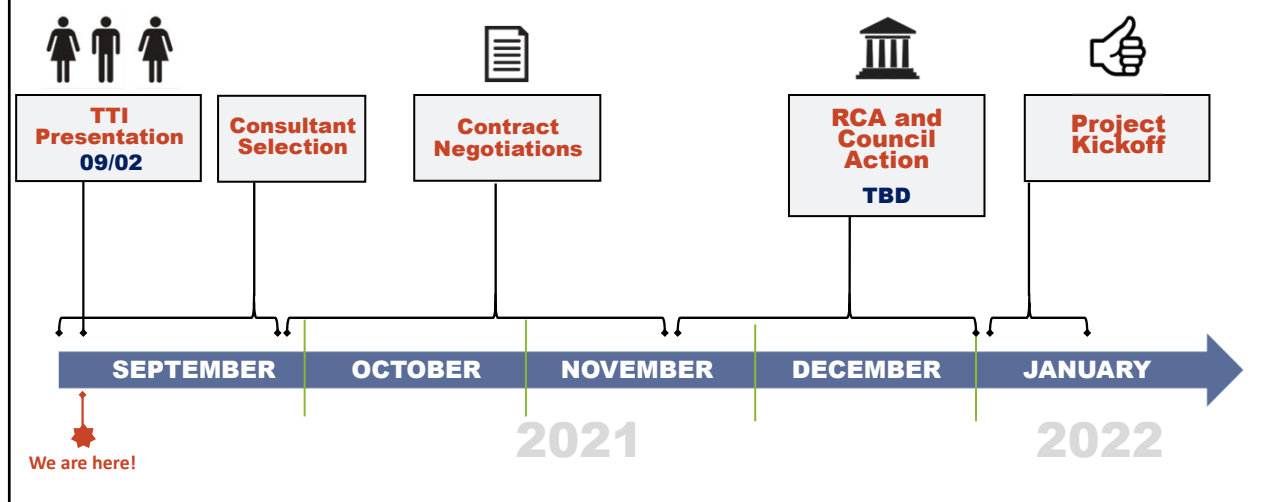
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## PROJECT SCOPE

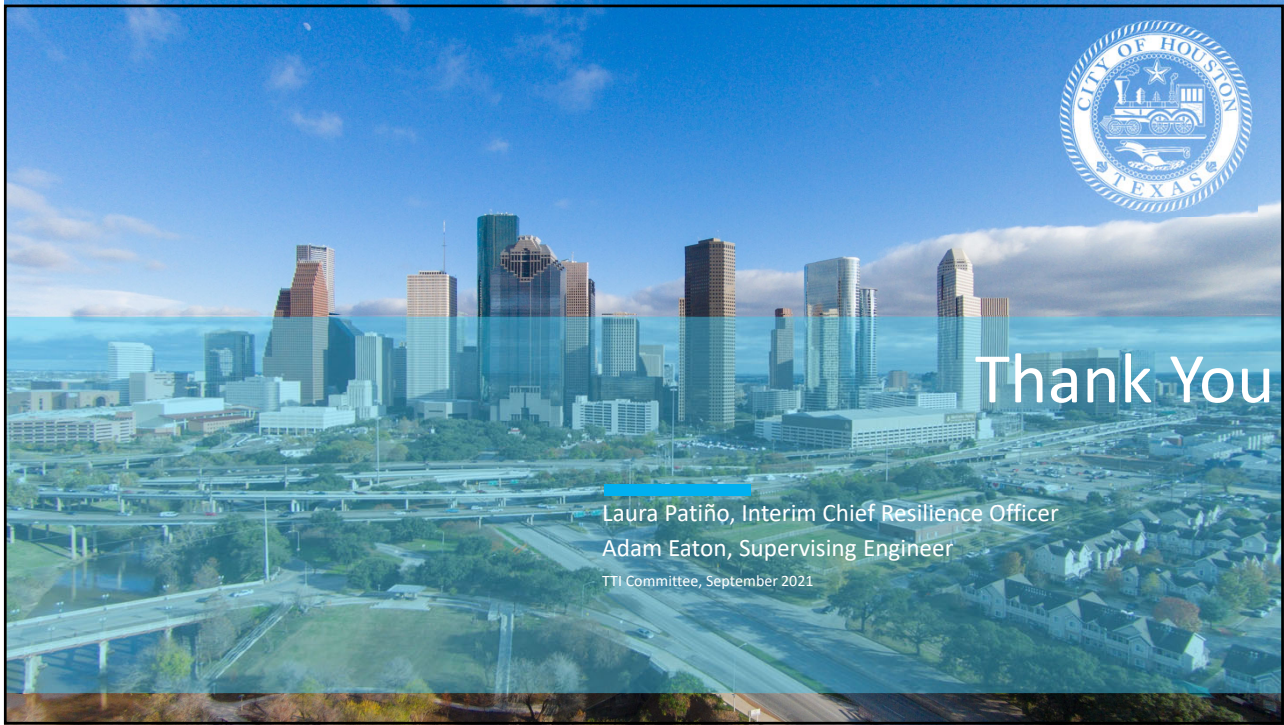
- Coordination with HCFCD, HC on existing and planned studies, modeling efforts
- Will incorporate MAAPnext outputs as inputs to the model
- Model will ultimately inform master planning efforts, coordinated with Houston Water for an overall One Water approach to three utilities (water, wastewater, stormwater)

13

## SCHEDULE AND NEXT STEPS



14



Thank You

Laura Patiño, Interim Chief Resilience Officer  
Adam Eaton, Supervising Engineer  
TTI Committee, September 2021