

Maps and Discussion Points in Support of Advocacy Conversations with Harris County Flood Control and Commissioners' Court Officials

Prepared on a volunteer basis in April, 2019
for the Texas Organizing Project
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The Hunting Bayou Project: C-18 Project Hunting

- Project Hunting falls under the jurisdiction of the Harris County Flood Control District (HCFCD) and includes:
 - Excavating a stormwater detention basin on a 75-acre site near the northeast corner of Homestead Road and Loop 610
 - Widening and deepening about 4 miles of Hunting Bayou
 - Replacing or modifying approximately 20 bridges
- Anticipated outcomes
 - 3-4 feet reduction in water surface elevation during a 1% flooding event
 - Drop in number of homes and businesses flooded from 5,100 to 650 during a 1% flooding event
- The project is funded by federal dollars and proceeds in partnership with the Army Corps of Engineers
- Additional information as well as comment forms can be found at:
 - <https://www.hcfcd.org/projects-studies/hunting-bayou/c-18-project-hunting/>

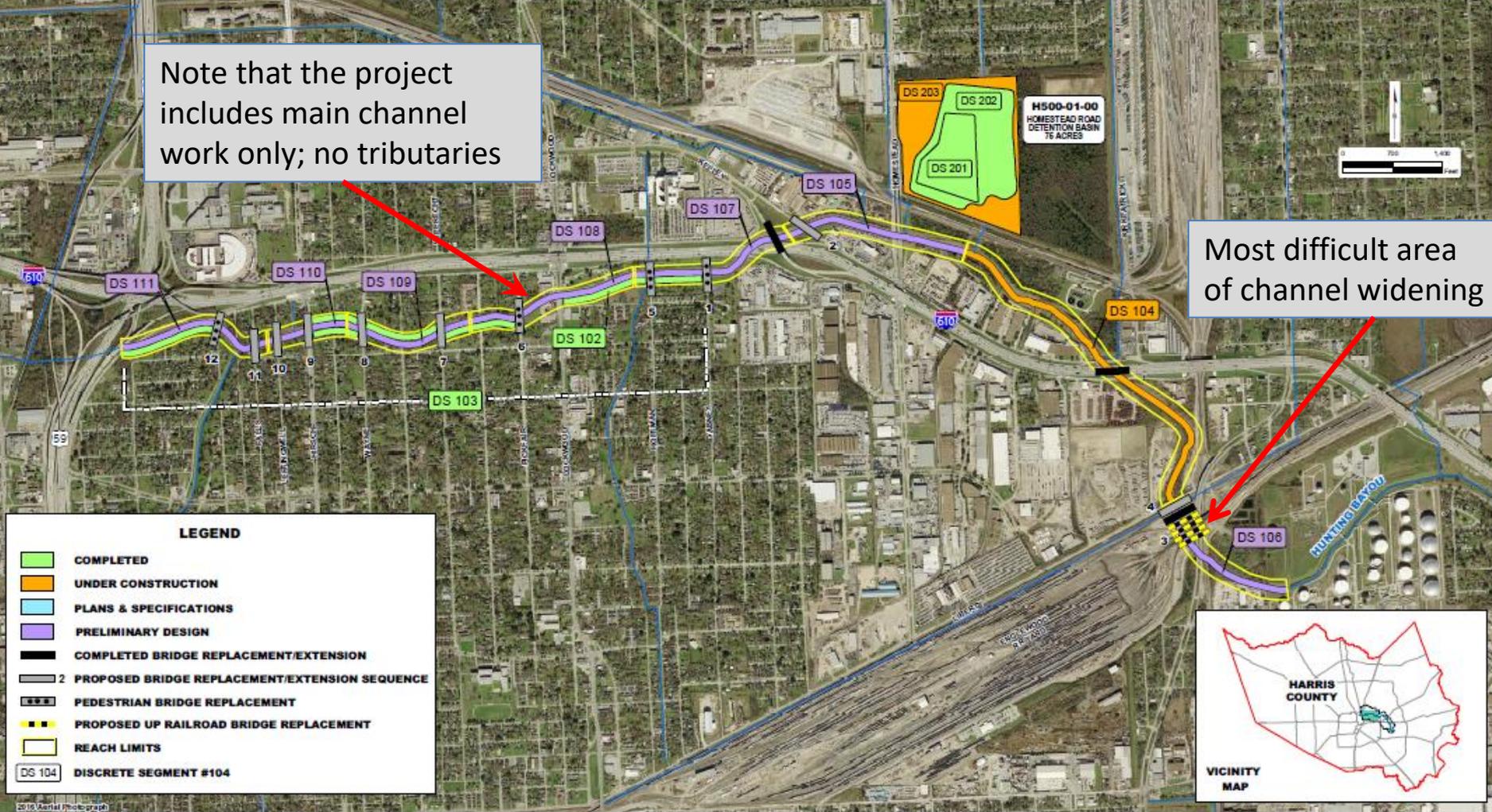
Assessment: the project as designed should provide flood relief to both Kashmere Gardens and Trinity/Houston Gardens from bayou overflow. The most difficult achievement of the project will be related to work item DS106, which calls for lengthening a Union Pacific Railroad bridge downstream of Liberty Road to accommodate a wider Hunting Bayou. However, none of the subordinate drainage ditches operated by the HCFCD are slated for improvement, so drainage from neighborhoods into the Bayou is not aided by this project. Improvements to elements such as H108, H109, H110, H121, H118 and H119, as well as maintenance on City of Houston infrastructure (culverts, residential ditches, and storm sewers) should be considered to carry storm runoff into Hunting Bayou and the Homestead Detention Pond.

HCFCD Map of Project Hunting

from HCFCD.org

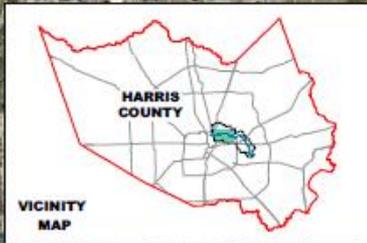
Note that the project includes main channel work only; no tributaries

Most difficult area of channel widening



LEGEND

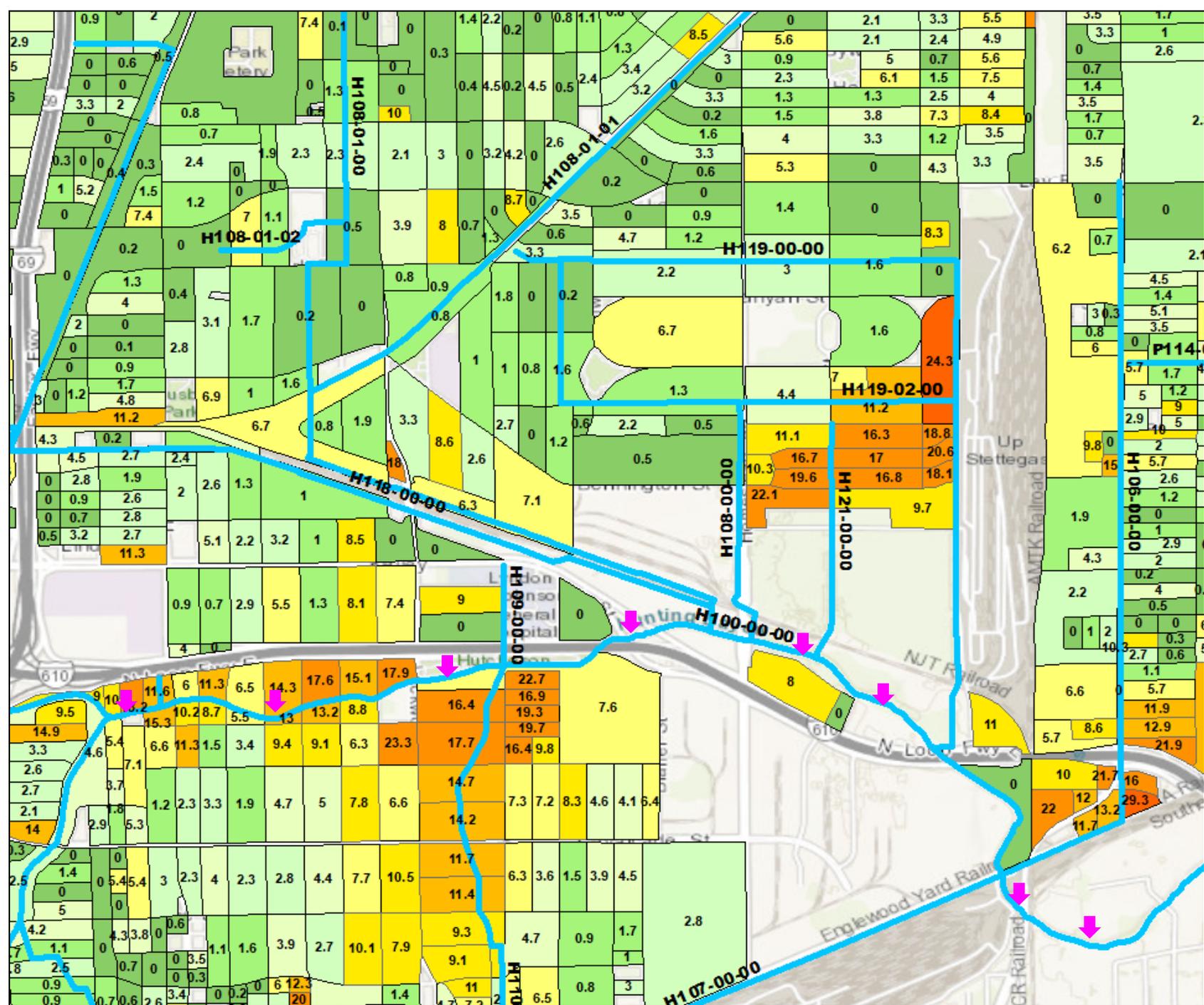
| | |
|----------------------------------------------------------|------------------------------------------------|
| ■ | COMPLETED |
| ■ | UNDER CONSTRUCTION |
| ■ | PLANS & SPECIFICATIONS |
| ■ | PRELIMINARY DESIGN |
| ■ | COMPLETED BRIDGE REPLACEMENT/EXTENSION |
| | PROPOSED BRIDGE REPLACEMENT/EXTENSION SEQUENCE |
| | PEDESTRIAN BRIDGE REPLACEMENT |
| | PROPOSED UP RAILROAD BRIDGE REPLACEMENT |
| | REACH LIMITS |
| DS 104 | DISCRETE SEGMENT #104 |



Analysis of FEMA Individual Assistance Data

On the following map, data collected from individual FEMA applicants have been summarized by census blocks. The blocks have been colored to reflect the average amount of water that residents in a given census block reported in their homes in inches. Hot colors (red) indicate more water, while green indicates less water. Areas of orange to red correspond with low-lying areas, as one would anticipate. All Harris County Flood Control District elements are shown by blue lines on the map, labeled with their HCFCD designations, e.g., Hunting Bayou is labeled “H100-00-00.”

These areas would be assisted by attention to maintenance of drainage infrastructure, both that maintained by the county and the city. County elements are shown on the following map. Project Hunting will only address maintenance and widening of Hunting Bayou (H100-00-00), the main drainage, but will not improve tributaries that drain the neighborhoods that reported high water levels to FEMA (H108, H109, H110, H119, and H121). This sort of work needs to be considered.



H100 is the only element that will see work under Project Hunting.

Color-coded census blocks: small numbers in each block indicate average reported water level in inches.

Projects Proposed for the 2018 Bond Program

In August of 2018, Harris County Commissioners approved a list of flood risk reduction projects to meet the goals of the bond election. Moneys from this fund can only be used for these purposes, and not for recreational purposes. The list was created with input from community members, and **additional feedback will be accepted**. While there is a scheme that has been proposed to prioritize projects, that plan is not published on HCFCD.org. Instead, the website indicates that priority will be given to those projects that are construction ready and have federal funding partners, as well as **economically disadvantaged communities and those communities with a lower level of current protection as compared with other areas in the county**. These latter two criteria should provide preference to the NE Houston area. Of critical importance, the website notes that “Now that voters have approved the bonds, project ideas will continue to be reviewed and the project list could be updated as appropriate. This statement provides an **avenue for residents of NE Houston to advocate with Harris County officials** and to sculpt their projects to meet neighborhood needs.

There are three projects in NE Houston “on the list.” The first is shown as an active partnership project (green cross), the Hunting Bayou project (C-18), and it is in the Hunting Bayou watershed. The other two projects are C-23 and C-24 (grey crosses) and they are in the Halls Bayou watershed. They are not shown as partnership projects, and are largely undefined. \$6M is also allocated for “storm repair” (green triangles).

The project list can be found at <https://www.hcfcd.org/2018-bond-program/bond-program-project-list/> and a map and list of the projects associated with NE Houston is shown on the following slides.

HCFCD map of 2018 Bond Projects

<https://www.harriscountyfemt.org/cb>

LEGEND

BOND PROJECTS

- ★ Buyout Areas
- ▲ Storm Repairs
- ◆ Subdivision Drainage Improvements
- Local Projects
- ⊕ Partnership Projects
- ✳ Community Input

SHOW PROJECTS

- All Bond Projects
- Active Only

WATERSHED BOUNDARIES

- 👉 Watersheds

JURISDICTIONS

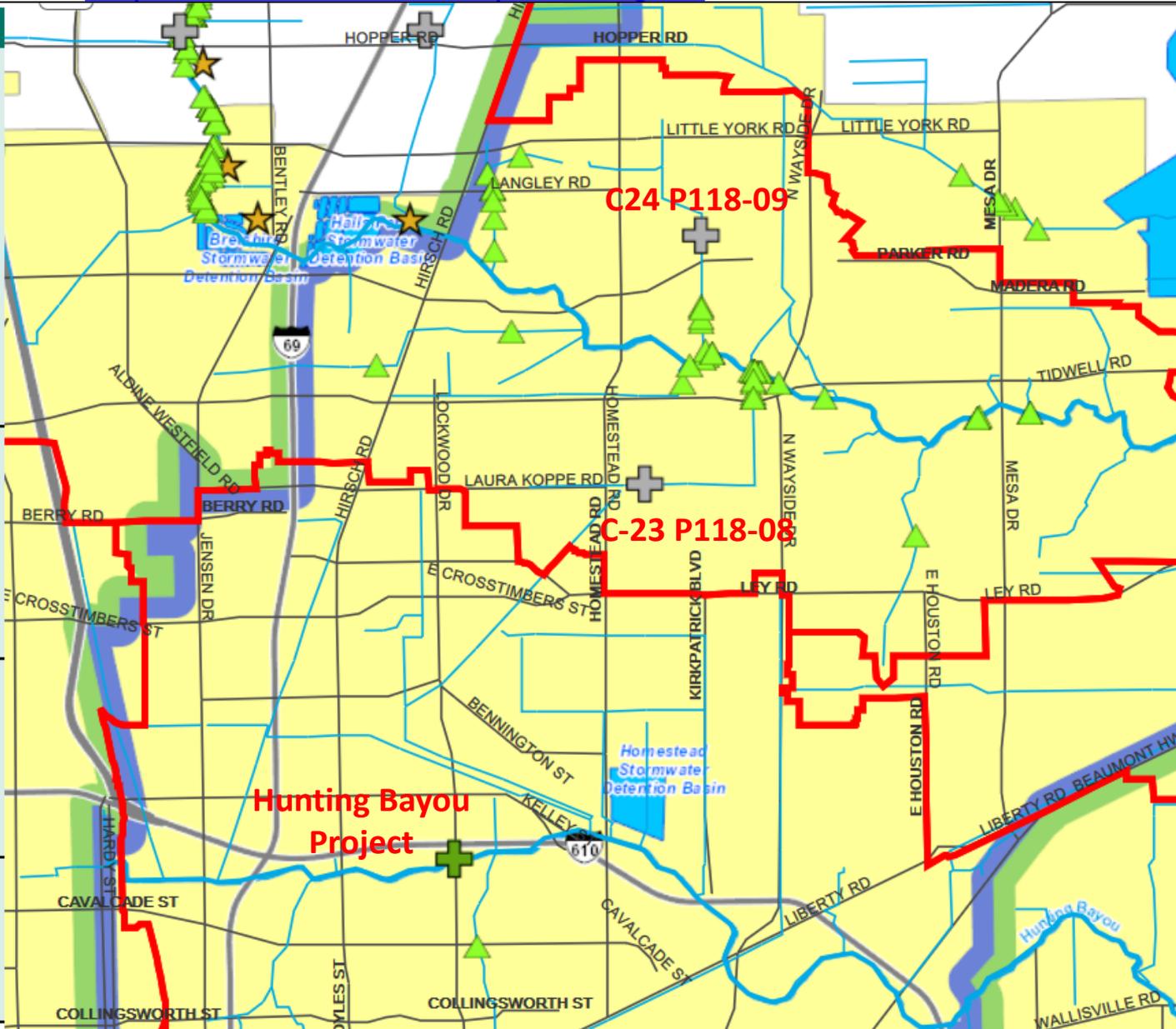
- Texas House Districts
- Texas Senate Districts
- US House of Representatives

Harris County Precincts

- 🟦 Pct. 1 - Rodney Ellis
- 🟩 Pct. 2 - Adrian Garcia
- 🟪 Pct. 3 - Steve Radack
- 🟨 Pct. 4 - R. Jack Cagle

Other Features

- 🟦 Existing Detention Basins
- 🏠 Other Municipalities
- 🟡 City of Houston
- 🏠 Unincorporated Harris County



2018 BOND PROJECTS

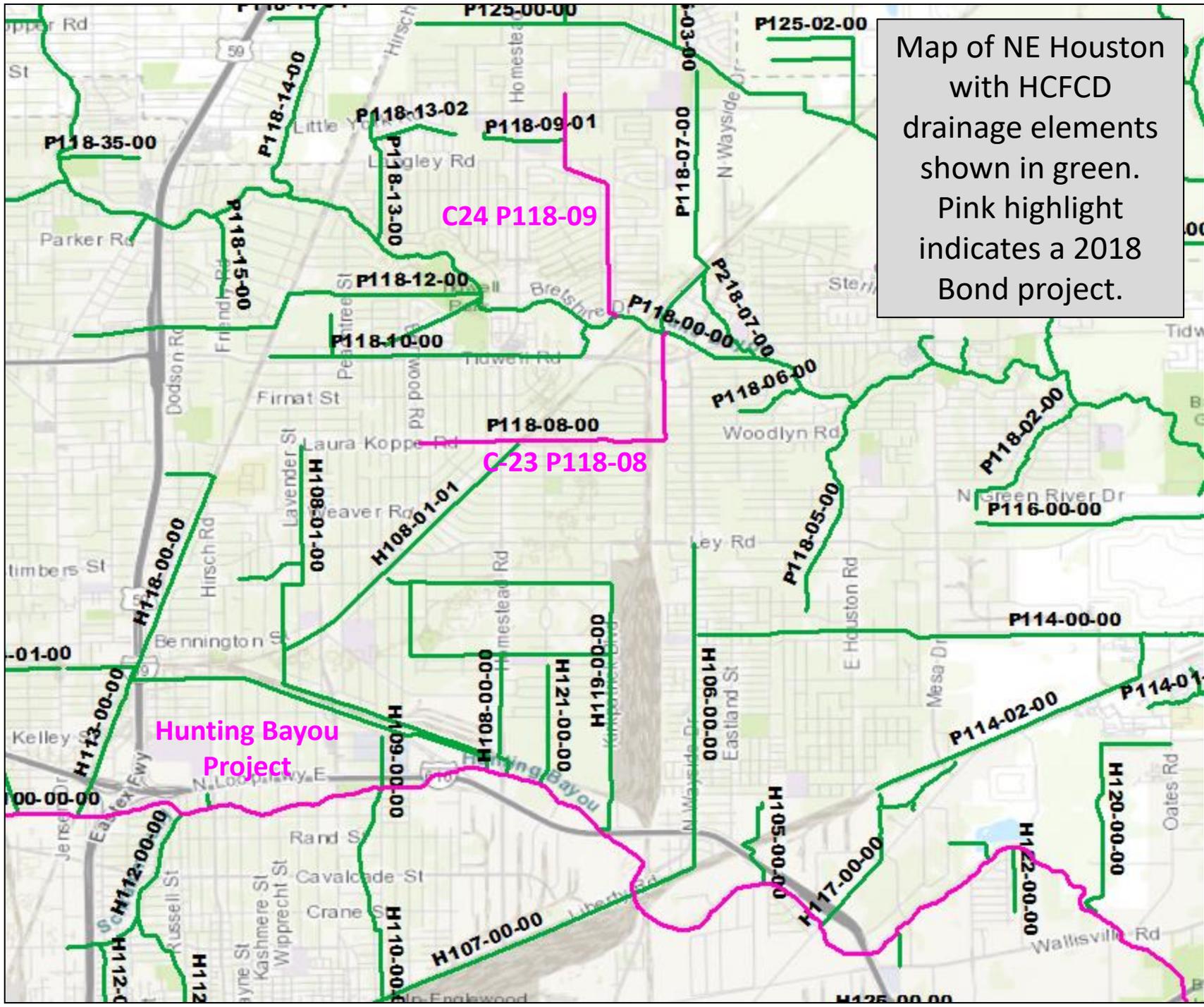
2018-08-06-1130

2018-08-06-1130

| WATERSHED | TYPE | Icon | MAP ID | PROJECT ID | TITLE | PRECINCT | LOCAL ONLY | GRANT TOTAL COST | PARTNER SHARE | LOCAL MATCH | DESCRIPTION OF BENEFITS |
|---------------|--------------|-----------------------------------------------------------------------------------|--------|------------------|-----------------------------------------------------------------------------------------|-----------|------------|------------------|---------------|---------------|-----------------------------------------------------------------------------------------------------------------------------|
| Hunting Bayou | Partnership |  | C-18 | H100-00-00-USACE | Design and Construction of Corps of Engineers Hunting Bayou, Section 211(f) Project | 1 | \$ - | \$ 80,000,000 | \$ 70,000,000 | \$ 10,000,000 | The 1% floodplain could be removed from up to 4,450 structures. |
| Halls Bayou | Partnership |  | C-23 | P118-08-00-FP | Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-08-00 | 1, 2, & 4 | \$ - | \$ 25,000,000 | \$ 22,500,000 | \$ 2,500,000 | This project could reduce the risk of flooding for over 210 buildings and could reduce the 1% floodplain for over 170 acres |
| Halls Bayou | Partnership |  | C-24 | P118-09-00-FP | Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00 | 1 | \$ - | \$ 12,000,000 | \$ 10,800,000 | \$ 1,200,000 | This project could reduce the risk of flooding for over 200 buildings and could reduce the 1% floodplain for over 160 acres |
| Halls Bayou | Storm Repair |  | | P118-StormRep | Storm Repairs in Halls Bayou Watershed | 1 & 2 | \$ - | \$ 6,150,000 | \$ 4,920,000 | \$ 1,230,000 | Approximately 115 repair projects of erosion and infrastructure identified after Hurricane Harvey. |

From the website:

Please note: The Bond Program Project List represents projects that the **Flood Control District intends to build** with bond funding. However, the estimated total cost of projects on the list exceeds \$2.5 billion, and there must be some flexibility in maintaining this list as projects are defined, designed and constructed. Over the next several years, projects on the list could be altered based upon community input or design constraints, be removed, or new projects added, depending on future unknown conditions including **right-of-way** availability, changing environmental regulations and funding that may come available from other partners.



Map of NE Houston with HCFCD drainage elements shown in green. Pink highlight indicates a 2018 Bond project.

Hunting Bayou Project

C24 P118-09

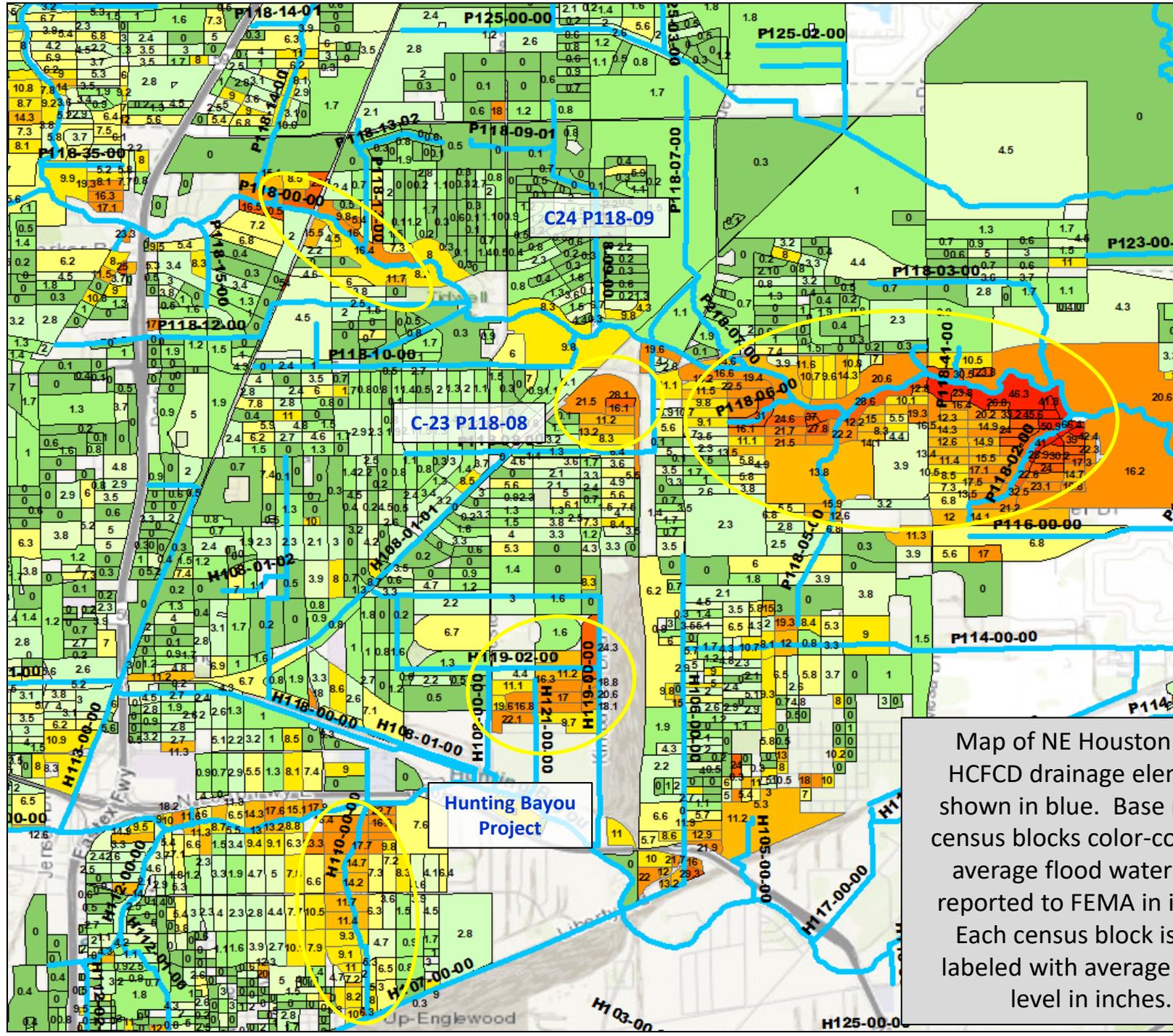
C-23 P118-08

Are these the right projects? Or are others more critical?

The preceding map is constructed on a city road map as a base, with the proposed projects (Hunting Bayou, P118-08 and 09) highlighted in pink among all the HCFCD drainage elements shown in green.

In the following map, the HCFCD drainage elements in blue are shown overlain on average water level after Harvey from FEMA data. Again, orange to red indicates higher levels of water, and the darkest red indicates an average of more than 40 inches of water.

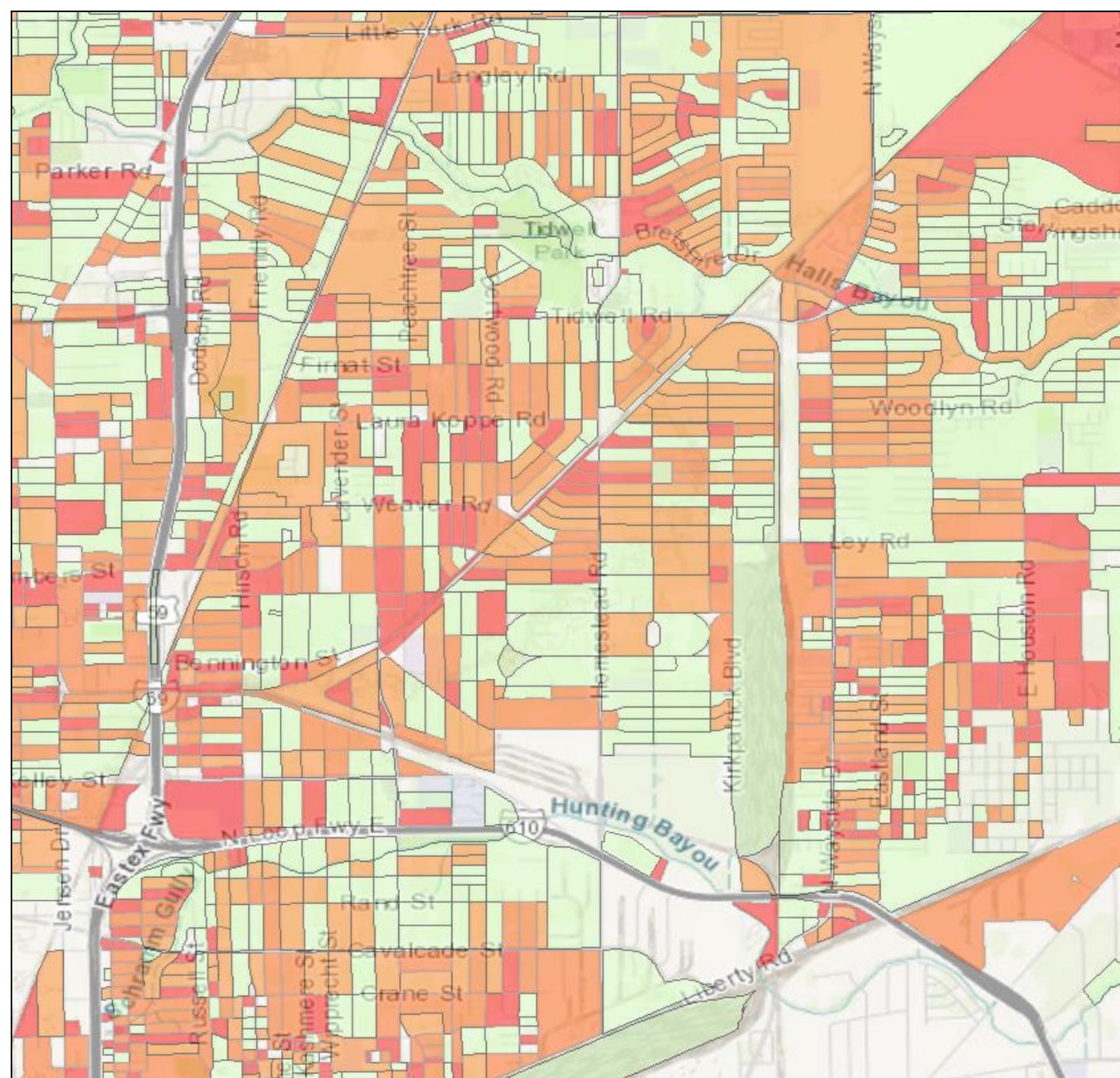
While it seems reasonable to propose work on P118-08, due to the high water documented along its inside curve, one wonders if P118-09 is really the most critical area in which to spend bond dollars. Consider, for example, the areas circled in yellow. Also, storm repair along Halls Bayou could be quite helpful if guided by community input accompanied by FEMA data.



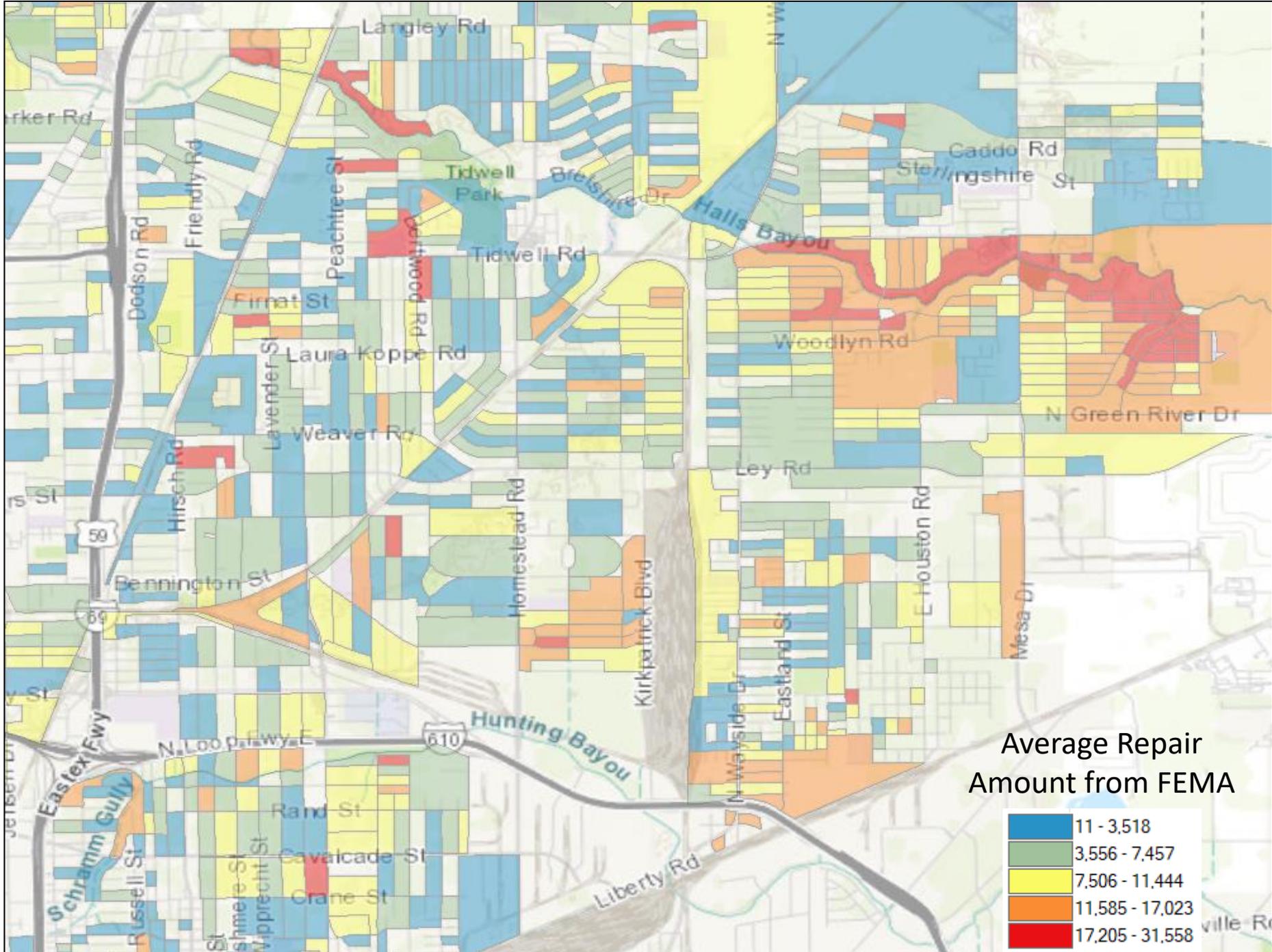
Map of NE Houston with HCFCD drainage elements shown in blue. Base map is census blocks color-coded by average flood level reported to FEMA in inches. Each census block is also labeled with average water level in inches.

Arguments in Favor of Prioritization of NE Houston Projects in 2018 Bond Decisions

- Very few census blocks reported homeowners with flood insurance – meets the criteria of giving priority to those with less protection from flooding
- The majority of the area reported households with an average gross income below the poverty level – meets the criteria of giving priority to low income neighborhoods
- FEMA payments to residents indicates that work on drainage in indicated areas might help avoid substantial damage costs in future



This map shows the average gross income reported by household to the FEMA individual assistance program by census block. Those blocks in green exceed the poverty level for a family of four - \$26,000. Those blocks shown in red or orange are below the poverty level, with blocks in red having an average gross income of less than \$16,000.



Average Repair Amount from FEMA

| | |
|--------|-----------------|
| Blue | 11 - 3,518 |
| Green | 3,556 - 7,457 |
| Yellow | 7,506 - 11,444 |
| Orange | 11,585 - 17,023 |
| Red | 17,205 - 31,558 |