

In June, the Harris County Flood Control District hosted a virtual public meeting on the Feasibility Study of Stormwater Conveyance Tunnels with more than 600 participants and nearly 200 comments. The Phase 2 report released by the Flood Control District identified large-diameter underground stormwater tunnels as having the potential to significantly reduce flooding risks in Harris County, warranting additional analyses. Preliminary information regarding a potentially “transformational” system of tunnels that could reduce persistent flooding for tens of thousands of homes was included in the update of the feasibility study, which was launched after Harris County officials challenged the Flood Control District to develop new flood risk reduction tools in the wake of Hurricane Harvey.

The Flood Control District also hosted virtual meetings to share updates and gather input on projects in the Armand Bayou watershed (B104-00-00 Horsepen Bayou Stormwater Conveyance Improvement project), in the Cypress Creek Watershed (Mercer Stormwater Detention Basin K500-21-00), in the Halls Bayou Watershed (Halls Bayou Bond Program – Summer 2022 Updates) and in the Cedar Bayou watershed (Channel Conveyance Improvements along Clawson Ditch Q122-00-00).

Construction Contracts Awarded

Total – Count

47

Total – Amount

\$392M

Agreements Awarded

Last Month – Count

5

Last Month – Amount

\$20M

Total – Count

459

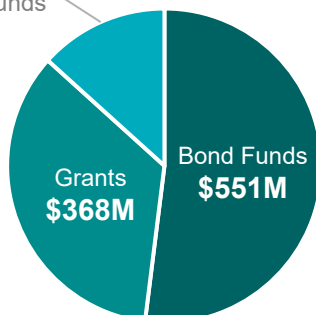
Total – Amount

\$358M

Total Spending through June 2022

\$1.06B

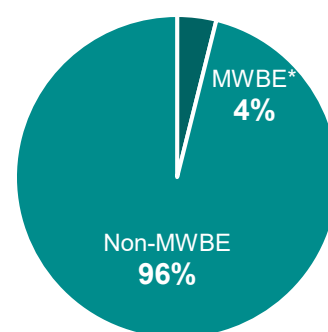
Other Local Funds
\$141M



Professional Services Invoices Paid

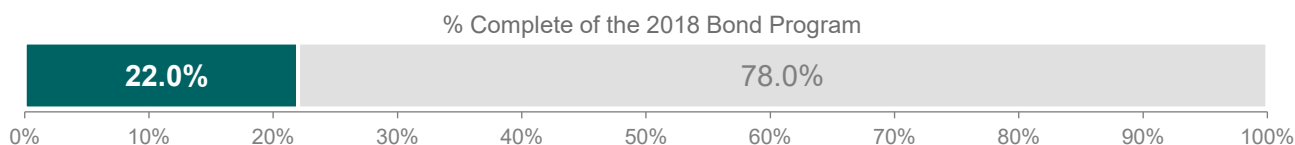
Total Invoiced – 06/01/2022 to 06/30/2022

\$5.7M



*Minority- and/or Women Owned Business Enterprises (MW)

Overall Progress



Key Performance Indicators*

SPI
.97

***SPI is Schedule Performance Index. Closest to 1 is the best, with anything above or below that as indicators for trending. For SPI, anything above 1 indicates ahead of schedule and under 1 behind schedule.*

Home Buyouts

Home Buyouts in Progress

351

Home Buyouts Completed
Includes CSD Mandatory Buyouts

802

Buyouts Funding Secured
– Total

\$516M

Buyouts Funding Secured –
Spent to Date

\$156.6M

In the News

The following represent construction notices distributed by the Harris County Flood Control District in June 2021. To view more information, log on to hcfcd.org and visit the “Latest News” section.

Flood Control District releases Phase 2 results of Tunnel Feasibility Study *(June 2022)*

Concept of a future tunnel system recommended for further analysis

HOUSTON, TX - June 21, 2022 - Large-diameter underground stormwater tunnels have the potential to significantly reduce flooding risks in Harris County and warrant deeper analysis, the Harris County Flood Control District announced today with publication of its “Feasibility Study of Stormwater Conveyance Tunnels – Phase 2” report. Preliminary information regarding a potentially “transformational” system of tunnels that could reduce persistent flooding for tens of thousands of homes were included in this update of the feasibility study, which was launched after Harris County officials challenged the Flood Control District to develop new flood risk reduction tools in the wake of Hurricane Harvey.

The second phase of the feasibility study shows that a potential tunnel system, if added to the existing bayou channels and detention basin network, could be a highly effective option for reducing flooding in densely populated areas of Harris County. The potential eight tunnel alignments (or locations) identified in the feasibility study represent the foundation of a Harris County tunnel system that could potentially reduce flooding in and around areas designated as **damage centers**. A damage center is a concentrated area that has and will continue to flood repeatedly, with water in homes and businesses. Damage centers were identified through a data-driven process, and then the damage centers were reviewed further to account for **social vulnerability** and other factors, in and around the watershed. By applying a social vulnerability screening, the feasibility study team identified the neighborhoods where people are least able to recover from a disaster. This comprehensive approach to flood damage reduction incorporates traditional engineering factors, as well as environmental and social considerations. This approach differs from one focused mainly on a cost-to-benefit ratio based on property values.

At the start of the tunnel feasibility study (Phase 1), the team confirmed that it is potentially possible to construct tunnels in many areas of the county. In the next stage (Phase 2), the team identified potential individual tunnel locations, considering various elements such as elevation, community impacts and availability of vacant land for traditional projects. As the benefits of tunnels became more evident during the feasibility study, however, the team also identified the potential benefits gained when tunnel alignments work synergistically with each other, instead of as independent alignments. A comprehensive approach to flood risk reduction, with the use of a tunnel system in conjunction with the existing drainage system, would provide significantly more benefits by allowing the different alignments to reduce the flood risk across multiple watersheds.

So far, the Phase 2 feasibility study has found that tunnels would require the acquisition of much less property, as compared to traditional flood risk reduction projects. Also, because the majority of tunnel construction would happen deep underground, a tunnel may have a flexible alignment that is not tied as closely to a bayou or creek. For example, a tunnel could potentially provide benefits to flood damage centers in more than one watershed. Tunnels are being considered as an addition to – not a replacement for – the county's existing stormwater management network of bayous, channels and stormwater detention basins.

The resulting tunnel system includes a potential eight tunnel concepts along the following bayous, in alphabetical order:

- Brays Bayou
- Buffalo Bayou
- Clear Creek, Berry Bayou and Vince Bayou
- Greens Bayou, Halls Bayou and Hunting Bayou
- Halls Bayou and Hunting Bayou
- Little Cypress Creek and Cypress Creek
- Sims Bayou
- and White Oak Bayou

These preliminary alignments from the Phase 2 feasibility study are conceptual and may change as more field information and modeling results are collected. These potential tunnel concepts come at a high cost, but in some situations can compare favorably against multiple smaller traditional projects totaling the same potential benefit. Preliminary construction cost estimates for a typical 10-mile tunnel segment are in the \$3-\$4 billion range. Funding for design and construction would require state and/or federal partnership funding, as well as a local share. If funding is secured, design and construction is estimated to take 10-15 years for a single representative 10-mile tunnel segment.

"Although the costs of a tunnel system are significant and finding partnership funding for a project of this scale is not guaranteed, we are excited about exploring tunnels as an additional tool to reduce flooding risks in Harris County," said Flood Control District Executive Director Tina Petersen. "There is still additional analysis to be done on the economic benefits and integration into our current stormwater management network, and we are asking for public feedback as we move forward."

Additional analysis that could occur in Phase 3 of the feasibility study would quantify countywide economic benefits of adding a tunnel system to our current stormwater management network, identify how to integrate such a system into our existing network, identify funding strategies, further investigate and refine potential tunnel alignments, and continue to gather public input. Phase 3 investigation could begin as early as Spring of 2023.

Materials from a June 16, 2022, Community Engagement Meeting, including meeting video and presentation, are available at www.hcfc.org/tunnels.

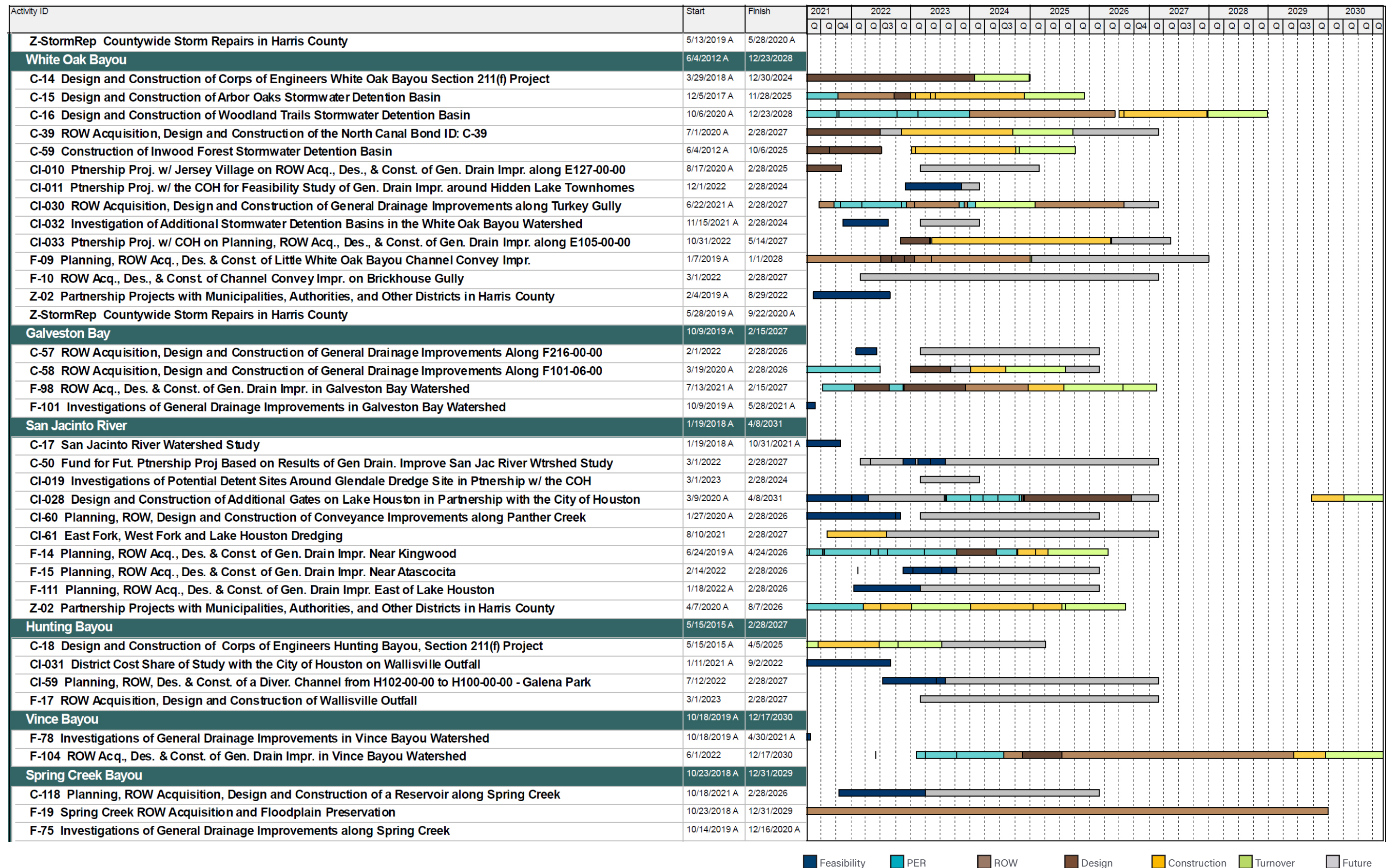
Construction Update for Traffic Switch Along Brays Bayou *(June 2022)*

This weekend, there will be a traffic switch on South Braeswood Boulevard along Brays Bayou at the Chimney Rock Road intersection.

The two-way traffic currently on the north half of the boulevard will be shifting to the south half of the boulevard. The temporary lane shift along with the associated construction should be completed within one week. Commuters should follow all directional signage, striping, and signal lights during this temporary traffic shift. For more information, visit projectbrays.org.

2018 Bond Program Commissioners Court Update

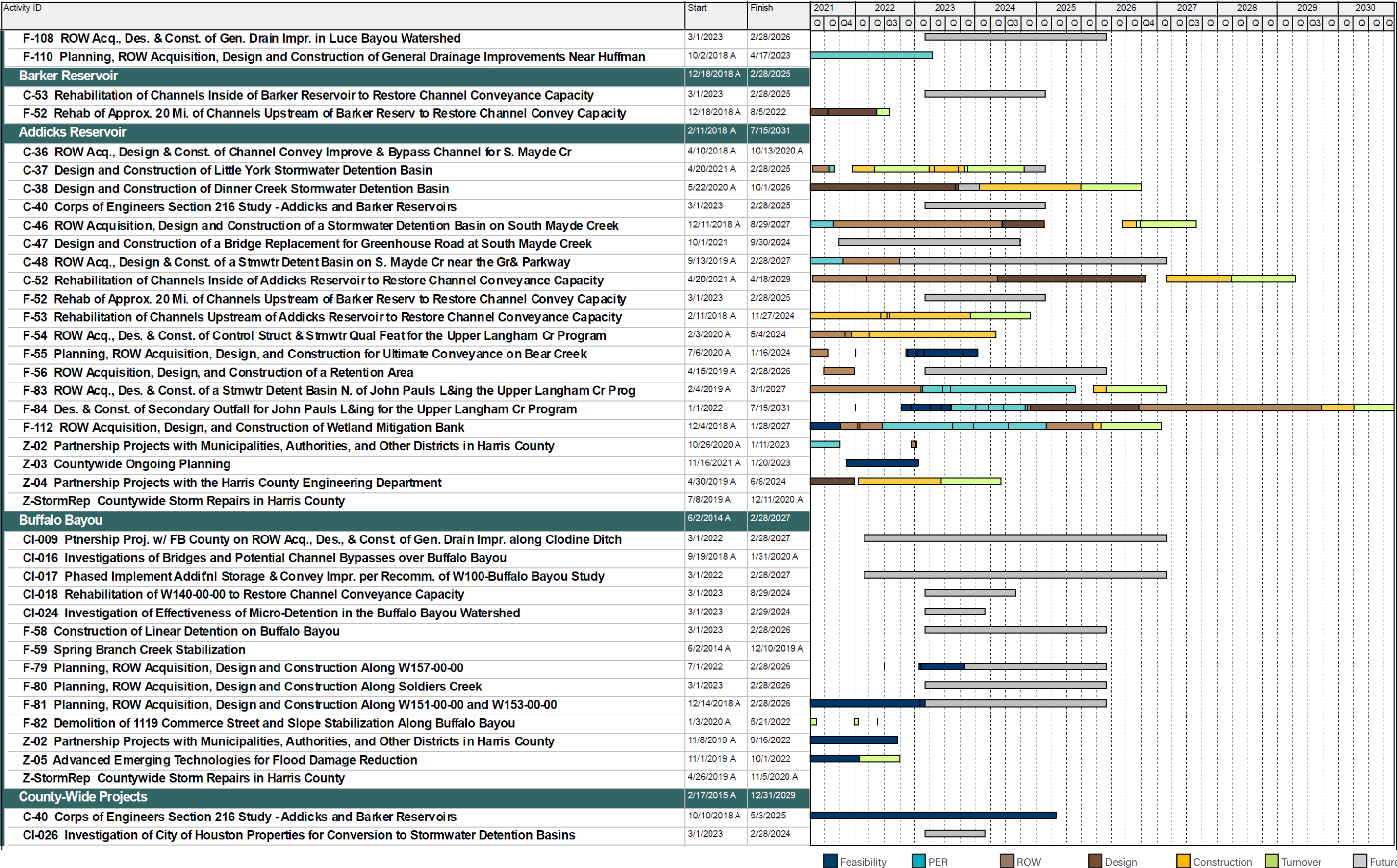
2018 Bond Program Commissioners Court Update

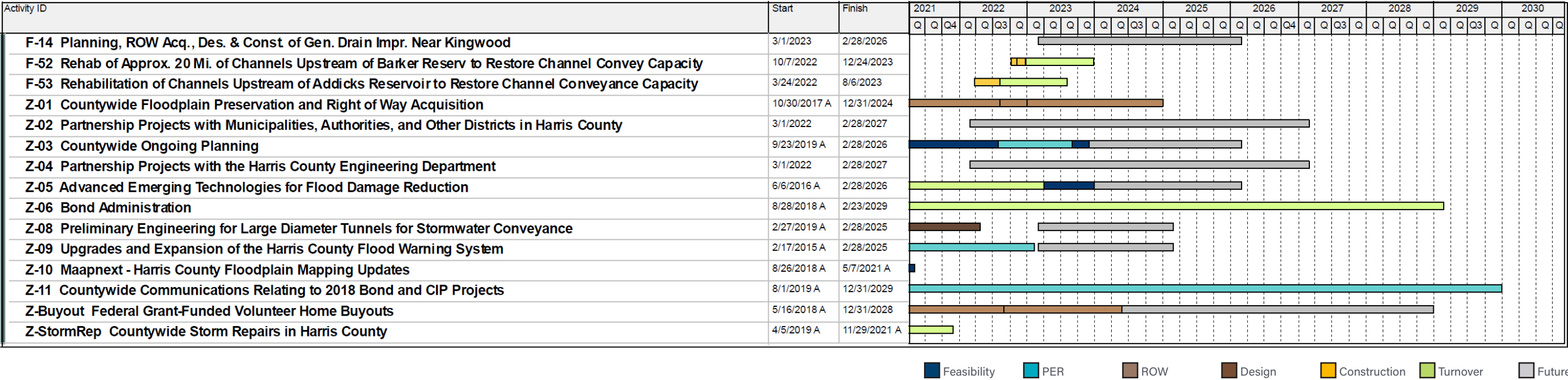


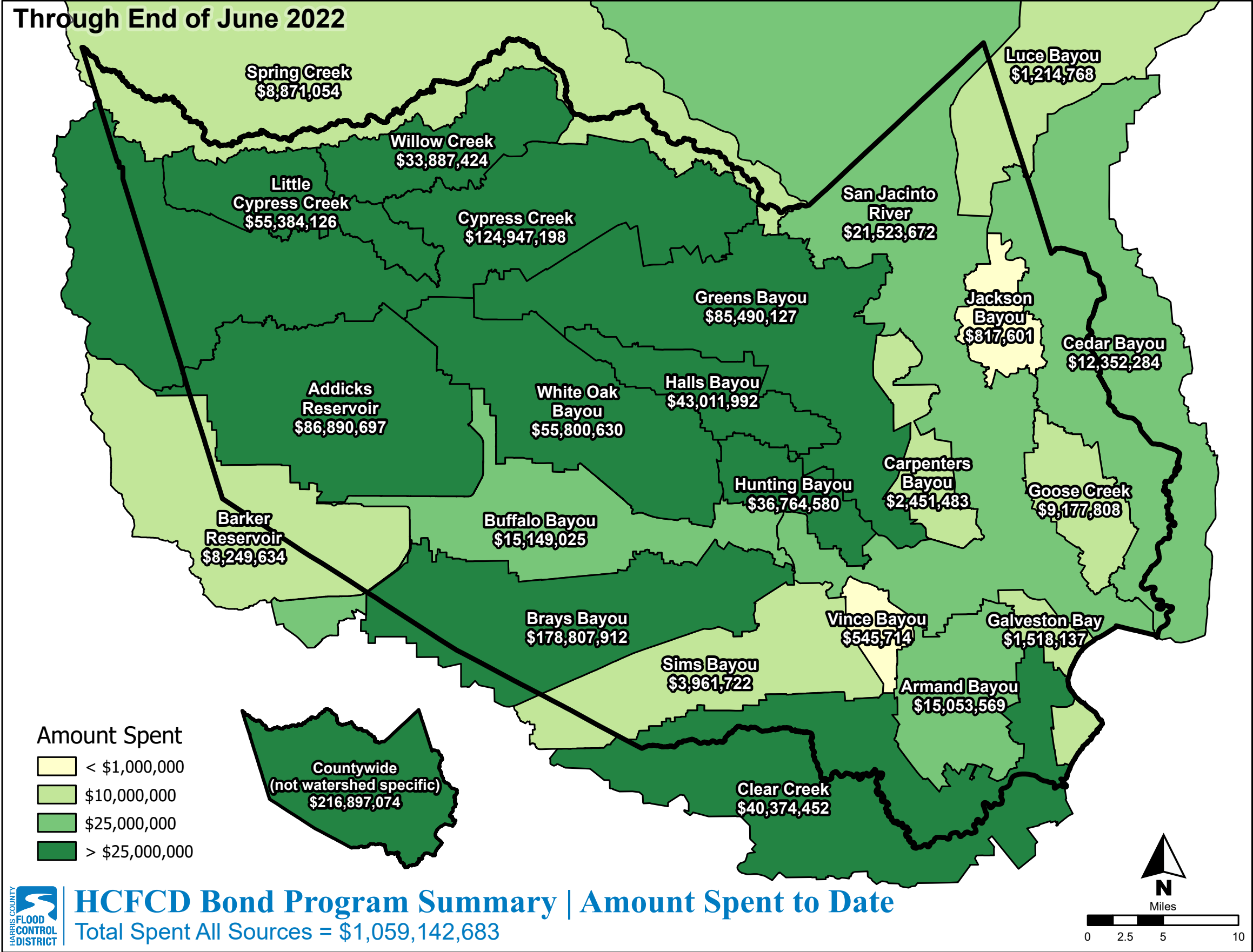
Activity ID	Start	Finish	2021		2022			2023			2024			2025			2026			2027			2028			2029			2030		
			Q	Q	Q4	Q	Q	Q3	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	
F-119 ROW Acquisition, Design and Construction of General Drainage Improvements along Spring Creek	10/29/2021 A	2/14/2028																													
Cypress Creek	10/1/2013 A	12/31/2029																													
CI-012 Major Maintenance of Cypress Creek and Tributaries	3/4/2019 A	8/20/2028																													
CI-035 Update 2003 TX Wtr Dev. Brd Cypress Cr Trib. Study & Invest Stmwtr Det Basins Cypress Cr Watershed	8/16/2018 A	4/27/2020 A																													
F-20 Cypress Creek ROW Acquisition and Floodplain Preservation	12/23/2019 A	12/31/2029																													
F-21 Restore Channel Conveyance Capacity on K129-00-00	10/5/2016 A	5/14/2020 A																													
F-22 Restore Channel Conveyance Capacity Along Pilot Gully	1/8/2020 A	12/15/2024																													
F-23 Construction of Channel Conveyance Improvements Along K163-00-00	6/23/2020 A	12/31/2022																													
F-24 Identification, Design and Construction of the K700-01 Environmental Mitigation Bank	10/1/2013 A	8/29/2024																													
F-88 ROW Acquisition, Design and Construction of Stormwater Detention Basins in Large Buyout Areas	3/15/2021 A	2/28/2026																													
F-112 ROW Acquisition, Design, and Construction of Wetland Mitigation Bank	6/21/2022	1/9/2024																													
Z-02 Partnership Projects with Municipalities, Authorities, and Other Districts in Harris County	3/31/2020 A	6/1/2023																													
Z-StormRep Countywide Storm Repairs in Harris County	2/15/2019 A	10/31/2020 A																													
Little Cypress Creek	8/22/2014 A	5/3/2031																													
F-26 Management, ROW Acquisition, Design and Construction of the Little Cypress Creek Frontier Program	4/24/2018 A	9/11/2028																													
F-27 Design and Construction of Zube Park Stormwater Detention Basin	5/2/2016 A	11/25/2024																													
F-28 ROW Acquisition, Design, and Construction of Kluge Stormwater Detention Basin	1/24/2023	5/11/2030																													
F-29 ROW Acquisition, Design, and Construction of Mueschke East Stormwater Detention Basin	8/22/2014 A	5/3/2031																													
F-30 ROW Acquisition, Design, and Construction of Schiel Stormwater Detention Basin	9/16/2015 A	7/10/2028																													
F-31 Construction of Mueschke West Stormwater Detention Basin Improvements	10/15/2015 A	12/23/2027																													
F-32 Construction of Hegar Stormwater Detention Basin Improvements	2/11/2017 A	1/9/2027																													
F-33 Construction of Kleb Woods Stormwater Detention Basin Improvements	6/14/2016 A	12/2/2022																													
F-34 ROW, Des., & Const. of Mason Stmwtr Detent Basin in Little Cypress Cr watershed	1/1/2015 A	4/9/2027																													
F-35 Construction of Bauer-Hockley Stormwater Detention Basin Improvements	3/22/2019 A	10/16/2020 A																													
F-89 Design and Construction of Additional Volume in Little Cypress Creek Stormwater Detention Basins	3/1/2023	11/28/2026																													
Willow Creek	1/18/2018 A	10/27/2027																													
F-36 Willow Creek ROW Acquisition and Floodplain Preservation	4/6/2020 A	10/4/2024																													
F-37 Design and Construction of Channel Conveyance Improvements on M124-00-00 Downstream of SH 249	1/18/2018 A	5/9/2027																													
F-38 Design and Construction of Cypress Rosehill Stormwater Detention Basin	11/26/2018 A	1/3/2026																													
F-71 Investigations of General Drainage Improvements in Willow Creek Watershed	10/17/2019 A	2/26/2021 A																													
F-106 ROW Acq., Des. & Const. of Gen. Drain Impr. in Willow Cr Watershed	8/26/2021 A	10/27/2027																													
Carpenters Bayou	1/13/2020 A	8/24/2027																													
F-124 Investigations of General Drainage Improvements along Carpenters Bayou	1/13/2020 A	3/21/2021 A																													
Z-02 Partnership Projects with Municipalities, Authorities, and Other Districts in Harris County	8/25/2021	8/24/2027																													
Goose Creek	6/4/2019 A	2/28/2027																													
F-39 Investigations of General Drainage Improvements on Spring Gully	6/4/2019 A	8/18/2021 A																													
F-109 ROW Acquisition, Design, and Construction of General Drainage Improvements on Spring Gully	5/14/2021 A	2/28/2025																													
F-120 ROW Acq., Des., & Const. of Gen. Drain Impr. in Goose Cr watershed	1/4/2021 A	2/28/2027																													
F-121 Investigations of General Drainage Improvements in Goose Creek watershed	10/14/2019 A	2/26/2021 A																													
Z-02 Partnership Projects with Municipalities, Authorities, and Other Districts in Harris County	12/1/2019 A	2/21/2026																													
Greens Bayou	11/26/2018 A	2/28/2027																													

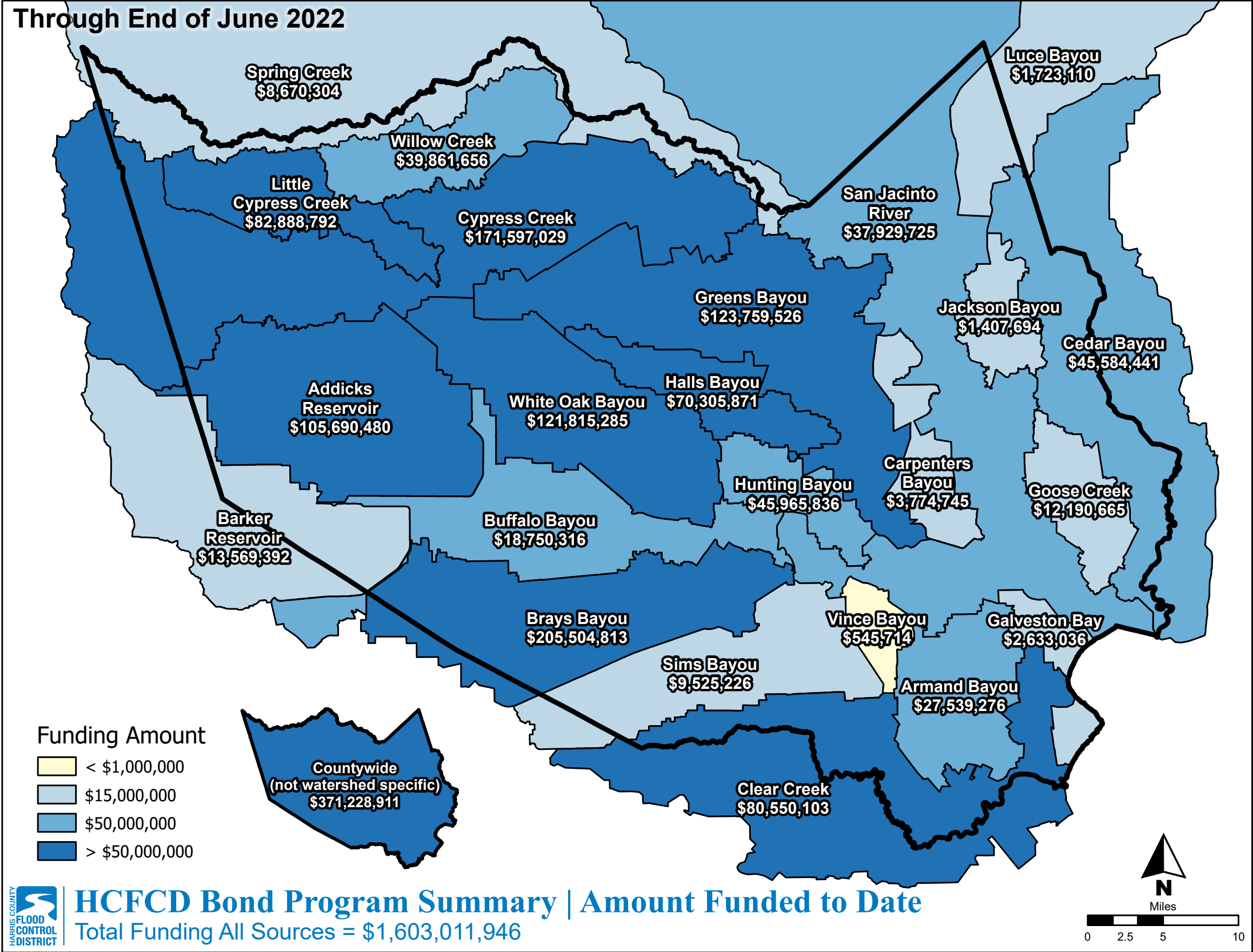












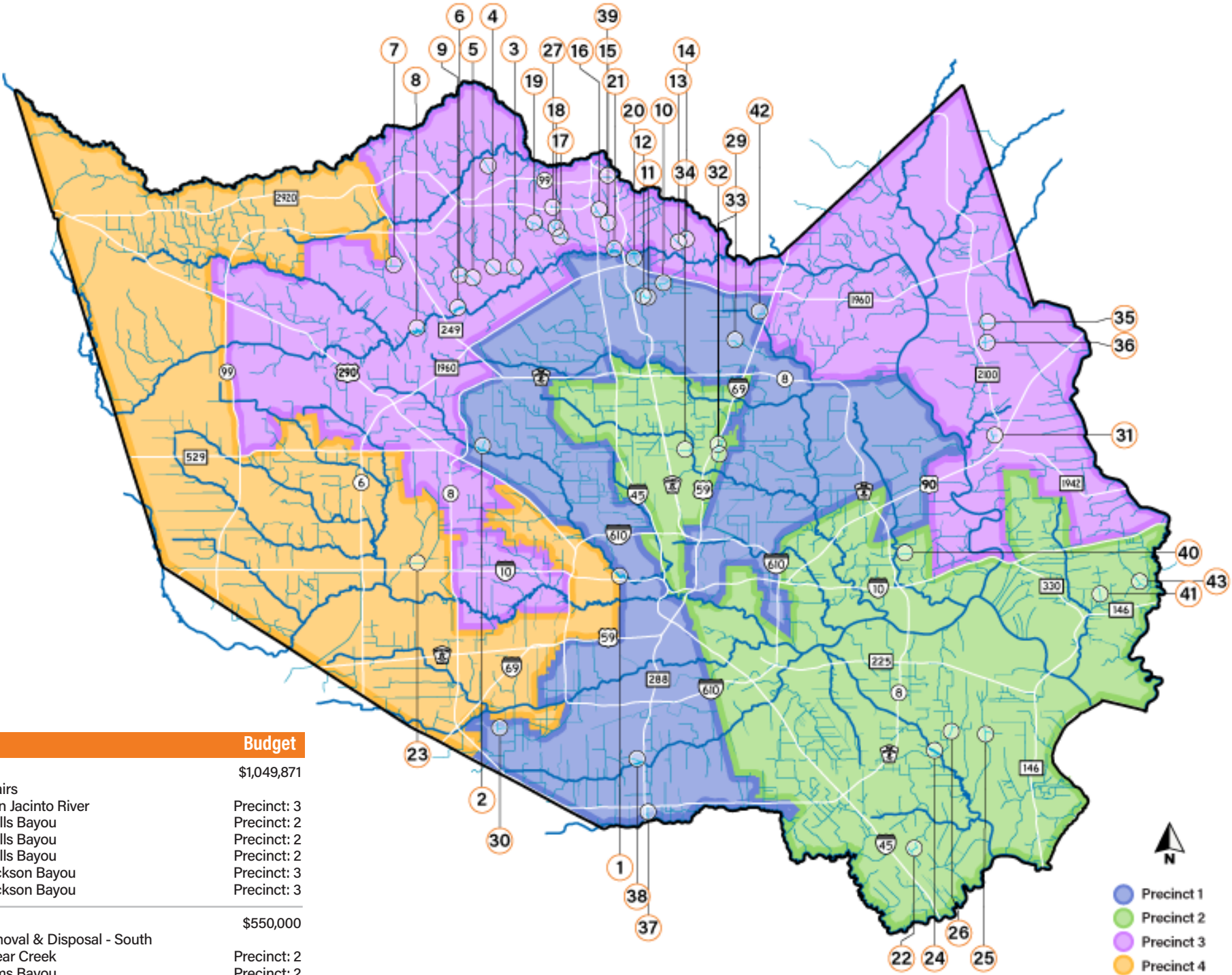


Maintenance Projects

Total Budget: \$78,842,850
Active Construction Projects - July 2022

Project		Budget
1	E100-00-00-X164 White Oak Bayou 2022 White Oak Bayou Repairs	\$1,390,374 Precincts: 1, 2, 4
2	E125-00-00-X007 White Oak Bayou Channel Improvements & Repair	\$3,494,955 Precinct: 1
K100-00-00-X084 Major Maintenance of Cypress Creek Tributaries		\$13,430,031
3	K131-00-00-X029 Cypress Creek	Precinct: 3
4	K131-02-00-X027 Cypress Creek	Precinct: 3
5	K133-00-00-X034 Cypress Creek	Precinct: 3
6	K133-03-00-X007 Cypress Creek	Precinct: 3
K100-00-00-X085 Major Maintenance of Cypress Creek Tributaries		\$3,299,607
7	K142-07-00-X013 Cypress Creek	Precinct: 3
8	K164-00-00-X003 Cypress Creek	Precinct: 3
K100-00-00-X087 Major Maintenance of Cypress Creek Tributaries		\$13,791,893
9	K100-00-00-X092 Cypress Creek	Precinct: 3
10	K111-00-00-X034 Cypress Creek	Precinct: 1
11	K111-02-00-X006 Cypress Creek	Precinct: 1
12	K111-02-01-X003 Cypress Creek	Precinct: 1
13	K112-00-00-X006 Cypress Creek	Precinct: 3
14	K112-01-00-X008 Cypress Creek	Precinct: 3
15	K120-00-00-X026 Cypress Creek	Precinct: 3
16	K120-03-00-X008 Cypress Creek	Precinct: 3
17	K124-00-00-X048 Cypress Creek	Precinct: 3
18	K124-02-00-X020 Cypress Creek	Precinct: 3
19	K124-06-00-X003 Cypress Creek	Precinct: 3
20	K117-00-00-X003 Cypress Creek Reinforced Concrete Spillway and Stilling Basin	\$1,197,520 Precinct: 1
Z100-00-00-X280 General Drainage System Repairs - North		\$16,396,126
21	K100-00-00-X097 Cypress Creek	Precinct: 3
Z100-00-00-X281 General Drainage System Repairs - South		\$16,569,166
22	B104-03-02.1-X008 Armand Bayou	Precinct: 2
23	W167-04-00-X005 Buffalo Bayou	Precinct: 4
Z100-00-00-X304 Drainage System Repairs - Southeast Area		\$1,392,750
24	B100-00-00-X011 Armand Bayou	Precinct: 2
25	B106-00-00-X011 Armand Bayou	Precinct: 2
26	B112-00-00-X010 Armand Bayou	Precinct: 2
Z100-00-00-X312 Drainage Sediment Removal & Disposal - North		\$995,000
27	K124-02-03-X002 Cypress Creek	Precinct: 3
28	M108-00-00-X003 Willow Creek	Precinct: 3
29	P130-05-00-X012 Greens Bayou	Precinct: 1
Z100-00-00-X314 On-Call Sediment Removal County Wide		\$400,000
30	D140-01-01-X001 Brays Bayou	Precinct: 1

Project		Budget
Z100-00-00-X316 Drainage System Repairs		\$1,049,871
31	G103-09-00-X001 San Jacinto River	Precinct: 3
32	P118-14-00-X001 Halls Bayou	Precinct: 2
33	P118-14-02-X001 Halls Bayou	Precinct: 2
34	P118-20-00-X003 Halls Bayou	Precinct: 2
35	R102-00-00-X005 Jackson Bayou	Precinct: 3
36	R102-10-01-X001 Jackson Bayou	Precinct: 3
Z100-00-00-X319 On-Call Sediment Removal & Disposal - South		\$550,000
37	A139-00-00-X002 Clear Creek	Precinct: 2
38	C135-00-00-X001 Sims Bayou	Precinct: 2
Z100-00-00-X324 General Drainage System Repairs - North		\$4,885,557
39	J114-00-00-X008 Spring Creek	Precinct: 3
40	N118-00-00-X009 Carpenters Bayou	Precinct: 2
41	O105-00-00-X013 Spring Gully & Goose Creek	Precinct: 2
42	P130-09-00-X009 Greens Bayou	Precinct: 1
43	Q112-00-00-X016 Cedar Bayou	Precinct: 2



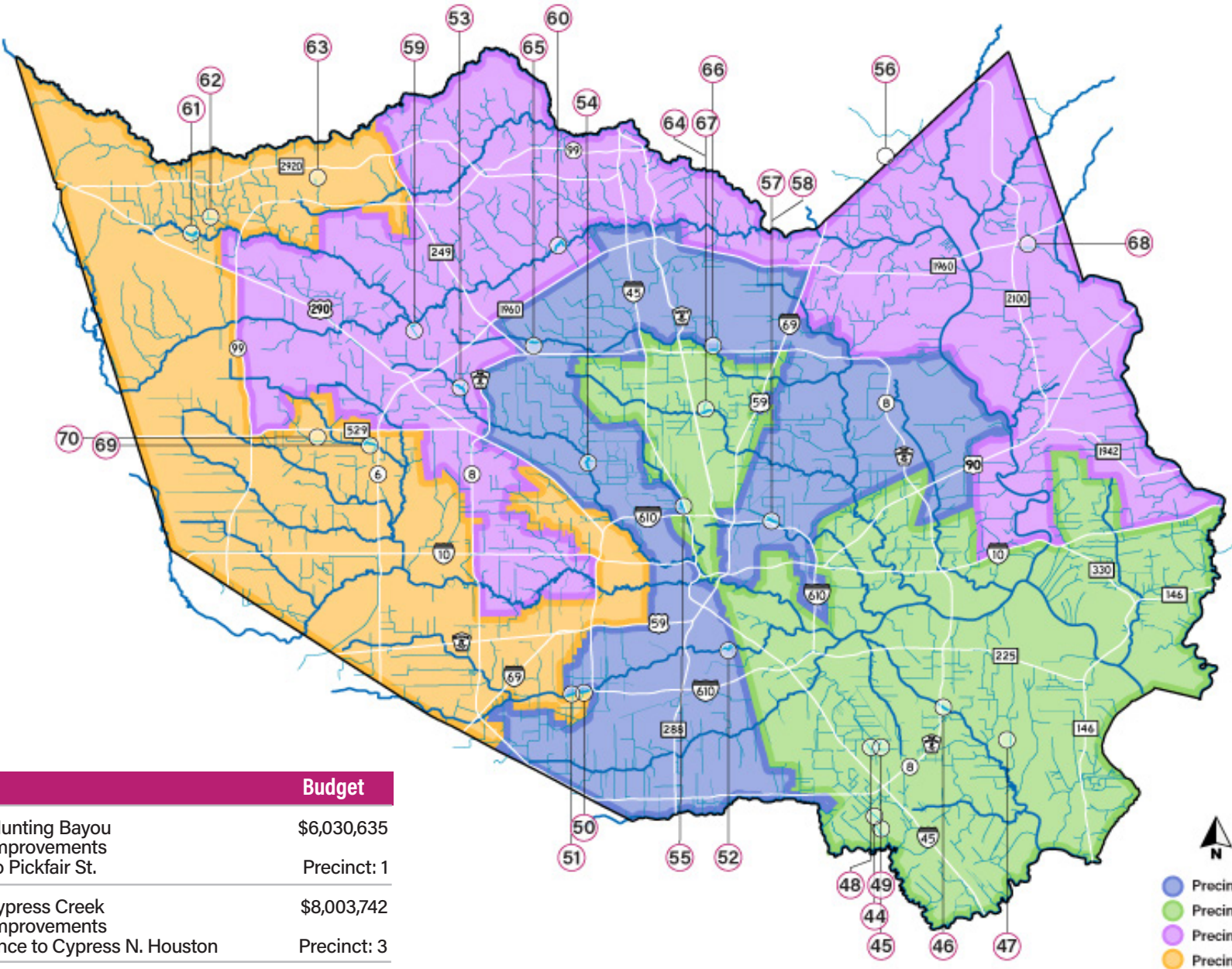


Capital Projects

Total Budget: \$231,910,827

Active Construction Projects - July 2022

Project	Budget
44 A120-00-00-C003 Clear Creek Mud Gully Channel Conveyance Improvements From Basin A520-03-00 to Sagerock Dr.	\$5,755,382 Precinct: 2
45 A520-03-00-E003 Clear Creek Construction of South Belt Stormwater Det. Basin - Phase III West of FM 1950 & Beamer Rd. Intersection	\$16,988,090 Precinct: 2
46 B100-00-00-E002 Armand Bayou Widening & Deepening of Armand Bayou Beltway 8 to Spencer Hwy	\$5,049,826 Precinct: 2
47 B509-03-00-E002 Armand Bayou Excavation of Genoa-Red Bluff Stormwater Detention Basin - Phase I Southeast of Genoa-Red Bluff Rd. & Fairmont Pkwy	\$2,111,794 Precinct: 2
48 C506-01-00-E004 Sims Bayou South Shaver Stormwater Detention Basin West of S. Shaver St. & Galveston Rd. intersection	\$9,732,379 Precinct: 2
49 C506-02-00-E005 Sims Bayou South Shaver Stormwater Detention Basin East of S. Shaver St. & Galveston Rd. intersection	\$4,822,417 Precinct: 2
D100-00-00-B030 Brays Bayou Federal Flood Control Project Multi-Site Project	\$20,965,112
50 D100-00-00-B030 Brays Bayou South Rice Blvd. Bridge	Precinct: 1, 4
51 D100-00-00-B031 Brays Bayou Chimney Rock Bridge	Precinct: 1, 4
D100-00-00-B047 Brays Bayou Federal Flood Control Project Multi-Site Project	\$49,975,582
52 D100-00-00-B011 Brays Bayou Calhoun Bridge	Precinct: 1
53 E100-00-00-E005 White Oak Bayou Phase 4 Channel Conveyance Improvements E. of IH-45 at Shawnee to S. of Edgebrook	\$21,371,486 Precinct: 1, 3
54 E100-00-00-E006 White Oak Bayou White Oak Bayou Federal Flood Risk Reduction Project Channel Modifications - Discrete Segment 106 Cole Creek to Hollister Rd.	\$13,160,439 Precinct: 1
55 E501-02-00-E001 White Oak Bayou Riggs Stormwater Detention Basin - Design Phase Southwest of Riggs Rd. & IH-45	\$1,479,625 Precinct: 1
56 G503-06-00-E002 San Jacinto River Excavation & Removal Agreement Woodridge Stormwater Detention Basin	\$1,000 Precinct: 3
57 H100-00-00-E005 Hunting Bayou Hunting Bayou Federal Flood Risk Management Project Hunting Bayou from US-59 to Homestead Det. Pond	\$16,338,008 Precinct: 1



Project	Budget
58 H100-00-00-E006 Hunting Bayou Channel Conveyance Improvements UPRR Yard Upstream to Pickfair St.	\$6,030,635 Precinct: 1
59 K163-00-00-E002 Cypress Creek Channel Conveyance Improvements Cypress Creek Confluence to Cypress N. Houston	\$8,003,742 Precinct: 3
60 K500-23-00-E001 Cypress Creek E&R Agreement: TC Jester Detention Basin East of T.C. Jester Blvd. & South of Cypresswood Dr.	\$1,225 Precinct: 3
61 L500-01-00-E003 Little Cypress Creek Zube Stormwater Detention Basin & Conveyance Improvements - Phase III	\$10,960,373 Precinct: 4
62 L514-01-00-E002 Little Cypress Creek E&R Agreement: Bauer-Hockley Stormwater Det. Basin Bauer-Hockley Rd. East of Becker Rd.	\$1,000 Precinct: 4
63 M528-01-00-E001 Willow Creek E&R Agreement: Cypress Rosehill Stormwater Detention Basin Cypress Rosehill Rd. South of Seidel Cemetary Rd.	\$1,000 Precinct: 4
64 P118-21-00-E001 Halls Bayou Open Channel & Concrete Box Improvements Lauder Rd. & JFK Boulevard	\$4,772,320 Precinct: 2
65 P500-02-00-E013 Greens Bayou Cuten Stormwater Detention Basin Improvements North of Beltway 8 and East of SH-249	\$14,250,194 Precinct: 1

Project	Budget
66 P500-04-00-E005 Greens Bayou Aldine Westfield Stormwater Detention Basin - Phase I Lauder Road and JFK Boulevard	\$11,420,726 Precinct: 2
67 P518-11-00-E001 Halls Bayou Excavation of P518-11-00 Detention Basin Along Halls Bayou, West of Aldine-Westfield Rd., East of US -59 South of Aldine Mail Rd.	\$8,715,472 Precinct: 2
68 Q534-01-00-E001 Cedar Bayou E & R Agreement: Stormwater Detention Basin Intersection of FM 1960 and FM 2100	\$1,000 Precinct: 3
69 U500-01-00-E003 Addicks Reservoir E&R Agreement: W. Little York Stormwater Detention Basin West Little York and Langham Creek	\$1,000 Precinct: 4
70 U520-01-00-E002 Addicks Reservoir E&R Agreement: Dinner Creek Stormwater Det. Basin FM-527 and Greenhouse Rd.	\$1,000 Precinct: 4