

2023 REGIONAL FLOOD PLAN

REGION 6

SAN JACINTO

January 2023

**PREPARED FOR THE SAN JACINTO
REGIONAL FLOOD PLANNING GROUP**

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000002	Durant Street Storm Sewer and Pavement Improvements - Phase 2	Further study of Durant Street Phase 2 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000003	City of Arcola Regional Drainage Improvements	Further study of proposed flood risk reduction project that includes various drainage improvement alternatives.	06000015	Fort Bend	12040204	120402040400	06000109	Project Planning
061000004	City of Stafford Drainage Improvements	Further study of proposed flood risk reduction project that includes drainage improvements to the Stafford Oaks neighborhood.	06000015	Fort Bend	-	-	-	Project Planning
061000005	Missouri City Estates Drainage Improvements	Further study of proposed flood risk reduction project that includes drainage improvements to Missouri City Estates.	06000015	Fort Bend, Harris	12040104	120401040401	06000083	Project Planning
061000011	City of Galveston Master Drainage Study	City wide drainage and flood risk reduction planning study of Galveston to include Atlas 14 rainfall.	06000010	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Watershed Planning
061000013	City of Bellaire Local Drainage System Asset Management	Study to develop asset management plan / capital improvement plan to repair/replace local drainage infrastructure over time to ensure it is in good working order and meeting the level of service desired by the City.	06000015	Harris	12040104	120401040402, 120401040401	06000084, 06000083	Project Planning
061000014	City of Bellaire Regional Detention Facilities Development	Effort to identify and develop/design regional detention facilities to either provide flood risk reduction or to facilitate the construction of local or regional drainage improvement projects.	06000001, 06000011, 06000012, 06000015	Harris	12040104	120401040402, 120401040401	06000084, 06000083	Project Planning
061000015	City of Bellaire Cypress Ditch Drainage Improvements	Perform engineering services to develop and advance a flood risk reduction project in the Cypress Ditch area, servicing the southern part of the City of Bellaire.	06000001, 06000011, 06000012, 06000015	Harris	12040104	120401040402, 120401040401	06000084, 06000083	Project Planning
061000016	City of Bunker Hill Drainage Projects	Further study of proposed localized and regional flood risk reduction projects within the City of Bunker Hill.	06000001, 06000011, 06000012, 06000015	Harris	12040104	120401040303	06000080	Project Planning

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000002	Durant Street Storm Sewer and Pavement Improvements - Phase 2	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 90,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000003	City of Arcola Regional Drainage Improvements	2.60	Urban/Local	City of Arcola	Fort Bend, Arcola	No	\$ 233,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000004	City of Stafford Drainage Improvements	0.48	Urban/Local	City of Stafford	Fort Bend, Stafford	No	\$ 300,000.00	No	Not within the San Jacinto Region.
061000005	Missouri City Estates Drainage Improvements	0.11	Urban/Local	City of Stafford	Fort Bend, Harris, Stafford	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000011	City of Galveston Master Drainage Study	211.08	Coastal, Urban/Local	City of Galveston	Galveston, City of Galveston	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000013	City of Bellaire Local Drainage System Asset Management	3.58	Urban/Local	City of Bellaire	Harris, Harris County Flood Control District, Bellaire	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000014	City of Bellaire Regional Detention Facilities Development	3.58	Urban/Local	City of Bellaire	Harris, Harris County Flood Control, City of Bellaire	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000015	City of Bellaire Cypress Ditch Drainage Improvements	3.58	Urban/Local	City of Bellaire	Harris, Harris County Flood Control, City of Bellaire	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000016	City of Bunker Hill Drainage Projects	1.44	Urban/Local	City of Bunker Hill Village	Harris, Harris County Flood Control, City of Bunker Hill Village	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000017	City of Bunker Hill Master Drainage and Stormwater Management Plan	Further study of Master Drainage and Stormwater Management Plan for the City of Bunker Hill to include Atlas 14 rainfall.	06000001, 06000010, 06000015	Harris	12040104	120401040303	06000080	Watershed Planning
061000022	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Dickinson Bayou Alternative 2	Further refine the DB Alt. 2 in the LCCDBFMP (2021), including alternative analysis to McFarland Detention Basin, W Cemetery Rd. Detention Basin, Hilton Detention Basin, Magnolia Bayou & Borden Gully Detention Basins, and Diversion Channel at Desel Dr.	06000015	Brazoria, Galveston, Harris	12040204	120402040100	06000106	Project Planning
061000024	Williamsburg Subdivision Drainage Assessment	Further study of a flood risk reduction project in the Williamsburg Subdivision which includes additional detail for the design of a required weir structure.	06000001, 06000015	Harris	12040104	120401040104	06000074	Project Planning
061000025	Preliminary Drainage & Infrastructure Improvements Happy Hide A Way Subdivision	Additional analysis in the Jackson Bayou watershed, specifically along R102-00-00, is needed to determine the necessary improvements and provide a no impact solution.	06000001, 06000003, 06000004, 06000015	Harris	12040104	120401040704	06000096	Project Planning
061000026	Bridgewater Village & Enclave at Bridgewater Drainage Analysis	Alternative analysis and assessment of additional protection of basin needed during design to control flows for 100-yr event.	06000001, 06000003, 06000004	Harris	12040104	120401040203	06000077	Project Planning
061000027	Lake Shadows Subdivision Drainage Improvements	Further study and development of a FMP of recommended alternative 5 which includes installing the Foley trunk line downstream of the pipelines, upsizing and installing new outfalls, and installing the Belle Cote trunk line.	06000001, 06000015	Harris	12040101, 12040104	120401010502, 120401040704	06000025, 06000096	Project Planning
061000028	Gum Gully Rd, W Stroker Rd, Wigwam Ln, and Related Infrastructure Drainage Improvements	Further study as report recommendation (2019) indicates that regional drainage improvements to the streams must be studied and implemented before Harris County can obtain a benefit from roadway drainage improvements.	06000001, 06000003, 06000004, 06000015	Harris	12040104	120401040704	06000096	Project Planning

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000017	City of Bunker Hill Master Drainage and Stormwater Management Plan	1.44	Urban/Local	City of Bunker Hill Village	Harris, Harris County Flood Control, City of Bunker Hill Village	No	\$ 170,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000022	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Dickinson Bayou Alternative 2	261.60	Riverine, Coastal, Urban/Local	City of League City	Galveston, Harris, Harris County Flood Control District,	No	\$ 1,090,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000024	Williamsburg Subdivision Drainage Assessment	12.76	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District, Katy, Houston	No	\$ 1,260,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000025	Preliminary Drainage & Infrastructure Improvements Happy Hide A Way Subdivision	0.26	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000026	Bridgewater Village & Enclave at Bridgewater Drainage Analysis	0.17	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 750,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000027	Lake Shadows Subdivision Drainage Improvements	1.44	Urban/Local	Harris County	Harris, Harris County Flood Control District	No	\$ 280,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000028	Gum Gully Rd, W Stroker Rd, Wigwam Ln, and Related Infrastructure Drainage Improvements	0.50	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District	No	\$ 130,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000029	Spanish Cove Subdivision Drainage Assessment	Additional analysis needed to confirm no negative effects. It is expected the larger channel can safely convey the increase in flows, but this must be demonstrated during the project design phase.	06000001, 06000003, 06000004, 06000015	Harris	12040101, 12040104	120401010502, 120401040704	06000025, 06000096	Project Planning
061000031	Shoreacres Drainage Assessment	Further analysis necessary to determine downstream impacts and whether any additional volume in A104-11-00 would be available during a coincident event on Taylor Bayou.	06000001, 06000013, 06000014, 06000015	Chambers, Harris	12040204	120402040100	06000106	Project Planning
061000032	Willow Creek - Overflow Flooding between Burlington Northern Railroad and Hufsmith-Kohrville Rd. Analysis	Study recommended as part of the Willow Creek Watershed Plan. Planning level analysis to identify flooding reasons in Northern Point subdivision south of SH99.	06000001, 06000003, 06000004, 06000015	Harris	12040102	120401020106, 120401020105, 120401020205, 120401020210, 120401020209, 120401020212	06000031, 06000030, 06000037, 06000042, 06000041, 06000044	Project Planning
061000034	Galveston Bay Watershed Plan- Analysis of PA07 100-year Conveyance Project	Project recommended by the Galveston Bay Watershed Plan. Modeling required to determine no negative Proposed subdivision drainage improvements to the Battle Ground Estates include replacement of driveway crossings and widening F101-08.	06000001, 06000005, 06000006, 06000015	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Project Planning
061000035	Galveston Bay Watershed Plan- Analysis of PA08 100-year Conveyance Project	Project recommended by the Galveston Bay Watershed Plan. Modeling required to determine no negative impacts. Storm sewer improvements to Monument Estates, increase roadside ditch capacity, and expand bypass channel outflowing into F101-00-00.	06000001, 06000005, 06000006, 06000015	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Project Planning
061000037	City of Alvin Flood Gauges	Study to identify areas where best to purchase additional flood gauges to be placed at bayous and key high water areas within City of Alvin.	06000001, 06000010	Brazoria, Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000038	Brazoria County Costal River Flood Extent Analysis	Study to determine flood extents, in Brazoria County, of recent hurricane disasters, by analyzing the post event aerial imagery through a GIS image classification process, and compare the flood extent area to other sources, such as LIDAR.	06000001, 06000010, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000029	Spanish Cove Subdivision Drainage Assessment	0.79	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District	No	\$ 150,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000031	Shoreacres Drainage Assessment	0.96	Riverine, Urban/Local	City of Shoreacres	Harris, Harris County Flood Control District, Shoreacres	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000032	Willow Creek - Overflow Flooding between Burlington Northern Railroad and Hufsmith-Kohrville Rd. Analysis	55.37	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Tomball	No	\$ 590,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000034	Galveston Bay Watershed Plan- Analysis of PA07 100-year Conveyance Project	19.29	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, La Porte	No	\$ 400,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000035	Galveston Bay Watershed Plan- Analysis of PA08 100-year Conveyance Project	19.29	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, La Porte	No	\$ 800,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000037	City of Alvin Flood Gauges	25.09	Urban/Local	City of Alvin	Brazos River Authority, West Brazoria County Drainage District, Alvin	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000038	Brazoria County Costal River Flood Extent Analysis	1481.87	Riverine	Brazoria County	Brazoria, Brazos River Authority, West Brazoria County Drainage District, Gulf Coast Protection District	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000039	City of Alvin Master Drainage Plan	Comprehensive review of current drainage, studies and recommendations for future projects and studies to create a Master Drainage Plan for the City of Alvin.	06000010	Brazoria, Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning
061000040	City of Alvin Open Space Preservation	Study for open space preservation within adjacent development, dedication of conservation easements or fee simple acquisition of land along Mustang Bayou.	06000001, 06000013, 06000014, 06000015	Brazoria, Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning
061000041	City of Manvel SH. 6 Drainage Improvements	Further study of state Highway 6 drainage improvements, including storm sewer upgrades to meet current capacities, ditch deepening, and sub regional detention ponds. Project will also widen and reshape ditches, and upgrade culverts.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Project Planning
061000042	Chambers County Dam and Levee Failure Inundation Map Update	Further study for all participating jurisdictions to update dam and levee failure inundation maps, and update floodplain and floodway maps throughout the county. The updated maps will also be made available to the public.	06000001, 06000010, 06000015	Chambers	12040203	120402030105, 120402030104, 120402030106, 120402030200	06000103, 06000102, 06000104, 06000105	Watershed Planning
061000043	City of Alvin Detention Pond Construction - Mustang and Dickinson Bayou	Further assessment and design of detention ponds needed along Mustang and Dickinson Bayous to reduce flood risk in the City of Alvin.	06000001, 06000003, 06000004, 06000015	Brazoria, Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000044	Chambers County Property Protection	Stud to determine flood risk reduction potential of clearing obstacles, widen and reshape ditches, and upgrade culverts to restore adequate drainage to mitigate flooding throughout all participating jurisdictions.	06000001, 06000011, 06000012, 06000015	Chambers	12040203	120402030105, 120402030104, 120402030106, 120402030200	06000103, 06000102, 06000104, 06000105	Project Planning
061000045	City of Manvel Flora St. Drainage Improvements	Study of possible Flora Street drainage improvements: widen and reshape ditches, and upgrade culverts to restore adequate drainage to mitigate flooding in Manvel neighborhoods.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Project Planning

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000039	City of Alvin Master Drainage Plan	25.09	Urban/Local	City of Alvin	Brazoria, West Brazoria County Drainage District, Alvin	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000040	City of Alvin Open Space Preservation	25.09	Riverine, Urban/Local	City of Alvin	Brazoria, West Brazoria County Drainage District, Alvin	No	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000041	City of Manvel SH. 6 Drainage Improvements	27.41	Urban/Local	City of Manvel	Brazoria, West Brazoria County Drainage District, Manvel	No	\$ 3,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000042	Chambers County Dam and Levee Failure Inundation Map Update	865.55	Urban/Local	Chambers County	Chambers, Gulf Coast Protection District, Liberty County Water Control District 1	No	\$ 25,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000043	City of Alvin Detention Pond Construction - Mustang and Dickinson Bayou	25.09	Riverine	City of Alvin	Brazoria, West Brazoria County Drainage District, Alvin	No	\$ 200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000044	Chambers County Property Protection	865.55	Urban/Local	Chambers County	Chambers, Trinity River Authority of Texas, Liberty County Water Control District 1	No	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000045	City of Manvel Flora St. Drainage Improvements	27.41	Urban/Local	City of Manvel	Brazoria, West Brazoria County Drainage District, Manvel	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000046	Brazoria County Drainage Improvements	Drainage study needed and evaluated of alternatives include: Widen and reshape drainage ditches, and upgrade culverts to restore adequate drainage to mitigate flooding.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000047	City of Manvel Various Drainage Improvements	Study of various drainage improvements, including storm sewer rehabilitation and ditch deepening.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Project Planning
061000048	Brazoria County Property Protection	Further study required to assess alternatives to restore drainage and mitigate flooding throughout the county.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000049	City of Hillcrest Village Drainage Improvements	Further study and FMP development required to assess alternatives to restore drainage and mitigate flooding throughout the City of Hillcrest Village.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000050	West Chocolate Bayou (CR 383 Ditch)	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000051	West Fork Chocolate (Cold River Ranch Ditch)	Further study of proposed channel modifications to Cold River Ranch Ditch included in the City of Pearland master drainage plan to include Atlas 14 rainfall.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000052	West Fork Chocolate Bayou	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040400	06000109	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000046	Brazoria County Drainage Improvements	1481.87	Urban/Local	Brazoria County	Brazoria,, West Brazoria County Drainage District, Pearland, Manvel, Iowa Colony, Alvin, Brookside Village, Hillcrest, Liverpool, Hitchcock	No	\$ 350,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000047	City of Manvel Various Drainage Improvements	27.41	Urban/Local	City of Manvel	Brazoria, West Brazoria County Drainage District, Manvel	No	\$ 460,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000048	Brazoria County Property Protection	1481.87	Urban/Local	Brazoria County	Brazoria, West Brazoria County Drainage District, Gulf Coast Protection District	No	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000049	City of Hillcrest Village Drainage Improvements	0.44	Urban/Local	City of Hillcrest Village	Brazoria, West Brazoria County Drainage District, Hillcrest	No	\$ 130,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000050	West Chocolate Bayou (CR 383 Ditch)	3.37	Riverine	Brazoria Drainage District #4	Brazoria, Fort Bend, West Brazoria County Drainage District, Arcola, Iowa Colony	No	\$ 252,400.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000051	West Fork Chocolate (Cold River Ranch Ditch)	1.61	Riverine	Brazoria Drainage District #4	Brazoria, West Brazoria County Drainage District, Manvel, Iowa Colony	No	\$ 200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000052	West Fork Chocolate Bayou	13.89	Riverine	Brazoria Drainage District #4	Brazoria, Fort Bend, West Brazoria County Drainage District, Arcola, Manvel, Iowa Colony	No	\$ 2,072,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000053	East Chocolate Bayou (E103-00-00)	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000054	Cannon Ditch Segment 2	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000055	City of Galveston Coastal Road Elevation	Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	06000001, 06000003, 06000004	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Project Planning
061000056	Mary's Creek Lower Segment	Study to develop project into a FMP. Project will provide a 25-year LOS; Channel modifications from SH35 to downstream of Pearland Pkwy. and 1670 ac-ft mitigation.	06000001, 06000003, 06000004, 06000015	Brazoria, Galveston	12040204	120402040100	06000106	Project Planning
061000057	Hickory Slough (Upper Segment)	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040100	06000106	Project Planning
061000059	City of Manvel Gates Loop Subdivision Drainage Improvement	Further study proposed Gates Loop subdivision drainage improvement.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000060	Hickory Slough Middle Segment	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040100	06000106	Project Planning
061000061	Mary's Creek Upper Segment	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040100	06000106	Project Planning
061000063	Mary's Creek Middle Segment	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040100	06000106	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000053	East Chocolate Bayou (E103-00-00)	0.49	Riverine	Brazoria Drainage District #4	Brazoria, West Brazoria County Drainage District, Iowa Colony	No	\$ 48,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000054	Cannon Ditch Segment 2	5.71	Riverine	Brazoria Drainage District #4	Brazoria, West Brazoria County Drainage District, Pearland, Manvel	No	\$ 932,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000055	City of Galveston Coastal Road Elevation	211.08	Coastal	City of Galveston	Galveston, City of Galveston	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000056	Mary's Creek Lower Segment	1.15	Riverine	City of Pearland	Brazoria, Galveston, West Brazoria County Drainage District, Pearland, Friendswood	No	\$ 2,436,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000057	Hickory Slough (Upper Segment)	4.75	Riverine	City of Pearland	Brazoria, West Brazoria County Drainage District, Pearland	No	\$ 1,136,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000059	City of Manvel Gates Loop Subdivision Drainage Improvement	0.05	Urban/Local	City of Manvel	Brazoria, West Brazoria County Drainage District, Manvel	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000060	Hickory Slough Middle Segment	1.83	Riverine	City of Pearland	Brazoria, West Brazoria County Drainage District, Pearland, Brookside Village	No	\$ 864,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000061	Mary's Creek Upper Segment	5.20	Riverine	City of Pearland	Brazoria, West Brazoria County Drainage District, Pearland	No	\$ 460,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000063	Mary's Creek Middle Segment	4.23	Riverine	City of Pearland	Brazoria, West Brazoria County Drainage District, Pearland	No	\$ 628,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000064	Mustang Bayou Middle Segment	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria, Fort Bend	12040204	120402040400	06000109	Project Planning
061000065	Hickory Slough Lower Segment	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040100	06000106	Project Planning
061000066	Mustang Bayou Upper Segment	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Fort Bend	12040204	120402040400, 120402040100	06000109, 06000106	Project Planning
061000067	City of Alvin Dickinson Bayou Watershed Study	Study of Dickinson Bayou Watershed to determine drainage improvement alternatives.	06000001, 06000010	Brazoria, Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning
061000069	City of Galveston Shoreline Protection	Further study and FMP development of a proposed shoreline protection for areas prone to coastal erosion.	06000001	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Project Planning
061000070	Cowart Creek Segment 16	Further study including Atlas 14 rainfall incorporation and Benefit Cost Analysis of proposed channel modifications included in the City of Pearland master drainage plan.	06000001, 06000003, 06000004, 06000015	Brazoria	12040204	120402040100	06000106	Project Planning
061000071	City of Galveston Dune Restoration	Study of dune system to determine needs and flood damage reduction potential of restoration.	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Project Planning
061000072	City of Hillcrest Village Engineering Survey	Conduct an engineering assessment to establish proper drainage for 24 homes located in the high risk flood Zone.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000076	Dredging Cedar Bayou	Study of proposed Cedar Bayou dredging to determine flood risk reduction potential.	06000001, 06000015	Harris, Chambers	12040203	120402030105, 120402030104, 120402030106, 120402030200	06000103, 06000102, 06000104, 06000105	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000064	Mustang Bayou Middle Segment	5.35	Riverine	Brazoria Drainage District #4	Brazoria, Fort Bend, West Brazoria County Drainage District, Pearland, Manvel	No	\$ 1,212,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000065	Hickory Slough Lower Segment	1.01	Riverine	City of Pearland	Brazoria, West Brazoria County Drainage District, Pearland	No	\$ 1,048,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000066	Mustang Bayou Upper Segment	7.07	Riverine	Brazoria Drainage District #4	Fort Bend, Missouri City, Houston	No	\$ 2,040,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000067	City of Alvin Dickinson Bayou Watershed Study	25.09	Riverine	City of Alvin	Brazoria, West Brazoria County Drainage District, Alvin	No	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000069	City of Galveston Shoreline Protection	211.08	Coastal	City of Galveston	Galveston, City of Galveston	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000070	Cowart Creek Segment 16	2.18	Riverine	City of Pearland	Brazoria, West Brazoria County Drainage District, Pearland	No	\$ 40,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000071	City of Galveston Dune Restoration	211.08	Coastal, Urban/Local	City of Galveston	Galveston, City of Galveston	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000072	City of Hillcrest Village Engineering Survey	0.44	Urban/Local	City of Hillcrest Village	Brazoria, West Brazoria County Drainage District, Hillcrest	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000076	Dredging Cedar Bayou	44.23	Riverine	Chambers County	Chambers, Baytown, Mont Belvieu, Southeast Texas Flood Control District, Liberty County Water Control District 1	No	\$ 7,070,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000078	Dam and Levee Failure Inundation Map Update	Study by each jurisdiction to update their dam and levee failure inundation maps to identify the probability and impact of a dam and levee failures	06000001, 06000010, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning
061000080	Replace the Tiki Drive bridge with improved, hardened bridge to withstand storm surge and debris.	Further study of proposed Tiki Drive bridge modifications	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000082	Stream and River Flood Program	Conduct a flood mitigation outreach program using information from the river and stream flood study to increase awareness of specific riverine flooding problems and provide guidance on mitigation in affected communities.	06000001, 06000007, 06000010, 06000015	Waller	12040102, 12040104	120401020102, 120401020103, 120401020204, 120401020101, 120401020201, 120401020202, 120401020203, 120401020205, 120401020207, 120401020206, 120401040102, 120401040103, 120401040101, 120401040203	06000027, 06000028, 06000036, 06000026, 06000033, 06000034, 06000035, 06000037, 06000039, 06000038, 06000072, 06000073, 06000071, 06000077	Preparedness
061000083	Liberty County Drainage Projects	Further study of proposed drainage projects throughout the county- including adding ditches, detention ponds and detention basins in identified locations throughout the county in order to improve drainage.	06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Project Planning
061000084	City of Bayou Vista Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000001, 06000015	Galveston	12040204	120402040200	06000107	Watershed Planning
061000085	Cane Island Branch- Alt 2	Further study and FMP development of proposed channel modifications to Cane Island Branch including Atlas 14 rainfall.	06000001, 06000015	Waller, Harris, Fort Bend	12040104	120401040102, 120401040103, 120401040104, 120401040101, 120401040203	06000072, 06000073, 06000074, 06000071, 06000077	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000078	Dam and Levee Failure Inundation Map Update	1481.87	Urban/Local	Brazoria County	Brazoria, West Brazoria County Drainage District, Gulf Coast Protection District	No	\$ 2,200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000080	Replace the Tiki Drive bridge with improved, hardened bridge to withstand storm surge and debris.	1.59	Urban/Local	City of Tiki Island	Galveston, Tiki Island	No	\$ 220,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000082	Stream and River Flood Program	515.95	Riverine, Urban/Local	Waller County	Waller, San Jacinto River Authority, Brazos River Authority, Katy, Waller, Houston, Prairie View, Gulf Coast Protection District	No	\$ 20,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000083	Liberty County Drainage Projects	1169.76	Urban/Local	Liberty County	Liberty, Cleveland, Dayton, North Cleveland, Plum Grove, Mont Belvieu, Southeast Texas Flood Control District, Liberty County Water Control District 1	No	\$ 2,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000084	City of Bayou Vista Master Drainage Plan	0.45	Urban/Local	City of Bayou Vista	Galveston, Bayou Vista	Yes	\$ 130,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000085	Cane Island Branch- Alt 2	14.52	Urban/Local	Waller County	Fort Bend, Harris, Waller, Harris County Flood Control District, Katy	No	\$ 3,270,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000086	Property Protection, Structural Project	Generate base flood elevation data for flood map revisions. Use floodplain study to identify future mitigation activities to improve water ways and flood carrying capacities. Area to include approximately 4 miles of floodway in New Waverly.	06000001, 06000015	Walker	12040103	120401030101	06000046	Watershed Planning
061000087	City of La Marque - East Side Storm water detention	Feasibility study and a drainage analysis of the new pond row acquisition and associated conveyance improvements on a part of 10 acres of land.	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000088	City of League City - Kansas Street Drainage	Further study and FMP development of proposed street drainage modifications to Kansas Street.	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000089	Update City of Friendswood Storm Surge Maps to Reflect the NWS Predictions	Study to update city storm surge maps based upon the NWS predicted storm surge and projected track for landfall. The new maps may more accurately display water depth in areas within the city.	06000001, 06000010, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Watershed Planning
061000090	City of Bayou Vista - Storm Sewer System Evaluation	Storm sewer system evaluation to determine reconstruction/upgrade needs to increase water flow	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000091	City of Friendswood - Comprehensive Flood Mitigation Plan	Study to update city floodplain maps and develop flood mitigation plan	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Watershed Planning
061000094	City of Santa Fe - Storm Water Detention & Widening Drainage System and Culverts Study	Study to plan for storm sewer detention and drainage system modifications.	06000001, 06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Project Planning
061000096	City of Friendswood - Devils Dip	Further study and design of modifications along Mary's creek bridge and channel	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000097	League City - Stormwater Drainage Improvement- Interurban & Newport ditch	Further study of proposed slope paving (concrete lining) improvements	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000086	Property Protection, Structural Project	2.21	Urban/Local	City of New Waverly	Walker, New Waverly	No	\$ 2,500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000087	City of La Marque - East Side Storm water detention	14.23	Urban/Local	City of La Marque	Galveston, La Marque	No	\$ 360,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000088	City of League City - Kansas Street Drainage	52.89	Urban/Local	City of League City	Galveston, Harris, League City	No	\$ 580,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000089	Update City of Friendswood Storm Surge Maps to Reflect the NWS Predictions	20.83	Coastal	City of Friendswood	Galveston, Harris, Harris County Flood Control District, Friendswood	No	\$ 140,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000090	City of Bayou Vista - Storm Sewer System Evaluation	0.45	Urban/Local	City of Bayou Vista	Galveston, Bayou Vista	No	\$ 130,000.00	No	Duplicate FME.
061000091	City of Friendswood - Comprehensive Flood Mitigation Plan	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District	No	\$ 140,000.00	No	Duplicate FME.
061000094	City of Santa Fe - Storm Water Detention & Widening Drainage System and Culverts Study	17.04	Urban/Local	City of Santa Fe	Galveston, Santa Fe	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000096	City of Friendswood - Devils Dip	20.83	Riverine	City of Friendswood	Galveston, Harris County Flood Control District, Friendswood	No	\$ 410,000.00	No	Project already funded and currently ongoing.
061000097	League City - Stormwater Drainage Improvement- Interurban & Newport ditch	52.89	Urban/Local	City of League City	Galveston, Harris, Harris County Flood Control District	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000098	Study of Texas City Hurricane Flood Protection Project	Corp of Engineers study of the Texas City Hurricane Flood Protection Project to improve the current levee system to provide protection from category 5 storm.	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000101	Fort Bend County - Big Creek Project	Further study of Big Creek channel improvements and wetland mitigation sites.	06000001, 06000011, 06000012, 06000015	Fort Bend	12040104, 12040204	120401040102, 120401040103, 120401040104, 120401040101, 120401040401, 120401040501, 120402040400, 120402040100	06000072, 06000073, 06000074, 06000071, 06000083, 06000085, 06000109, 06000106	Project Planning
061000102	Raise Road Surfaces in City of Plum Grove	Further evaluation of road surface elevation.	06000001, 06000011, 06000012, 06000015	Liberty	12040103	120401030402	06000070	Project Planning
061000103	Highland Terrace Drainage	Further study of slope paving a portion of the drainage ditch north of FM 518, with probable wetland mitigation and lowering pavement section of Highland Terrace Drive.	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000104	Sunmeadow Drainage Improvements Phase 2	Further study of component of 1993 master Drainage Plan Phase 1. Initial phase of project completed in 2005. Upsizing storm sewer system to reduce potential flooding. Include Atlas 14 rainfalls	06000001, 06000015	Liberty	12040103	120401030402	06000070	Project Planning
061000105	City of Friendswood - Tributary 2 Drainage/Outfall Improvements	Further study of component of 2004 TXDOT study to include Atlas 14 rainfalls	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000107	Storm water detention ponds & Widening of drainage systems feasibility study	Study of area to identify problem areas and recommend flood mitigation alternatives that considered detention ponds & widening drainage systems.	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000098	Study of Texas City Hurricane Flood Protection Project	664.95	Coastal, Urban/Local	Galveston County	Galveston, USACE	No	\$ 1,590,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000101	Fort Bend County - Big Creek Project	882.72	Riverine	Fort Bend County Drainage District	Fort Bend County	No	\$ 200,000.00	No	FME included in Region 8.
061000102	Raise Road Surfaces in City of Plum Grove	3.61	Urban/Local	City of Plum Grove	Liberty, Plum Grove, Southeast Texas Flood Control District	No	\$ 35,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000103	Highland Terrace Drainage	52.89	Urban/Local	City of League City	Galveston, Harris, Harris County Flood Control District, League City	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000104	Sunmeadow Drainage Improvements Phase 2	3.61	Urban/Local	City of Friendswood	Liberty, Plum Grove, Southeast Texas Flood Control District	No	\$ 160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000105	City of Friendswood - Tributary 2 Drainage/Outfall Improvements	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District	No	\$ 170,000.00	No	Project has been completed.
061000107	Storm water detention ponds & Widening of drainage systems feasibility study	664.95	Urban/Local	Galveston County	Galveston, Nassau Bay, Bayou Vista, Clear Lake Shores, Galveston, Jamaica Beach, Friendswood, Hitchcock, La Marque, League City, Santa Fe, Texas City, Kemah, Tiki Island, Dickinson, Seabrook	No	\$ 11,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000115	Stormwater Drainage Improvement- Nottingham ditch	Further study of proposed slope paving (concrete lining) improvements. Still in planning, consultant hired. Design complete and pending construction funding.	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000116	Remedy Data Deficiency in City of New Waverly	Conduct a proper risk assessment of the dams residents suspect are causing upstream flooding, and determine all potential inundation areas.	06000001, 06000015	Walker	12040103	120401030101	06000046	Watershed Planning
061000117	City of Bayou Vista - Drainage Improvement Program	Study to develop drainage improvement program to reduce standing water and runoff, and reduce minor flooding for residents located in District No. 12	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000118	Stormwater Drainage Improvement- Bradshaw Rd	Further study of proposed slope paving (concrete lining) improvements. Southwest from SH 3 to the north line of CCISD's Elem. School #25. Pending Funding	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000119	Shellside Drainage Improvements	Further study of proposed drainage improvements to Shellside.	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000120	Evaluation of Culvert Enlargement and Bridge Elevation in Grimes County	Study to identify flood-prone areas and mitigate the flooding problem by enlarging culverts under roads and bridges.	06000003, 06000004	Grimes	12040101, 12040102	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010304, 120401010305, 120401010306, 120401020202, 120401020203, 120401020207, 120401020206	06000001, 06000012, 06000013, 06000014, 06000003, 06000015, 06000016, 06000017, 06000034, 06000035, 06000039, 06000038	Project Planning
061000121	Widen Drainage Systems and Culverts in City of Kemah	Further study to widen drainage systems and increase culvert size to accommodate increased water flows. Coordinate efforts with water district	06000001, 06000015	Galveston	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000122	Widen Drainage Systems and Culverts in City of Clear Lake Shores	Further study to widen drainage systems and increase culvert size to accommodate increased water flows. Coordinate efforts with water district	06000001, 06000011, 06000012, 06000015	Galveston	12040204	120402040100	06000106	Project Planning
061000123	FM518 Drainage Improvements- Phase 2	Further study of component of 2007 Master Drainage Plan to include Atlas 14 rainfall	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000115	Stormwater Drainage Improvement- Nottingham ditch	52.89	Urban/Local	City of League City	Galveston, Harris, Harris County Flood Control District	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000116	Remedy Data Deficiency in City of New Waverly	2.21	Urban/Local	City of New Waverly	Walker, New Waverly	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000117	City of Bayou Vista - Drainage Improvement Program	0.45	Urban/Local	City of Bayou Vista	Galveston, Bayou Vista	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000118	Stormwater Drainage Improvement- Bradshaw Rd	52.89	Urban/Local	City of League City	Galveston, Harris, Harris County Flood Control District	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000119	Shellside Drainage Improvements	52.89	Urban/Local	City of League City	Galveston, Harris, Harris County Flood Control District	No	\$ 580,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000120	Evaluation of Culvert Enlargement and Bridge Elevation in Grimes County	798.87	Urban/Local	Grimes County	Grimes, Plantersville, Todd Mission	No	\$ 750,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000121	Widen Drainage Systems and Culverts in City of Kemah	1.91	Urban/Local	City of Kemah	Galveston, Chambers, Kemah	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000122	Widen Drainage Systems and Culverts in City of Clear Lake Shores	0.710432	Urban/Local	City of Clear Lake Shores	Galveston, Clear Lake Shores	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000123	FM518 Drainage Improvements- Phase 2	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District	No	\$ 410,000.00	No	Sponsor requested removal of project due to project completion.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000124	Replace Existing Culverts in City of Arcola	Evaluation of proposed culvert replacement.	06000003, 06000004, 06000015	Fort Bend	12040204	120402040400	06000109	Project Planning
061000125	Update Liberty County Floodplain Maps	Study by participating jurisdictions to update floodway maps throughout the county, including Atlas 14 rainfalls.	06000001, 06000010, 06000015	Liberty	12040103, 12040203	120401030108, 120401030109, 120401030201, 120401030202, 120401030203, 120401030204, 120401030205, 120401030401, 120401030402, 120402030101, 120402030102, 120402030103, 120402030104	06000053, 06000054, 06000056, 06000057, 06000058, 06000059, 06000060, 06000069, 06000070, 06000099, 06000100, 06000101, 06000102	Watershed Planning
061000129	Waller County Flood Damage Prevention Planning	Establish watershed-based planning and studies to address flood hazards with neighboring and constituent communities.	06000001, 06000015	Waller	12040102, 12040104	120401020102, 120401020103, 120401020204, 120401020101, 120401020201, 120401020202, 120401020203, 120401020205, 120401020207, 120401020206, 120401040102, 120401040103, 120401040101, 120401040203	06000027, 06000028, 06000036, 06000026, 06000033, 06000034, 06000035, 06000037, 06000039, 06000038, 06000072, 06000073, 06000071, 06000077	Watershed Planning
061000130	Hostetter and Gourd Creek Bridges Elevation Evaluation	Further study to elevate and install culverts on Hostetter and Gourd Creek roadways to prevent flooding and/or flood damage on roadway.	06000001, 06000015	Walker	12040101, 12040103	120401010202, 120401010204, 120401030101, 120401030301, 120401030302	06000006, 06000008, 06000046, 06000061, 06000062	Project Planning
061000131	Implementation Study of Storm Sewer System Re-engineering in City of Kemah	Study of storm sewer system re-engineering and follow-up construction project to mitigate flood related impacts.	06000001, 06000015	Galveston	12040204	120402040200, 120402040100	06000107, 06000106	Watershed Planning
061000134	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	Review findings of potential breach to dam/levee system and develop/implement mitigation actions as applicable.	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000135	Recanalization Feasibility Study	Dechannelize existing feeder creeks that flow from north to south and improve drainage for storm water runoff.	06000001, 06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000124	Replace Existing Culverts in City of Arcola	2.60	Urban/Local	City of Arcola	Fort Bend, Arcola	No	\$ 200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000125	Update Liberty County Floodplain Maps	1169.76	Riverine	Liberty County	Liberty, Dayton, Liberty County Water Control District 1	No	\$ 1,243,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000129	Waller County Flood Damage Prevention Planning	515.95	Urban/Local	Waller County	Waller, Katy, City of Waller, Houston, Prairie View	No	\$ 1,160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000130	Hostetter and Gourd Creek Bridges Elevation Evaluation	76.33	Urban/Local	Walker County	Walker, Willis, New Waverly	No	\$ 130,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000131	Implementation Study of Storm Sewer System Re-engineering in City of Kemah	1.91	Urban/Local	City of Kemah	Galveston, Chambers, Kemah	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000134	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	664.95	Urban/Local	Galveston County	Galveston, USACE	No	\$ 1,590,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000135	Recanalization Feasibility Study	1169.76	Riverine, Urban/Local	Liberty County	Liberty, Trinity River Authority of Texas, San Jacinto River Authority, Southeast Texas Flood Control District, Gulf Coast Protection District, Liberty County Water Control District 1	No	\$ 486,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000136	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	Review findings of potential breach to dam/levee system and develop/implement mitigation actions as applicable	06000001, 06000015	Galveston	12040103	120401030201, 120401030401	06000056, 06000069	Project Planning
061000137	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	Review findings of potential breach to dam/levee system and develop/implement mitigation actions as applicable	06000001, 06000015	Galveston	12040204	120402040100	06000106	Project Planning
061000138	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	Review findings of potential breach to dam/levee system and develop/implement mitigation actions as applicable	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000139	City of Arcola Regional Drainage Improvements	Study of repetitive loss and possible drainage improvements.	06000001, 06000003, 06000004, 06000015	Fort Bend	12040204	120402040400	06000109	Project Planning
061000140	Elevate Existing Bridge - East Fork San Jacinto River	Evaluate, Design and construct new bridge over east fork San Jacinto river on low water bridge road to reduce flooding.	06000001, 06000010, 06000011, 06000012, 06000015	Liberty	12040103	120401030201, 120401030401	06000056, 06000069	Project Planning
061000141	Southwood Forest Subdivision and Forgotten Forest Subdivision Evaluation	Study to develop a community-wide drainage system in Southwood Forest Subdivision and Forgotten Forest Subdivision.	06000001, 06000015	Walker	12040101	120401010202	06000006	Project Planning
061000142	Shadowbend Drainage Improvements Phase 2	Further study of component of 1993 master Drainage Plan Phase 1 to include Atlas 14 rainfall.	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000143	City of Todd Mission Reduction of Floodplain Area Roads and Drainage Upgrade	Analysis of potential upgrades to be made to floodplain-area roads and drainage to reduce flood risk.	06000003, 06000004	Grimes	12040102	120401020203, 120401020206	06000035, 06000038	Project Planning
061000145	Jamica Cove Rd. Survey	Engineering assessment needed to determine if elevating the road would reduce future flooding impacts.	06000001, 06000015	Galveston	12040204	120402040300	06000108	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000136	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	1.91	Urban/Local	Galveston County	Galveston, Kemah	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000137	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	0.71	Urban/Local	City of Clear Lake Shores	Galveston, Clear Lake Shores	No	\$ 140,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000138	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	14.23	Urban/Local	City of La Marque	Galveston, La Marque	No	\$ 360,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000139	City of Arcola Regional Drainage Improvements	2.60	Urban/Local	City of Arcola	Fort Bend, Arcola	No	\$ 520,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000140	Elevate Existing Bridge - East Fork San Jacinto River	1.91	Riverine	City of North Cleveland	Liberty, North Cleveland	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000141	Southwood Forest Subdivision and Forgotten Forest Subdivision Evaluation	0.29	Urban/Local	Walker County	Walker	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000142	Shadowbend Drainage Improvements Phase 2	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District, Friendswood	No	\$ 950,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000143	City of Todd Mission Reduction of Floodplain Area Roads and Drainage Upgrade	2.00	Urban/Local	City of Todd Mission	Grimes, Todd Mission	No	\$ 220,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000145	Jamica Cove Rd. Survey	0.71	Urban/Local	City of Jamaica Beach	Galveston, Jamaica Beach	No	\$ 140,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000146	Annalea/Whitehall Kings Park Drainage - Drainage Improvements Phase 2	Further study of proposed drainage improvements to Stafford oaks	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000147	Implement Drainage Improvements in City of La Marque	Implement drainage projects that support low maintenance and cleaning of drainage ditches.	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000148	Liberty County Culvert Replacement Project	Increase culvert size in identified flood hazard problem areas within Liberty County.	06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Project Planning
061000149	Evaluating of Increase Height of Existing Levee Wall System in City of La Marque	Increase height of existing Levee wall system to withstand a Category 5 storm surge	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000150	Evaluation of Reinforcement of Critical Facilities in the City of Arcola	Reinforcement of critical facilities to withstand high winds from severe weather.	06000001, 06000011, 06000012	Fort Bend	12040204	120402040400	06000109	Project Planning
061000151	Evaluation of Mitigation Alternatives for Repetitive Flood Claims Properties in Galveston County	Evaluate Mitigation Alternatives of Repetitive Flood Claim Properties in Galveston County	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000152	Cane Island Branch- Alt 1	Further study of 2,800 ac-ft detention upstream of Pitts road	06000001, 06000015	Fort Bend, Harris, Waller	12040104	120401040102, 120401040103, 120401040104, 120401040101, 120401040203	06000072, 06000073, 06000074, 06000071, 06000077	Project Planning
061000153	Downtown Cleveland Drainage Line Installation	Further study of proposed larger drainage lines in downtown Cleveland to reduce flooding.	06000001, 06000010, 06000015	Liberty, San Jacinto	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000146	Annalea/Whitehall Kings Park Drainage - Drainage Improvements Phase 2	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District	No	\$ 50,000.00	No	Duplicate FME.
061000147	Implement Drainage Improvements in City of La Marque	14.23	Urban/Local	City of La Marque	Galveston, La Marque	No	\$ 360,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000148	Liberty County Culvert Replacement Project	1169.76	Urban/Local	Liberty County	Liberty, Cleveland, Dayton, North Cleveland, Mont Belvieu, Liberty County Water Control District 1	No	\$ 120,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000149	Evaluating of Increase Height of Existing Levee Wall System in City of La Marque	14.23	Urban/Local	City of La Marque	Galveston, La Marque	No	\$ 810,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000150	Evaluation of Reinforcement of Critical Facilities in the City of Arcola	2.60	Urban/Local	City of Arcola	Fort Bend, Arcola	No	\$ 200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000151	Evaluation of Mitigation Alternatives for Repetitive Flood Claims Properties in Galveston County	664.95	Urban/Local	Galveston County	Galveston Nassau Bay, Bayou Vista, Clear Lake Shores, Galveston, Jamaica Beach, Friendswood, Hitchcock, La Marque, League City, Santa Fe, Texas City, Kemah, Tiki Island, Dickinson, Seabrook	No	\$ 11,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000152	Cane Island Branch- Alt 1	14.52	Urban/Local	Waller County	Waller, Harris County Flood Control District, Katy-Brookshire Drainage District, Katy	No	\$ 180,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000153	Downtown Cleveland Drainage Line Installation	18.74	Urban/Local	City of Cleveland	Liberty, Cleveland	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000156	Flood Gates Evaluation at Walker County Annex #2	Evaluation of proposed removable facility flood gates at Walker County Annex #2	06000001, 06000015	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Project Planning
061000158	City of Bayou Vista Canal Dredging Study	Plan for Canal Dredging to reduce sediment deposited during storm events. Study to develop and implement canal dredging program.	06000001, 06000015	Galveston	12040204	120402040200	06000107	Project Planning
061000160	Liberty County Regional Flood Drainage Plan	Regional drainage study to establish a county wide drainage plan including atlas 14 rainfall.	06000001, 06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Project Planning
061000161	City of North Cleveland Engineering Study	Study to identify drainage improvements in the City of North Cleveland.	06000001, 06000010, 06000011, 06000012, 06000015	Liberty	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Project Planning
061000162	Elevation of Bridge Road in City of North Cleveland	Further study to elevate Bridge road	06000001, 06000010, 06000011, 06000012, 06000015	Liberty	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Project Planning
061000163	Galveston County Drainage System Improvement Study	Further study to widen drainage systems and increase culvert size to accommodate increased water flows. Coordinate efforts with water district	06000001	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000164	Storm Water Detention Ponds Evaluation in the City of Santa Fe	Further study to determine detention ponds/basin could be solution for addressing flood impacts	06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000156	Flood Gates Evaluation at Walker County Annex #2	797.84	Urban/Local	Walker County	Walker, Huntsville, New Waverly	No	\$ 20,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000158	City of Bayou Vista Canal Dredging Study	0.45	Urban/Local	City of Bayou Vista	Galveston, Bayou Vista	No	\$ 130,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000160	Liberty County Regional Flood Drainage Plan	1169.76	Urban/Local	Liberty County	Liberty, Cleveland, Dayton, North Cleveland, Plum Grove, Mont Belvieu, Liberty County Water Control District 1	No	\$ 486,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000161	City of North Cleveland Engineering Study	18.74	Urban/Local	City of North Cleveland	Liberty, North Cleveland	No	\$ 400,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000162	Elevation of Bridge Road in City of North Cleveland	18.74	Urban/Local	City of North Cleveland	Liberty, North Cleveland	No	\$ 120,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000163	Galveston County Drainage System Improvement Study	664.95	Urban/Local	Galveston County	Galveston	No	\$ 1,590,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000164	Storm Water Detention Ponds Evaluation in the City of Santa Fe	17.04	Urban/Local	City of Santa Fe	Galveston, Santa Fe	No	\$ 380,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000165	Drainage System Analysis for City of Santa Fe	Further study to widen drainage systems and increase culvert size to accommodate increased water flows. Coordinate efforts with water district	06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Project Planning
061000166	City of Stafford Run Creek Detention Pond Construction	Further study of proposed detention ponds immediately downstream of Brand Lane and Independence Park.	06000015	Fort Bend, Harris	12040104, 12040204	120401040401, 120401040501, 120402040400	06000083, 06000085, 06000109	Project Planning
061000167	City of Cleveland Drainage Improvements	Further study of proposed city of Cleveland drainage improvements	06000001, 06000015	Liberty, Montgomery, San Jacinto	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Project Planning
061000168	San Jacinto Watershed and Tributary Barrier and Flood Mitigation - East County Project	planning, H&H studies, design, environmental review, and barrier removal for the 98.6 miles of the San Jacinto Watershed and Tributary Barrier and Flood Mitigation-East County project area.	06000001, 06000015	Harris, Liberty, Montgomery, San Jacinto	12040103	120401030402, 120401030401	06000070, 06000069	Watershed Planning
061000169	San Jacinto Watershed and Tributary Barrier and Flood Mitigation - West County Project	H&H study, design, tributary barrier removal, and environmental assessments for the 96.2 miles of the San Jacinto Watershed and Tributary Barrier and Flood Mitigation-West County project area.	06000001, 06000015	Harris, Montgomery	12040101	120401010401, 120401010402, 120401010404	06000020, 06000021, 06000023	Watershed Planning
061000170	Spring Gully Watershed Planning Project Near-Term Planning Project: PA03	Planning-level study needed. PA03 warranted a near-term solution. Flooded structures centralized in a short reach along the main stem O200-00-00 which the best strategy for the area was buyouts.	06000001, 06000015	Harris	12040104, 12040203	120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030106	06000097, 06000098, 06000096, 06000103, 06000102, 06000104	Project Planning
061000171	Spring Gully Watershed Planning Project- Near-term Planning Project: PA04	Planning-level study. Lowering WSEL in O203-00-00 to around 29 feet MSL. Most benefit when O203-00-00 and Thompson Road Storm drain system upsized, but Thompson road storm drain design.	06000001, 06000015	Harris	12040104, 12040203	120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030106	06000097, 06000098, 06000096, 06000103, 06000102, 06000104	Project Planning
061000172	Spring Gully Watershed Planning Project - Near-term planning project: PA05	Planning-level study needed. A stormwater detention basin near confluence of O207-00-00 and O207-01-00 required to lower WSEL . Reduced flow rates only after relief channel in Phase III implemented.	06000001, 06000015	Harris	12040104, 12040203	120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030106	06000097, 06000098, 06000096, 06000103, 06000102, 06000104	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000165	Drainage System Analysis for City of Santa Fe	17.04	Urban/Local	City of Santa Fe	Galveston, Santa Fe	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000166	City of Stafford Run Creek Detention Pond Construction	7.02	Riverine, Urban/Local	City of Stafford	Fort Bend, Harris, Harris County Flood Control District, Stafford	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000167	City of Cleveland Drainage Improvements	18.74	Riverine	City of Cleveland	Liberty, Cleveland	No	\$ 410,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000168	San Jacinto Watershed and Tributary Barrier and Flood Mitigation - East County Project	94.89	Riverine, Urban/Local	Montgomery County	Harris County Flood Control District, Harris, Liberty County, City of Houston,	No	\$ 1,160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000169	San Jacinto Watershed and Tributary Barrier and Flood Mitigation - West County Project	122.12	Riverine, Urban/Local	Montgomery County	Montgomery, Harris, City of Houston, Harris County Flood Control District	No	\$ 1,110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000170	Spring Gully Watershed Planning Project Near-Term Planning Project: PA03	32.66	Riverine, Urban/local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Baytown	No	\$ 600,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000171	Spring Gully Watershed Planning Project- Near-term Planning Project: PA04	32.66	Riverine, Urban/local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Baytown	No	\$ 210,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000172	Spring Gully Watershed Planning Project - Near-term planning project: PA05	32.66	Riverine, Urban/local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Baytown	No	\$ 170,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000173	Update Liberty County FIRMs to Include Bench Marks	Add bench marks to updated Flood Insurance Rate Maps.	06000001, 06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Watershed Planning
061000174	Carpenters Planning Study N110-00-00 Diversion to P103-00/P103-03	Feasibility study needed to evaluate a designed interconnection to lower Greens Bayou	06000001, 06000015	Harris	12040101, 12040104	120401010502, 120401040605, 120401040703, 120401040705, 120401040702, 120401040606, 120401040704	06000025, 06000091, 06000095, 06000097, 06000094, 06000092, 06000096	Project Planning
061000175	Regional Implementation of Large Diameter Deep Tunnel Systems for Storm Water Management	Further study of regional Implementation of Large Diameter Deep Tunnel Systems for Storm Water Management	06000001, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	120401010502, 120401040605, 120401040703, 120401040705, 120401040702, 120401040606, 120401040704	06000025, 06000091, 06000095, 06000097, 06000094, 06000092, 06000096	Project Planning
061000176	Lower Greens Feasibility Study	Feasibility study will identify the existing causes of flooding and solutions to reduce the risk of flooding in the lower stretch of Greens Bayou. Potential solutions channel conveyance improvements, detention, or bridge adjustments or replacements.	06000001, 06000010, 06000015	Harris	12040101, 12040102, 12040104	120401010502, 120401010501, 120401020106, 120401020107, 120401040605, 120401040703, 120401040601, 120401040702, 120401040302, 120401040604, 120401040606, 120401040304, 120401040301, 120401040602, 120401040603, 120401040701	06000025, 06000024, 06000031, 06000032, 06000091, 06000095, 06000087, 06000094, 06000079, 06000090, 06000092, 06000081, 06000078, 06000088, 06000089, 06000093	Project Planning
061000177	Addicks Reservoir Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Harris, Waller	12040102, 12040104	120401020103, 120401040102, 120401040202, 120401040104, 120401040201, 120401040302, 120401040101, 120401040203, 120401040303, 120401040301	06000028, 06000072, 06000076, 06000074, 06000075, 06000079, 06000071, 06000077, 06000080, 06000078	Watershed Planning
061000178	Barker Reservoir Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Fort Bend, Harris, Waller	12040102, 12040104	120401020103, 120401040102, 120401040103, 120401040104, 120401040101, 120401040203, 120401040303, 120401040401	06000028, 06000072, 06000073, 06000074, 06000071, 06000077, 06000080, 06000083	Watershed Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000173	Update Liberty County FIRMs to Include Bench Marks	1169.76	Urban/Local	Liberty County	Liberty, Dayton, Liberty County Water Control District 1	No	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000174	Carpenters Planning Study N110-00-00 Diversion to P103-00/P103-03	31.03	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 1,200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000175	Regional Implementation of Large Diameter Deep Tunnel Systems for Storm Water Management	1770.82	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Liberty County Water Control District 1	No	\$ 20,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000176	Lower Greens Feasibility Study	210.14	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Humble	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000177	Addicks Reservoir Watershed Study	137.96	Riverine	Harris County Flood Control District (HCFCD)	Harris, Waller, Harris County Flood Control District, Katy, Houston	Yes	\$ 670,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000178	Barker Reservoir Watershed Study	128.16	Riverine	Harris County Flood Control District (HCFCD)	Fort Bend, Harris, Waller, Harris County Flood Control District, Katy, Houston	Yes	\$ 620,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000179	Buffalo Bayou Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project.	06000001, 06000010, 06000015	Fort Bend, Harris	12040104	120401040703, 120401040402, 120401040104, 120401040305, 120401040302, 120401040203, 120401040303, 120401040304, 120401040401, 120401040701	06000095, 06000084, 06000074, 06000082, 06000079, 06000077, 06000080, 06000081, 06000083, 06000093	Watershed Planning
061000180	Brays Bayou Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Fort Bend, Harris	12040104	120401040703, 120401040402, 120401040305, 120401040303, 120401040401, 120401040502	06000095, 06000084, 06000082, 06000080, 06000083, 06000086	Watershed Planning
061000181	Cypress Creek Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Harris, Waller	12040102, 12040104	120401020102, 120401020103, 120401020104, 120401020106, 120401020101, 120401020105, 120401020107, 120401020201, 120401020210, 120401020212, 120401020213, 120401040601, 120401040102, 120401040201, 120401040101, 120401040203, 120401040301, 120401040602, 120401040603	06000027, 06000028, 06000029, 06000031, 06000026, 06000030, 06000032, 06000033, 06000042, 06000044, 06000045, 06000087, 06000072, 06000075, 06000071, 06000077, 06000078, 06000088, 06000089	Watershed Planning
061000182	Hunting Bayou Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Harris	12040104	120401040703, 120401040604, 120401040606, 120401040304, 120401040701	06000095, 06000090, 06000092, 06000081, 06000093	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000179	Buffalo Bayou Watershed Study	101.51	Riverine	Harris County Flood Control District (HCFCD)	Fort Bend, Harris, Harris County Flood Control District, Hedwig Village, Hillshire Village, Hunters Creek Village, Piney Point Village, Houston, Bunker Hill Village, Spring Valley Village	Yes	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000180	Brays Bayou Watershed Study	128.21	Riverine	Harris County Flood Control District (HCFCD)	Fort Bend, Harris, Harris County Flood Control District, Houston, Bellaire, Meadows Place, Southside Place, West University Place, Stafford	Yes	\$ 620,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000181	Cypress Creek Watershed Study	266.21	Riverine	Harris County Flood Control District (HCFCD)	Harris, Waller, Harris County Flood Control District, Waller, Houston, Tomball, Prairie View	Yes	\$ 1,230,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000182	Hunting Bayou Watershed Study	30.87	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Galena Park, Jacinto City, Houston	Yes	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000183	Sims Bayou Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Fort Bend, Harris	12040104, 12040204	120401040703, 120401040402, 120401040502, 120401040501, 120402040400, 120402040100	06000095, 06000084, 06000086, 06000085, 06000109, 06000106	Watershed Planning
061000184	White Oak Bayou Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Harris	12040102, 12040104	120401020104, 120401020106, 120401040601, 120401040305, 120401040302, 120401040604, 120401040303, 120401040304, 120401040301, 120401040701	06000029, 06000031, 06000087, 06000082, 06000079, 06000090, 06000080, 06000081, 06000078, 06000093	Watershed Planning
061000185	Upper Greens Bayou Watershed Study	Watershed wide study using latest data, including MAAPnext models and Atlas 14 rainfall. Study to identify flooding issues within watershed, identify projects to reduce flooding, and provide cost estimates and benefit and cost metrics for each project	06000001, 06000010, 06000015	Harris	12040101, 12040102, 12040104	120401010502, 120401010501, 120401020106, 120401020107, 120401040605, 120401040703, 120401040601, 120401040702, 120401040302, 120401040604, 120401040606, 120401040304, 120401040301, 120401040602, 120401040603, 120401040701	06000025, 06000024, 06000031, 06000032, 06000091, 06000095, 06000087, 06000094, 06000079, 06000090, 06000092, 06000081, 06000078, 06000088, 06000089, 06000093	Watershed Planning
061000186	Brays Bayou - Poor Farm Ditch	Study to develop a BCR and elevate project to a FMP. Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls	06000001, '06000015	Harris	12040104	120401040402	06000084	Project Planning
061000187	Brays Bayou Restore Channel Conveyance Capacity Along D115-00-00	Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls	06000001, '06000015	Harris	12040104	120401040401	06000083	Project Planning
061000188	Brays Bayou - Partnership Project with Fort Bend County on Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements along Clodine Ditch	Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls	06000001, '06000015	Fort Bend, Harris	12040104	120401040103, 120401040104, 120401040303, 120401040401	06000073, 06000074, 06000080, 06000083	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000183	Sims Bayou Watershed Study	93.21	Riverine	Harris County Flood Control District (HCFCD)	Fort Bend, Harris, Harris County Flood Control District, South Houston, Missouri City, Houston, Pasadena, Stafford	Yes	\$ 470,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000184	White Oak Bayou Watershed Study	110.70	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Jersey Village, Houston	Yes	\$ 800,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000185	Upper Greens Bayou Watershed Study	210.14	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Humble	Yes	\$ 980,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000186	Brays Bayou - Poor Farm Ditch	3.34	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Southside Place, West University Place	No	\$ 690,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000187	Brays Bayou Restore Channel Conveyance Capacity Along D115-00-00	6.32	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Bellaire	No	\$ 1,020,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000188	Brays Bayou - Partnership Project with Fort Bend County on Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements along Clodine Ditch	34.14	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 1,020,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000191	Spring Creek - Construction of a Reservoir along Spring Creek	Further study for design and construction of a future flood control dam and reservoir in the Spring Creek watershed	06000001, '06000015	Harris, Waller, Montgomery, Grimes	12040101, 12040102, 12040104	120401040103, 120401040104, 120401040303, 120401040401	06000073, 06000074, 06000080, 06000083	Project Planning
061000192	White Oak Bayou - E127-00-00 Fork	Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls.	06000001, '06000015	Harris	12040104	120401040302, 120401040301	06000079, 06000078	Project Planning
061000194	White Oak Bayou - Turkey Gully E106-00-00	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls	06000001, '06000015	Harris	12040104	120401040304	06000081	Project Planning
061000196	White Oak Bayou - General Drainage Improvements along E105-00-00	Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls	06000015	Harris	12040104	120401040304	06000081	Project Planning
061000197	Harris County Wide - Investigation of City of Houston Properties for Conversion to Stormwater Detention Basins	Further study for design and construction of stormwater detention basins on various City of Houston properties could reduce the risk of flooding in the area	06000010, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	120401020104, 120401020106, 120401040601, 120401040305, 120401040302, 120401040604, 120401040303, 120401040304, 120401040301, 120401040701	06000029, 06000031, 06000087, 06000082, 06000079, 06000090, 06000080, 06000081, 06000078, 06000093	Project Planning
061000201	Little Cypress Creek - L109-00-00	Further study of Flood Risk Reduction need identified through the HCFCF 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040102	120401020104, 120401020105, 120401020210	06000029, 06000030, 06000042	Project Planning
061000202	Little Cypress Creek - L113-00-00	Further study of Flood Risk Reduction need identified through the HCFCF 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040102	120401020104, 120401020105, 120401020205	06000029, 06000030, 06000037	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000191	Spring Creek - Construction of a Reservoir along Spring Creek	384.39	Riverine	Harris County Flood Control District (HCFCD)	Harris, Waller, Montgomery, Grimes, Harris County Flood Control District,	No	\$ 870,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000192	White Oak Bayou - E127-00-00 Fork	2.23	Riverine	City of Jersey Village	Harris, Harris County Flood Control District	No	\$ 150,000.00	No	Sponsor already proceeded with evaluation.
061000194	White Oak Bayou - Turkey Gully E106-00-00	6.78	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 1,330,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000196	White Oak Bayou - General Drainage Improvements along E105-00-00	0.92	Riverine	City of Houston	Harris, Harris County Flood Control District	No	\$ 120,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000197	Harris County Wide - Investigation of City of Houston Properties for Conversion to Stormwater Detention Basins	1770.82	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Liberty County Water Control District 1	No	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000201	Little Cypress Creek - L109-00-00	5.58	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000202	Little Cypress Creek - L113-00-00	14.96	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000203	Little Cypress Creek - L103-00-00	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040102	120401020104, 120401020106, 120401020105	06000029, 06000031, 06000030	Project Planning
061000204	Greens Bayou - P130-05-02	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040602	06000088	Project Planning
061000205	Greens Bayou - P142-00-00	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040603	06000089	Project Planning
061000207	San Jacinto River - G103-46-00	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040101	120401010501	06000024	Project Planning
061000208	San Jacinto River - G103-33-04	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040101	120401010501	06000024	Project Planning
061000209	San Jacinto River - G103-36-00	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040101	120401010501	06000024	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000203	Little Cypress Creek - L103-00-00	5.24	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000204	Greens Bayou - P130-05-02	0.13	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000205	Greens Bayou - P142-00-00	1.63	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000207	San Jacinto River - G103-46-00	58.51	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Humble	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000208	San Jacinto River - G103-33-04	1.13	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000209	San Jacinto River - G103-36-00	58.51	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Humble	No	\$ 1,000,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000213	City of Conroe Riverine Study and Mapping Improvements	Study and new modeling for moderate to low quality areas and revise the flood maps using the results from the updated modeling	06000010	Montgomery	12040101	120401010207, 120401010401, 120401010402	06000011, 06000020, 06000021	Watershed Planning
061000214	April Sound Subdivision Evaluation	Detailed analysis to be completed for the entire development using detailed storm sewer modeling	06000010, 06000015	Montgomery	12040101	120401010207, 120401010401, 120401010402	06000011, 06000020, 06000021	Project Planning
061000215	City of Conroe Downtown Master Drainage Plan	Full as-built storm sewer inventory survey and a full drainage study recommended.	06000010, 06000015	Montgomery	12040101	120401010207, 120401010401, 120401010402	06000011, 06000020, 06000021	Project Planning
061000216	Greens Bayou - P103-00-00	Further study of Flood Risk Reduction need identified through the HCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040703, 120401040702, 120401040606	06000095, 06000094, 06000092	Project Planning
061000217	Barker - T101-00-00	Further study of Flood Risk Reduction need identified through the HCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040102, 120401040104, 120401040203, 120401040303	06000072, 06000074, 06000077, 06000080	Project Planning
061000218	Barker - T103-00-00	Further study of Flood Risk Reduction need identified through the HCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040102, 120401040104, 120401040203	06000072, 06000074, 06000077	Project Planning
061000219	Buffalo Bayou - W158-00-00	Further study of Flood Risk Reduction need identified through the HCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040303	06000080	Project Planning

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000213	City of Conroe Riverine Study and Mapping Improvements	100.07	Riverine	City of Conroe	Montgomery, Conroe	No	\$ 500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000214	April Sound Subdivision Evaluation	100.07	Urban/Local	City of Conroe	Montgomery, Conroe, San Jacinto River Authority	No	\$ 1,700,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000215	City of Conroe Downtown Master Drainage Plan	100.07	Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 750,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000216	Greens Bayou - P103-00-00	5.55	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000217	Barker - T101-00-00	17.28	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Katy, Houston	No	\$ 300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000218	Barker - T103-00-00	4.07	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Katy, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000219	Buffalo Bayou - W158-00-00	2.82	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000220	Buffalo Bayou - W130-00-00	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040305, 120401040303	06000082, 06000080	Project Planning
061000221	Buffalo Bayou - W163-00-00	Further study of Flood Risk Reduction need identified through the HCFCFCD 'Watershed Planning Tool' to determine channel modifications needed to restore/improve channel conveyance including Atlas 14 rainfall	06000001, 06000015	Harris	12040104	120401040303	06000080	Project Planning
061000222	City of Arcola Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend	12040204	120402040400	06000109	Watershed Planning
061000223	City of Baytown Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Chambers, Harris	12040104, 12040203	120401040705, 120401040706, 120402030105, 120402030106, 120402030200	06000097, 06000098, 06000103, 06000104, 06000105	Watershed Planning
061000224	City of Beach City Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Chambers	12040203	120402030200	06000105	Watershed Planning
061000225	City of Bellaire Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040402, 120401040401	06000084, 06000083	Watershed Planning
061000226	City of Brookside Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Brazoria	12040204	120402040100	06000106	Watershed Planning
061000227	City of Bunker Hill Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040303	06000080	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000220	Buffalo Bayou - W130-00-00	2.79	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000221	Buffalo Bayou - W163-00-00	1.39	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000222	City of Arcola Master Drainage Plan	2.60	Urban/Local	City of Arcola	Fort Bend, City of Arcola	No	\$ 200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000223	City of Baytown Master Drainage Plan	38.05	Urban/Local	City of Baytown	Chambers, Harris, Harris County Flood Control District, Baytown,	Yes	\$ 520,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000224	City of Beach City Master Drainage Plan	4.46	Urban/Local	City of Beach City	Chambers, Beach City	Yes	\$ 240,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000225	City of Bellaire Master Drainage Plan	3.58	Urban/Local	City of Bellaire	Harris, Harris County Flood Control, Bellaire	Yes	\$ 1,500,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000226	City of Brookside Village Master Drainage Plan	2.06	Urban/Local	City of Brookside Village	Brazoria, West Brazoria County Drainage District, Brookside Village	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000227	City of Bunker Hill Village Master Drainage Plan	1.44	Urban/Local	City of Bunker Hill Village	Harris, Harris County Flood Control, City of Bunker Hill Village	No	\$ 170,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000228	City of Clear Lake Shores Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston, Harris	12040204	120402040100	06000106	Watershed Planning
061000229	City of Cleveland Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Liberty	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Watershed Planning
061000230	City of Coldspring Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	San Jacinto	12040103	120401030307	06000067	Watershed Planning
061000232	City of Cut and Shoot Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101, 12040103	120401010403, 120401030102, 120401030104	06000022, 06000047, 06000049	Watershed Planning
061000233	City of Dayton Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Liberty	12040203	120402030104, 120402030103, 120402030102, 120402030101	06000102, 06000101, 06000100, 06000099	Watershed Planning
061000234	City of Deer Park Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104, 12040204	120401040703, 120401040706, 120402040100	06000095, 06000098, 06000106	Watershed Planning
061000235	City of Dickinson Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston	12040204	120402040200	06000107	Watershed Planning
061000236	City of El Lago Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040204	120402040100	06000106	Watershed Planning
061000237	City of Friendswood Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000228	City of Clear Lake Shores Master Drainage Plan	0.71	Urban/Local	City of Clear Lake Shores	Galveston, Harris, Harris County Flood Control District, Clear Lake Shores	Yes	\$ 140,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000229	City of Cleveland Master Drainage Plan	18.74	Urban/Local	City of Cleveland	Liberty, City of Cleveland	No	\$ 400,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000230	City of Coldspring Master Drainage Plan	1.85	Urban/Local	City of Coldspring	San Jacinto, City of Coldspring	No	\$ 180,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000232	City of Cut and Shoot Master Drainage Plan	2.70	Urban/Local	City of Cut and Shoot	Montgomery, City of Cut and Shoot	No	\$ 210,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000233	City of Dayton Master Drainage Plan	30.58	Urban/Local	City of Dayton	Liberty, City of Dayton, Liberty County Water Control District 1	No	\$ 480,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000234	City of Deer Park Master Drainage Plan	10.53	Urban/Local	City of Deer Park	Harris, Harris County Flood Control District, Deer Park	Yes	\$ 320,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000235	City of Dickinson Master Drainage Plan	10.30	Urban/Local	City of Dickinson	Galveston, Dickinson	Yes	\$ 320,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000236	City of El Lago Master Drainage Plan	0.71	Urban/Local	City of El Lago	Harris, City of El Lago	No	\$ 140,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000237	City of Friendswood Master Drainage Plan	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District, Friendswood	Yes	\$ 750,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000238	City of Fulshear Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend	12040104	120401040103	06000073	Watershed Planning
061000239	City of Galena Park Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040703, 120401040701	06000095, 06000093	Watershed Planning
061000241	City of Hedwig Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040303	06000080	Watershed Planning
061000242	City of Hillcrest Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Brazoria	12040204	120402040400	06000109	Watershed Planning
061000243	City of Hillshire Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040303	06000080	Watershed Planning
061000244	City of Hitchcock Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Brazoria, Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Watershed Planning
061000246	City of Humble Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040101, 12040102, 12040104	120401010501, 120401020213, 120401040602	06000024, 06000045, 06000088	Watershed Planning
061000247	City of Hunters Creek Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040303	06000080	Watershed Planning
061000248	City of Huntsville Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Walker	12040101, 12040103	120401010104, 120401010102, 120401010201, 120401010202, 120401030302	06000004, 06000002, 06000005, 06000006, 06000062	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000238	City of Fulshear Master Drainage Plan	12.06	Urban/Local	City of Fulshear	Fort Bend, Fulshear	Yes	\$ 340,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000239	City of Galena Park Master Drainage Plan	4.90	Urban/Local	City of Galena Park	Harris, Harris County Flood Control District, Galena Park	Yes	\$ 250,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000241	City of Hedwig Village Master Drainage Plan	0.94	Urban/Local	City of Hedwig Village	Harris, Harris County Flood Control District, Hedwig Village	Yes	\$ 150,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000242	City of Hillcrest Master Drainage Plan	0.44	Urban/Local	Hillcrest Village	Brazoria, West Brazoria County Drainage District, Hillcrest	Yes	\$ 130,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000243	City of Hillshire Village Master Drainage Plan	0.27	Urban/Local	City of Hilshire Village	Harris, Harris County Flood Control District, Hillshire Village	Yes	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000244	City of Hitchcock Master Drainage Plan	91.21	Urban/Local	City of Hitchcock	Brazoria, Galveston, West Brazoria County Drainage District, Hitchcock	Yes	\$ 720,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000246	City of Humble Master Drainage Plan	9.79	Urban/Local	City of Humble	Harris, Harris County Flood Control District, Humble	Yes	\$ 320,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000247	City of Hunters Creek Village Master Drainage Plan	1.95	Urban/Local	City of Hunters Creek Village	Harris, Harris County Flood Control District, Hunters Creek Village	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000248	City of Huntsville Master Drainage Plan	43.24	Urban/Local	City of Huntsville	Walker, Huntsville	Yes	\$ 349,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000249	City of Iowa Colony Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Brazoria	12040204	120402040400	06000109	Watershed Planning
061000250	City of Jacinto City Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040701	06000093	Watershed Planning
061000251	City of Jamaica Beach Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston	12040204	120402040300	06000108	Watershed Planning
061000252	City of Jersey Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040302, 120401040301	06000079, 06000078	Watershed Planning
061000253	City of Katy Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend, Harris, Waller	12040104	120401040102, 120401040103, 120401040104, 120401040101, 120401040203	06000072, 06000073, 06000074, 06000071, 06000077	Watershed Planning
061000254	City of Kemah Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston, Chambers	12040204	120402040200, 120402040100	06000107, 06000106	Watershed Planning
061000255	City of La Marque Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000001, 06000011, 06000012, 06000015	Galveston	12040204	120402040200	06000107	Watershed Planning
061000256	City of La Porte Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000001, 06000011, 06000012, 06000015	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Watershed Planning
061000257	City of League City Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000001, 06000011, 06000012, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Watershed Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000249	City of Iowa Colony Master Drainage Plan	9.42	Urban/Local	City of Iowa Colony	Brazoria, West Brazoria County Drainage District, Iowa Colony	Yes	\$ 310,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000250	City of Jacinto City Master Drainage Plan	1.85	Urban/Local	City of Jacinto City	Harris, City of Jacinto City	No	\$ 180,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000251	City of Jamaica Beach Master Drainage Plan	0.71	Urban/Local	City of Jamaica Beach	Galveston, City of Jamaica Beach	No	\$ 140,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000252	City of Jersey Village Master Drainage Plan	3.42	Urban/Local	City of Jersey Village	Harris, Harris County Flood Control District, Jersey Village	Yes	\$ 220,000.00	No	Sponsor already completed evaluation.
061000253	City of Katy Master Drainage Plan	14.52	Urban/Local	City of Katy	Fort Bend, Harris, Waller, Harris County Flood Control District, Katy,	Yes	\$ 360,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000254	City of Kemah Master Drainage Plan	1.91	Urban/Local	City of Kemah	Galveston, Kemah	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000255	City of La Marque Master Drainage Plan	14.23	Urban/Local	City of La Marque	Galveston, La Marque	Yes	\$ 360,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000256	City of La Porte Master Drainage Plan	19.83	Urban/Local	City of La Porte	Harris, Harris County Flood Control District, La Porte	Yes	\$ 410,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000257	City of League City Master Drainage Plan	52.89	Urban/Local	City of League City	Galveston, League City	Yes	\$ 580,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000258	City of Liverpool Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000001, 06000011, 06000012, 06000015	Brazoria	12040204	120402040400	06000109	Watershed Planning
061000259	City of Magnolia Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040102	120401020204, 120401020207, 120401020208	06000036, 06000039, 06000040	Watershed Planning
061000260	City of Manvel Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000001, 06000011, 06000012, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Watershed Planning
061000261	City of Meadows Place Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend	12040104	120401040401	06000083	Watershed Planning
061000262	City of Missouri City Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend	12040104, 12040204	120401040401, 120401040501, 120402040400	06000083, 06000085, 06000109	Watershed Planning
061000263	City of Mont Belvieu Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Chambers	12040203	120402030105, 120402030104	06000103, 06000102	Watershed Planning
061000264	City of Montgomery Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101	120401010307, 120401010206	06000018, 06000010	Watershed Planning
061000265	City of Morgan's Point Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Watershed Planning
061000266	City of Nassau Bay Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston, Harris	12040204	120402040100	06000106	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000258	City of Liverpool Master Drainage Plan	1.09	Urban/Local	City of Liverpool	Brazoria, Liverpool	Yes	\$ 160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000259	City of Magnolia Master Drainage Plan	2.87	Urban/Local	City of Magnolia	Montgomery, City of Magnolia	No	\$ 210,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000260	City of Manvel Master Drainage Plan	27.41	Urban/Local	City of Manvel	Brazoria, Manvel	Yes	\$ 460,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000261	City of Meadows Place Master Drainage Plan	0.93	Urban/Local	City of Meadows Place	Fort Bend, Meadows Place	Yes	\$ 150,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000262	City of Missouri City Master Drainage Plan	30.29	Urban/Local	City of Missouri City	Fort Bend, City of Missouri City	No	\$ 470,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000263	City of Mont Belvieu Master Drainage Plan	17.20	Urban/Local	City of Mont Belvieu	Chambers, City of Mont Belvieu, Liberty County Water Control District 1	No	\$ 390,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000264	City of Montgomery Master Drainage Plan	5.10	Urban/Local	City of Montgomery	Montgomery, City of Montgomery	No	\$ 250,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000265	City of Morgan's Point Master Drainage Plan	2.22	Urban/Local	City of Morgan's Point	Harris, Harris County Flood Control District, Morgan's Point	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000266	City of Nassau Bay Master Drainage Plan	1.74	Urban/Local	City of Nassau Bay	Galveston, Harris, Harris County Flood Control District, Nassau Bay	Yes	\$ 180,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000267	City of New Waverly Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Walker	12040103	120401030101	06000046	Watershed Planning
061000268	City of North Cleveland Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Liberty	12040103	120401030201, 120401030401	06000056, 06000069	Watershed Planning
061000269	City of Oak Ridge North Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101, 12040102	120401010404, 120401020212	06000023, 06000044	Watershed Planning
061000270	City of Panorama Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Watershed Planning
061000271	City of Pasadena Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104, 12040204	120401040703, 120401040502, 120402040100	06000095, 06000086, 06000106	Watershed Planning
061000272	City of Patton Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040103	120401030109, 120401030402	06000054, 06000070	Watershed Planning
061000274	City of Piney Point Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040303	06000080	Watershed Planning
061000275	City of Plantersville Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Grimes	12040101, 12040102	120401010305, 120401010306, 120401020206	06000016, 06000017, 06000038	Watershed Planning
061000276	City of Plum Grove Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Liberty	12040103	120401030402	06000070	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000267	City of New Waverly Master Drainage Plan	2.21	Urban/Local	City of New Waverly	Walker, City of New Waverly	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000268	City of North Cleveland Master Drainage Plan	1.91	Urban/Local	City of North Cleveland	Liberty, City of North Cleveland	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000269	City of Oak Ridge North Master Drainage Plan	1.44	Urban/Local	City of Oak Ridge North	Montgomery, Oak Ridge North	Yes	\$ 170,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000270	City of Panorama Village Master Drainage Plan	1.09	Urban/Local	City of Panorama Village	Montgomery, City of Panorama Village	No	\$ 160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000271	City of Pasadena Master Drainage Plan	44.58	Urban/Local	City of Pasadena	Harris, Harris County Flood Control District, Pasadena	Yes	\$ 550,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000272	City of Patton Village Master Drainage Plan	2.40	Urban/Local	City of Patton Village	Montgomery, Patton Village	Yes	\$ 200,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000274	City of Piney Point Village Master Drainage Plan	2.13	Urban/Local	City of Piney Point Village	Harris, Harris County Flood Control District, Piney Point Village	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000275	City of Plantersville Master Drainage Plan	1.98	Urban/Local	City of Plantersville	Grimes, City of Plantersville	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000276	City of Plum Grove Master Drainage Plan	3.61	Urban/Local	City of Plum Grove	Liberty, City of Plum Grove	No	\$ 230,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000277	City of Prairie View Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Waller	12040102	120401020101	06000026	Watershed Planning
061000278	City of Roman Forest Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040103	120401030109, 120401030402	06000054, 06000070	Watershed Planning
061000279	City of Santa Fe Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Watershed Planning
061000280	City of Seabrook Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston, Harris, Chambers	12040204	120402040100	06000106	Watershed Planning
061000281	City of Shenandoah Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101, 12040102	120401010402, 120401010404, 120401020211, 120401020212	06000021, 06000023, 06000043, 06000044	Watershed Planning
061000282	City of Shoreacres Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Chambers, Harris	12040204	120402040100	06000106	Watershed Planning
061000283	City of South Houston Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040703, 120401040502	06000095, 06000086	Watershed Planning
061000284	City of Southside Place Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040402	06000084	Watershed Planning
061000285	City of Splendora Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040103	120401030109, 120401030402, 120401030401	06000054, 06000070, 06000069	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000277	City of Prairie View Master Drainage Plan	7.32	Urban/Local	City of Prairie View	Waller, City of Prairie View	No	\$ 290,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000278	City of Roman Forest Master Drainage Plan	2.19	Urban/Local	City of Roman Forest	Montgomery, Roman Forest	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000279	City of Santa Fe Master Drainage Plan	17.04	Urban/Local	City of Santa Fe	Galveston, Santa Fe	Yes	\$ 380,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000280	City of Seabrook Master Drainage Plan	21.19	Urban/Local	City of Seabrook	Galveston, Harris, Harris County Flood Control District, Seabrook	Yes	\$ 420,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000281	City of Shenandoah Master Drainage Plan	1.95	Urban/Local	City of Shenandoah	Montgomery, Shenandoah	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000282	City of Shoreacres Master Drainage Plan	0.96	Urban/Local	City of Shoreacres	Harris, Harris County Flood Control, City of Shoreacres	No	\$ 150,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000283	City of South Houston Master Drainage Plan	3.04	Urban/Local	City of South Houston	Harris, Harris County Flood Control District, South Houston	Yes	\$ 210,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000284	City of Southside Place Master Drainage Plan	0.25	Urban/Local	City of Southside Place	Harris, City of Southside Place	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000285	City of Splendora Master Drainage Plan	3.06	Urban/Local	City of Splendora	Montgomery, Splendora	Yes	\$ 210,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000286	City of Spring Valley Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040303	06000080	Watershed Planning
061000287	City of Stafford Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend, Harris	12040104, 12040204	120401040401, 120401040501, 120402040400	06000083, 06000085, 06000109	Watershed Planning
061000288	City of Stagecoach Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040102	120401020204, 120401020208	06000036, 06000040	Watershed Planning
061000289	City of Sugar Land Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Fort Bend	12040104	120401040401	06000083	Watershed Planning
061000290	City of Taylor Lake Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040204	120402040100	06000106	Watershed Planning
061000291	City of Texas City Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Chambers, Galveston	12040204	120402040200	06000107	Watershed Planning
061000292	City of Tiki Island Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Galveston	12040204	120402040200	06000107	Watershed Planning
061000293	City of Todd Mission Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Grimes	12040102	120401020203, 120401020206	06000035, 06000038	Watershed Planning
061000294	City of Tomball Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040102	120401020106, 120401020205, 120401020210, 120401020209	06000031, 06000037, 06000042, 06000041	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000286	City of Spring Valley Village Master Drainage Plan	1.21	Urban/Local	City of Spring Valley Village	Harris, Harris County Flood Control District, Spring Valley Village	Yes	\$ 160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000287	City of Stafford Master Drainage Plan	7.02	Urban/Local	City of Stafford	Fort Bend, Harris, Harris County Flood Control District, Stafford,	Yes	\$ 280,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000288	City of Stagecoach Master Drainage Plan	1.17	Urban/Local	City of Stagecoach	Montgomery, Stagecoach	No	\$ 160,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000289	City of Sugar Land Master Drainage Plan	42.76	Urban/Local	City of Sugar Land	Fort Bend, Sugar Land	Yes	\$ 540,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000290	City of Taylor Lake Village Master Drainage Plan	1.30	Urban/Local	City of Taylor Lake Village	Harris, Harris County Flood Control, City of Taylor Lake Village	No	\$ 170,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000291	City of Texas City Master Drainage Plan	185.08	Urban/Local	City of Texas City	Galveston, Texas City	Yes	\$ 950,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000292	City of Tiki Island Master Drainage Plan	1.59	Urban/Local	City of Tiki Island	Galveston, Tiki Island	Yes	\$ 180,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000293	City of Todd Mission Master Drainage Plan	2.00	Urban/Local	City of Todd Mission	Grimes, City of Todd Mission	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000294	City of Tomball Master Drainage Plan	13.04	Urban/Local	City of Tomball	Harris, Harris County Flood Control, City of Tomball	No	\$ 350,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000295	City of Waller Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris, Waller	12040102	120401020101, 120401020105, 120401020201	06000026, 06000030, 06000033	Watershed Planning
061000296	City of Webster Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040204	120402040100	06000106	Watershed Planning
061000297	City of West University Place Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Harris	12040104	120401040402	06000084	Watershed Planning
061000298	City of Willis Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101, 12040103	120401010403, 120401010401, 120401010204, 120401010205, 120401030102, 120401030101	06000022, 06000020, 06000008, 06000009, 06000047, 06000046	Watershed Planning
061000299	City of Woodbranch Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall.	06000010	Montgomery	12040103	120401030105, 120401030109	06000050, 06000054	Watershed Planning
061000300	Town of Woodloch Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall.	06000010	Montgomery	12040101	120401010402	06000021	Watershed Planning
061000301	Brazoria Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000295	City of Waller Master Drainage Plan	3.71	Urban/Local	City of Waller	Waller, City of Waller	No	\$ 100,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000296	City of Webster Master Drainage Plan	6.60	Urban/Local	City of Webster	Harris, Harris County Flood Control District, Webster	Yes	\$ 280,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000297	City of West University Place Master Drainage Plan	2.00	Urban/Local	City of West University Place	Harris, Harris County Flood Control, City of West University Place	No	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000298	City of Willis Master Drainage Plan	4.72	Urban/Local	City of Willis	Montgomery, City of Willis	No	\$ 250,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000299	City of Woodbranch Master Drainage Plan	2.00	Urban/Local	Woodbranch Village	Montgomery, Woodbranch	Yes	\$ 190,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000300	Town of Woodloch Master Drainage Plan	0.08	Urban/Local	Town of Woodloch	Montgomery, Woodloch	Yes	\$ 50,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000301	Brazoria Flood Mapping Updates	1481.87	Riverine, Urban/Local	Brazoria County	Brazoria, West Brazoria County Drainage District, Pearland, Manvel, Iowa Colony, Alvin, Brookside Village, Hillcrest, Liverpool, Hitchcock	Yes	\$ 6,440,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000302	Chambers Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Chambers	12040203	120402030105, 120402030104, 120402030106, 120402030200	06000103, 06000102, 06000104, 06000105	Watershed Planning
061000304	Galveston Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Watershed Planning
061000305	Grimes Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Grimes	12040101, 12040102	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010304, 120401010305, 120401010306, 120401020202, 120401020203, 120401020207, 120401020206	06000001, 06000012, 06000013, 06000014, 06000003, 06000015, 06000016, 06000017, 06000034, 06000035, 06000039, 06000038	Watershed Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000302	Chambers Flood Mapping Updates	865.55	Riverine, Urban/Local	Chambers County	Chambers, Morgan's Point, Pasadena, Baytown, Beach City, Texas City, Kemah, Seabrook, Shoreacres, Mont Belvieu, Southeast Texas Flood Control District, Liberty County Water Control District 1	Yes	\$ 631,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000304	Galveston Flood Mapping Updates	664.95	Riverine, Urban/Local	Galveston County	Galveston, Nassau Bay, Bayou Vista, Clear Lake Shores, Galveston, Jamaica Beach, Friendswood, Hitchcock, La Marque, League City, Santa Fe, Texas City, Kemah, Tiki Island, Dickinson, Seabrook	Yes	\$ 2,960,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000305	Grimes Flood Mapping Updates	798.87	Riverine, Urban/Local	Grimes County	Grimes, Plantersville, Todd Mission	Yes	\$ 3,530,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000307	Montgomery Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Montgomery	12040101, 12040102, 12040103	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010304, 120401010305, 120401010306, 120401020202, 120401020203, 120401020207, 120401020206	06000001, 06000012, 06000013, 06000014, 06000003, 06000015, 06000016, 06000017, 06000034, 06000035, 06000039, 06000038	Watershed Planning
061000308	San Jacinto Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	San Jacinto	12040103	120401030201, 120401030108, 120401030106, 120401030107, 120401030303, 120401030305, 120401030202, 120401030301, 120401030302, 120401030304, 120401030306, 120401030401, 120401030307, 120401030308	06000056, 06000053, 06000051, 06000052, 06000063, 06000065, 06000057, 06000061, 06000062, 06000064, 06000066, 06000069, 06000067, 06000068	Watershed Planning
061000309	Walker Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Watershed Planning
061000310	Waller Flood Mapping Updates	County wide study to produce flood mapping updates including Atlas 14 rainfall.	06000010	Waller	12040102, 12040104	120401020102, 120401020103, 120401020204, 120401020101, 120401020201, 120401020202, 120401020203, 120401020205, 120401020207, 120401020206, 120401040102, 120401040103, 120401040101, 120401040203	06000027, 06000028, 06000036, 06000026, 06000033, 06000034, 06000035, 06000037, 06000039, 06000038, 06000072, 06000073, 06000071, 06000077	Watershed Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000307	Montgomery Flood Mapping Updates	1072.61	Riverine, Urban/Local	Montgomery County	Montgomery, Montgomery County Drainage District 9, Patton Village, Roman Forest, Shenandoah, Woodbranch, Cleveland, Magnolia, Oak Ridge North, Panorama Village, Willis, Stagecoach, Houston, Cut and Shoot, Conroe, Splendora, Woodloch, Montgomery, Tomball	Yes	\$ 4,700,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000308	San Jacinto Flood Mapping Updates	625.69	Riverine, Urban/Local	San Jacinto County	San Jacinto	Yes	\$ 1,419,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000309	Walker Flood Mapping Updates	797.84	Riverine, Urban/Local	Walker County	Walker, Huntsville, New Waverly	Yes	\$ 1,747,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000310	Waller Flood Mapping Updates	515.95	Riverine, Urban/Local	Waller County	Waller, Katy, Waller, Houston, Prairie View	Yes	\$ 2,300,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000311	37th Street, Galveston, Drainage Project	Further study and FMP development of existing storm sewer system replacement and upgrades using the city's updated drainage criteria that now require a 25-year storm drainage capacity.	06000015	Brazoria, Galveston	12040204	120402040200	06000107	Project Planning
061000312	Addicks Reservoir - Right-Of-Way Acquisition, Design and Construction of a Stormwater Detention Basin on South Mayde Creek	Develop BCA to become a FMP. This project is part of the South Mayde Creek Plan that could reduce the risk of flooding for more than 70 homes and reduce the rainfall event by more than 340 acres in a pre-Atlas 1% rainfall event.	06000015	Harris	12040104	120401040102, 120401040202, 120401040104, 120401040203, 120401040303	06000072, 06000076, 06000074, 06000077, 06000080	Project Planning
061000313	Addicks Reservoir - Design and Construction of Dinner Creek Stormwater Detention Basin	Develop BCA to become a FMP. Project would provide additional stormwater detention in support of flood damage reduction and could reduce the risk of flooding for approximately 30 multi-family structures in Addicks Reservoir Watershed.	06000015	Harris	12040104	120401040102, 120401040202, 120401040104, 120401040203, 120401040303	06000072, 06000076, 06000074, 06000077, 06000080	Project Planning
061000315	Addicks Reservoir - Right-Of-Way Acquisition, Design and Construction of Channel Conveyance Improvements, Bypass Channel, and Detention for South Mayde Creek	Study to develop a BCA needed for this project to become a FMP. This project is part of the South Mayde Creek Plan to reduce flood risk 70+ homes & reduce the rainfall event by 340+ acres in pre-Atlas 1% rainfall event.	06000015	Harris	12040104	120401040202, 120401040104, 120401040203, 120401040303	06000076, 06000074, 06000077, 06000080	Project Planning
061000317	Arcadian Gardens Subdivision Drainage Improvements	Study to develop a Cost Benefit Analysis and elevate the project to a FMP. To achieve this goal, the key features of improvements are to rehabilitate roadside swales, build new storm sewers and improve the outfall drainage conditions.	06000015	Harris	12040104	120401040704	06000096	Project Planning
061000318	Fort Bend County Willow Fork Channel Improvements	Further study and BCA development. Combo of 11 different channel improvements were identified along Willow Fork and its tributaries as part of the Fort Bend County Master Drainage Plan that, when combined, will provide a 100-year level of service.	06000015	Fort Bend, Harris, Waller	12040104	120401040102, 120401040103, 120401040104, 120401040101, 120401040401	06000072, 06000073, 06000074, 06000071, 06000083	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000311	37th Street, Galveston, Drainage Project	253.17	Coastal, Urban/Local	City of Galveston	Galveston, City of Galveston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000312	Addicks Reservoir - Right-Of-Way Acquisition, Design and Construction of a Stormwater Detention Basin on South Mayde Creek	15.50	Riverine, Urban/Local	Harris County Flood Control District (HCFCF)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000313	Addicks Reservoir - Design and Construction of Dinner Creek Stormwater Detention Basin	15.50	Riverine, Urban/Local	Harris County Flood Control District (HCFCF)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000315	Addicks Reservoir - Right-Of-Way Acquisition, Design and Construction of Channel Conveyance Improvements, Bypass Channel, and Detention for South Mayde Creek	13.20	Riverine, Urban/Local	Harris County Flood Control District (HCFCF)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000317	Arcadian Gardens Subdivision Drainage Improvements	0.32	Urban/Local	Harris County	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000318	Fort Bend County Willow Fork Channel Improvements	46.10	Riverine	Fort Bend County Drainage District	Fort Bend, Harris, Waller, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000319	Armand Bayou - Design and Construction of the B509-03-00 and B509-04-00 Stormwater Detention Basins	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Design and Construction of this stormwater detention basin could reduce the risk of flooding for over 400 structures in an Atlas 14 1% rainfall event.	06000015	Harris	12040204	120402040100	06000106	Project Planning
061000320	Warren Lake and Dam Retrofit	Further study of Retrofit dam to improve detention of flood & storm water runoff, new 137.3 ac wetlands complex added of storage capacity & conversion of fields to tallgrass prairies to add approximately 856 ac-ft of total storage during rainfall events.	06000013, 060000140600 0015	Harris	12040102	120401020103	06000028	Project Planning
061000321	Armand Bayou Watershed- Basin Expansion and Extension and H&H Study (Phases 1 + 2)	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Channel modifications along B115-00-00 requires expansion of B500-04-00 and new detention property,	06000015	Harris	12040204	120402040100	06000106	Project Planning
061000322	Jackson Bayou Watershed Planning Project- Immediate: First Street Crossing Mitigation	Develop BCA to become a FMP. Priority ranking #1, 0.5 mile upstream along Jackson Bayou identified to fulfill mitigation efforts. Culvert upsizing recommended at First Street. Improvements produced need or 32.4 acre-feet of detention.	06000015	Harris	12040104	120401040704	06000096	Project Planning
061000323	B106-WP01 & WP02 for Armand Bayou Watershed	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Conveyance improvements for B106-00-00 channel, including detention/mitigation storage	06000015	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Project Planning
061000324	Barker Reservoir Flood Risk Reduction and Park Project	Study to further the proposed project. FIF application information unavailable.	06000015	Fort Bend, Harris	12040104	120401040103	06000073	Project Planning
061000325	Beaumont Place Subdivision Drainage Improvement Phase 2	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040606	06000092	Project Planning
061000326	I100-WP01 Vince Bayou Watershed Planning Project Recommendation	Study to develop a BCR required for this project to become a FMP. Alt-6 Detention basin and channel widening near Strawberry road on left bank of Vince Bayou.	06000015	Harris	12040104, 12040204	120401040703, 120402040100	06000095, 06000106	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000319	Armand Bayou - Design and Construction of the B509-03-00 and B509-04-00 Stormwater Detention Basins	4.79	Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, La Porte, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000320	Warren Lake and Dam Retrofit	2.11	Riverine, Urban/Local	Coastal Prairie Conservancy	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000321	Armand Bayou Watershed-Basin Expansion and Extension and H&H Study (Phases 1 + 2)	1.09	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000322	Jackson Bayou Watershed Planning Project-Immediate: First Street Crossing Mitigation	0.51	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000323	B106-WP01 & WP02 for Armand Bayou Watershed	9.77	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District, La Porte, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000324	Barker Reservoir Flood Risk Reduction and Park Project	27.08	Riverine, Urban/Local	Willow Fork Drainage District	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000325	Beaumont Place Subdivision Drainage Improvement Phase 2	1.41	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.
061000326	I100-WP01 Vince Bayou Watershed Planning Project Recommendation	2.07	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000327	Blalock Road Drainage Improvement Project	Study to further the proposed project that includes increasing the capacity of the drainage system with a 9'x9' RCB to replace dual 36-inch RCP along the east side of the road and an open ditch with driveway culverts on the west side of the road.	06000015	Harris	12040104	120401040302, 120401040303	06000079, 06000080	Project Planning
061000328	Brays Bayou - Keegans Bayou (D118-00-00) Flood Risk Reduction	Study to develop a BCR required for this project to become a FMP. A project could reduce the risk flooding for over 2,500 structures and could reduce the frequency and duration of flooding along about 100 miles of roadway.	06000003, 06000004, 06000015	Fort Bend, Harris	12040104	120401040401	06000083	Project Planning
061000329	I100-WP06 for Vince Bayou Watershed Planning Project	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Right-of-way acquisition, design, and construction of a stormwater detention basin and channel widening near Strawberry Road and Young Street	06000015	Harris	12040104, 12040204	120401040703, 120401040502, 120402040100	06000095, 06000086, 06000106	Project Planning
061000330	I100-WP10 for Vince Bayou Watershed Planning Project	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Right-of-way acquisition, Design, and Construction of Two Stormwater Detention Basins near Westside Dr. and Westside. Ct.	06000015	Harris	12040104, 12040204	120401040703, 120401040502, 120402040100	06000095, 06000086, 06000106	Project Planning
061000331	I100-WP07 for Vince Bayou Watershed Planning Project	Study to develop a BCR needed for this project to become a FMP. Pasadena (CIP) Street Lowering (Various). Right-of-way acquisition, Design, and Construction of Stormwaters Detention Basin and construction of Culverts near Pasadena Blvd.	06000015	Harris	12040104, 12040204	120401040703, 120401040502, 120402040100	06000095, 06000086, 06000106	Project Planning
061000332	I100-WP11 for Vince Bayou Watershed Planning Project	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Right-of-way acquisition, Design, and Construction of Stormwater Detention Basins near Spencer Hwy. and Tulip Street	06000015	Harris	12040104, 12040204	120401040703, 120401040502, 120402040100	06000095, 06000086, 06000106	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000327	Blalock Road Drainage Improvement Project	6.70	Urban/Local	City of Piney Point Village	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000328	Brays Bayou - Keegans Bayou (D118-00-00) Flood Risk Reduction	22.88	Urban/Local	Harris County Flood Control District (HCFCD)	Fort Bend, Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000329	I100-WP06 for Vince Bayou Watershed Planning Project	4.42	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000330	I100-WP10 for Vince Bayou Watershed Planning Project	4.42	Urban/Local	Harris County	Harris, Harris County Flood Control District, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000331	I100-WP07 for Vince Bayou Watershed Planning Project	4.42	Urban/Local	Harris County	Harris, Harris County Flood Control District, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000332	I100-WP11 for Vince Bayou Watershed Planning Project	4.42	Urban/Local	Harris County	Harris, Harris County Flood Control District, Pasadena	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000333	Carpenters Planning Study Cloverleaf Community Flood Risk Reduction Project (Phase 1 and 2)	Study to develop a BCR required for this project to become a FMP. Drainage system upgrade using combination of 9'x7' RCB spanning 3,000' and a 109 acre-feet detention facility providing drainage relief for this portion of the Cloverleaf Community.	06000015	Harris	12040104	120401040702, 120401040606	06000094, 06000092	Project Planning
061000334	Goose Creek Flood Risk Reduction Phase 1	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. 1.65 Miles of Goose Creek channel modifications (Downstream of IH 10) with proposed detention basin "J"	06000015	Harris	12040104	120401040705, 120401040706	06000097, 06000098	Project Planning
061000335	Goose Creek Flood Risk Reduction Phase 2	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. 1.00 Mile of Goose Creek channel modifications (Upstream of IH 10) with proposed detention basin "I"	06000015	Harris	12040104	120401040705, 120401040706	06000097, 06000098	Project Planning
061000336	Goose Creek Flood Risk Reduction Phase 3	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Local channel modifications and crossing structure improvements along O117 and O126	06000015	Harris	12040104	120401040705	06000097	Project Planning
061000337	Spring Creek Watershed Plan- Recommended Alternative for PA-02: J131-01-00 Storm Sewer improvements & channel modification	Study to develop a BCR required for this project to become a FMP. Channel modifications along J131-01 & storm sewer improvements under Zion Road, reduces sheet flow by providing positive drainage outfall for ~200 ac of land.	06000015	Harris	12040102	120401020209	06000041	Project Planning
061000338	Willow Creek Watershed Plan- Immediate: Selective Clearing BNRR to Mouth	Study to develop a BCR required for this project to become a FMP. Selective clearing from BNRR to mouth to increase riverine storm water conveyance, maintain tree canopy & veg. diversity, minimize impact on riparian & uplands habitats.	06000015	Harris	12040102	120401020106, 120401020105, 120401020210	06000031, 06000030, 06000042	Project Planning
061000339	Willow Creek Watershed Plan - M120 Detention/Preservation Site	Study to develop BCA to become a FMP. Pursue purchase of property for regional detention, floodplain preservation, & habitat preservation.	06000015	Harris	12040102	120401020106, 120401020105, 120401020210	06000031, 06000030, 06000042	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000333	Carpenters Planning Study Cloverleaf Community Flood Risk Reduction Project (Phase 1 and 2)	0.74	Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000334	Goose Creek Flood Risk Reduction Phase 1	6.22	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Baytown	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000335	Goose Creek Flood Risk Reduction Phase 2	7.32	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Baytown	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000336	Goose Creek Flood Risk Reduction Phase 3	1.39	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Baytown	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000337	Spring Creek Watershed Plan- Recommended Alternative for PA-02: J131-01-00 Storm Sewer improvements & channel modification	0.30	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Tomball	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000338	Willow Creek Watershed Plan- Immediate: Selective Clearing BNRR to Mouth	55.37	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000339	Willow Creek Watershed Plan - M120 Detention/Preservation Site	55.37	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000340	Willow Creek Watershed Plan- FM2920 Stormwater Detention Basin	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Proposed 826 acre-feet detention basin located near FM 2920 crossing of Willow Creek	06000015	Harris	12040102	120401020106, 120401020105, 120401020210	06000031, 06000030, 06000042	Project Planning
061000341	Willow Creek Watershed Plan- Kuykendahl Basin	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Proposed 727 acre-feet detention basin located near Kuykendahl Road crossing of Willow Creek	06000015	Harris	12040102	120401020106, 120401020105, 120401020210	06000031, 06000030, 06000042	Project Planning
061000342	Willow Creek Watershed Plan- M121 Basin Stormwater Detention Basin	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Proposed 1010 acre-feet detention basin located near M121 tributary	06000015	Harris	12040102	120401020106, 120401020105, 120401020210	06000031, 06000030, 06000042	Project Planning
061000343	Galveston Bay Watershed Plan- PA01 (N+6) Channel & Crossing Improvements	Develop BCA to become FMP. Channel deepening from N Broadway St to N Utah St, convert open channel segment to closed conduit w/ 8'x5' concrete boxes b/w N Utah St & Main St, replace concrete pipe w/ dual 8'x5' concrete box culvert outfall to F212.	06000015	Harris	12040204	120402040100	06000106	Project Planning
061000344	White Oak Bayou - Design and Construction of Woodland Trails Stormwater Detention Basin	Study to develop a BCA to become FMP. This stormwater detention basin compliments the federal project on White Oak Bayou which will reduce the risk of flooding for 1,800 structures in an Atlas 14 1% rainfall event.	06000015	Harris	12040102, 12040104	120401020104, 120401020106, 120401040601, 120401040302, 120401040604, 120401040303, 120401040304, 120401040301	06000029, 06000031, 06000087, 06000079, 06000090, 06000080, 06000081, 06000078	Project Planning
061000345	Spring Gully Watershed Planning Project- Project Phase I	Develop BCA to become FMP. 108 ac-ft of detention storage. Basin A w/ 95 ac-ft of storage, 10 ft depth, inlet & outlet structures consist of 2 culverts & weir. Basin B w/ 13 ac-ft of storage, 10.5 ft depth, inlet & outlet structures of culvert & weir.	06000015	Harris	12040104	120401040705	06000097	Project Planning
061000346	Spring Gully Watershed Planning Project- Project Phase II	Develop BCA to become a FMP. Independent of Phase I. Phase II includes addition of Stormwater Detention Basin C, with 80 acre-feet of detention storage w/ 9.5 ft depth & an inlet and outlet structure consisting of a culvert & a weir.	06000015	Harris	12040104	120401040705	06000097	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000340	Willow Creek Watershed Plan- FM2920 Stormwater Detention Basin	55.37	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000341	Willow Creek Watershed Plan- Kuykendahl Basin	55.37	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000342	Willow Creek Watershed Plan- M121 Basin Stormwater Detention Basin	55.37	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000343	Galveston Bay Watershed Plan- PA01 (N+6) Channel & Crossing Improvements	1.13	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Morgan's Point, La Porte	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000344	White Oak Bayou - Design and Construction of Woodland Trails Stormwater Detention Basin	79.45	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000345	Spring Gully Watershed Planning Project- Project Phase I	0.49	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000346	Spring Gully Watershed Planning Project- Project Phase II	0.49	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000347	Spring Gully Watershed Planning Project- Project Phase III	Complete after phase 2. Relief channel intended to outfall into Stormwater Detention Basin C from Phase 2. Consists of trapezoidal 850-foot channel with cross culvert sized at Prairie Street. Upstream of the culvert crossing, the bottom width is 8 ft.	06000015	Harris	12040104	120401040705	06000097	Project Planning
061000348	Galveston Bay - Right-of-Way Acquisition, Design and Construction of General Drainage Improvements Along F216-00-00	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. The project could reduce the risk of flooding for more than 450 structures in an Atlas 14 1% rainfall event.	06000015	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Project Planning
061000349	Galveston Bay - Right-of-Way Acquisition, Design and Construction of General Drainage Improvements Along F101-06-00	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. The project could reduce the risk of flooding for over 40 structures in an Atlas 14 1% rainfall event.	06000015	Harris	12040104, 12040204	120401040706, 120402040100	06000098, 06000106	Project Planning
061000350	Galveston Bay Watershed Plan- PA04 (S+4) Crossing Improvements	Recommended alternative directly addresses need for improved channel conveyance by increasing the size of the crossings at El Jardin Dr and Youpon Dr. to 8'x5' box culverts.	06000015	Chambers, Harris	12040204	120402040100	06000106	Project Planning
061000353	TC Jester Detention Basin	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Construction of a 25 acre stormwater detention basin. Estimated construction cost is \$10,047,910. this application is requesting \$10,000,000.00 of these funds.	06000015	Harris	12040102, 12040104	120401020106, 120401020107, 120401020210, 120401020212, 120401020213, 120401040601, 120401040602, 120401040603	06000031, 06000032, 06000042, 06000044, 06000045, 06000087, 06000088, 06000089	Project Planning
061000354	Halls Bayou Drainage Project Bond C-26 & C-27	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000355	Halls Bayou Drainage Project Bond C-01	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000347	Spring Gully Watershed Planning Project- Project Phase III	0.49	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000348	Galveston Bay - Right-of-Way Acquisition, Design and Construction of General Drainage Improvements Along F216-00-00	0.75	Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, La Porte	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000349	Galveston Bay - Right-of-Way Acquisition, Design and Construction of General Drainage Improvements Along F101-06-00	2.01	Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, La Porte	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000350	Galveston Bay Watershed Plan- PA04 (S+4) Crossing Improvements	0.50	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Pasadena, Seabrook	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000353	TC Jester Detention Basin	92.81	Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000354	Halls Bayou Drainage Project Bond C-26 & C-27	44.45	Other	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000355	Halls Bayou Drainage Project Bond C-01	44.45	Other	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000356	Westador Stormwater Detention Basin	Study to develop a BCR required for this project to become a FMP. The Westador Detention Basin is a proposed detention mitigation project within the Cypress Creek Watershed and located south of Cypress Creek and east and west of K141-00-00.	06000015	Harris	12040102, 12040104	120401020106, 120401020107, 120401020210, 120401020212, 120401020213, 120401040601, 120401040602, 120401040603	06000031, 06000032, 06000042, 06000044, 06000045, 06000087, 06000088, 06000089	Project Planning
061000357	Cypress Creek Implementation Plan - Various Detention Sites	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. The Implementation Plan identifies that approximately 14,000 acre-feet of stormwater detention volume across 23 different sites reducing flooding risk.	06000015	Harris	12040102, 12040104	120401020104, 120401020106, 120401020105, 120401020107, 120401020210, 120401020213, 120401040601, 120401040201, 120401040301, 120401040602	06000029, 06000031, 06000030, 06000032, 06000042, 06000045, 06000087, 06000075, 06000078, 06000088	Project Planning
061000358	Little Cypress Creek - Management, Right-of-Way Acquisition, Design and Construction of the Little Cypress Creek Frontier Program	Study to develop a BCR required for this to become a FMP. The Little Cypress Creek Frontier program will reduce the risk of flooding and include detention, sediment control, vegetation management and other flood risk management projects.	06000015	Harris	12040102	120401020103, 120401020104, 120401020106, 120401020101, 120401020105, 120401020205, 120401020210	06000028, 06000029, 06000031, 06000026, 06000030, 06000037, 06000042	Project Planning
061000360	G103-38-00 (Kingwood Diversion Ditch)	Study to develop a BCR required for this to become a FMP. Improvements to the Kingwood Diversion Ditch include channel modifications, flow diversion from Bens Branch, bridge replacements, as well as a new outfall to the West Fork San Jacinto River.	06000015	Harris, Montgomery	12040101, 12040103	120401010501, 120401010404, 120401030110, 120401030402	06000024, 06000023, 06000055, 06000070	Project Planning
061000361	G103-80-03.1B (Taylor Gully)	Study to develop a BCR required for this project to become a FMP. Improvements to Taylor Gully include two miles of channel conveyance improvements to the upper limits of Taylor Gully and a concrete low flow structure.	06000015	Harris	12040101, 12040103	120401010501, 120401010404, 120401030110, 120401030402	06000024, 06000023, 06000055, 06000070	Project Planning
061000362	Goose Creek O119-00-00-P001 (Alt 2A1)	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Construction of channel modifications and in-line stormwater detention along O119 to facilitate Harris County drainage improvements in Highland Mobile Estates	06000015	Harris	12040104, 12040203	120401040705, 120402030104	06000097, 06000102	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000356	Westador Stormwater Detention Basin	92.81	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000357	Cypress Creek Implementation Plan - Various Detention Sites	118.36	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000358	Little Cypress Creek - Management, Right-of-Way Acquisition, Design and Construction of the Little Cypress Creek Frontier Program	52.10	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000360	G103-38-00 (Kingwood Diversion Ditch)	21.65	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000361	G103-80-03.1B (Taylor Gully)	21.65	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000362	Goose Creek O119-00-00-P001 (Alt 2A1)	0.23	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000363	Goose Creek O119-00-00-P001 (Alt 2A3)	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Secondary option for the recommended alternative with less benefits and project cost	06000015	Harris	12040104, 12040203	120401040705, 120402030104	06000097, 06000102	Project Planning
061000364	Sims Bayou C116 Storm Sewer Improvement (C116-00-00-P001) From Mykawa Road to Telephone Road	Study to develop a BCR required for this project to become a FMP. To increase the system C116 capacity, Alternative 1 adds capacity to the C116 system trunkline through an additional parallel trunkline, from Dixie Drive to Sims Bayou.	06000015	Harris	12040104	120401040502	06000086	Project Planning
061000365	Greens Bayou (P100-00-00) Mid-Reach Channel Conveyance Improvements From John F. Kennedy Blvd to Veterans Memorial Drive (Ultimate Project (Alternative 3))	Study to develop a BCR required for this project to become a FMP. 2,000 ac-ft proposed Hardy stormwater detention basin and channel conveyance improvements throughout the Green's Bayou Mid-Reach (From John F. Kennedy Blvd to Veterans Memorial Drive)	06000015	Harris	12040101, 12040102, 12040104	120401010502, 120401010501, 120401020106, 120401020107, 120401040605, 120401040703, 120401040601, 120401040702, 120401040302, 120401040604, 120401040606, 120401040301, 120401040602, 120401040603, 120401040701	06000025, 06000024, 06000031, 06000032, 06000091, 06000095, 06000087, 06000094, 06000079, 06000090, 06000092, 06000078, 06000088, 06000089, 06000093	Project Planning
061000366	Greens Bayou - Planning, Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements along P138-01-01	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Potential federal funded project, the risk of flooding could be reduced for approximately 100 structures in a pre-Atlas 1% rainfall event.	06000015	Harris	12040104	120401040604, 120401040603	06000090, 06000089	Project Planning
061000367	Cedar Bayou Flood Risk Reduction Study - Property Acquisition in segment from SH 146 to Galveston Bay along Cedar Bayou (Q100-00-00)	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Property Acquisition in segment from SH 146 to Galveston Bay along Cedar Bayou	06000015	Chambers, Harris	12040104, 12040203	120401040706, 120402030106, 120402030200	06000098, 06000104, 06000105	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000363	Goose Creek O119-00-00-P001 (Alt 2A3)	0.23	Riverine	Harris County Flood Control District (HCFCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000364	Sims Bayou C116 Storm Sewer Improvement (C116-00-00-P001) From Mykawa Road to Telephone Road	1.39	Urban/Local	Harris County Flood Control District (HCFCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000365	Greens Bayou (P100-00-00) Mid-Reach Channel Conveyance Improvements From John F. Kennedy Blvd to Veterans Memorial Drive (Ultimate Project (Alternative 3))	165.69	Riverine, Urban/Local	Harris County Flood Control District (HCFCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	No	Sponsor requested removal. Duplicative project, project already listed in FMPs.
061000366	Greens Bayou - Planning, Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements along P138-01-01	1.02	Riverine, Urban/Local	Harris County Flood Control District (HCFCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000367	Cedar Bayou Flood Risk Reduction Study - Property Acquisition in segment from SH 146 to Galveston Bay along Cedar Bayou (Q100-00-00)	28.42	Urban/Local	Harris County Flood Control District (HCFCFCD)	Chambers, Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000368	Cedar Bayou Flood Risk Reduction Study - Q130 Channel improvements from Crosby Eastgate Rd. to Q100 Confluence	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Cedar Bayou Flood Risk Reduction Study - Q130 Channel improvements from Crosby Eastgate Rd. to Q100 Confluence	06000015	Harris, Liberty	12040103, 12040104, 12040203	120401030205, 120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030103, 120402030106, 120402030102, 120402030200, 120402030101	06000060, 06000097, 06000098, 06000096, 06000103, 06000102, 06000101, 06000104, 06000100, 06000105, 06000099	Project Planning
061000369	Cedar Bayou Flood Risk Reduction Study - Property Acquisition in segment from IH-10 to SH 146 along Cedar Bayou (Q100-00-00)	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Property Acquisition in segment from IH-10 to SH 146 along Cedar Bayou	06000015	Chambers, Harris	12040104, 12040203	120401040706, 120402030105, 120402030106	06000098, 06000103, 06000104	Project Planning
061000370	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 1	Further study to develop this project into a FMP. FIF application information unavailable.	06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	120401040706, 120402030105, 120402030106	06000098, 06000103, 06000104	Project Planning
061000371	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 2	Further study to develop this project into a FMP. FIF application information unavailable.	06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	120401010501, 120401030205, 120401030402	06000024, 06000060, 06000070	Project Planning
061000372	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 3	Further study to develop this project into a FMP. FIF application information unavailable.	06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	120401010501, 120401030205, 120401030402	06000024, 06000060, 06000070	Project Planning
061000373	City of Tomball Drainage Improvements	Study to the drainage project for the City of Tomball is comprised of building storm sewer systems and channel conveyance to enable flood waters to be removed from portions of the city bounded by Holderrieth Road, SH 249, UPRR, and FM 2920.	06000015	Harris, Montgomery	12040102	120401020106, 120401020205, 120401020210, 120401020209	06000031, 06000037, 06000042, 06000041	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000368	Cedar Bayou Flood Risk Reduction Study - Q130 Channel improvements from Crosby Eastgate Rd. to Q100 Confluence	198.31	Riverine	Harris County Flood Control District (HCFCD)	Chambers, Harris, Liberty, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000369	Cedar Bayou Flood Risk Reduction Study - Property Acquisition in segment from IH-10 to SH 146 along Cedar Bayou (Q100-00-00)	18.71	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Chambers, Harris, Harris County Flood Control District, Baytown	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000370	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 1	1770.82	Other	City of Pasadena	Harris, Harris County Flood Control District, Pasadena, Liberty County Water Control District 1	No	\$ 30,000.00	No	Sponsor is no longer pursuing this project.
061000371	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 2	1770.82	Other	City of Pasadena	Harris, Harris County Flood Control District, Pasadena, Liberty County Water Control District 1	No	\$ 30,000.00	No	Sponsor is no longer pursuing this project.
061000372	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 3	1770.82	Other	City of Pasadena	Harris, Harris County Flood Control District, Pasadena, Liberty County Water Control District 1	No	\$ 30,000.00	No	Sponsor is no longer pursuing this project.
061000373	City of Tomball Drainage Improvements	13.04	Urban/Local	City of Tomball	Harris, Harris County Flood Control District, Tomball	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000374	Cedar Bayou Flood Risk Reduction Study - Q128 Channel Improvements from US 90 to Q100 Confluence	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Cedar Bayou channel improvements from US 90 to Confluence with Q100	06000015	Harris	12040103, 12040104, 12040203	120401030205, 120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030103, 120402030106, 120402030102, 120402030200, 120402030101	06000060, 06000097, 06000098, 06000096, 06000103, 06000102, 06000101, 06000104, 06000100, 06000105, 06000099	Project Planning
061000376	Cedar Bayou Flood Risk Reduction Study - Channel improvements from US 90 to FM 1942	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Cedar Bayou channel improvements from US 90 to FM 1942	06000015	Chambers, Harris, Liberty	12040103, 12040104, 12040203	120401030205, 120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030103, 120402030106, 120402030102, 120402030200, 120402030101	06000060, 06000097, 06000098, 06000096, 06000103, 06000102, 06000101, 06000104, 06000100, 06000105, 06000099	Project Planning
061000379	Cedar Bayou Flood Risk Reduction Study - Channel improvements upstream of FM 1960	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Cedar Bayou channel improvements upstream of FM 1960	06000015	Harris, Liberty	12040103, 12040104, 12040203	120401030205, 120401040705, 120401040706, 120401040704, 120402030105, 120402030104, 120402030103, 120402030106, 120402030102, 120402030200, 120402030101	06000060, 06000097, 06000098, 06000096, 06000103, 06000102, 06000101, 06000104, 06000100, 06000105, 06000099	Project Planning
061000384	Houston Braeburn Glen Area Flood Mitigation	Further study of a proposed project that includes upsizing of the existing stormwater system with new pipes, inlets, and manholes. Lateral improvement will be completed on Mahoning Drive and Valley View Lane.	06000015	Fort Bend, Harris	12040104	120401040401	06000083	Project Planning
061000388	Roman Forest Boulevard Bridge Elevation Project	Further study of this project involves the study, design, elevation, and replacement of the Roman Forest Boulevard Bridge to mitigate the risks associated with storms and riverine flooding for the approximate 15,000 citizens.	06000015	Montgomery	12040103	120401030109, 120401030402	06000054, 06000070	Project Planning
061000389	White Oak - SPT and E116 (E116-00-00) Improvements : PA01 thru PA-05	Study to develop a Benefit Cost Analysis needed for these projects to become a FMP. The "E116-00-00 Flood Reduction Feasibility Study" was completed in March 2022 and provides a decrease riverine and urban flood risk in the area.	06000015	Harris	12040104	120401040302, 120401040304	06000079, 06000081	Project Planning

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061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000374	Cedar Bayou Flood Risk Reduction Study - Q128 Channel Improvements from US 90 to Q100 Confluence	198.31	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Liberty, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000376	Cedar Bayou Flood Risk Reduction Study - Channel improvements from US 90 to FM 1942	198.31	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Liberty, Harris County Flood Control District, Liberty County Water Control District 1	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000379	Cedar Bayou Flood Risk Reduction Study - Channel improvements upstream of FM 1960	198.31	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Liberty, Harris County Flood Control District, Liberty County Water Control District 1	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000384	Houston Braeburn Glen Area Flood Mitigation	95.57	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000388	Roman Forest Boulevard Bridge Elevation Project	2.19	Riverine	Montgomery County	Montgomery, Roman Forest	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000389	White Oak - SPT and E116 (E116-00-00) Improvements : PA01 thru PA-05	6.90	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000394	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-08-00	Develop BCA to become a FMP. This project could reduce the risk of flooding for over 210 structures and could reduce the 1% rainfall event for over 170 acres as part of the Halls Ahead Bond Implementation Program.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000395	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00	Develop BCA to become a FMP. Part of Halls Ahead Bond Implementation Program, could reduce flood risk for 80+ structures, size of the floodplain by 30+ acres & frequency & duration of flooding of up to half a mile of roadway in an Atlas 14 1% event.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000396	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-21-00	Develop BCA to become a FMP. Part of Halls Ahead Bond Implementation Program, could reduce flood risk for 60+ structures & floodplain by 40+ acres.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000397	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-23-00 and P118-23-02	Study to develop a BCR required for this project to become a FMP. Would reduce flood risk for 300+ structures, size of floodplain by 200+ acres. Facilitates future drainage projects by more outfall depth.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000399	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-25-00 & P118-25-01	Study to develop a BCR required for this project to become a FMP. Would reduce flood risk for 600+ structures. Facilitates future drainage projects by more outfall depth.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000400	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-27-00	Develop BCA to become a FMP. Part of Halls Ahead Bond Implementation Program, could reduce flood risk for 150+ structures, size of the floodplain by 90+ acres, frequency & duration of flooding along 3+ miles of roadway in an Atlas 14 1% event.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000394	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-08-00	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000395	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000396	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-21-00	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000397	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-23-00 and P118-23-02	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000399	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-25-00 & P118-25-01	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000400	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-27-00	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000402	Carpenters (N100-00-00) Channel Improvements	Study to develop a Cost Benefit Analysis and elevate the project to a FMP. Carpenters Bayou (N100-00-00) channel conveyance improvements.	06000015	Harris	12040104	120401040702	06000094	Project Planning
061000403	Halls Bayou - Design and Construction of a Stormwater Detention Basin in Brock Park	Develop BCA to become a FMP. Provides additional stormwater detention in support of flood damage reduction as part of the Halls Ahead Bond Implementation Program. The project will be a partnership with the City of Houston.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Project Planning
061000404	Halls Bayou - Planning, Right-Of-Way, Design and Construction of Halls Bayou Flood Risk Management Project	Develop BCA to become a FMP. Projects as part of the Halls Ahead Bond Implementation Program, could reduce the risk of flooding for more than 700 structures in an Atlas 14 1% rainfall event.	06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Other
061000405	Hunting Bayou Wallisville Outfall (H103-00-00) - Gellhorn Drive	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Diversion channel expansion for Gellhorn Drive flood reductions.	06000015	Harris	12040104	120401040606, 120401040701	06000092, 06000093	Project Planning
061000406	Hunting Bayou Wallisville Outfall (H103-00-00) - Denver Harbor	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Denver Harbor drainage system improvements.	06000015	Harris	12040104	120401040606, 120401040701	06000092, 06000093	Project Planning
061000407	Luce Bayou (Z100-00-00-P026) Bypass Channel	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Construction of channel bypass to provide Luce main stem upstream and local overland flooding relief	06000015	Harris	12040101, 12040103, 12040104, 12040203	120401010502, 120401010501, 120401030205, 120401030402, 120401040704, 120402030103, 120402030102	06000025, 06000024, 06000060, 06000070, 06000096, 06000101, 06000100	Project Planning
061000412	Luce Bayou (Z100-00-00-P026) Channelization	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Construction of channel improvements along Luce main stem	06000015	Harris	12040101, 12040103, 12040104, 12040203	120401010502, 120401010501, 120401030205, 120401030402, 120401040704, 120402030103, 120402030102	06000025, 06000024, 06000060, 06000070, 06000096, 06000101, 06000100	Project Planning
061000413	Luce Bayou (Z100-00-00-P026) Upstream Detention	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. Construction of regional detention upstream of Luce Bayou, including acquiring open land north of Harris County	06000015	Harris	12040101, 12040103, 12040104, 12040203	120401010502, 120401010501, 120401030205, 120401030402, 120401040704, 120402030103, 120402030102	06000025, 06000024, 06000060, 06000070, 06000096, 06000101, 06000100	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000402	Carpenters (N100-00-00) Channel Improvements	0.85	Riverine, Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000403	Halls Bayou - Design and Construction of a Stormwater Detention Basin in Brock Park	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000404	Halls Bayou - Planning, Right-Of-Way, Design and Construction of Halls Bayou Flood Risk Management Project	44.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000405	Hunting Bayou Wallisville Outfall (H103-00-00) - Gellhorn Drive	4.93	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000406	Hunting Bayou Wallisville Outfall (H103-00-00) - Denver Harbor	4.93	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000407	Luce Bayou (Z100-00-00-P026) Bypass Channel	74.89	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Liberty County Water Control District 1	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000412	Luce Bayou (Z100-00-00-P026) Channelization	74.89	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Liberty County Water Control District 1	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000413	Luce Bayou (Z100-00-00-P026) Upstream Detention	74.89	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston, Liberty County Water Control District 1	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000414	Planning Phase Study Report for Fairgreen & Eastex Freeway Forest Subdivisions Drainage Improvements 2019	Further study of Scenarios A, B and C recommended by the Fairgreen & Eastex Freeway Forest Subdivisions Drainage Report. Will develop Benefit Cost Analysis and other data required for a FMP designation.	06000015	Harris	12040104	120401040604, 120401040603	06000090, 06000089	Project Planning
061000415	City of Manvel Rogers Rd. Drainage Improvements	Further study Alleluia Trail Rogers Rd & All Roads off Rogers drainage improvements, including storm sewer rehabilitation and ditch deepening.	06000015	Brazoria	12040204, 12040204, 12040204	120402040100, 120402040400, 120402040200	06000106, 06000107, 06000109	Project Planning
061000416	Fallbrook, Ridgepoint and Westpoint Subdivision Drainage Improvements	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040604, 120401040603	06000090, 06000089	Project Planning
061000417	Houston Fifth Area Flood Mitigation	Further study to develop this project into a FMP. This unfunded CDBG-MIT application involves installing various storm sewer infrastructure in the Fifth Ward within the City of Houston.	06000015	Harris	12040104	120401040701	06000093	Project Planning
061000418	Houston Port Area Flood Mitigation	Further study to develop this project into a FMP. The project includes storm sewer improvements on nearly every street in the Pleasantville neighborhood to improve conveyance capacity and construction of a detention basin.	06000015	Harris	12040104	120401040701	06000093	Project Planning
061000419	Houston Huntington Village Area Flood Mitigation	Further study to develop this project into a FMP. The project includes storm sewer improvements in the Huntington Village neighborhood to reduce structural flood loss.	06000015	Fort Bend, Harris	12040104	120401040401	06000083	Project Planning
061000420	Clear Creek - Friendswood Detention Basin Near FM 528 in Friendswood	Develop BCA to become a FMP. ROW acquisition, design, and construction of 39 ac stormwater detention basin holding 500 ac-ft near FM 528; Additional solutions include buyouts, improving channel conveyance, and tributary detention.	06000015	Brazoria, Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000414	Planning Phase Study Report for Fairgreen & Eastex Freeway Forest Subdivisions Drainage Improvements 2019	0.26	Urban/Local	Harris County	Harris, Harris County Flood Control District	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.
061000415	City of Manvel Rogers Rd. Drainage Improvements	0.26	Urban/Local	City of Manvel	City of Manvel, Brazoria County	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000416	Fallbrook, Ridgepoint and Westpoint Subdivision Drainage Improvements	1.96	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.
061000417	Houston Fifth Area Flood Mitigation	40.60	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	FME has been elevated to FMP and is recommended in Table 16.
061000418	Houston Port Area Flood Mitigation	40.60	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	FME has been elevated to FMP and is recommended in Table 16.
061000419	Houston Huntington Village Area Flood Mitigation	95.57	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000420	Clear Creek - Friendswood Detention Basin Near FM 528 in Friendswood	102.41	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000421	Clear Creek - Hughes Stormwater Detention (SWD) Basin	Develop BCA to become a FMP. Project identified in Clear Creek Federal Project study for flood management but did not yield high enough cost benefit ratio for Federal funding. Therefore, Harris and Galveston County have decided to fund this effort.	06000015	Brazoria, Galveston, Fort Bend, Harris	12040104, 12040204	120401040502, 120401040501, 120402040200, 120402040400, 120402040100	06000086, 06000085, 06000107, 06000109, 06000106	Project Planning
061000422	Danubina Drainage Improvements	Study to further this project and develop an FMP. This CDBG-MIT application involves the installation and construction of various storm sewer and detention infrastructure.	06000015	Chambers, Harris	12040203	120402030106	06000104	Project Planning
061000423	North Alexander Drainage Improvements	Further study to develop this project into a FMP. This CDBG-MIT application involves the installation and construction of various storm sewer and detention infrastructure.	06000015	Chambers, Harris	12040203	120402030106	06000104	Project Planning
061000424	City of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I	This project, which includes terraces, detention, and a trail network, will reduce water surface elevations on Clear Creek within the City of Friendswood and will make the Blackhawk Wastewater Treatment Facility more resilient.	06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Project Planning
061000425	Clear Creek - Rehabilitation of the A214-00-00 channel to Restore Channel Conveyance Capacity	Major maintenance to restore channel conveyance capacity.	06000015	Harris, Galveston	12040104, 12040204	120401040502, 120401040501, 120402040200, 120402040400, 120402040100	06000086, 06000085, 06000107, 06000109, 06000106	Project Planning
061000426	Sawdust Road Bridge Elevation Project	Further study of study, design, elevation, & replacement of the Sawdust Road Bridge to mitigate the risks associated with riverine flooding for the citizens residing in the Grogan's Point and Timberlakes - Timberridge Subdivisions.	06000015	Harris, Montgomery	12040101, 12040102	120401010402, 120401010404, 120401020107, 120401020210, 120401020209, 120401020211, 120401020212, 120401020213	06000021, 06000023, 06000032, 06000042, 06000041, 06000043, 06000044, 06000045	Project Planning
061000427	Sandpiper Village Subdivision Drainage Improvements	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040102	120401020107	06000032	Project Planning
061000431	Oak Glen Place Subdivision Drainage Improvements	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040604, 120401040304	06000090, 06000081	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000421	Clear Creek - Hughes Stormwater Detention (SWD) Basin	200.27	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000422	Danubina Drainage Improvements	48.36	Urban/Local	City of Baytown	Harris, Harris County Flood Control District, Baytown	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000423	North Alexander Drainage Improvements	48.36	Urban/Local	City of Baytown	Harris, Harris County Flood Control District, Baytown	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000424	City of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I	20.83	Urban/Local	City of Friendswood	Galveston, Harris, Harris County Flood Control District, Friendswood	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000425	Clear Creek - Rehabilitation of the A214-00-00 channel to Restore Channel Conveyance Capacity	200.27	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Friendswood	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000426	Sawdust Road Bridge Elevation Project	32.94	Riverine	Montgomery County	Montgomery,	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000427	Sandpiper Village Subdivision Drainage Improvements	2.31	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.
061000431	Oak Glen Place Subdivision Drainage Improvements	6.01	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000432	Northfield Place Subdivision Drainage Improvements	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040604, 120401040304	06000090, 06000081	Project Planning
061000433	Spring Shadows South	Study to develop a Benefit Cost Analysis needed to elevate project to a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040302, 120401040303	06000079, 06000080	Project Planning
061000434	Houston Kashmere Gardens Area Flood Mitigation	Further study to develop this project into a FMP. The project includes improvements to storm sewer, roadside ditch systems, culverts, sewer inlets, and the construction of detention basins.	06000015	Harris	12040104	120401040703, 120401040604, 120401040606, 120401040304, 120401040701	06000095, 06000090, 06000092, 06000081, 06000093	Project Planning
061000435	City of Southside Place - Auden Street Drainage Improvement Project	This project provides for design and construction of a new stormwater conveyance system for the City of Southside Place, that will have the capacity to convey a City standard storm event (2-year storm).	06000015	Harris	12040104	120401040402	06000084	Project Planning
061000436	Unincorporated Areas of Bacliff and San Leon Roadside Ditches & Driveway Culverts Improvements	Further study of this unfunded CDBG-MIT project consists of various areas of roadside ditch and driveway culvert improvements in Bacliff and San Leon.	06000015	Galveston, Chambers	12040204	120402040200	06000107	Project Planning
061000437	Evaluation of Dredging of Channels that Exit Into Lake Houston	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris, Liberty, Montgomery	12040101, 12040103	120401010501, 120401030205, 120401030402	06000024, 06000060, 06000070	Project Planning
061000438	Greens Bayou, Jackson Bayou, White Oak Bayou, Cypress Creek and San Jacinto River Areas Subdivision Drainage Mitigation Project	This proposed solution recommends establishing positive drainage and clear flow lines, which are expected to reduce the water surface elevation in the subdivision to mitigate the structural flood risk for all 1,445 beneficiaries.	06000015	Harris, Waller, Liberty, Montgomery	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000432	Northfield Place Subdivision Drainage Improvements	6.01	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.
061000433	Spring Shadows South	5.82	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000434	Houston Kashmere Gardens Area Flood Mitigation	30.87	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	FME has been elevated to FMP and is recommended in Table 16.
061000435	City of Southside Place - Auden Street Drainage Improvement Project	45.60	Urban/Local	City of Southside Place	Harris, Harris County Flood Control District, Southside Place	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000436	Unincorporated Areas of Bacliff and San Leon Roadside Ditches & Driveway Culverts Improvements	6.95	Urban/Local	Galveston County	Galveston, Chambers	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000437	Evaluation of Dredging of Channels that Exit Into Lake Houston	155.78	Urban/Local	Harris County	North Harris County Regional Water Authority, San Jacinto River Authority, Harris County Flood Control District, USACE, Liberty County Water Control District 1	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000438	Greens Bayou, Jackson Bayou, White Oak Bayou, Cypress Creek and San Jacinto River Areas Subdivision Drainage Mitigation Project	722.66	Urban/Local	Harris County	Harris, Harris County Flood Control District,	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000439	Greens Bayou, White Oak Bayou and Cypress Creek Areas Subdivision Drainage Mitigation Project	The mitigation solution for Cypress Creek Estates is to install storm sewer systems along West Shadow Lake, East Shadow Lake, North Shadow Lake and Winding Lane, to re-grade the roadside ditches, and to remove and replace of all driveways and culverts.	06000015	Harris	12040101, 12040102, 12040104	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000440	Brazoria County Camp Mohawk County Park Development	Develop Benefit Cost Analysis in support of the purchase of approximately 160 acres of flood prone area adjacent to and surrounding Camp Mohawk County Park to be used as open space.	06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Project Planning
061000441	Addicks Reservoir - Design and Construction of a Bridge Replacement for Greenhouse Road at South Mayde Creek	Develop BCA to become a FMP. This project is part of the South Mayde Creek Plan that could reduce the risk of flooding for more than 70 homes and reduce the rainfall event by more than 340 acres in a pre-Atlas 1% rainfall event.	06000015	Harris	12040104	120401040102, 120401040202, 120401040104, 120401040203, 120401040303	06000072, 06000076, 06000074, 06000077, 06000080	Project Planning
061000442	Forest Estates - Live Oak Creek Watershed Artesian Forest 1 - Artesian Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000443	Artesian Forest 1 - Artesian Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010207	06000011	Project Planning
061000444	Artesian Forest East - Artesian Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207	06000011	Project Planning
061000445	Lilly - Alligator Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000446	East Fork North - Alligator Creek Watershed "	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000439	Greens Bayou, White Oak Bayou and Cypress Creek Areas Subdivision Drainage Mitigation Project	542.61	Urban/Local	Harris County	Harris, Waller, Harris County Flood Control District, Jersey Village, Waller, Houston, Tomball, Prairie View, Humble	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000440	Brazoria County Camp Mohawk County Park Development	1481.87	Urban/Local	Brazoria County	Brazoria West Brazoria County Drainage District, Pearland, Manvel, Iowa Colony, Alvin, Brookside Village, Hillcrest, Liverpool, Hitchcock	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000441	Addicks Reservoir - Design and Construction of a Bridge Replacement for Greenhouse Road at South Mayde Creek	15.50	Riverine	Harris County Flood Control District (HCFCD)	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000442	Forest Estates - Live Oak Creek Watershed Artesian Forest 1 - Artesian Creek Watershed	20.07	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000443	Artesian Forest 1 - Artesian Creek Watershed	2.48	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000444	Artesian Forest East - Artesian Creek Watershed	1.40	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000445	Lilly - Alligator Creek Watershed	1.40	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000446	East Fork North - Alligator Creek Watershed "	6.01	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000447	East Fork South - Alligator Creek Watershed "	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000448	West Branch - Alligator Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000449	Oak Hollow - Alligator Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000450	Cable - Alligator Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000451	South Frazier - Grand Lake Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000452	Rivershire East - Grand Lake Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000453	Rivershire West - Grand Lake Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000454	Baretta - Grand Lake Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010401	06000020	Project Planning
061000455	Valley - Stewarts Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010403, 120401010401, 120401010402, 120401010205, 120401010206	06000011, 06000022, 06000020, 06000021, 06000009, 06000010	Project Planning
061000456	Hunnington - Stewarts Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010207, 120401010403, 120401010401, 120401010402, 120401010205, 120401010206	06000011, 06000022, 06000020, 06000021, 06000009, 06000010	Project Planning
061000457	Avenue M - Stewarts Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010207, 120401010403, 120401010401, 120401010402, 120401010205, 120401010206	06000011, 06000022, 06000020, 06000021, 06000009, 06000010	Project Planning
061000458	South 3rd - Stewarts Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010403, 120401010401, 120401010402, 120401010205, 120401010206	06000011, 06000022, 06000020, 06000021, 06000009, 06000010	Project Planning

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FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000447	East Fork South - Alligator Creek Watershed "	6.01	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000448	West Branch - Alligator Creek Watershed	6.01	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000449	Oak Hollow - Alligator Creek Watershed	6.01	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000450	Cable - Alligator Creek Watershed	6.01	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000451	South Frazier - Grand Lake Creek Watershed	6.01	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000452	Rivershire East - Grand Lake Creek Watershed	3.51	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000453	Rivershire West - Grand Lake Creek Watershed	3.51	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000454	Baretta - Grand Lake Creek Watershed	9.51	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000455	Valley - Stewarts Creek Watershed	3.59	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000456	Hunnington - Stewarts Creek Watershed	19.66	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000457	Avenue M - Stewarts Creek Watershed	19.66	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000458	South 3rd - Stewarts Creek Watershed	19.66	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000459	Toby - Little Caney Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010403, 120401010401, 120401010402	06000022, 06000020, 06000021	Project Planning
061000460	Southern Oak - Little Laney Creek	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010403, 120401010401, 120401010402	06000022, 06000020, 06000021	Project Planning
061000461	Rush Creek Lake - Lake Conroe Estates Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000013, 06000014, 06000015	Montgomery	12040101	120401010207, 120401010206	06000011, 06000010	Project Planning
061000462	Longmire and SH-105 - Live Oak Creek Watershed	Develop a benefits cost analysis in support of this project identified in the City of Conroe Master Drainage Plan.	06000015	Montgomery	12040101	120401010207, 120401010401	06000011, 06000020	Project Planning
061000463	Southeast Montgomery County Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	06000010	Montgomery	12040101, 12040102, 12040103	120401010403, 120401010401, 120401010402, 120401010501, 120401010404, 120401020212, 120401030110, 120401030102, 120401030108, 120401030104, 120401030103, 120401030105, 120401030106, 120401030107, 120401030109, 120401030402, 120401030401	06000022, 06000020, 06000021, 06000024, 06000023, 06000044, 06000055, 06000047, 06000053, 06000049, 06000048, 06000050, 06000051, 06000052, 06000054, 06000070, 06000069	Watershed Planning
061000464	Carpenters Bayou (West Acres, Shadowglen & Old River Terrace Neighborhood)	Further study to develop a BCA required to elevate project to FMP. The project is to reduce flooding in the Problem Area #5 identified by the Carpenters Bayou Watershed Planning Project Report, 2021.	06000015	Harris	12040101, 12040104	120401010502, 120401040605, 120401040703, 120401040705, 120401040702, 120401040606, 120401040704	06000025, 06000091, 06000095, 06000097, 06000094, 06000092, 06000096	Project Planning
061000465	Catalina	Study to develop a BCR and other data needed to elevate project to a FMP. FIF application information unavailable.	06000015	Harris	12040204	120402040100	06000106	Project Planning
061000466	Ralston Acres Subdivision Drainage Improvements	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040605, 120401040604, 120401040606	06000091, 06000090, 06000092	Project Planning
061000467	Middle Armand Bayou Protection Project	Further study to develop this project into a FMP. FIF application information unavailable.	06000015	Harris	12040204	120402040100	06000106	Other

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000459	Toby - Little Caney Creek Watershed	19.66	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000460	Southern Oak - Little Laney Creek	8.61	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000461	Rush Creek Lake - Lake Conroe Estates Watershed	8.61	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000462	Longmire and SH-105 - Live Oak Creek Watershed	2.38	Riverine, Urban/Local	City of Conroe	Montgomery, Conroe	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000463	Southeast Montgomery County Master Drainage Plan	312.72	Riverine, Urban/Local	Montgomery County	Montgomery	No	\$ 1,170,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000464	Carpenters Bayou (West Acres, Shadowglen & Old River Terrace Neighborhood)	31.03	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000465	Catalina	261.60	Other	City of Houston	Harris, Harris County Flood Control District	No	\$ 30,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000466	Ralston Acres Subdivision Drainage Improvements	1.86	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.
061000467	Middle Armand Bayou Protection Project	261.60	Urban/Local	City of Pasadena	Harris County Flood Control District, Pasadena	No	\$ 30,000.00	No	The Sponsor is no longer pursuing this project.

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s	Watershed Names	FME Study Type
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	06000015	Brazoria	12040204	120402040400	06000109	Project Planning
061000468	Houston Sunnyside Area Flood Mitigation	Further study to develop into a FMP. Includes new storm sewer trunk systems on major thoroughfares & new or improved neighborhood storm sewer systems. Will also require construction of detention basins to mitigate the proposed improvements.	06000015	Harris	12040104, 12040204	120401040402, 120401040502, 120401040501, 120402040100	06000084, 06000086, 06000085, 06000106	Project Planning
061000469	Eastex Freeway Forest Sections 3 & 4 Subdivision Improvements	Study to develop a Benefit Cost Analysis needed for this project to become a FMP. FIF application information unavailable.	06000015	Harris	12040104	120401040604, 120401040603	06000090, 06000089	Project Planning

Appendix 5-6: Table 15 - Flood Management Evaluations Recommended by RFPG

FME ID	FME Name	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation
061000001	Durant Street Storm Sewer and Pavement Improvements - Phase 1	25.09	Urban/Local	City of Alvin	Brazoria, Galveston, West Brazoria County Drainage District, Alvin	No	\$ 110,000.00	Yes	Alignment with RFPG goals and TWDB guidance principles.
061000468	Houston Sunnyside Area Flood Mitigation	23.57	Urban/Local	City of Houston	Harris, Harris County Flood Control District, Houston	No	\$ 30,000.00	No	FME has been elevated to FMP and is recommended in Table 16.
061000469	Eastex Freeway Forest Sections 3 & 4 Subdivision Improvements	10.48	Urban/Local	Harris County	Harris, Harris County Flood Control District, Houston,	No	\$ 30,000.00	No	Current RRD project. No additional funding is needed.

Appendix 5-7:
Table 16 - Recommended FMPs

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000026	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Further refine the LCC Alt. Combination 3 as proposed as part of the LCCDBFMP (2021), including detention channel benching, a diversion tunnel, capacity improvements, and an auxiliary opening.	06000001, 06000005, 06000006, 06000015	Brazoria, Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Comprehensive	109.51	Riverine	City of League City
063000027	Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharpstown	Projects submitted as part of the CDBG MIT grant in the Brays Bayou Watershed which include regional channel and detention projects including D133 (Bintliff Ditch) and Sharpstown Drainage	06000001, 06000005, 06000006, 06000015	Harris	12040104	120401040401	06000083	Comprehensive	2.17	Riverine	Harris County Flood Control District (HCFCD)
063000037	Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Projects submitted as part of the CDBG MIT grant in the Sims Bayou Watershed which include three (3) regional channel and detention projects including C147/C547, Saltwater Ditch, and C506	06000001, 06000005, 06000006, 06000015	Fort Bend, Harris	12040104, 12040204	120401040703, 120401040402, 120401040502, 120401040501, 120402040400, 120402040100	06000095, 06000084, 06000086, 06000085, 06000109, 06000106	Comprehensive	93.21	Riverine, Urban/Local	Harris County Flood Control District (HCFCD)

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000026	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Brazoria, Galveston, Harris, Harris County Flood Control District	No	\$ 1,150,000,000.00		1,545,699	0	No	No	No	0.06	0.331956
063000027	Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharpstown	Harris, Harris County Flood Control District, Houston	Yes	\$ 107,061,000.00		0	0	No	No	No	0.13	0.75590557
063000037	Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Harris, Harris County Flood Control District, Houston	Yes	\$ 99,653,000.00		43,650	0	No	No	No	1.8	0.797316

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000026	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000027	Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharpstown	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000037	Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000040	Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Projects submitted as part of the CDBG MIT grant in Halls Bayou which include five (5) regional channel and detention projects including C-28, C-41 Hardy West, C-41 Mainstem, C30, and C23	06000001, 06000005, 06000006, 06000015	Harris	12040104	120401040605, 120401040601, 120401040302, 120401040604, 120401040606, 120401040304, 120401040603, 120401040701	06000091, 06000087, 06000079, 06000090, 06000092, 06000081, 06000089, 06000093	Comprehensive	44.45	Riverine	Harris County Flood Control District (HCFCD)
063000046	White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	Projects submitted as part of the CDBG MIT grant in the White Oak Bayou Watershed which include five (5) regional channel and detention projects including Kolbe Road, Barwood, E132-00-00, Tower Oaks, & Little White Oak Bayous.	06000001, 06000005, 06000006, 06000015	Harris	12040102, 12040104	120401020104, 120401020106, 120401040601, 120401040305, 120401040302, 120401040604, 120401040303, 120401040304, 120401040301, 120401040701	06000029, 06000031, 06000087, 06000082, 06000079, 06000090, 06000080, 06000081, 06000078, 06000093	Comprehensive	110.71	Urban/Local	Harris County Flood Control District (HCFCD)
063000058	Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Reduce flooding in the Caney Creek watershed by benching/widening a 7.8-mile-long stretch to increase conveyance capacity. Must be constructed with detention at FM1097 or detention at SH105 to capture runoff from Caney Creek.	06000001, 06000005, 06000006, 06000015	Harris, Liberty, Montgomery, San Jacinto, Walker	12040103, 12040103			Comprehensive	370.50	Riverine	Montgomery County
063000059	East Fork San Jacinto River - Winters Bayou Detention	The goal of the detention facility is to reduce flooding in the East Fork watershed by constructing a 1.60-mile-long earthen impoundment that captures runoff from Winters Bayou.	06000001, 06000011, 06000012, 06000015	Harris, Liberty, Montgomery, San Jacinto, Walker	12040103, 12040103			Detention Pond	408.79	Riverine	San Jacinto County

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000040	Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Harris, Harris County Flood Control District, Houston	Yes	\$ 99,653,000.00		196,554	0	No	No	No	1.46	0.78274165
063000046	White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	Harris, Harris County Flood Control District, Jersey Village, Houston	Yes	\$ 120,015,000.00		179,127	0	No	No	No	0.8	0.9188
063000058	Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Montgomery, Harris, Houston, Harris County Flood Control District, San Jacinto San Jacinto River Authority	Yes	\$ 469,000,000.00	TWDB FIF grants, GLO	193,642	0	No	No	No	0.3	0.548078
063000059	East Fork San Jacinto River - Winters Bayou Detention	Montgomery, Liberty, Harris, Harris County Flood Control District, San Jacinto San Jacinto River Authority	No	\$ 134,000,000.00	TWDB, GLO	205,837	0	No	No	No	0.47	0.601114

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000040	Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Yes	Alignment with RFPG goals and TWDB guidance principles.
		Yes	Alignment with RFPG goals and TWDB guidance principles.
063000046	White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak		
063000058	Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000059	East Fork San Jacinto River - Winters Bayou Detention	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000060	Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	The goal of the detention ponds is to reduce flooding in the Lake Creek and West Fork watersheds by constructing earthen impoundments that captures runoff from Garrett’s Creek, Caney Creek, & Little Caney Creek.	06000001, 06000011, 06000012, 06000015	Montgomery , Grimes	12040101	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010203, 120401010304, 120401010205	06000001, 06000012, 06000013, 06000014, 06000003, 06000007, 06000015, 06000009	Detention Pond	103.90	Riverine	Montgomery County
063000061	Peach Creek-Channelization at IH-69 & Detention at SH105 + Walker Creek	Widen 4.3-mile-long stretch to increase conveyance capacity. Must be completed with 4.7-mile-long detention at SH105 and 3.2-mile-long at Walker Creek to reduce flooding in Peach Creek watershed.	06000001, 06000005, 06000006, 06000015	Liberty, Montgomery , San Jacinto, Walker	12040103	120401030110, 120401030102, 120401030108, 120401030101, 120401030103, 120401030105, 120401030106, 120401030107, 120401030109, 120401030402, 120401030303, 120401030304, 120401030401	06000055, 06000047, 06000053, 06000046, 06000048, 06000050, 06000051, 06000052, 06000054, 06000070, 06000063, 06000064, 06000069	Comprehensive	157.95	Riverine	Montgomery County

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000060	Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	Montgomery, Grimes, San Jacinto San Jacinto River Authority	Yes	\$ 291,000,000.00	TWDB, GLO	819,718	0	No	No	No	0.26	0.169647
063000061	Peach Creek-Channelization at IH-69 & Detention at SH105 + Walker Creek	Montgomery, San Jacinto San Jacinto River Authority, Harris, Harris County Flood Control District	Yes	\$ 810,000,000.00	TWDB, GLO	706,806	0	No	No	No	0.26	0.589343

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000060	Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000061	Peach Creek- Channelization at IH- 69 & Detention at SH105 + Walker Creek	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000062	Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	8.9-mile, 200-foot-wide benched improvement 4-feet above the flowline of Woodlands channel and 6.9-mile, 300-foot-wide benched improvement 4 feet above I-45 channel. Must be completed with detention on Birch Creek and Walnut Creek.	06000001, 06000005, 06000006, 06000015	Harris, Waller, Montgomery, Grimes	12040101, 12040102, 12040104	120401030110, 120401030102, 120401030108, 120401030101, 120401030103, 120401030105, 120401030106, 120401030107, 120401030109, 120401030402, 120401030303, 120401030304, 120401030401	06000055, 06000016, 06000017, 06000018, 06000019, 06000020, 06000021, 06000024, 06000023, 06000036, 06000026, 06000030, 06000032, 06000033, 06000034, 06000035, 06000037, 06000039, 06000038, 06000042, 06000040, 06000041, 06000043, 06000044, 06000045, 06000088	Comprehensive	386.26	Riverine	Montgomery County
063000064	West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Channel improvement is to reduce flooding in the West Fork watershed by benching/widening to increase conveyance capacity of West Fork in order to lower the water surface elevation. Conduct after or in conjunction with detention on Lake Creek or Spring Creek.	06000001, 06000011, 06000012, 06000015	Harris, Montgomery	12040101, 12040102, 12040103, 12040104, 12040203	120401010502, 120401010501, 120401010404, 120401020213, 120401030110, 120401030402, 120401040705, 120401040702, 120401040602, 120401040704, 120402030104, 120402030102	06000025, 06000024, 06000023, 06000045, 06000055, 06000070, 06000097, 06000094, 06000088, 06000096, 06000102, 06000100	Channel	141.08	Riverine	Harris County Flood Control District (HCFCD)

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000062	Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	Harris, Montgomery, San Jacinto River Authority, Harris County Flood Control District	Yes	\$ 393,000,000.00	TWDB, GLO, FEMA, USACE	71,728	0	No	No	No	0.73	0.174256
063000064	West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Harris, Montgomery, San Jacinto River Authority, Harris County Flood Control District, Houston	No	\$ 994,000,000.00	TWDB, GLO	742,900	0	No	No	No	0.1	0.245437

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000062	Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000064	West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000113	City of Friendswood Ordinances and Regulation Update	Adopt higher codes and update ordinances and regulation to promote hazard mitigation strategies	06000001, 06000007, 06000010, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Preparedness	20.83	Urban/Local	City of Friendswood
063000114	City of Bayou Vista Regulations and Permit Requirements Update	Update regulations and permit requirements to address enhances hazard mitigation strategies.	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040200	6,000,107	Preparedness	0.45	Urban/Local	City of Bayou Vista
063000115	City of League City Freeboard Ordinance	Update city ordinance to require 24" of freeboard in the floodplain.	06000001, 06000007, 06000010, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Preparedness	52.89	Riverine, Urban/Local	City of League City
063000123	City of Cleveland Floodplain Land-Use Ordinance	The city shall adopt a land-use ordinance which prohibits building residential or commercial structures in the 100-year floodplain	06000001, 06000007, 06000010, 06000015	Liberty, Montgomery, San Jacinto	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Preparedness	18.74	Urban/Local	City of Cleveland
063000124	City of Cleveland Floodplain Ordinance Update	Adopt a land use ordinance which requires any structure within the 100-year floodplain to be elevated 2 feet	06000001, 06000007, 06000010, 06000015	Liberty, Montgomery, San Jacinto	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Preparedness	18.74	Urban/Local	City of Cleveland
063000126	City of Cleveland Ordinance Update Pipeline Right-of-Way	Adopt 25-foot setback from pipeline right-of-way	06000001, 06000007, 06000010, 06000015	Liberty, Montgomery, San Jacinto	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Preparedness	18.74	Urban/Local	City of Cleveland

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000113	City of Friendswood Ordinances and Regulation Update	Friendswood	No	\$ 109,000.00		0	0	No	No	No	5	0.27393697
063000114	City of Bayou Vista Regulations and Permit Requirements Update	Galveston, Bayou Vista	No	\$ 109,000.00		0	0	No	No	No	5	0.1425
063000115	City of League City Freeboard Ordinance	Galveston, League City	No	\$ 109,000.00		0	0	No	No	No	5	0.18696194
063000123	City of Cleveland Floodplain Land-Use Ordinance	Cleveland	No	\$ 109,000.00		0	0	No	No	No	5	0.74820302
063000124	City of Cleveland Floodplain Ordinance Update	Cleveland	No	\$ 109,000.00		0	0	No	No	No	0	0.74820302
063000126	City of Cleveland Ordinance Update Pipeline Right-of-Way	Cleveland	No	\$ 55,000.00		0	0	No	No	No	0	0.74820302

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000113	City of Friendswood Ordinances and Regulation Update	No	Project has been completed.
063000114	City of Bayou Vista Regulations and Permit Requirements Update	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000115	City of League City Freeboard Ordinance	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000123	City of Cleveland Floodplain Land-Use Ordinance	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000124	City of Cleveland Floodplain Ordinance Update	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000126	City of Cleveland Ordinance Update Pipeline Right-of-Way	No	Yields no direct flood risk reduction benefits and does not have a BCR.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000127	Galveston Bay Surge Protection Coastal Storm Risk Management	Federal projects identified in the Texas Coastal Study (2021) including Boliver Gates, Galveston Sea Wall Improvements, Ecosystem Restoration, Galveston Ring Barrier system, Clear Creek & Dickinson Bayou Gates, and non-structural measures	06000011, 06000012, 06000013, 06000014	Brazoria, Galveston, Fort Bend, Chambers, Harris, Liberty	12040104, 12040203, 12040204	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000091, 06000095, 06000084, 06000097, 06000098, 06000094, 06000082, 06000090, 06000092, 06000081, 06000086, 06000085, 06000093, 06000096, 06000103, 06000102, 06000104, 06000105, 06000108, 06000107, 06000109, 06000110, 06000106	Coastal	1559.02	Coastal	Gulf Coast Protection District

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000127	Galveston Bay Surge Protection Coastal Storm Risk Management	Galveston, Galveston, Chambers, Houston, Gulf Coast Protection District, USACE, Liberty County Water Control District 1	Yes	\$ 24,107,064,000.00		305,014	0	No	No	No	1.91	0.470157

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000127	Galveston Bay Surge Protection Coastal Storm Risk Management	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000128	Bolivar Peninsula and West Bay Gulf Intracoastal Waterway (GIWW) Shoreline and Island Protection	This project involves ecosystem restoration efforts planned along the GIWW such as the restoration of wetlands and islands, construction of breakwaters, and oyster reef scaling will provide natural buffer from coastal storm surge and prevent erosion.	06000011, 06000012, 06000013, 06000014	Brazoria, Galveston, Fort Bend, Chambers, Harris, Liberty	12040104, 12040203, 12040204	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000091, 06000095, 06000084, 06000097, 06000098, 06000094, 06000082, 06000090, 06000092, 06000081, 06000086, 06000085, 06000093, 06000096, 06000103, 06000102, 06000104, 06000105, 06000108, 06000107, 06000109, 06000110, 06000106	Coastal	1559.02	Coastal	Gulf Coast Protection District
063000129	City of Manvel City Ordinance	The city shall adopt a land use ordinance which requires any structure within the 100-year floodplain to be elevated 2 feet above base flood elevation.	06000001, 06000007, 06000010, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Preparedness	27.41	Urban/Local	City of Manvel
063000130	City of Manvel Land-Use Ordinance Adoption	The city shall adopt a land-use ordinance which prohibits building residential or commercial structures in the 100-year floodplain	06000001, 06000007, 06000010, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Preparedness	27.41	Urban/Local	City of Manvel

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
		Brazoria, Galveston, Chambers, Gulf Coast Protection District, Liberty County Water Control District 1	Yes	\$1,200,169,000.00		0	100	No	No	No	0	0.49437145
063000128	Bolivar Peninsula and West Bay Gulf Intracoastal Waterway (GIWW) Shoreline and Island Protection											
063000129	City of Manvel City Ordinance	Brazoria, West Brazoria County Drainage District, Manvel	No	\$103,000.00		0	0	No	No	No	5	0.42391255
063000130	City of Manvel Land-Use Ordinance Adoption	Brazoria, West Brazoria County Drainage District, Manvel	No	\$103,000.00		0	0	No	No	No	5	0.42391255

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
		No	Yields no direct flood risk reduction benefits and does not have a BCR.
063000128	Bolivar Peninsula and West Bay Gulf Intracoastal Waterway (GIWW) Shoreline and Island Protection		
063000129	City of Manvel City Ordinance	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000130	City of Manvel Land-Use Ordinance Adoption	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000132	City of Manvel GIS Database Improvements	Improve GIS database to include repetitive loss properties areas and flooded structure data. Data to be used for future drainage infrastructure planning and to provide outreach and emergency services to residents in substantial risk zones.	06000001, 06000007, 06000010, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Preparedness	27.41	Urban/Local	City of Manvel
063000136	Brazoria County NFIP Technical Material	Place copies of FEMA Flood-related technical bulletins in County libraries.	06000001, 06000005, 06000006, 06000010, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Other	1481.87	Urban/Local	Brazoria County
063000139	City of Clear Lake Shores - Implement Stormwater Management Practices	The Stormwater management plan is focused on six minimum measures regarding what is being done to prevent stormwater pollution. Annual reporting and renewals are required to ensure compliance is met.	06000001, 06000007, 06000010, 06000015	Galveston, Harris	12040204	120402040100	06000106	Preparedness	0.71	Riverine, Urban/Local	City of Clear Lake Shores
063000140	City of Clear Lake Shores - Improve Regulations and Permit Requirements	Update regulations and permit requirements	06000001, 06000007, 06000010, 06000015	Galveston, Harris	12040204	120402040100	06000106	Preparedness	0.71	Urban/Local	City of Clear Lake Shores
063000142	City of Hitchcock - Improve Regulations and Permit Requirements	Improve regulations and permit requirements to promote hazard mitigation strategies.	06000001, 06000007, 06000010, 06000015	Brazoria, Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Preparedness	91.21	Urban/Local	City of Hitchcock
063000143	City of Jamaica Beach - Improve Regulations and Permit Requirements	Improve regulations and permit requirements to promote hazard mitigation strategies.	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040300	6,000,108	Preparedness	0.71	Urban/Local	City of Jamaica Beach

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000132	City of Manvel GIS Database Improvements	Brazoria, West Brazoria County Drainage District, Manvel	No	\$ 21,000.00		0	0	No	No	No	0	0.42391255
063000136	Brazoria County NFIP Technical Material	Brazoria	No	\$ 21,000.00		0	0	No	No	No	0	0.35840346
063000139	City of Clear Lake Shores - Implement Stormwater Management Practices	Galveston, Clear Lake Shores	No	\$ 109,000.00		0	0	No	No	No	0	0.2025733
063000140	City of Clear Lake Shores - Improve Regulations and Permit Requirements	Galveston, Clear Lake Shores	No	\$ 109,000.00		0	0	No	No	No	5	0.2025733
063000142	City of Hitchcock - Improve Regulations and Permit Requirements	Galveston, Hitchcock	No	\$ 109,000.00		0	0	No	No	No	5	0.546378
063000143	City of Jamicia Beach - Improve Regulations and Permit Requirements	Galveston, Jamaica Beach	No	\$ 109,000.00		0	0	No	No	No	5	0.0307

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000132	City of Manvel GIS Database Improvements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000136	Brazoria County NFIP Technical Material	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000139	City of Clear Lake Shores - Implement Stormwater Management Practices	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000140	City of Clear Lake Shores - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000142	City of Hitcock - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000143	City of Jamicia Beach - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000144	City of Kemah - Improve Regulations and Permit Requirements	Improve regulations and permit requirements to promote hazard mitigation strategies.	06000001, 06000007, 06000010, 06000015	Galveston, Chambers	12040204	120402040200, 120402040100	06000107, 06000106	Preparedness	1.91	Urban/Local	City of Kemah
063000145	City of Kemah - Update Floodplain Ordinance	Update floodplain ordinance to ensure compliance with minimum standard of NFIP.	06000001, 06000007, 06000010, 06000015	Galveston, Chambers	12040204	120402040200, 120402040100	06000107, 06000106	Preparedness	1.91	Urban/Local	City of Kemah
063000146	City of La Marque - Improve Regulations and Permit Requirements	Improve regulations and permit requirements to promote hazard mitigation strategies	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040200	06000107	Preparedness	14.23	Urban/Local	City of La Marque
063000148	City of Tiki Island - Improve Regulations and Permit Requirements	Update and/or develop regulations and permits to address hazards prone to the area and include any changes in future development area.	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040200	06000107	Preparedness	1.59	Urban/Local	City of Tiki Island
063000149	City of Santa Fe - Improve Regulations and Permit Requirements	Update and/or develop regulations and permits to address hazards prone to the area and include any changes in future development area	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Preparedness	17.04	Riverine, Urban/Local	City of Santa Fe
063000152	City of Galveston Land Use Mapping	Develop proposed land use mapping to allow easier consideration of hazards	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Preparedness	211.08	Urban/Local	City of Galveston
063000153	City of Galveston Freeboard Requirement Enforcement	Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Preparedness	211.08	Riverine, Urban/Local	City of Galveston

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000144	City of Kemah - Improve Regulations and Permit Requirements	Galveston, Kemah	No	\$ 109,000.00		0	0	No	No	No	5	0.421484
063000145	City of Kemah - Update Floodplain Ordinance	Galveston, Kemah	No	\$ 109,000.00		0	0	No	No	No	5	0.421484
063000146	City of La Marque - Improve Regulations and Permit Requirements	Galveston, La Marque	No	\$ 109,000.00		0	0	No	No	No	5	0.665832
063000148	City of Tiki Island - Improve Regulations and Permit Requirements	Galveston, Tiki Island	No	\$ 109,000.00		0	0	No	No	No	5	0.137459
063000149	City of Santa Fe - Improve Regulations and Permit Requirements	Galveston, Santa Fe	No	\$ 109,000.00		0	0	No	No	No	5	0.354962
063000152	City of Galveston Land Use Mapping	Galveston, City of Galveston	No	\$ 11,000.00		0	0	No	No	No	0	0.424152
063000153	City of Galveston Freeboard Requirement Enforcement	Galveston, City of Galveston	No	\$ 100,000.00		0	0	No	No	No	5	0.424152

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000144	City of Kemah - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000145	City of Kemah - Update Floodplain Ordinance	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000146	City of La Marque - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000148	City of Tiki Island - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000149	City of Santa Fe - Improve Regulations and Permit Requirements	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000152	City of Galveston Land Use Mapping	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000153	City of Galveston Freeboard Requirement Enforcement	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000167	Greens CDBG MIT Projects: Castlewood, Fountainview, Humble Rd Place, North Forest, Mid-Reach	Projects submitted as part of the CDBG MIT grant in Greens Bayou including Projects: Fountainview Sec 1&2, Castlewood Sec 3&4, North Forest, Mid-Reach Greens, Parkland Estates, and Humble Road Place.	06000001, 06000005, 06000006, 06000015	Harris				Comprehensive	165.69	Urban/Local	Harris County Flood Control District (HCFCD)
063000201	City of Alvin Unified Development Ordinance	A unified land development code combines all land use controls into a single document with a logical structure that is user friendly. Cost is time, data and preparation of a unified land development code.	06000001, 06000007, 06000010, 06000015	Brazoria, Galveston, Fort Bend	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Preparedness	25.09	Urban/Local	City of Alvin
063000417	Houston Fifth Area Flood Mitigation	This unfunded CDBG-MIT application involves installing various storm sewer infrastructure in the Fifth Ward and Market Square areas within the City of Houston.	06000015	Harris	12040104	120401040701	06000093	Infrastructure	40.595013	Urban/Local	City of Houston
063000468	Houston Sunnyside Area Flood Mitigation	Includes new storm sewer trunk systems on major thoroughfares & new or improved neighborhood storm sewer systems. Will also require construction of detention basins to mitigate the proposed improvements.	06000015	Harris	12040104,12040204	120401040402, 120401040502, 120401040501, 120402040100	06000084, 06000086, 06000085, 06000106	Infrastructure	23.571218	Urban/Local	City of Houston

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000167	Greens CDBG MIT Projects: Castlewood, Fountainview, Humble Rd Place, North Forest, Mid-Reach	Harris, Harris County Flood Control District, Houston	Yes	\$ 120,284,000.00		0	0	No	No	No	2.13	0.695068
063000201	City of Alvin Unified Development Ordinance	Brazoria, Alvin	No	\$ 100,000.00	Entity Budget/Funds (100%)	0	0	No	No	No	5	0.505242
063000417	Houston Fifth Area Flood Mitigation	Harris, Harris County Flood Control District, Houston	No	\$ 89,753,487.00			0	No	No	No	1.87	
063000468	Houston Sunnyside Area Flood Mitigation	Harris, Harris County Flood Control District, Houston	No	\$ 111,281,647.00			0	No	No	No	1.2	

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000167	Greens CDBG MIT Projects: Castlewood, Fountainview, Humble Rd Place, North Forest, Mid-Reach	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000201	City of Alvin Unified Development Ordinance	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000417	Houston Fifth Area Flood Mitigation	Yes	Alignment with RFPG goals and TWDB guidance principles.
063000468	Houston Sunnyside Area Flood Mitigation	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
063000434	Houston Kashmere Gardens Area Flood Mitigation	The project includes improvements to storm sewer, roadside ditch systems, culverts, sewer inlets, and the construction of detention basins.	06000015	Harris	12040104	120401040703, 120401040604, 120401040606, 120401040304, 120401040701	06000095, 06000090, 06000092, 06000081, 06000093	Infrastructure	30.87229	Urban/Local	City of Houston
063000418	Houston Port Area Flood Mitigation	The project includes storm sewer improvements on nearly every street in the Pleasantville neighborhood to improve conveyance capacity and construction of a detention basin.	06000015	Harris	12040104	120401040701	06000093	Infrastructure	40.595013	Urban/Local	City of Houston

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Percent Nature-Based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)
063000434	Houston Kashmere Gardens Area Flood Mitigation	Harris, Harris County Flood Control District, Houston	No	\$ 94,879,859.00			0	No	No	No	1.09	
		Harris, Harris County Flood Control District, Houston	No	\$ 99,021,350.00			0	No	No	No	0.3	
063000418	Houston Port Area Flood Mitigation											

Appendix 5-7: Table 16 - Potentially Feasible Flood Mitigation Projects Recommended by RFPG

FMP ID	FMP Name	RFPG Recommendation (Y/N)	Reason for Recommendation
063000434	Houston Kashmere Gardens Area Flood Mitigation	Yes	Alignment with RFPG goals and TWDB guidance principles.
		Yes	Alignment with RFPG goals and TWDB guidance principles.
063000418	Houston Port Area Flood Mitigation		

Appendix 5-8:
Table 17 - Recommended FMSs

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000001	City of Bellaire Roadway and Drainage Improvements	Perform engineering services in support of the local drainage asset management planning, to repair or reconstruct antiquated local drainage and associated road infrastructure. Including design of storm sewers, roadways, and overland storage/conveyance.	060000001, 060000015	Harris	12040104	120401040402, 120401040401	060000084, 060000083	Other	4	Urban/Local	City of Bellaire
062000002	City of Bellaire Non-Structural Flood Risk Reduction Strategies	Conduct planning and outreach efforts to identify residents interested in buy-out, home elevation, or flood proofing programs, and develop plans or grant applications to support	060000001, 060000015	Harris	12040104	120401040402, 120401040401	060000084, 060000083	Other	4	Urban/Local	City of Bellaire
062000003	City of Bellaire Drainage Requirements and Flood Damage Prevention Ordinance	Develop updates to Bellaire's residential and non-residential drainage requirements and the City's flood damage prevention ordinance, in alignment with Bellaire's broader flood risk management goals and objectives.	060000001, 060000015	Harris	12040104	120401040402, 120401040401	060000084, 060000083	Other	4	Urban/Local	City of Bellaire
062000004	City of Bellaire Surrounding Area Drainage Improvements	Partner with surrounding municipalities/governmental agencies to identify drainage improvements (conveyance or detention) which could minimize extreme event sheet flow entering into Bellaire.	060000001, 060000015	Harris	12040104	120401040402, 120401040401	060000084, 060000083	Other	4	Urban/Local	City of Bellaire
062000005	City of Bellaire Floodwater Public Awareness Initiatives	Periodically distribute messages to residents warning of dangers of walking or playing in floodwaters. Develop a plan with local schools to educate children to avoid walking, playing, or riding bicycles in floodwaters.	060000001, 060000005, 060000006, 060000010, 060000015	Harris	12040104	120401040402, 120401040401	060000084, 060000083	Education and Outreach	4	Urban/Local	City of Bellaire

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000001	City of Bellaire Roadway and Drainage Improvements	Harris, Bellaire, Harris County Flood Control District	N	3,000,000	Bonds/Other Financing (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000002	City of Bellaire Non-Structural Flood Risk Reduction Strategies	Harris, Bellaire	N	50,000	Other (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000003	City of Bellaire Drainage Requirements and Flood Damage Prevention Ordinance	Harris, Harris County Flood Control District, Bellaire	N	50,000	General Revenue (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000004	City of Bellaire Surrounding Area Drainage Improvements	Harris, Harris County Flood Control District, Bellaire	N	100,000	General Revenue (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000005	City of Bellaire Floodwater Public Awareness Initiatives	Bellaire	N	50,000	General Revenue (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000006	City of Bunker Hill Community Outreach	Community Outreach (flooded street identification, marking and signage)	06000001, 06000005, 06000006, 06000010, 06000015	Harris	12040104	120401040303	06000080	Education and Outreach	1	Urban/Local	City of Bunker Hill Village
062000007	City of Bunker Hill Dam/Levee Maintenance and Monitoring Plan	Minimize the risk of dam/levee failure and related damage to existing and proposed structures by monitoring the maintenance and inspection schedules.	06000001,06000015	Harris	12040104	120401040303	06000080	Other	1	Riverine, Urban/Local	City of Bunker Hill Village
062000008	Harris County Hazard Mitigation Action AW-3	Utilizing the existing public outreach capability to develop, deploy, and disseminate targeted outreach projects promoting risk communication, mitigation and resilience to all the hazards of concern.	06000001, 06000005, 06000006, 06000010, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	N/A	N/A	Education and Outreach	1,771	Riverine, Urban/Local	Harris County
062000009	Harris County Hazard Mitigation Action AW-4	Strive to capture time-sensitive data such as high-water marks, extent and location of hazard, and loss information to support future updates to risk assessments as well as other plans and programs that utilize hazard extent data.	06000001, 06000010, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	N/A	N/A	Flood Measurement and Warning	1,771	Riverine, Urban/Local	Harris County
062000010	Harris County Hazard Mitigation Action AW-5	Continue to develop, improve, and implement an enhanced mass public warning and alert system within the Harris County Joint Information Center to provide warning capability throughout Harris County to support the emergency management of all hazards.	06000001, 06000010, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	N/A	N/A	Flood Measurement and Warning	1,771	Riverine, Urban/Local	Harris County

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000006	City of Bunker Hill Community Outreach	Harris, Harris County Flood Control District, Bunker Hill Village	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000007	City of Bunker Hill Dam/Levee Maintenance and Monitoring Plan	Harris, Harris County Flood Control District, Houston, Bunker Hill Village	N	500,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000008	Harris County Hazard Mitigation Action AW-3	Harris, Liberty County Water Control District 1	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000009	Harris County Hazard Mitigation Action AW-4	Harris, Liberty County Water Control District 1	N	300,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000010	Harris County Hazard Mitigation Action AW-5	Harris, Liberty County Water Control District 1	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000011	Harris County Hazard Mitigation Action AW-6	Utilize viable and relevant information, data and tools (Hazus models) developed as part of the update to the risk assessment of this plan update to support training and exercise of the County's preparedness, response and recovery programs.	06000001, 06000010, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	N/A	N/A	Flood Measurement and Warning	1,771	Riverine, Urban/Local	Harris County
062000012	City of Alvin CRS Application	Apply and once accepted maintain and/or improve CRS status. Cost is time, data and preparation of a CRS application. Benefit, if approved homeowner with flood insurance could receive a discount based on the City's CRS score.	06000001, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Other	16	Riverine, Urban/Local	City of Alvin
062000013	Brazoria County Increased Cost of Compliance Education	Implement campaign on public education of ICC (Increased Cost of Compliance) coverage.	06000001, 06000005, 06000006, 06000010, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Education and Outreach	1,482	Riverine, Coastal, Urban/Local	Brazoria County
062000014	City of Galveston NFIP CRS Rating	Maintain membership of the NFIP's CRS	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Other	53	Riverine, Coastal, Urban/Local	City of Galveston
062000015	Develop Applicable Plans and Studies to Address Hazard Mitigation in Galveston County	Review planning needs annually to include, but not be limited to, CEMP, debris management, stormwater management, master plan, drainage, drought, GIS mapping, complete study to locate areas prone to expansive soils and land subsidence, etc.	06000001, 06000007, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Regulatory and Guidance	665	Riverine, Coastal, Urban/Local	Galveston County

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062000011	Harris County Hazard Mitigation Action AW-6	Harris, Liberty County Water Control District 1	N	500,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000012	City of Alvin CRS Application	Brazoria, Alvin	N	25,000	Entity Budget/Funds (100%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000013	Brazoria County Increased Cost of Compliance Education	Brazoria	N	20,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000014	City of Galveston NFIP CRS Rating	Galveston	N	10,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000015	Develop Applicable Plans and Studies to Address Hazard Mitigation in Galveston County	Galveston	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000016	Waller County Elevation Certificate Requirement	Require and maintain FEMA elevation certificates for all new/improved building in the SFHA. Finished construction Ecs must be submitted prior to OSSF permitting.	06000001, 06000007, 06000010, 06000015	Waller	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Regulatory and Guidance	798	Riverine, Urban/Local	Waller County
062000017	Develop Program to Optimize Operation of the Flood Gates at Second Cut Outlet in City of Kemah	Develop program to integrate with the Harris County Flood Control District for the purpose of optimizing the operation of the flood gates at second cut outlet.	06000001, 06000007, 06000010, 06000015	Galveston	12040204	120402040200, 120402040100	06000107, 06000106	Regulatory and Guidance	2	Riverine, Coastal, Urban/Local	City of Kemah
062000018	Galveston County-wide Education and Outreach	Provide educational information related to preparedness, mitigation, response, and recovery to the public.	06000001, 06000005, 06000006, 06000010, 06000015	Galveston, Harris	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Education and Outreach	665	Riverine, Coastal, Urban/Local	Galveston County
062000019	Public Information and Awareness in City of New Waverly	Rewrite, improve, and implement new local floodplain regulations, to include a public information campaign on regulatory awareness.	06000001, 06000005, 06000006, 06000010, 06000015	Walker	12040103	120401030101	06000046	Education and Outreach	2	Urban/Local	City of New Waverly
062000020	Promotion of Flood Insurance in City of Arcola	Promote the purchase of flood insurance. Advertise the availability, cost, and coverage of flood insurance through the NFIP.	06000001, 06000005, 06000006, 06000010, 06000015	Fort Bend	12040204	120402040400	06000109	Education and Outreach	3	Riverine, Urban/Local	City of Arcola

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FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000016	Waller County Elevation Certificate Requirement	Waller, Waller, Hempstead, Brookshire, Brookshire Katy Drainage District, Katy	N	50,000	General Revenue (50%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000017	Develop Program to Optimize Operation of the Flood Gates at Second Cut Outlet in City of Kemah	Galveston, Harris County Flood Control District, Kemah	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000018	Galveston County-wide Education and Outreach	Galveston	N	50,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000019	Public Information and Awareness in City of New Waverly	Walker, New Waverly	N	10,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000020	Promotion of Flood Insurance in City of Arcola	Fort Bend, Arcola	N	50,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000021	City of Todd Mission Public Outreach & Education	Provide educational information related to preparedness, mitigation, response, and recovery to the public.	06000001, 06000005, 06000006, 06000010, 06000015	Grimes	12040102	120401020203, 120401020206	06000035, 06000038	Education and Outreach	2	Riverine, Urban/Local	City of Todd Mission
062000022	Increase Public Awareness of Hazards in City of Arcola	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards.	06000001, 06000005, 06000006, 06000010, 06000015	Fort Bend	12040204	120402040400	06000109	Education and Outreach	3	Riverine, Urban/Local	City of Arcola
062000023	Expand Development of Emergency Notification System in Liberty County	Expand development of emergency notification system/work to establish public awareness of emergency notification process.	06000001, 06000005, 06000006, 06000010, 06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Education and Outreach	1,170	Riverine, Urban/Local	Liberty County
062000025	Galveston County Stormproof/Retrofit Infrastructure	Stormproof/retrofit critical facilities and infrastructure for county-owned properties and unincorporated areas.	06000001, 06000003, 06000004, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Infrastructure Projects	665	Riverine, Coastal, Urban/Local	Galveston County
062000026	Implement Stormwater Management Plan in City of Bayou Vista	Implement stormwater management plan to improve drainage during flood and other weather events.	06000001, 06000007, 06000015	Galveston	12040204	120402040200	06000107	Regulatory and Guidance	0	Riverine, Coastal, Urban/Local	City of Bayou Vista

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062000021	City of Todd Mission Public Outreach & Education	Todd Mission	N	20,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000022	Increase Public Awareness of Hazards in City of Arcola	Arcola	N	50,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000023	Expand Development of Emergency Notification System in Liberty County	Liberty, Liberty County Water Control District 1	N	10,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000025	Galveston County Stormproof/Retrofit Infrastructure	Galveston, Galveston	Y	5,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000026	Implement Stormwater Management Plan in City of Bayou Vista	Bayou Vista	N	25,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

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FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000027	Walker County Public Information and Awareness	Purchase high water (flood) indicators for low water river crossing for county roads.	06000001, 06000010, 06000015	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Flood Measurement and Warning	798	Riverine, Urban/Local	Walker County
062000028	City of Bayou Vista Severe Weather Warning Systems	Purchase and install severe weather warning systems	06000001, 06000010, 06000015	Galveston	12040204	120402040200	06000107	Flood Measurement and Warning	0	Riverine, Coastal, Urban/Local	City of Bayou Vista
062000029	Natural Infrastructure Project Barker Reservoir Headwater Acquisition and Restoration	Purchase and restore agricultural & natural lands at the headwater of Barker Reservoir. Manage land for agricultural use, restore native landscape like grasslands and wetlands, and enhance management practices. Provides natural flood mitigation benefits.	06000001, 06000013, 06000014	Waller	12040102, 12040104	120401020103, 120401040101	06000028, 06000071	Property Acquisition and Structural Elevation	2	Riverine, Urban/Local	Coastal Prairie Conservancy
062000030	Natural Infrastructure Project Mound Creek Conservation	Purchase conservation easement from landowner to permanently conserve as agricultural/natural areas. KPC to ensure land remains undeveloped agricultural land and maintain conservation. Would provide multiple benefits such as flood mitigation, and more.	06000001, 06000013, 06000014	Harris, Waller	12040102	120401020103, 120401020101	06000028, 06000026	Property Acquisition and Structural Elevation	3	Riverine, Urban/Local	Coastal Prairie Conservancy

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062000027	Walker County Public Information and Awareness	Walker	N	248,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000028	City of Bayou Vista Severe Weather Warning Systems	Bayou Vista	N	35,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000029	Natural Infrastructure Project Barker Reservoir Headwater Acquisition and Restoration	Harris, Waller, Harris County Flood Control District	N	33,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000030	Natural Infrastructure Project Mound Creek Conservation	Harris, Waller, Harris County Flood Control District	N	32,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

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062000031	Brazoria County Structure Elevation	Elevate structures in flood zone. Over 70% of these structures are pre-firm and do not meet current FEMA elevation standards. FEMA estimates that over 400 structures may be substantially damaged and must be elevated to meet current standards	06000001, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Property Acquisition and Structural Elevation	1,482	Riverine, Urban/Local, Coastal	Brazoria County
062000032	Brazoria County Non-structural Mitigation / Land Preservation	Up to 35,0000 acres of land could be purchased to help reduce the impacts of natural hazards by converting the space to floodwater storage, groundwater recharge, erosion, drought mitigation, in the form of public green space.	06000001, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Property Acquisition and Structural Elevation	1,482	Riverine, Urban/Local, Coastal	Brazoria County
062000033	City of Bellaire Flood Rescue Plan	Develop a plan to address rescues from both one-story and two-story homes. This includes evacuating disabled/physically impaired/elderly individuals from homes in advance of anticipated extreme rainfall events.	06000001, 06000007, 06000010, 06000015	Harris	12040104	120401040402, 120401040401	06000084, 06000083	Regulatory and Guidance	4	Riverine, Urban/Local	City of Bellaire
062000034	Brazoria County Dam and Levee Failure Outreach and Education campaign	Implement an outreach and education campaign to educate the public on mitigation techniques for dam and levee failure to reduce loss of life and property.	06000001, 06000005, 06000006, 06000010, 06000015	Brazoria	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Education and Outreach	1,482	Riverine, Urban/Local, Coastal	Brazoria County

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062000031	Brazoria County Structure Elevation	Brazoria, Alvin, Iowa Colony, Pearland	Y	60,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000032	Brazoria County Non-structural Mitigation / Land Preservation	Brazoria, Alvin, Iowa Colony, Pearland	Y	65,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000033	City of Bellaire Flood Rescue Plan	Bellaire	N	200,000	General Revenue (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000034	Brazoria County Dam and Levee Failure Outreach and Education campaign	Brazoria, Alvin, Iowa Colony, Pearland	N	20,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

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062000035	Amending Grimes County Floodplain Ordinance	Prohibit the building of any new structures located down-stream of high hazard dams by amending the floodplain ordinance.	06000001, 06000007, 06000015	Grimes	12040101, 12040102	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010304, 120401010305, 120401010306, 120401020202, 120401020203, 120401020207, 120401020206	06000001, 06000012, 06000013, 06000014, 06000003, 06000015, 06000016, 06000017, 06000034, 06000035, 06000039, 06000038	Regulatory and Guidance	799	Riverine, Urban/Local	Grimes County
062000036	Grimes County Property Acquisition	Per NFIP participation, the acquisition of structures located in the 100-year flood plain and in dam inundation areas.	06000001, 06000015	Grimes	12040101, 12040102	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010304, 120401010305, 120401010306, 120401020202, 120401020203, 120401020207, 120401020206	06000001, 06000012, 06000013, 06000014, 06000003, 06000015, 06000016, 06000017, 06000034, 06000035, 06000039, 06000038	Property Acquisition and Structural Elevation	799	Riverine, Urban/Local	Grimes County
062000037	Property Acquisition Down-Stream of High Hazard Dams in Grimes County	Acquire homes located down-stream of high hazard dams	06000001, 06000015	Grimes	12040101, 12040102	120401010101, 120401010301, 120401010302, 120401010303, 120401010103, 120401010304, 120401010305, 120401010306, 120401020202, 120401020203, 120401020207, 120401020206	06000001, 06000012, 06000013, 06000014, 06000003, 06000015, 06000016, 06000017, 06000034, 06000035, 06000039, 06000038	Property Acquisition and Structural Elevation	799	Riverine, Urban/Local	Grimes County

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062000035	Amending Grimes County Floodplain Ordinance	Grimes, Todd Mission	N	20,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000036	Grimes County Property Acquisition	Grimes, Todd Mission	Y	95,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000037	Property Acquisition Down-Stream of High Hazard Dams in Grimes County	Walker	Y	1,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

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062000038	Walker County Property Acquisition in Deep River Plantation Subdivision	Acquire flood loss properties and properties prone to flooding in the Deep River Plantation Subdivision.	06000001, 06000015	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Property Acquisition and Structural Elevation	798	Riverine, Urban/Local	Walker County
062000039	City of Santa Fe Stormproof/retrofit New Critical Infrastructure	New construction and existing critical facilities and infrastructure should include advanced mitigation techniques.	06000001, 06000007, 06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Regulatory and Guidance	17	Riverine, Urban/Local	City of Santa Fe
062000040	Waller County Drainage System Maintenance	Project will clear obstacles, widen and reshape ditches, and upgrade culverts to restore adequate drainage to mitigate flooding in all participating jurisdictions.	06000001, 06000003, 06000004, 06000015	Waller	12040102, 12040104	120401020102, 120401020103, 120401020204, 120401020101, 120401020201, 120401020202, 120401020203, 120401020205, 120401020207, 120401020206, 120401040102, 120401040103, 120401040101, 120401040203	060000027, 060000028, 060000036, 060000026, 060000033, 060000034, 060000035, 060000037, 060000039, 060000038, 060000072, 060000073, 060000071, 060000077	Infrastructure Projects	516	Riverine, Urban/Local	Waller County

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062000038	Walker County Property Acquisition in Deep River Plantation Subdivision	Walker	Y	2,475,000		0	0	No	No	No	No	Outside of San Jacinto region.
062000039	City of Santa Fe Stormproof/retrofit New Critical Infrastructure	Santa Fe	N	5,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000040	Waller County Drainage System Maintenance	Waller, Waller, Brookshire Katy Drainage District, Katy	0	2,500,000	General Revenue (50%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000041	Waller County Flood Hazard Public Information Campaign	Posting of signage at high profile locations and use of social media to communicate threats/concurs. Flood gauges for common flooded road crossings. Burn ban signs.	06000001, 06000005, 06000006, 06000010, 06000015	Waller	12040102, 12040104	120401020102, 120401020103, 120401020204, 120401020101, 120401020201, 120401020202, 120401020203, 120401020205, 120401020207, 120401020206, 120401040102, 120401040103, 120401040101, 120401040203	060000027, 060000028, 060000036, 060000026, 060000033, 060000034, 060000035, 060000037, 060000039, 060000038, 060000072, 060000073, 060000071, 060000077	Education and Outreach	516	Riverine, Urban/Local	Waller County
062000042	Waller County Freeboard Requirement Update	The county may increase its freeboard requirement to 24-in from 18-in above the base flood elevation. County may require that all new lots within a platted subdivision be located fully outside of the floodplain. Applicable to all floodplain development.	06000001, 06000007, 06000015	Waller	12040102, 12040104	120401020102, 120401020103, 120401020204, 120401020101, 120401020201, 120401020202, 120401020203, 120401020205, 120401020207, 120401020206, 120401040102, 120401040103, 120401040101, 120401040203	060000027, 060000028, 060000036, 060000026, 060000033, 060000034, 060000035, 060000037, 060000039, 060000038, 060000072, 060000073, 060000071, 060000077	Regulatory and Guidance	516	Riverine, Urban/Local	Waller County

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000041	Waller County Flood Hazard Public Information Campaign	Waller, Waller, Hempstead, Brookshire, Brookshire Katy Drainage District, Katy	N	20,000	General Revenue (50%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000042	Waller County Freeboard Requirement Update	Waller, Waller, Hempstead, Brookshire, Brookshire Katy Drainage District, Katy	N	100,000	General Revenue (100%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000043	Install Outdoor Early warning System in Walker County	Install Outdoor Early warning System to provide citizens early warning of an impending disaster, or an event that would affect the life and/or property of the citizens.	06000001, 06000005, 06000006, 06000010, 06000015	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Education and Outreach	798	Riverine, Urban/Local	Walker County
062000044	Walker County Public Hazard Information and Awareness Campaign	The county and participating jurisdiction will create and implement an education campaign to educate the public on mitigation techniques for all hazards.	06000001, 06000005, 06000006, 06000010, 06000015	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Education and Outreach	798	Riverine, Urban/Local	Walker County

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000043	Install Outdoor Early warning System in Walker County	Walker, Huntsville, New Waverly	N	850,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000044	Walker County Public Hazard Information and Awareness Campaign	Walker, Huntsville, New Waverly	N	20,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000045	Retrofit and Harden the Emergency Operations Center Serving Walker County	Retrofit and harden the Emergency Operations Center serving Walker county including city of Huntsville, New Waverly, and Riverside.	06000001, 06000005, 06000006, 06000010, 06000015	Walker	12040101, 12040103	120401010104, 120401010101, 120401010102, 120401010103, 120401010201, 120401010202, 120401010203, 120401010204, 120401030101, 120401030106, 120401030303, 120401030305, 120401030301, 120401030302	06000004, 06000001, 06000002, 06000003, 06000005, 06000006, 06000007, 06000008, 06000046, 06000051, 06000063, 06000065, 06000061, 06000062	Education and Outreach	798	Riverine, Urban/Local	Walker County
062000046	City of Cleveland Drainage Maintenance	Removal of debris, silt and vegetation obstacles in drainageways. Project will clear obstacles, mow and reshape ditches, and upgrade culverts to restore adequate drainage to mitigate flooding	06000001, 06000003, 06000004, 06000015	Liberty, Montgomery, San Jacinto	12040103	120401030201, 120401030108, 120401030109, 120401030203, 120401030202, 120401030401	06000056, 06000053, 06000054, 06000058, 06000057, 06000069	Infrastructure Projects	19	Riverine, Urban/Local	City of Cleveland
062000047	City of Hilcrest Village Land Acquisition	Purchase additional land for retention pond construction to mitigate flooding in flood zones.	06000001, 06000015	Brazoria	12040204	120402040400	06000109	Property Acquisition and Structural Elevation	0	Riverine, Urban/Local	City of Hillcrest Village
062000048	City of Manvel Property Acquisition	Acquire Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties in the 100-year flood plain, as identified by FEMA and NFIP	06000001, 06000015	Brazoria	12040204	120402040200, 120402040400, 120402040100	06000107, 06000109, 06000106	Property Acquisition and Structural Elevation	27	Riverine, Urban/Local	City of Manvel
062000049	City of Bellaire Flood Early Warning System	Develop Flood Early Warning System for the City of Bellaire to inform emergency responders and to assist residents in making safe decisions during major storm events.	06000001, 06000010, 06000015	Harris	12040104	120401040402, 120401040401	06000084, 06000083	Flood Measurement and Warning	4	Riverine, Urban/Local	City of Bellaire

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000045	Retrofit and Harden the Emergency Operations Center Serving Walker County	Walker, Huntsville	N	4,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000046	City of Cleveland Drainage Maintenance	Cleveland, San Jacinto, Montgomery	N	5,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000047	City of Hilcrest Village Land Acquisition	Hillcrest	Y	250,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000048	City of Manvel Property Acquisition	Manvel	Y	1,700,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000049	City of Bellaire Flood Early Warning System	Bellaire, Harris County Flood Control District	N	150,000	General Revenue (25%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000050	City of Bayou Vista Management Practices for Securing Windblown Debris in Canals.	Debris generated by many hazards if the level of intensity allows. Implement plan to remove debris throughout the canal system especially since Bayou Vista is a residential canal community.	06000001, 06000003, 06000004, 06000015	Galveston	12040204	120402040200	06000107	Infrastructure Projects	0	Riverine, Urban/Local, Coastal	City of Bayou Vista
062000051	Maintain Drainage Systems and Culverts in City of Friendswood	Cleaned & recut drainage ditches, complete work orders related to conveyance systems. Pursue sub-regional drainage improvements.	06000001, 06000003, 06000004, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Infrastructure Projects	21	Riverine, Urban/Local	City of Friendswood
062000052	City of League City Property Acquisition and Relocation	Buying and removing property from the floodplain will reduce long-term, repetitive flood loss. The open space created by the removal of insured property will facilitate drainage and allow for the creation of recreation areas.	06000001, 06000015	Galveston, Harris	12040204	120402040200, 120402040100	06000107, 06000106	Property Acquisition and Structural Elevation	53	Riverine, Urban/Local	City of League City
062000053	City of Santa Fe - Harden Existing Critical Facilities and Infrastructure	Harden existing critical facilities and infrastructure. Specifically City Hall, Maintenance Building, Library, and Community Center.	06000001, 06000003, 06000004, 06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Infrastructure Projects	17	Riverine, Urban/Local	City of Santa Fe
062000054	City of Santa Fe - Drainage System Maintenance	Keep areas of concern free of unnecessary debris as needed. Implement and maintain tree, vegetation trimming/removal near, infrastructure, drainage systems and roadside areas.	06000001, 06000003, 06000004, 06000015	Galveston	12040204	120402040300, 120402040200	06000108, 06000107	Infrastructure Projects	17	Urban/Local	City of Santa Fe
062000055	Liberty County Floodplain Acquisition	Acquisition of property in the floodplain.	06000001, 06000015	Liberty	12040204	120402040300, 120402040200, 120402040400, 120402040100	06000108, 06000107, 06000109, 06000106	Property Acquisition and Structural Elevation	665	Riverine, Urban/Local	Liberty County
062000056	City of Galveston Floodplain Manager Increase	Increase and maintain number of floodplain managers in the building division through training and certification.	06000001, 06000007, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Regulatory and Guidance	211	Riverine, Urban/Local, Coastal	City of Galveston

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000050	City of Bayou Vista Management Practices for Securing Windblown Debris in Canals.	Bayou Vista	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000051	Maintain Drainage Systems and Culverts in City of Friendswood	Friendswood, Harris, Galveston	N	1,400,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000052	City of League City Property Acquisition and Relocation	League City	Y	300,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000053	City of Santa Fe - Harden Existing Critical Facilities and Infrastructure	Santa Fe	Y	2,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000054	City of Santa Fe - Drainage System Maintenance	Santa Fe	N	5,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000055	Liberty County Floodplain Acquisition	Liberty, Dayton	Y	750,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000056	City of Galveston Floodplain Manager Increase	Galveston	N	10,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000057	City of Galveston SRL and RL Property Mitigation	Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties and structures damaged by flooding.	06000001, 06000015	Galveston	12040204	120402040300, 120402040200, 120402040400, 120402040500	06000108, 06000107, 06000109, 06000110	Property Acquisition and Structural Elevation	211	Riverine, Urban/Local, Coastal	City of Galveston
062000058	City of Bunker Hill Village Non-Structural Mitigation Projects	Non-structural mitigation measure - buried powerlines, tree management and generators	06000001,06000015	Harris	12040104	120401040303	06000080	Other	1	Riverine, Urban/Local	City of Bunker Hill Village
062000059	Hardening of Critical Facilities in City of Mission Todd	Protecting critical facilities such as hospitals, fire stations, police stations and water treatment plants can help keep them operational during severe storms.	06000001, 06000003, 06000004, 06000015	Grimes	12040102	120401020203, 120401020206	06000035, 06000038	Infrastructure Projects	2	Riverine, Urban/Local	City of Todd Mission
062000060	Harris County Mitigation Buyout and Relocation Program	This program is designed to assist owners whose properties were damaged by a natural disaster and or in an area that is designated hopelessly deep in the floodplain and repetitively flooded, to relocate outside the threat of flooding.	06000001, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	N/A	N/A	Property Acquisition and Structural Elevation	1,771	Riverine, Urban/Local, Coastal	Harris County
062000061	City of Alvin Full Time Floodplain Administrator	Hire a full-time floodplain administrator who can support CRS application, NFIP, mapping and community floodplain support. A dedicated employee could help the community obtain CRS status and full time flood plain support.	06000001, 06000007, 06000015	Brazoria, Galveston, Fort Bend	N/A	N/A	N/A	Regulatory and Guidance	25	Riverine, Urban/Local	City of Alvin

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000057	City of Galveston SRL and RL Property Mitigation	Galveston, Galveston	Y	80,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000058	City of Bunker Hill Village Non-Structural Mitigation Projects	Harris, Harris County Flood Control District, Bunker Hill Village,	N	100,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000059	Hardening of Critical Facilities in City of Mission Todd	Grimes, Todd Mission	Y	25,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000060	Harris County Mitigation Buyout and Relocation Program	Harris, Houston, Harris County Flood Control District, Liberty County Water Control District 1	Y	75,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000061	City of Alvin Full Time Floodplain Administrator	Alvin	N	100,000	Entity Budget/Funds (100%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s	Watershed Name	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor
062000062	City of Pearland SRL and RL Property Acquisition	Continue working with County and State officials to identify repetitive loss and severe repetitive loss properties, and pursue mitigation projects to reduce risk.	06000001, 06000015	Brazoria, Fort Bend, Harris	N/A	N/A	N/A	Property Acquisition and Structural Elevation	49	Riverine, Urban/Local	City of Pearland
062000063	Harris County Wide Voluntary Buyout Program	Targeted home buyouts to reduce flood damages in areas several feet deep in the floodplain where structural projects to reduce flooding are not cost-effective and/or beneficial.	06000001, 06000015	Harris	12040101, 12040102, 12040103, 12040104, 12040203, 12040204	N/A	N/A	Property Acquisition and Structural Elevation	1,771	Riverine, Urban/Local, Coastal	Harris County Flood Control District (HCFCD)
062000064	Mitigate Repetitive Flood Claim & Severe Repetitive Loss Properties in Galveston County	Grant funding through HMGP may be used to mitigate RFC and SRL properties. Mitigation option will be implemented with property owners as funding and opportunities arise.	06000001, 06000011, 06000012, 06000015	Galveston	12040204	120402040200	06000107	Property Acquisition and Structural Elevation	14	Riverine, Urban/Local, Coastal	Galveston County
062000065	Liberty County Regional Coordination	Work with adjoining counties regarding flooding and drainage issues.	06000001, 06000011, 06000012, 06000015	Liberty	12040103, 12040203	120401030201, 120401030108, 120401030109, 120401030205, 120401030402, 120401030203, 120401030204, 120401030202, 120401030401, 120402030104, 120402030103, 120402030102, 120402030101	06000056, 06000053, 06000054, 06000060, 06000070, 06000058, 06000059, 06000057, 06000069, 06000102, 06000101, 06000100, 06000099	Other	1,170	Riverine, Urban/Local, Coastal	Liberty County

Appendix 5-8: Table 17 - Potentially Feasible Flood Mitigation Strategies Recommended by RFPG

FMS ID	FMS Name	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/Structure removed	Consideration of Nature-Based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation
062000062	City of Pearland SRL and RL Property Acquisition	Pearland, Brazoria, Brazoria County Drainage District 4	Y	100,000	Other (0%)	0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000063	Harris County Wide Voluntary Buyout Program	Harris, Houston, Harris County Flood Control District, Liberty County Water Control District 1	Y	500,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000064	Mitigate Repetitive Flood Claim & Severe Repetitive Loss Properties in Galveston County	Galveston, Galveston, Jamaica Beach, Hitchcock, La Marque, Santa Fe, Texas City,	N	30,000,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.
062000065	Liberty County Regional Coordination	Liberty, Chambers, Harris, San Jacinto, Hardin, Liberty County Water Control District 1	N	500,000		0	0	No	No	No	Yes	Alignment with RFPG goals and TWDB guidance principles.

Appendix 5-9: FMP Details

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	063000026	The LCC Alt. Combination 3 as proposed as part of the LCCDBFMP (2021), including detention channel benching, a diversion tunnel, capacity improvements, and an auxiliary opening.	San Jacinto	Comprehensive	2	Clear Creek & Dickinson Bayou	No	\$ 1,150,000,000	0.06	\$ 1,545,699	Unknown	Unknown	3642
Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown	063000027	Projects submitted as part of the CDBG MIT grant in the Brays Bayou Watershed which include regional channel and detention projects including D133 (Bintliff Ditch) and Sharpstown Drainage	San Jacinto	Comprehensive	2	Brays Bayou	No	\$ 107,061,000	0.13	\$ -	Unknown	Unknown	267
Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	063000037	Projects submitted as part of the CDBG MIT grant in the Sims Bayou Watershed which include three (3) regional channel and detention projects including C147/C547, Saltwater Ditch, and C506	San Jacinto	Comprehensive	2	Sims Bayou	No	\$ 99,653,000	1.8	\$ 43,650	Unknown	Unknown	4367
Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	063000040	Projects submitted as part of the CDBG MIT grant in Halls Bayou which include five (5) regional channel and detention projects including C-28, C-41 Hardy West, C-41 Mainstem, C-30, and C-23	San Jacinto	Comprehensive	2	Halls Bayou	No	\$ 99,653,000	1.46	\$ 196,554	Unknown	0.01	15541
White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	063000046	Projects submitted as part of the CDBG MIT grant in the White Oak Bayou Watershed which include five (5) regional channel and detention projects including Kolbe Road, Barwood, E132-00-00, Tower Oaks, & Little White Oak Bayous.	San Jacinto	Comprehensive	2	White Oak Bayou	No	\$ 120,015,000	0.8	\$ 179,127	Unknown	0.01	2937

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Planning	1.029		Baseline average flood depth > 1ft	6	Brazoria County, Galveston County, Harris County; Pasadena city, Alvin city, El Lago city, Clear Lake Shores city, Taylor Lake Village city, La Porte city, Webster city, Friendswood city, Houston city, Kemah city, Nassau Bay city, Pearland city, Shoreacres city, League City city, Seabrook city	5,453,858	15,959	0.29%	<25% of project community affected	1	911	25.01%
Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown	Planning	0.524		Baseline average flood depth > 0.5ft	4	Harris County, Fort Bend County; Meadows Place city, Southside Place city, Missouri City city, Sugar Land city, Bellaire city, Stafford city, Houston city, Four Corners CDP, Mission Bend CDP, West University Place city	5,553,924	8,121	0.15%	<25% of project community affected	1	160	59.93%
Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Planning	1.063		Baseline average flood depth > 1ft	6	Harris County, Fort Bend County; Pasadena city, Missouri City city, Stafford city, South Houston city, Houston city, Pearland city	5,553,924	18,899	0.34%	<25% of project community affected	1	2283	52.28%
Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Planning	2.813		Baseline average flood depth > 2ft	8	Harris County; Houston city, Aldine CDP	4,731,145	55,015	1.16%	<25% of project community affected	1	3023	19.45%
White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	Planning	0.903		Baseline average flood depth > 0.5ft	4	Harris County; Houston city, Jersey Village city	4,731,145	15,842	0.33%	<25% of project community affected	1	670	22.81%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Reduced risk to <50% of structures in floodplain	4	3642	\$ 1,364,856,777	\$ 1,225,237,940	0.1023	Flood damage reduction < 25%	2	8	44.44%	Reduced risk for <50% of critical facilities in floodplain	4	9.087	
Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown	Reduced risk to <75% of structures in floodplain	7	267	\$ 5,892,708	\$ 3,163,203	0.4632	Flood damage reduction < 25%	2	4	15.38%	Reduced risk for <50% of critical facilities in floodplain	4	7.572	
Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Reduced risk to <75% of structures in floodplain	7	4367	\$ 27,781,666	\$ -	1.0000	Flood damage reduction >95%	10	32	54.24%	Reduced risk for <75% of critical facilities in floodplain	7	9.189	
Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Reduced risk to <50% of structures in floodplain	4	15541	\$ 147,283,199	\$ 7,740,718	0.9474	Flood damage reduction > 75%	8	6	6.25%	Reduced risk for <10% of critical facilities in floodplain	1	14.439	
White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	Reduced risk to <50% of structures in floodplain	4	2937	\$ 152,483,269	\$ 105,838,953	0.3059	Flood damage reduction > 25%	4	3	7.32%	Reduced risk for <10% of critical facilities in floodplain	1	8.709	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				S
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.332		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.756		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	None
Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.797		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	None
Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.783		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	None
White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.919		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	None

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner's regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner's regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner's regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
Halls Bayou Watershed Mitigation Application 1 - CDBG MIT		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner's regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner's regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	Project will deliver a high level of environmental benefits (4+ categories)	10		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	063000058	Reduce flooding in the Caney Creek watershed by benching/widening a 7.8-mile-long stretch to increase conveyance capacity. Must be constructed with detention at FM1097 or detention at SH105 to capture runoff from Caney Creek.	San Jacinto	Comprehensive	2	San Jacinto River Basin	No	\$ 469,000,000	0.3	\$ 193,642	Varies by Roadways	Varies by Roadways	3641
East Fork San Jacinto River - Winters Bayou Detention	063000059	The goal of the detention facility is to reduce flooding in the East Fork watershed by constructing a 1.60-mile-long earthen impoundment that captures runoff from Winters Bayou.	San Jacinto	Detention Pond	2	San Jacinto River Basin	No	\$ 134,000,000	0.47	\$ 205,837	Varies by Roadways	Varies by Roadways	1896
Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	063000060	The goal of the detention ponds is to reduce flooding in the Lake Creek and West Fork watersheds by constructing earthen impoundments that captures runoff from Garrett's Creek, Caney Creek, & Little Caney Creek.	San Jacinto	Detention Pond	2	San Jacinto River Basin	No	\$ 291,000,000	0.26	\$ 819,718	Varies by Roadways	Varies by Roadways	479
Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek	063000061	Widen 4.3-mile-long stretch to increase conveyance capacity. Must be completed with 4.7-mile-long detention at SH105 and 3.2-mile-long at Walker Creek to reduce flooding in Peach Creek watershed.	San Jacinto	Comprehensive	2	San Jacinto River Basin	No	\$ 810,000,000	0.26	\$ 706,806	Varies by Roadways	Varies by Roadways	1516
Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	063000062	8.9-mile, 200-feet-wide benched improvement 4-feet above the flowline of Woodlands channel and 6.9-mile, 300-foot-wide benched improvement 4 feet above I-45 channel. Must be completed with detention on Birch Creek and Walnut Creek.	San Jacinto	Comprehensive	2	San Jacinto River Basin	No	\$ 393,000,000	0.73	\$ 71,728	Varies by Roadways	Varies by Roadways	7487

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Planning	1.138		Baseline average flood depth > 1ft	6	Walker County, San Jacinto County, Harris County, Montgomery County, Liberty County; Cleveland city, Deerwood CDP, New Waverly city, Woodbranch city, Porter Heights CDP, Patton Village city, Roman Forest city, Houston city, Splendora city, Grangerland CDP, Willis city, Cut and Shoot city	5,547,018	5,743	0.10%	<25% of project community affected	1	2422	66.52%
East Fork San Jacinto River - Winters Bayou Detention	Planning	1.511		Baseline average flood depth > 1ft	6	Walker County, San Jacinto County, Harris County, Montgomery County, Liberty County; Cleveland city, Patton Village city, Coldspring city, Roman Forest city, North Cleveland city, Houston city, Splendora city, Plum Grove city, Huntsville city, Oakhurst CDP	5,547,018	3,705	0.07%	<25% of project community affected	1	651	34.34%
Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	Planning	1.144		Baseline average flood depth > 1ft	6	Grimes County, Montgomery County; Conroe city, Richards CDP, Shiro CDP, Plantersville city, Montgomery city	649,711	488	0.08%	<25% of project community affected	1	355	74.11%
Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek	Planning	2.6		Baseline average flood depth > 2ft	8	Walker County, San Jacinto County, Montgomery County, Liberty County; Cleveland city, Woodbranch city, Patton Village city, Roman Forest city, Splendora city	815,873	2,394	0.29%	<25% of project community affected	1	1146	75.59%
Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	Planning	-				Grimes County, Harris County, Montgomery County, Waller County; Conroe city, Todd Mission city, Shenandoah city, The Woodlands CDP, Magnolia city, Spring CDP, Humble city, Houston city, Pinebrook CDP, Oak Ridge North city, Stagecoach town, Plantersville city, Pinehurst CDP, Tomball city, Waller city	5,437,650	24,721	0.45%	<25% of project community affected	1	5479	73.18%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Reduced risk to <75% of structures in floodplain	7	15	\$ 1,182,357	\$ 486,080	0.5889	Flood damage reduction > 50%	6	1	100.00%	Reduced risk for >75% of critical facilities in floodplain	10	9.414	
East Fork San Jacinto River - Winters Bayou Detention	Reduced risk to <50% of structures in floodplain	4	13	\$ 1,339,324	\$ 781,055	0.4168	Flood damage reduction > 25%	4	1	33.33%	Reduced risk for <50% of critical facilities in floodplain	4	10.533	
Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	Reduced risk to <75% of structures in floodplain	7	6	\$ 547,719	\$ -	1.0000	Flood damage reduction >95%	10	0	#DIV/0!	Reduced risk for 0 structures in floodplain	0	9.432	
Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek	Reduced risk to >75% of structures in floodplain	10	9	\$ 528,140	\$ -	1.0000	Flood damage reduction >95%	10	1	100.00%	Reduced risk for >75% of critical facilities in floodplain	10	13.8	
Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	Reduced risk to <75% of structures in floodplain	7				-			8	53.33%	Reduced risk for <75% of critical facilities in floodplain	7	-	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				S
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.548		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
East Fork San Jacinto River - Winters Bayou Detention	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.601		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.170		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.589		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	Life/injury risk percentage <20%	2	NA				No impact on water supply	0	0.174		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
East Fork San Jacinto River - Winters Bayou Detention		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
East Fork San Jacinto River - Winters Bayou Detention	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	063000064	Channel improvement to reduce flooding in West Fork watershed by benching/widening to increase conveyance capacity of West Fork to lower the water surface elevation. Conduct after or in conjunction with detention on Lake Creek or Spring Creek.	San Jacinto	Channel	2	San Jacinto River Basin	No	\$ 994,000,000	0.1	\$ 742,900	Varies by Roadways	Varies by Roadways	4364
City of Friendswood Ordinances and Regulation Update	063000113	Adopt higher codes and update ordinances and regulation to promote hazard mitigation strategies	San Jacinto	Preparedness	1		No	\$ 109,000	5	\$ -	Unknown	0.01	1680
City of Bayou Vista Regulations and Permit Requirements Update	063000114	Update regulations and permit requirements to address enhances hazard mitigation strategies.	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	1122
City of League City Freeboard Ordinance	063000115	Update city ordinance to require 24" of freeboard in the floodplain.	San Jacinto	Preparedness	1		No	\$ 109,000	5	\$ -	Unknown	Unknown	5251
City of Cleveland Floodplain Land-Use Ordinance	063000123	The city shall adopt a land-use ordinance which prohibits building residential or commercial structures in the 100-year floodplain	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	Unknown	261
City of Cleveland Flooplain Ordinance Update	063000124	Adopt a land use ordinance which requires any structure within the 100-year floodplain to be elevated 2 feet	San Jacinto	Preparedness	1		Yes	\$ 109,000	0	\$ -	Unknown	Unknown	261

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Planning	7.556		Baseline average flood depth > 2ft	8	Harris County, Montgomery County; Atascocita CDP, Humble city, Houston city	5,351,588	21,983	0.41%	<25% of project community affected	1	1638	37.53%
City of Friendswood Ordinances and Regulation Update	Planning	-				Brazoria County, Galveston County, Harris County; Alvin city, Webster city, Friendswood city, Houston city, Pearland city, League City city	5,453,858	5,467	0.10%	<25% of project community affected	1	0	0.00%
City of Bayou Vista Regulations and Permit Requirements Update	Planning	-				Galveston County; Hitchcock city, Bayou Vista city	350,682	1,502	0.43%	<25% of project community affected	1	0	0.00%
City of League City Freeboard Ordinance	Planning	-				Galveston County, Harris County; Clear Lake Shores city, Webster city, Bacliff CDP, Friendswood city, Kemah city, Nassau Bay city, Texas City city, Dickinson city, League City city, Seabrook city	5,081,827	20,978	0.41%	<25% of project community affected	1	0	0.00%
City of Cleveland Floodplain Land-Use Ordinance	Planning	-				San Jacinto County, Montgomery County, Liberty County; Cleveland city, North Cleveland city	739,473	1,267	0.17%	<25% of project community affected	1	0	0.00%
City of Cleveland Flooplain Ordinance Update	Planning	-				San Jacinto County, Montgomery County, Liberty County; Cleveland city, North Cleveland city	739,473	1,267	0.17%	<25% of project community affected	1	0	0.00%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Reduced risk to <50% of structures in floodplain	4	376	\$ 83,365,541	\$ 78,052,424	0.0637	Flood damage reduction < 25%	2	10	20.00%	Reduced risk for <50% of critical facilities in floodplain	4	28.668	
City of Friendswood Ordinances and Regulation Update	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Bayou Vista Regulations and Permit Requirements Update	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of League City Freeboard Ordinance	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Cleveland Floodplain Land-Use Ordinance	Reduced risk to 0 structures in floodplain	0				-			0	#DIV/0!	Reduced risk for 0 structures in floodplain	0	-	
City of Cleveland Flooplain Ordinance Update	Reduced risk to 0 structures in floodplain	0				-			0	#DIV/0!	Reduced risk for 0 structures in floodplain	0	-	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				S
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Life/injury risk percentage >20%	4	NA				No impact on water supply	0	0.245		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
City of Friendswood Ordinances and Regulation Update			NA				No impact on water supply	0	0.274		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
City of Bayou Vista Regulations and Permit Requirements Update			NA				No impact on water supply	0	0.143		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
City of League City Freeboard Ordinance			NA				No impact on water supply	0	0.187		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
City of Cleveland Floodplain Land-Use Ordinance			NA				No impact on water supply	0	0.748		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
City of Cleveland Flooplain Ordinance Update			NA				No impact on water supply	0	0.748		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score 13
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Friendswood Ordinances and Regulation Update		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Bayou Vista Regulations and Permit Requirements Update		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of League City Freeboard Ordinance		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Cleveland Floodplain Land-Use Ordinance		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Cleveland Flooplain Ordinance Update		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Friendswood Ordinances and Regulation Update	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Bayou Vista Regulations and Permit Requirements Update	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of League City Freeboard Ordinance	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Cleveland Floodplain Land-Use Ordinance	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Cleveland Floodplain Ordinance Update	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
Galveston Bay Surge Protection Coastal Storm Risk Management	063000127	Federal projects identified in the Texas Coastal Study (2021) including Boliver Gates, Galveston Sea Wall Improvements, Ecosystem Restoration, Galveston Ring Barrier system, Clear Creek & Dickinson Bayou Gates, and non-structural measures	San Jacinto	Coastal	2		No	\$ 23,103,015,000	1.91	\$ 305,014	Unknown	0.01	103716
City of Manvel City Ordinance	063000129	The city shall adopt a land use ordinance which requires any structure within the 100-year floodplain to be elevated 2 feet above base flood elevation.	San Jacinto	Preparedness	1		Yes	\$ 103,000	5	\$ -	Unknown	Unknown	1250
City of Manvel Land-Use Ordinance Adoption	063000130	The city shall adopt a land-use ordinance which prohibits building residential or commercial structures in the 100-year floodplain	San Jacinto	Preparedness	1		Yes	\$ 103,000	5	\$ -	Unknown	0.01	1250
City of Manvel GIS Database Improvements	063000132	Improve GIS database to include repetitive loss properties areas and flooded structure data. Data to be used for future drainage infrastructure planning and to provide outreach and emergency services to residents in substantial risk zones.	San Jacinto	Preparedness	1		Yes	\$ 21,000	0	\$ -	Unknown	Unknown	1250
Brazoria County NFIP Technical Material	063000136	Place copies of FEMA Flood-related technical bulletins in County libraries.	San Jacinto	Other	1		No	\$ 21,000	0	\$ -	Unknown	Unknown	18848

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
Galveston Bay Surge Protection Coastal Storm Risk Management	Planning	-				Brazoria County, Galveston County, Chambers County, Harris County, Fort Bend County, Liberty County; Cleveland city, North Cleveland city	6,414,836	438,685	6.84%	<25% of project community affected	1	75744	73.03%
City of Manvel City Ordinance	Planning	-				Brazoria County; Alvin city, Manvel city, Iowa Colony village, Pearland city	372,031	8,190	2.20%	<25% of project community affected	1	0	0.00%
City of Manvel Land-Use Ordinance Adoption	Planning	-				Brazoria County; Alvin city, Manvel city, Iowa Colony village, Pearland city	372,031	8,190	2.20%	<25% of project community affected	1	0	0.00%
City of Manvel GIS Database Improvements	Planning	-				Brazoria County; Alvin city, Manvel city, Iowa Colony village, Pearland city	372,031	8,190	2.20%	<25% of project community affected	1	0	0.00%
Brazoria County NFIP Technical Material	Planning	-				Wharton County, Brazoria County, Galveston County, Harris County, Fort Bend County, Matagorda County; Pasadena city, Missouri City city, Stafford city, South Houston city, Houston city, Pearland city	6,354,462	65,547	1.03%	<25% of project community affected	1	0	0.00%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
Galveston Bay Surge Protection Coastal Storm Risk Management	Reduced risk to <75% of structures in floodplain	7				-			2086	66.05%	Reduced risk for <75% of critical facilities in floodplain	7	-	
City of Manvel City Ordinance	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Manvel Land-Use Ordinance Adoption	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Manvel GIS Database Improvements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
Brazoria County NFIP Technical Material	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				S
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
Galveston Bay Surge Protection Coastal Storm Risk Management	Life/injury risk percentage >40%	8	NA				No impact on water supply	0	0.470		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	Environmental, Public Uplift, Low Impact Development Features
City of Manvel City Ordinance			NA				No impact on water supply	0	0.424		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
City of Manvel Land-Use Ordinance Adoption			NA				No impact on water supply	0	0.424		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
City of Manvel GIS Database Improvements			NA				No impact on water supply	0	0.424		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
Brazoria County NFIP Technical Material			NA				No impact on water supply	0	0.358		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	Public Education

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score 13
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
Galveston Bay Surge Protection Coastal Storm Risk Management		Project delivers benefits in 3 wider benefit categories	7	\$ 131,000,000	0.57%	Project requires regular, ongoing operation and maintenance; and/or O&M requirements are well defined (Regular);	7		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Manvel City Ordinance		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Manvel Land-Use Ordinance Adoption		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Manvel GIS Database Improvements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
Brazoria County NFIP Technical Material		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
Galveston Bay Surge Protection Coastal Storm Risk Management	Project will deliver a high level of environmental benefits (4+ categories)	10		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Manvel City Ordinance	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Manvel Land-Use Ordinance Adoption	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Manvel GIS Database Improvements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Brazoria County NFIP Technical Material	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
City of Clear Lake Shores - Implement Stormwater Management Practices	063000139	The Stormwater management plan is focused on six minimum measures regarding what is being done to prevent stormwater pollution. Annual reporting and renewals are required to ensure compliance is met.	San Jacinto	Preparedness	1		Yes	\$ 109,000	0	\$ -	Unknown	0.01	633
City of Clear Lake Shores - Improve Regulations and Permit Requirements	063000140	Update regulations and permit requirements	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	633
City of Hitcock - Improve Regulations and Permit Requirements	063000142	Improve regulations and permit requirements to promote hazard mitigation strategies.	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	2655
City of Jamicia Beach - Improve Regulations and Permit Requirements	063000143	Improve regulations and permit requirements to promote hazard mitigation strategies.	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	1276
City of Kemah - Improve Regulations and Permit Requirements	063000144	Improve regulations and permit requirements to promote hazard mitigation strategies.	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	562
City of Kemah - Update Floodplain Ordinance	063000145	Update floodplain ordinance to ensure compliance with minimum standard of NFIP.	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	562

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
City of Clear Lake Shores - Implement Stormwater Management Practices	Planning	-				Galveston County, Harris County; Clear Lake Shores city, Kemah city, League City city, Seabrook city	5,081,827	3,407	0.07%	<25% of project community affected	1	0	0.00%
City of Clear Lake Shores - Improve Regulations and Permit Requirements	Planning	-				Galveston County, Harris County; Clear Lake Shores city, Kemah city, League City city, Seabrook city	5,081,827	3,407	0.07%	<25% of project community affected	1	0	0.00%
City of Hitchcock - Improve Regulations and Permit Requirements	Planning	-				Brazoria County, Galveston County; Tiki Island village, Alvin city, Hitchcock city, Santa Fe city, Bayou Vista city, La Marque city	722,713	6,415	0.89%	<25% of project community affected	1	0	0.00%
City of Jamicia Beach - Improve Regulations and Permit Requirements	Planning	-				Galveston County; Jamaica Beach city, Galveston city	350,682	395	0.11%	<25% of project community affected	1	0	0.00%
City of Kemah - Improve Regulations and Permit Requirements	Planning	-				Galveston County, Harris County; Clear Lake Shores city, Bacliff CDP, Kemah city, League City city, Seabrook city	5,081,827	3,492	0.07%	<25% of project community affected	1	0	0.00%
City of Kemah - Update Floodplain Ordinance	Planning	-				Galveston County, Harris County; Clear Lake Shores city, Bacliff CDP, Kemah city, League City city, Seabrook city	5,081,827	3,492	0.07%	<25% of project community affected	1	0	0.00%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
City of Clear Lake Shores - Implement Stormwater Management Practices	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Clear Lake Shores - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Hitcock - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Jamicia Beach - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Kemah - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Kemah - Update Floodplain Ordinance	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				Score 5
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
City of Clear Lake Shores - Implement Stormwater Management Practices			NA				No impact on water supply	0	0.203		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	Environmental
City of Clear Lake Shores - Improve Regulations and Permit Requirements			NA				No impact on water supply	0	0.203		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
City of Hitcock - Improve Regulations and Permit Requirements			NA				No impact on water supply	0	0.546		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
City of Jamicia Beach - Improve Regulations and Permit Requirements			NA				No impact on water supply	0	0.031		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
City of Kemah - Improve Regulations and Permit Requirements	Life/injury risk percentage >30%	6	NA				No impact on water supply	0	0.421		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
City of Kemah - Update Floodplain Ordinance			NA				No impact on water supply	0	0.421		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
City of Clear Lake Shores - Implement Stormwater Management Practices		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Clear Lake Shores - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Hitcock - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Jamicia Beach - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Kemah - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Kemah - Update Floodplain Ordinance		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
City of Clear Lake Shores - Implement Stormwater Management Practices	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Clear Lake Shores - Improve Regulations and Permit Requirements									
City of Hitcock - Improve Regulations and Permit Requirements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Jamicia Beach - Improve Regulations and Permit Requirements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Kemah - Improve Regulations and Permit Requirements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Kemah - Update Floodplain Ordinance	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
City of La Marque - Improve Regulations and Permit Requirements	063000146	Improve regulations and permit requirements to promote hazard mitigation strategies	San Jacinto	Preparedness	1		No	\$ 109,000	5	\$ -	Unknown	0.01	829
City of Tiki Island - Improve Regulations and Permit Requirements	063000148	Update and/or develop regulations and permits to address hazards prone to the area and include any changes in future development area.	San Jacinto	Preparedness	1		Yes	\$ 109,000	5	\$ -	Unknown	0.01	1006
City of Santa Fe - Improve Regulations and Permit Requirements	063000149	Update and/or develop regulations and permits to address hazards prone to the area and include any changes in future development area	San Jacinto	Preparedness	1		No	\$ 109,000	5	\$ -	Unknown	0.01	400
City of Galveston Land Use Mapping	063000152	Develop proposed land use mapping to allow easier consideration of hazards	San Jacinto	Preparedness	1		No	\$ 11,000	0	\$ -	Varies by Roadways	Unknown	21858
City of Galveston Freeboard Requirement Enforcement	063000153	Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance	San Jacinto	Preparedness	1		No	\$ 100,000	5	\$ -	Unknown	Unknown	21858
Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.	063000167	Projects submitted as part of the CDBG MIT grant in Greens Bayou including Projects: Fountainview Sec 1&2, Castlewood Sec 3&4, North Forest, Mid-Reach Greens, Parkland Estates, and Humble Road Place.	San Jacinto	Comprehensive	2	Greens Bayou	No	\$ 120,284,000	2.13	\$ -	Unknown	Unknown	6644

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
City of La Marque - Improve Regulations and Permit Requirements	Planning	-				Galveston County; Hitchcock city, Santa Fe city, Texas City city, La Marque city	350,682	1,612	0.46%	<25% of project community affected	1	0	0.00%
City of Tiki Island - Improve Regulations and Permit Requirements	Planning	-				Galveston County; Tiki Island village	350,682	1,721	0.49%	<25% of project community affected	1	0	0.00%
City of Santa Fe - Improve Regulations and Permit Requirements	Planning	-				Galveston County; Hitchcock city, Santa Fe city, Texas City city, Dickinson city, La Marque city	350,682	798	0.23%	<25% of project community affected	1	0	0.00%
City of Galveston Land Use Mapping	Planning	-				Galveston County; Jamaica Beach city, Galveston city	350,682	93,583	26.69%	25%-50% of project community affected	4	0	0.00%
City of Galveston Freeboard Requirement Enforcement	Planning	-				Galveston County; Jamaica Beach city, Galveston city	350,682	93,583	26.69%	25%-50% of project community affected	4	0	0.00%
Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.	Planning	0.933		Baseline average flood depth > 0.5ft	4	Harris County; Atascocita CDP, Humble city, Houston city, Cloverleaf CDP, Aldine CDP	4,731,145	82,257	1.74%	<25% of project community affected	1	1816	27.33%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
City of La Marque - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Tiki Island - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Santa Fe - Improve Regulations and Permit Requirements	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Galveston Land Use Mapping	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
City of Galveston Freeboard Requirement Enforcement	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.	Reduced risk to <50% of structures in floodplain	4	6644	\$ 945,592,566	\$ 714,694,141	0.2442	Flood damage reduction < 25%	2	21	18.75%	Reduced risk for <50% of critical facilities in floodplain	4	8.799	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				S
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
City of La Marque - Improve Regulations and Permit Requirements			NA				No impact on water supply	0	0.666		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
City of Tiki Island - Improve Regulations and Permit Requirements			NA				No impact on water supply	0	0.137		SVI between 0.01-0.25 (low vulnerability)	1	0		<25% of the project cost is nature-based	1	None
City of Santa Fe - Improve Regulations and Permit Requirements			NA				No impact on water supply	0	0.355		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
City of Galveston Land Use Mapping			NA				No impact on water supply	0	0.424		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
City of Galveston Freeboard Requirement Enforcement			NA				No impact on water supply	0	0.424		SVI between 0.25-0.5 (low to moderate vulnerability)	4	0		<25% of the project cost is nature-based	1	None
Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.	Life/injury risk percentage >30%	6	NA				No impact on water supply	0	0.695		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score 13
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
City of La Marque - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Tiki Island - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Santa Fe - Improve Regulations and Permit Requirements		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Galveston Land Use Mapping		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
City of Galveston Freeboard Requirement Enforcement		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.		Project delivers benefits in 3 wider benefit categories	7	Not provided in description	-	Project will require ongoing operation and maintenance outside of the owner’s regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4		Project has a high number of administrative, regulatory and limitations / requirements	2	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
City of La Marque - Improve Regulations and Permit Requirements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Tiki Island - Improve Regulations and Permit Requirements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Santa Fe - Improve Regulations and Permit Requirements	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Galveston Land Use Mapping	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
City of Galveston Freeboard Requirement Enforcement	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.	Project will deliver a moderate level of environmental benefits (2-3 categories)	6		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

General Project Data													
Project Name	FMP	Project Description:	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)
City of Alvin Unified Development Ordinance	063000201	A unified land development code combines all land use controls into a single document with a logical structure that is user friendly. Cost is time, data and preparation of a unified land development code.	San Jacinto	Preparedness	1		No	\$ 100,000	5	\$ -	Unknown	Unknown	3445
Houston Fifth Area Flood Mitigation	63000417	This unfunded CDBG-MIT application involves installing various storm sewer infrastructure in the Fifth Ward and Market Square areas within the City of Houston.	San Jacinto	Infrastructure	2		No	\$ 89,753,487	1.87	\$ 68,724	Unknown	Unknown	2162
Houston Port Area Flood Mitigation	63000418	The project includes storm sewer improvements on nearly every street in the Pleasantville neighborhood to improve conveyance capacity and construction of a detention basin.	San Jacinto	Infrastructure	3		No	\$ 99,021,350	0.3	\$ 184,055	Unknown	Unknown	765
Houston Kashmere Gardens Area Flood Mitigation	63000434	The project includes improvements to storm sewer, roadside ditch systems, culverts, sewer inlets, and the construction of detention basins.	San Jacinto	Infrastructure	4		No	\$ 94,879,859	1.09	\$ 207,615	Unknown	Unknown	1221
Houston Sunnyside Area Flood Mitigation	63000468	Includes new storm sewer trunk systems on major thoroughfares & new or improved neighborhood storm sewer systems. Will also require construction of detention basins to mitigate the proposed improvements.	San Jacinto	Infrastructure	5		No	\$ 111,251,647	1.2	\$ 78,902	Unknown	Unknown	7876

		Score 1: Severity - Pre-Project Average Depth of Flooding (100-year)				Score 2: Severity - Community Need (% Population)						Score 3: Flood	
Project Name	Project Status	Average Flood Depth (100yr)	Notes	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Score 1	Communities Served by Project	Community Population Served	Flood Plain Population	Notes 2	Severity Ranking: Community Need (% Population)	Score 2	# of Structures Removed from 1% Annual Chance FP	Notes 3
City of Alvin Unified Development Ordinance	Planning	-				Brazoria County, Galveston County, Fort Bend County; Alvin city, Hillcrest village, Manvel city, Iowa Colony village, Friendswood city, Hitchcock city, Pearland city, League City city, Rosharon CDP	1,545,492	21,569	1.40%	<25% of project community affected	1	0	0.00%
Houston Fifth Area Flood Mitigation	Planning	-				Harris County; Houston	26,580	8,005	0	<25% of project community affected	1	1306	60.41%
Houston Port Area Flood Mitigation	Planning	-				Harris County; Houston	184,333	4,119	2.23%	<25% of project community affected	1	538	70.33%
Houston Kashmere Gardens Area Flood Mitigation	Planning	-				Harris County; Houston	13,567	3,569	26.31%	25%-50% of project community affected	4	457	37.43%
Houston Sunnyside Area Flood Mitigation	Planning	-				Harris County; Houston	49,448	29,877	60.42%	50%-75% of project community affected	7	1410	17.90%

Risk Reduction			Score 4: Flood Damage Reduction						Score 5: Critical Facilities Damage Reduction				Score 6: Li	
Project Name	Flood Risk Reduction	Score 3	# of Structures with Reduced 1% Annual Chance Flood Risk	Pre-Project Damage \$	Post-Project Damage \$	Notes 4	Flood Damage Reduction	Score 4	# of Critical Faciliites Removed from 1% Annual Chance FP	Notes 5	Reduction in Critical Facilities Flood Risk	Score 5	Adjusted Injury Risk (%)	Notes 6
City of Alvin Unified Development Ordinance	Reduced risk to 0 structures in floodplain	0				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
Houston Fifth Area Flood Mitigation	Reduced risk to <75% of structures in floodplain	7				-			16	84.21%	Reduced risk for >75% of critical facilities in floodplain	10	-	
Houston Port Area Flood Mitigation	Reduced risk to <75% of structures in floodplain	7				-			0	0.00%	Reduced risk for 0 structures in floodplain	0	-	
Houston Kashmere Gardens Area Flood Mitigation	Reduced risk to <50% of structures in floodplain	4				-			1	20.00%	Reduced risk for <50% of critical facilities in floodplain	4	-	
Houston Sunnyside Area Flood Mitigation	Reduced risk to <50% of structures in floodplain	4				-			20	20.62%	Reduced risk for <50% of critical facilities in floodplain	4	-	

Life and Safety			Score 7: Water Supply						Score 8: Social Vulnerability				Score 9: Nature-Based Solution				S
Project Name	Life and Safety Ranking (Injury/Loss of Life)	Score 6	Water Supply Benefit in Acre-Feet	SourceID	WMS_ID	Notes 7	Water Supply Yield Ranking	Score 7	SVI Score	Notes 8	Social Vulnerability Ranking	Score 8	% Nature Based Solution by Cost	Notes 9	Nature-Based Solutions Ranking	Score 9	Multiple Benefits Description
City of Alvin Unified Development Ordinance			NA				No impact on water supply	0	0.505		SVI between 0.5-0.75 (moderate to high vulnerability)	7	0		<25% of the project cost is nature-based	1	None
Houston Fifth Area Flood Mitigation			NA				No impact on water supply	0	0.903		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	<Null>
Houston Port Area Flood Mitigation			NA				No impact on water supply	0	0.754		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	<Null>
Houston Kashmere Gardens Area Flood Mitigation			NA				No impact on water supply	0	0.890		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	<Null>
Houston Sunnyside Area Flood Mitigation			NA				No impact on water supply	0	0.814		SVI between 0.75-1.00 (high vulnerability)	10	0		<25% of the project cost is nature-based	1	<Null>

core 10: Multiple Benefits				Score 11: O&M				Score 12: Admin, Regulatory Obstacles			Score
Project Name	Notes 10	Multiple Benefit Ranking	Score 10	O&M Cost (Annual)	Notes 11	Operations and Maintenance Ranking	Score 11	Notes 12	Administrative, Regulatory and Other Obstacle Ranking	Score 12	Notes 13
City of Alvin Unified Development Ordinance		Project does not deliver any wider benefits	0	Non-structural project; no maintenance	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a high number of administrative, regulatory and limitations / requirements	2	
Houston Fifth Area Flood Mitigation		Project does not deliver any wider benefits	0	\$ 5,437,724	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a typical number of administrative, regulatory and limitations / requirements	6	
Houston Port Area Flood Mitigation		Project does not deliver any wider benefits	0	\$ 5,999,219	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a typical number of administrative, regulatory and limitations / requirements	6	
Houston Kashmere Gardens Area Flood Mitigation		Project does not deliver any wider benefits	0	\$ 5,748,306	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a typical number of administrative, regulatory and limitations / requirements	6	
Houston Sunnyside Area Flood Mitigation		Project does not deliver any wider benefits	0	\$ 551,258	-	Project will not require any ongoing operation and maintenance (low);	10		Project has a typical number of administrative, regulatory and limitations / requirements	6	

Score 13: Environmental Benefit			Score 14: Environmental Impact			Score 15: Mobility			
Project Name	Environmental Benefit Ranking	Score 13	Notes 14	Environmental Impact Ranking	Score 14	Traffic Count for LWC Project	Notes 15	Mobility Ranking	Score 15
City of Alvin Unified Development Ordinance	Project does not provide any environmental benefits	0		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Houston Fifth Area Flood Mitigation	Project will deliver a low level of environmental benefits (1 category)	3		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Houston Port Area Flood Mitigation	Project will deliver a low level of environmental benefits (1 category)	3		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Houston Kashmere Gardens Area Flood Mitigation	Project will deliver a low level of environmental benefits (1 category)	3		Project has no adverse environmental impacts	10			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4
Houston Sunnyside Area Flood Mitigation	Project will deliver a low level of environmental benefits (1 category)	3		Project will have adverse environmental impacts in 1 environmental category	6			Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas	4

Appendix 9-1: Survey Template

Appendix 9-1 – Survey Template

Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because **<Insert Sponsor Agency Here>** is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

Flood Mitigation Action ID	Flood Mitigation Action Type	Flood Mitigation Action Name	Flood Mitigation Action Description	Flood Mitigation Action Estimated Total Cost	Sponsor Funding	
					Anticipated Source of Sponsor Funding	Percent Funding Anticipated to be Provided by Sponsor
<Insert ID>	<Insert Type>	<Insert Name>	<Insert Description>	<Insert Cost>	Choose an item.	Choose an item.
<Insert ID>	<Insert Type>	<Insert Name>	<Insert Description>	<Insert Cost>	Choose an item.	Choose an item.

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 - FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Friday, June 17, 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Appendix 9-2:
Table 1 - Survey Results

Appendix 9-2: Survey Results Table

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS or FMP or FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or				Survey Response Received?
						Non- construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Alvin	FME	Durant Street Storm Sewer and Pavement Improvements - Phase 1	061000001	-	\$110,000.00	\$0.00	\$110,000.00	Bonds/Other Financing	100%	0%	100%	YES
06	Alvin	FME	Durant Street Storm Sewer and Pavement Improvements - Phase 2	061000002	-	\$90,000.00	\$0.00	\$90,000.00	Bonds/Other Financing	100%	0%	100%	YES
06	Arcola	FME	City of Arcola Regional Drainage Improvements	061000003	-	\$233,000.00	\$0.00	\$233,000.00	N/A	0%	100%	100%	NO
06	Stafford	FME	Missouri City Estates Drainage Improvements	061000005	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	City of Galveston	FME	City of Galveston Master Drainage Study	061000011	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	NO
06	Bellaire	FME	City of Bellaire Local Drainage System Asset Management	061000013	-	\$300,000.00	\$0.00	\$300,000.00	Bonds/Other Financing	25%	75%	100%	YES
06	Bellaire	FME	City of Bellaire Regional Detention Facilities Development	061000014	-	\$1,000,000.00	\$0.00	\$1,000,000.00	Bonds/Other Financing	25%	75%	100%	YES
06	Bellaire	FME	City of Bellaire Cypress Ditch Drainage Improvements	061000015	-	\$1,000,000.00	\$0.00	\$1,000,000.00	Bonds/Other Financing	25%	75%	100%	YES
06	Bunker Hill Village	FME	City of Bunker Hill Drainage Projects	061000016	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Bunker Hill Village	FME	City of Bunker Hill Master Drainage and Stormwater Management Plan	061000017	-	\$170,000.00	\$0.00	\$170,000.00	N/A	0%	100%	100%	NO
06	League City	FME	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Dickinson Bayou Alternative 2	061000022	-	\$1,090,000.00	\$0.00	\$1,090,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Williamsburg Subdivision Drainage Assessment	061000024	-	\$1,260,000.00	\$0.00	\$1,260,000.00	N/A	0%	100%	100%	YES

Appendix 9-2: Survey Results Table

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS or FMP or FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or				Survey Response Received?
						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Harris	FME	Preliminary Drainage & Infrastructure Improvements Happy Hide A Way Subdivison	061000025	-	\$110,000.00	\$0.00	\$110,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Bridgewater Village & Enclave at Bridgewater Drainage Analysis	061000026	-	\$750,000.00	\$0.00	\$750,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Lake Shadows Subdivision Drainage Improvements	061000027	-	\$280,000.00	\$0.00	\$280,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Gum Gully Rd, W Stroker Rd, Wigwam Ln, and Related Infrastructure Drainage Improvements	061000028	-	\$130,000.00	\$0.00	\$130,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Spanish Cove Subdivision Drainage Assessment	061000029	-	\$150,000.00	\$0.00	\$150,000.00	N/A	0%	100%	100%	YES
06	Shoreacres	FME	Shoreacres Drainage Assessment	061000031	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Willow Creek - Overflow Flooding between Burlington Northern Railroad and Hufsmith-Kohrville Rd. Analysis	061000032	-	\$590,000.00	\$0.00	\$590,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Galveston Bay Watershed Plan- Analysis of PA07 100-year Conveyance Project	061000034	-	\$400,000.00	\$0.00	\$400,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Galveston Bay Watershed Plan- Analysis of PA08 100-year Conveyance Project	061000035	-	\$800,000.00	\$0.00	\$800,000.00	N/A	0%	100%	100%	YES
06	Alvin	FME	City of Alvin Flood Gauges	061000037	-	\$50,000.00	\$0.00	\$50,000.00	Other	50%	50%	100%	YES

Appendix 9-2: Survey Results Table

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS or FMP or FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or				Survey Response Received?
						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Brazoria	FME	Brazoria County Costal River Flood Extent Analysis	061000038	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	Alvin	FME	City of Alvin Master Drainage Plan	061000039	-	\$100,000.00	\$0.00	\$100,000.00	Entity/ Budget Funds	50%	50%	100%	YES
06	Alvin	FME	City of Alvin Open Space Preservation	061000040	-	\$500,000.00	\$0.00	\$500,000.00	Other	0%	100%	100%	YES
06	Manvel	FME	City of Manvel SH. 6 Drainage Improvements	061000041	-	\$3,000,000.00	\$0.00	\$3,000,000.00	N/A	0%	100%	100%	NO
06	Chambers	FME	Chambers County Dam and Levee Failure Inundation Map Update	061000042	-	\$25,000.00	\$0.00	\$25,000.00	N/A	0%	100%	100%	NO
06	Alvin	FME	City of Alvin Detention Pond Construction - Mustang and Dickinson Bayou	061000043	-	\$200,000.00	\$0.00	\$200,000.00	Entity/ Budget Funds	25%	75%	100%	YES
06	Chambers	FME	Chambers County Property Protection	061000044	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	NO
06	Manvel	FME	City of Manvel Flora St. Drainage Improvements	061000045	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Brazoria	FME	Brazoria County Drainage Improvements	061000046	-	\$350,000.00	\$0.00	\$350,000.00	N/A	0%	100%	100%	NO
06	Manvel	FME	City of Manvel Various Drainage Improvements	061000047	-	\$460,000.00	\$0.00	\$460,000.00	N/A	0%	100%	100%	NO
06	Brazoria	FME	Brazoria County Property Protection	061000048	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	NO
06	Hillcrest Village	FME	City of Hillcrest Village Drainage Improvements	061000049	-	\$130,000.00	\$0.00	\$130,000.00	N/A	0%	100%	100%	NO
06	Brazoria Drainage District #4	FME	West Chocolate Bayou (CR 383 Ditch)	061000050	-	\$252,400.00	\$0.00	\$252,400.00	N/A	0%	100%	100%	YES
06	Brazoria Drainage District #4	FME	West Fork Chocolate (Cold River Ranch Ditch)	061000051	-	\$200,000.00	\$0.00	\$200,000.00	N/A	0%	100%	100%	YES

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						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Brazoria Drainage District #4	FME	West Fork Chocolate Bayou	061000052	-	\$2,072,000.00	\$0.00	\$2,072,000.00	N/A	0%	100%	100%	YES
06	Brazoria Drainage District #4	FME	East Chocolate Bayou (E103-00-00)	061000053	-	\$48,000.00	\$0.00	\$48,000.00	N/A	0%	100%	100%	YES
06	Brazoria Drainage District #4	FME	Cannon Ditch Segment 2	061000054	-	\$932,000.00	\$0.00	\$932,000.00	N/A	0%	100%	100%	YES
06	Galveston	FME	City of Galveston Coastal Road Elevation	061000055	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	NO
06	Pearland	FME	Mary's Creek Lower Segment	061000056	-	\$2,436,000.00	\$0.00	\$2,436,000.00	Other	0%	100%	100%	YES
06	Pearland	FME	Hickory Slough (Upper Segment)	061000057	-	\$1,136,000.00	\$0.00	\$1,136,000.00	Other	0%	100%	100%	YES
06	Manvel	FME	City of Manvel Gates Loop Subdivision Drainage Improvement	061000059	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Pearland	FME	Hickory Slough Middle Segment	061000060	-	\$864,000.00	\$0.00	\$864,000.00	Other	0%	100%	100%	YES
06	Pearland	FME	Mary's Creek Upper Segment	061000061	-	\$460,000.00	\$0.00	\$460,000.00	Other	0%	100%	100%	YES
06	Pearland	FME	Mary's Creek Middle Segment	061000063	-	\$628,000.00	\$0.00	\$628,000.00	Other	0%	100%	100%	YES
06	Brazoria Drainage District #4	FME	Mustang Bayou Middle Segment	061000064	-	\$1,212,000.00	\$0.00	\$1,212,000.00	N/A	0%	100%	100%	YES
06	Pearland	FME	Hickory Slough Lower Segment	061000065	-	\$1,048,000.00	\$0.00	\$1,048,000.00	Other	0%	100%	100%	YES
06	Brazoria Drainage District #4	FME	Mustang Bayou Upper Segment	061000066	-	\$2,040,000.00	\$0.00	\$2,040,000.00	N/A	0%	100%	100%	YES
06	Alvin	FME	City of Alvin Dickinson Bayou Watershed Study	061000067	-	\$500,000.00	\$0.00	\$500,000.00	Entity/ Budget Funds	25%	75%	100%	YES
06	Galveston	FME	City of Galveston Shoreline Protection	061000069	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO

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06	Pearland	FME	Cowart Creek Segment 16	061000070	-	\$40,000.00	\$0.00	\$40,000.00	Other	0%	100%	100%	YES
06	Galveston	FME	City of Galveston Dune Restoration	061000071	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	NO
06	Hillcrest Village	FME	City of Hillcrest Village Engineering Survey	061000072	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	NO
06	Chambers	FME	Dredging Cedar Bayou	061000076	-	\$7,070,000.00	\$0.00	\$7,070,000.00	N/A	0%	100%	100%	NO
06	Brazoria	FME	Dam and Levee Failure Inundation Map Update	061000078	-	\$2,200,000.00	\$0.00	\$2,200,000.00	N/A	0%	100%	100%	NO
06	Tiki Island	FME	Replace the Tiki Drive bridge with improved, hardened bridge to withstand storm surge and debris.	061000080	-	\$220,000.00	\$0.00	\$220,000.00	N/A	0%	100%	100%	NO
06	Waller	FME	Stream and River Flood Program	061000082	-	\$20,000.00	\$0.00	\$20,000.00	General Revenue	50%	50%	100%	YES
06	Liberty	FME	Liberty County Drainage Projects	061000083	-	\$2,000,000.00	\$0.00	\$2,000,000.00	N/A	0%	100%	100%	NO
06	Bayou Vista	FME	City of Bayou Vista Master Drainage Plan	061000084	-	\$130,000.00	\$0.00	\$130,000.00	N/A	0%	100%	100%	NO
06	Waller	FME	Cane Island Branch- Alt 2	061000085	-	\$3,270,000.00	\$0.00	\$3,270,000.00	General Revenue	10%	90%	100%	YES
06	New Waverly	FME	Property Protection, Structural Project	061000086	-	\$2,500,000.00	\$0.00	\$2,500,000.00	N/A	0%	100%	100%	NO
06	La Marque	FME	City of La Marque - East Side Storm water detention	061000087	-	\$360,000.00	\$0.00	\$360,000.00	N/A	0%	100%	100%	NO
06	League City	FME	City of League City - Kansas Street Drainage	061000088	-	\$580,000.00	\$0.00	\$580,000.00	N/A	0%	100%	100%	YES
06	Friendswood	FME	Update City of Friendswood Storm Surge Maps to Reflect the NWS Predictions	061000089	-	\$140,000.00	\$0.00	\$140,000.00	N/A	0%	100%	100%	YES

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06	Santa Fe	FME	City of Sante Fe - Storm Water Detention & Widening Drainage System and Cuvlerts Study	061000094	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	NO
06	League City	FME	League City - Stormwater Drainage Improvement- Interurban & Newport ditch	061000097	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	YES
06	Galveston	FME	Study of Texas City Hurricane Flood Protection Project	061000098	-	\$1,590,000.00	\$0.00	\$1,590,000.00	N/A	0%	100%	100%	NO
06	Plum Grove	FME	Raise Road Surfaces in City of Plum Grove	061000102	-	\$35,000.00	\$0.00	\$35,000.00	N/A	0%	100%	100%	NO
06	League City	FME	Highland Terrace Drainage	061000103	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	YES
06	Friendswood	FME	Sunmeadow Drainage Improvements Phase 2	061000104	-	\$160,000.00	\$0.00	\$160,000.00	N/A	0%	100%	100%	YES
06	Galveston	FME	Storm water detention ponds & Widening of drainage systems feasibility study	061000107	-	\$11,000,000.00	\$0.00	\$11,000,000.00	N/A	0%	100%	100%	NO
06	League City	FME	Stormwater Drainage Improvement- Nottingham ditch	061000115	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	YES
06	New Waverly	FME	Remedy Data Deficiency in City of New Waverly	061000116	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Bayou Vista	FME	City of Bayou Vista - Drainage Improvement Program	061000117	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	League City	FME	Stormwater Drainage Improvement- Bradshaw Rd	061000118	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	YES
06	League City	FME	Shellside Drainage Improvements	061000119	-	\$580,000.00	\$0.00	\$580,000.00	N/A	0%	100%	100%	YES

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06	Grimes	FME	Evaluation of Culvert Enlargement and Bridge Elevation in Grimes County	061000120	-	\$750,000.00	\$0.00	\$750,000.00	N/A	0%	100%	100%	NO
06	Kemah	FME	Widen Drainage Systems and Culverts in City of Kemah	061000121	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Clear Lake Shores	FME	Widen Drainage Systems and Culverts in City of Clear Lake Shores	061000122	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Arcola	FME	Replace Existing Culverts in City of Arcola	061000124	-	\$200,000.00	\$0.00	\$200,000.00	N/A	0%	100%	100%	NO
06	Liberty	FME	Update Liberty County Floodplain Maps	061000125	-	\$1,243,000.00	\$0.00	\$1,243,000.00	N/A	0%	100%	100%	NO
06	Waller	FME	Waller County Flood Damage Prevention Planning	061000129	-	\$1,160,000.00	\$0.00	\$1,160,000.00	General Revenue	25%	75%	100%	YES
06	Walker	FME	Hostetter and Gourd Creek Bridges Elevation Evaluation	061000130	-	\$130,000.00	\$0.00	\$130,000.00	N/A	0%	100%	100%	NO
06	Kemah	FME	Implemention Study of Storm Sewer System Re-engineering in City of Kemah	061000131	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Galveston County	FME	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	061000134	-	\$1,590,000.00	\$0.00	\$1,590,000.00	N/A	0%	100%	100%	NO
06	Liberty	FME	Recanalization Feasibility Study	061000135	-	\$486,000.00	\$0.00	\$486,000.00	N/A	0%	100%	100%	NO
06	Galveston	FME	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	061000136	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO

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									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Clear Lake Shores	FME	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	061000137	-	\$140,000.00	\$0.00	\$140,000.00	N/A	0%	100%	100%	NO
06	La Marque	FME	Corp of Engineers study of the Galveston County Water Reservoir Dam and Levee system	061000138	-	\$360,000.00	\$0.00	\$360,000.00	N/A	0%	100%	100%	NO
06	Arcola	FME	City of Arcola Regional Drainage Improvements	061000139	-	\$520,000.00	\$0.00	\$520,000.00	N/A	0%	100%	100%	NO
06	North Cleveland	FME	Elevate Existing Bridge - East Fork San Jacinto River	061000140	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	NO
06	Walker	FME	Southwood Forest Subdivision and Forgotten Forest Subdivision Evaluation	061000141	-	\$110,000.00	\$0.00	\$110,000.00	N/A	0%	100%	100%	NO
06	Friendswood	FME	Shadowbend Drainage Improvements Phase 2	061000142	-	\$950,000.00	\$0.00	\$950,000.00	Entity/ Budget Funds	0%	100%	100%	YES
06	Todd Mission	FME	City of Todd Mission Reduction of Floodplain Area Roads and Drainage Upgrade	061000143	-	\$220,000.00	\$0.00	\$220,000.00	N/A	0%	100%	100%	NO
06	Jamaica Beach	FME	Jamica Cove Rd. Survey	061000145	-	\$140,000.00	\$0.00	\$140,000.00	N/A	0%	100%	100%	NO
06	La Marque	FME	Implement Drainage Improvements in City of La Marque	061000147	-	\$360,000.00	\$0.00	\$360,000.00	N/A	0%	100%	100%	NO
06	Liberty	FME	Liberty County Culvert Replacement Project	061000148	-	\$120,000.00	\$0.00	\$120,000.00	N/A	0%	100%	100%	NO
06	La Marque	FME	Evaluatin of Increase Height of Existing Levee Wall System in City of La Marque	061000149	-	\$810,000.00	\$0.00	\$810,000.00	N/A	0%	100%	100%	NO

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06	Arcola	FME	Evaluation of Reinforcement of Critical Facilities in the City of Arcola	061000150	-	\$200,000.00	\$0.00	\$200,000.00	N/A	0%	100%	100%	NO
06	Galveston	FME	Evaluation of Mitigation Alternatives for Repetitive Flood Claims Properties in Galveston County	061000151	-	\$11,000,000.00	\$0.00	\$11,000,000.00	N/A	0%	100%	100%	NO
06	Waller	FME	Cane Island Branch- Alt 1	061000152	-	\$180,000.00	\$0.00	\$180,000.00	General Revenue	25%	75%	100%	YES
06	Cleveland	FME	Downtown Cleveland Drainage Line Installation	061000153	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	Walker	FME	Flood Gates Evaluation at Walker County Annex #2	061000156	-	\$20,000.00	\$0.00	\$20,000.00	N/A	0%	100%	100%	NO
06	Bayou Vista	FME	City of Bayou Vista Canal Dredging Study	061000158	-	\$130,000.00	\$0.00	\$130,000.00	N/A	0%	100%	100%	NO
06	Liberty	FME	Liberty County Regional Flood Drainage Plan	061000160	-	\$486,000.00	\$0.00	\$486,000.00	N/A	0%	100%	100%	NO
06	North Cleveland	FME	City of North Cleveland Engineering Study	061000161	-	\$400,000.00	\$0.00	\$400,000.00	N/A	0%	100%	100%	NO
06	North Cleveland	FME	Elevation of Bridge Road in City of North Cleveland	061000162	-	\$120,000.00	\$0.00	\$120,000.00	N/A	0%	100%	100%	NO
06	Galveston	FME	Galveston County Drainage System Improvement Study	061000163	-	\$1,590,000.00	\$0.00	\$1,590,000.00	N/A	0%	100%	100%	NO
06	Santa Fe	FME	Storm Water Detention Ponds Evalution in the City of Santa Fe	061000164	-	\$380,000.00	\$0.00	\$380,000.00	N/A	0%	100%	100%	NO
06	Santa Fe	FME	Drainage System Analysis for City of Santa Fe	061000165	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	NO

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06	Stafford	FME	City of Stafford Run Creek Detention Pond Construction	061000166	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	NO
06	Cleveland	FME	City of Cleveland Drainage Improvements	061000167	-	\$410,000.00	\$0.00	\$410,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FME	San Jacinto Watershed and Tributary Barrier and Flood Mitigation - East County Project	061000168	-	\$1,160,000.00	\$0.00	\$1,160,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FME	San Jacinto Watershed and Tributary Barrier and Flood Mitigation - West County Project	061000169	-	\$1,110,000.00	\$0.00	\$1,110,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Spring Gully Watershed Planning Project Near-Term Planning Project: PA03	061000170	-	\$600,000.00	\$0.00	\$600,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Gully Watershed Planning Project- Near-term Planning Project: PA04	061000171	-	\$210,000.00	\$0.00	\$210,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Gully Watershed Planning Project - Near-term planning project: PA05	061000172	-	\$170,000.00	\$0.00	\$170,000.00	N/A	0%	100%	100%	YES
06	Liberty	FME	Update Liberty County FIRMs to Include Bench Marks	061000173	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Carpenters Planing Study N110-00-00 Diversion to P103-00/P103-03	061000174	-	\$1,200,000.00	\$0.00	\$1,200,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Regional Implementation of Large Diameter Deep Tunnel Systems for Storm Water Management	061000175	-	\$20,000,000.00	\$0.00	\$20,000,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Lower Greens Feasibility Study	061000176	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Addicks Reservoir Watershed Study	061000177	-	\$670,000.00	\$0.00	\$670,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Barker Reservoir Watershed Study	061000178	-	\$620,000.00	\$0.00	\$620,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Buffalo Bayou Watershed Study	061000179	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Brays Bayou Watershed Study	061000180	-	\$620,000.00	\$0.00	\$620,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Cypress Creek Watershed Study	061000181	-	\$1,230,000.00	\$0.00	\$1,230,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Hunting Bayou Watershed Study	061000182	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Sims Bayou Watershed Study	061000183	-	\$470,000.00	\$0.00	\$470,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	White Oak Bayou Watershed Study	061000184	-	\$800,000.00	\$0.00	\$800,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Upper Greens Bayou Watershed Study	061000185	-	\$980,000.00	\$0.00	\$980,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Brays Bayou - Poor Farm Ditch	061000186	-	\$690,000.00	\$0.00	\$690,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Brays Bayou Restore Channel Conveyance Capacity Along D115-00-00	061000187	-	\$1,020,000.00	\$0.00	\$1,020,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Brays Bayou - Partnership Project with Fort Bend County on Right-of-Way Acquisition, Design, and Construction of General Drainage Improvements along Clodine Ditch	061000188	-	\$1,020,000.00	\$0.00	\$1,020,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Creek - Construction of a Reservoir along Spring Creek	061000191	-	\$870,000.00	\$0.00	\$870,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	White Oak Bayou - Turkey Gully E106-00-00	061000194	-	\$1,330,000.00	\$0.00	\$1,330,000.00	N/A	0%	100%	100%	YES
06	Houston	FME	White Oak Bayou - General Drainage Improvements along E105-00-00	061000196	-	\$120,000.00	\$0.00	\$120,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Harris County Wide - Investigation of City of Houston Properties for Conversion to Stormwater Detention Basins	061000197	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Little Cypress Creek - L109-00-00	061000201	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Little Cypress Creek - L113-00-00	061000202	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Little Cypress Creek - L103-00-00	061000203	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Greens Bayou - P130-05-02	061000204	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Greens Bayou - P142-00-00	061000205	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	San Jacinto River - G103-46-00	061000207	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	San Jacinto River - G103-33-04	061000208	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	San Jacinto River - G103-36-00	061000209	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	YES
06	Conroe	FME	City of Conroe Riverine Study and Mapping Improvements	061000213	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	April Sound Subdivision Evaluation	061000214	-	\$1,700,000.00	\$0.00	\$1,700,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	City of Conroe Downtown Master Drainage Plan	061000215	-	\$750,000.00	\$0.00	\$750,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Greens Bayou - P103-00-00	061000216	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Barker - T101-00-00	061000217	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Barker - T103-00-00	061000218	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Buffalo Bayou - W158-00-00	061000219	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Buffalo Bayou - W130-00-00	061000220	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Buffalo Bayou - W163-00-00	061000221	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Arcola	FME	City of Arcola Master Drainage Plan	061000222	-	\$200,000.00	\$0.00	\$200,000.00	N/A	0%	100%	100%	NO
06	Baytown	FME	City of Baytown Master Drainage Plan	061000223	-	\$520,000.00	\$0.00	\$520,000.00	N/A	0%	100%	100%	NO
06	Beach City	FME	City of Beach City Master Drainage Plan	061000224	-	\$240,000.00	\$0.00	\$240,000.00	N/A	0%	100%	100%	NO
06	Bellaire	FME	City of Bellaire Master Drainage Plan	061000225	-	\$1,500,000.00	\$0.00	\$1,500,000.00	Bonds/Other Financing	25%	75%	100%	YES
06	Brookside Village	FME	City of Brookside Village Master Drainage Plan	061000226	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Bunker Hill Village	FME	City of Bunker Hill Village Master Drainage Plan	061000227	-	\$170,000.00	\$0.00	\$170,000.00	N/A	0%	100%	100%	NO
06	Clear Lake Shores	FME	City of Clear Lake Shores Master Drainage Plan	061000228	-	\$140,000.00	\$0.00	\$140,000.00	N/A	0%	100%	100%	NO
06	Cleveland	FME	City of Cleveland Master Drainage Plan	061000229	-	\$400,000.00	\$0.00	\$400,000.00	N/A	0%	100%	100%	NO
06	Coldspring	FME	City of Coldspring Master Drainage Plan	061000230	-	\$180,000.00	\$0.00	\$180,000.00	N/A	0%	100%	100%	NO
06	Cut and Shoot	FME	City of Cut and Shoot Master Drainage Plan	061000232	-	\$210,000.00	\$0.00	\$210,000.00	N/A	0%	100%	100%	NO
06	Dayton	FME	City of Dayton Master Drainage Plan	061000233	-	\$480,000.00	\$0.00	\$480,000.00	N/A	0%	100%	100%	NO

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06	Deer Park	FME	City of Deer Park Master Drainage Plan	061000234	-	\$320,000.00	\$0.00	\$320,000.00	N/A	0%	100%	100%	NO
06	Dickinson	FME	City of Dickinson Master Drainage Plan	061000235	-	\$320,000.00	\$0.00	\$320,000.00	N/A	0%	100%	100%	NO
06	El Lago	FME	City of El Lago Master Drainage Plan	061000236	-	\$140,000.00	\$0.00	\$140,000.00	N/A	0%	100%	100%	NO
06	Friendswood	FME	City of Friendswood Master Drainage Plan	061000237	-	\$750,000.00	\$0.00	\$750,000.00	N/A	0%	100%	100%	YES
06	Fulshear	FME	City of Fulshear Master Drainage Plan	061000238	-	\$340,000.00	\$0.00	\$340,000.00	N/A	0%	100%	100%	NO
06	Galena Park	FME	City of Galena Park Master Drainage Plan	061000239	-	\$250,000.00	\$0.00	\$250,000.00	N/A	0%	100%	100%	NO
06	Hedwig Village	FME	City of Hedwig Village Master Drainage Plan	061000241	-	\$150,000.00	\$0.00	\$150,000.00	N/A	0%	100%	100%	NO
06	Hillcrest Village	FME	City of Hillcrest Master Drainage Plan	061000242	-	\$130,000.00	\$0.00	\$130,000.00	N/A	0%	100%	100%	NO
06	Hilshire Village	FME	City of Hilshire Village Master Drainage Plan	061000243	-	\$110,000.00	\$0.00	\$110,000.00	N/A	0%	100%	100%	NO
06	Hitchcock	FME	City of Hitchcock Master Drainage Plan	061000244	-	\$720,000.00	\$0.00	\$720,000.00	N/A	0%	100%	100%	NO
06	Humble	FME	City of Humble Master Drainage Plan	061000246	-	\$320,000.00	\$0.00	\$320,000.00	N/A	0%	100%	100%	NO
06	Hunters Creek Village	FME	City of Hunters Creek Village Master Drainage Plan	061000247	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Huntsville	FME	City of Huntsville Master Drainage Plan	061000248	-	\$349,000.00	\$0.00	\$349,000.00	N/A	0%	100%	100%	NO
06	Iowa Colony	FME	City of Iowa Colony Master Drainage Plan	061000249	-	\$310,000.00	\$0.00	\$310,000.00	N/A	0%	100%	100%	NO
06	Jacinto City	FME	City of Jacinto City Master Drainage Plan	061000250	-	\$180,000.00	\$0.00	\$180,000.00	N/A	0%	100%	100%	NO
06	Jamaica Beach	FME	City of Jamaica Beach Master Drainage Plan	061000251	-	\$140,000.00	\$0.00	\$140,000.00	N/A	0%	100%	100%	NO
06	Katy	FME	City of Katy Master Drainage Plan	061000253	-	\$360,000.00	\$0.00	\$360,000.00	N/A	0%	100%	100%	NO

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06	Kemah	FME	City of Kemah Master Drainage Plan	061000254	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	La Marque	FME	City of La Marque Master Drainage Plan	061000255	-	\$360,000.00	\$0.00	\$360,000.00	N/A	0%	100%	100%	NO
06	La Porte	FME	City of La Porte Master Drainage Plan	061000256	-	\$410,000.00	\$0.00	\$410,000.00	N/A	0%	100%	100%	NO
06	League City	FME	City of League City Master Drainage Plan	061000257	-	\$580,000.00	\$0.00	\$580,000.00	N/A	0%	100%	100%	YES
06	Liverpool	FME	City of Liverpool Master Drainage Plan	061000258	-	\$160,000.00	\$0.00	\$160,000.00	N/A	0%	100%	100%	NO
06	Magnolia	FME	City of Magnolia Master Drainage Plan	061000259	-	\$210,000.00	\$0.00	\$210,000.00	N/A	0%	100%	100%	NO
06	Manvel	FME	City of Manvel Master Drainage Plan	061000260	-	\$460,000.00	\$0.00	\$460,000.00	N/A	0%	100%	100%	NO
06	Meadows Place	FME	City of Meadows Place Master Drainage Plan	061000261	-	\$150,000.00	\$0.00	\$150,000.00	N/A	0%	100%	100%	NO
06	Missouri City	FME	City of Missouri City Master Drainage Plan	061000262	-	\$470,000.00	\$0.00	\$470,000.00	N/A	0%	100%	100%	NO
06	Mont Belvieu	FME	City of Mont Belvieu Master Drainage Plan	061000263	-	\$390,000.00	\$0.00	\$390,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FME	City of Montgomery Master Drainage Plan	061000264	-	\$250,000.00	\$0.00	\$250,000.00	N/A	0%	100%	100%	NO
06	Morgan's Point	FME	City of Morgan's Point Master Drainage Plan	061000265	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Nassau Bay	FME	City of Nassau Bay Master Drainage Plan	061000266	-	\$180,000.00	\$0.00	\$180,000.00	N/A	0%	100%	100%	NO
06	New Waverly	FME	City of New Waverly Master Drainage Plan	061000267	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	North Cleveland	FME	City of North Cleveland Master Drainage Plan	061000268	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Oak Ridge North	FME	City of Oak Ridge North Master Drainage Plan	061000269	-	\$170,000.00	\$0.00	\$170,000.00	N/A	0%	100%	100%	NO
06	Panorama Village	FME	City of Panorama Village Master Drainage Plan	061000270	-	\$160,000.00	\$0.00	\$160,000.00	N/A	0%	100%	100%	NO
06	Pasadena	FME	City of Pasadena Master Drainage Plan	061000271	-	\$550,000.00	\$0.00	\$550,000.00	N/A	0%	100%	100%	NO

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06	Patton Village	FME	City of Patton Village Master Drainage Plan	061000272	-	\$200,000.00	\$0.00	\$200,000.00	N/A	0%	100%	100%	NO
06	Piney Point Village	FME	City of Piney Point Village Master Drainage Plan	061000274	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Plantersville	FME	City of Plantersville Master Drainage Plan	061000275	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Plum Grove	FME	City of Plum Grove Master Drainage Plan	061000276	-	\$230,000.00	\$0.00	\$230,000.00	N/A	0%	100%	100%	NO
06	Prairie View	FME	City of Prairie View Master Drainage Plan	061000277	-	\$290,000.00	\$0.00	\$290,000.00	N/A	0%	100%	100%	NO
06	Roman Forest	FME	City of Roman Forest Master Drainage Plan	061000278	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Santa Fe	FME	City of Santa Fe Master Drainage Plan	061000279	-	\$380,000.00	\$0.00	\$380,000.00	N/A	0%	100%	100%	NO
06	Seabrook	FME	City of Seabrook Master Drainage Plan	061000280	-	\$420,000.00	\$0.00	\$420,000.00	N/A	0%	100%	100%	NO
06	Shenandoah	FME	City of Shenandoah Master Drainage Plan	061000281	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Shoreacres	FME	City of Shoreacres Master Drainage Plan	061000282	-	\$150,000.00	\$0.00	\$150,000.00	N/A	0%	100%	100%	NO
06	South Houston	FME	City of South Houston Master Drainage Plan	061000283	-	\$210,000.00	\$0.00	\$210,000.00	N/A	0%	100%	100%	NO
06	Southside Place	FME	City of Southside Place Master Drainage Plan	061000284	-	\$110,000.00	\$0.00	\$110,000.00	N/A	0%	100%	100%	NO
06	Splendora	FME	City of Splendora Master Drainage Plan	061000285	-	\$210,000.00	\$0.00	\$210,000.00	N/A	0%	100%	100%	NO
06	Spring Valley Village	FME	City of Spring Valley Village Master Drainage Plan	061000286	-	\$160,000.00	\$0.00	\$160,000.00	N/A	0%	100%	100%	NO
06	Stafford	FME	City of Stafford Master Drainage Plan	061000287	-	\$280,000.00	\$0.00	\$280,000.00	N/A	0%	100%	100%	NO
06	Stagecoach	FME	City of Stagecoach Master Drainage Plan	061000288	-	\$160,000.00	\$0.00	\$160,000.00	N/A	0%	100%	100%	NO
06	Sugar Land	FME	City of Sugar Land Master Drainage Plan	061000289	-	\$540,000.00	\$0.00	\$540,000.00	N/A	0%	100%	100%	NO

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06	Taylor Lake Village	FME	City of Taylor Lake Village Master Drainage Plan	061000290	-	\$170,000.00	\$0.00	\$170,000.00	N/A	0%	100%	100%	NO
06	Texas City	FME	City of Texas City Master Drainage Plan	061000291	-	\$950,000.00	\$0.00	\$950,000.00	N/A	0%	100%	100%	NO
06	Tiki Island	FME	City of Tiki Island Master Drainage Plan	061000292	-	\$180,000.00	\$0.00	\$180,000.00	N/A	0%	100%	100%	NO
06	Todd Mission	FME	City of Todd Mission Master Drainage Plan	061000293	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Tomball	FME	City of Tomball Master Drainage Plan	061000294	-	\$350,000.00	\$0.00	\$350,000.00	N/A	0%	100%	100%	NO
06	Waller	FME	City of Waller Master Drainage Plan	061000295	-	\$100,000.00	\$0.00	\$100,000.00	General Revenue	0%	100%	100%	YES
06	Webster	FME	City of Webster Master Drainage Plan	061000296	-	\$280,000.00	\$0.00	\$280,000.00	N/A	0%	100%	100%	YES
06	City of West University Place	FME	City of West University Place Master Drainage Plan	061000297	-	\$190,000.00	\$0.00	\$190,000.00	Internal CIP Dollars	20%	80%	100%	YES
06	Willis	FME	City of Willis Master Drainage Plan	061000298	-	\$250,000.00	\$0.00	\$250,000.00	N/A	0%	100%	100%	NO
06	Woodbranch Village	FME	City of Woodbranch Master Drainage Plan	061000299	-	\$190,000.00	\$0.00	\$190,000.00	N/A	0%	100%	100%	NO
06	Woodloch	FME	Town of Woodloch Master Drainage Plan	061000300	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	Brazoria	FME	Brazoria Flood Mapping Updates	061000301	-	\$6,440,000.00	\$0.00	\$6,440,000.00	N/A	0%	100%	100%	NO
06	Chambers	FME	Chambers Flood Mapping Updates	061000302	-	\$631,000.00	\$0.00	\$631,000.00	N/A	0%	100%	100%	NO
06	Galveston	FME	Galveston Flood Mapping Updates	061000304	-	\$2,960,000.00	\$0.00	\$2,960,000.00	N/A	0%	100%	100%	NO
06	Grimes	FME	Grimes Flood Mapping Updates	061000305	-	\$3,530,000.00	\$0.00	\$3,530,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FME	Montgomery Flood Mapping Updates	061000307	-	\$4,700,000.00	\$0.00	\$4,700,000.00	N/A	0%	100%	100%	NO
06	San Jacinto	FME	San Jacinto Flood Mapping Updates	061000308	-	\$1,419,000.00	\$0.00	\$1,419,000.00	N/A	0%	100%	100%	NO

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06	Walker	FME	Walker Flood Mapping Updates	061000309	-	\$1,747,000.00	\$0.00	\$1,747,000.00	N/A	0%	100%	100%	NO
06	Waller	FME	Waller Flood Mapping Updates	061000310	-	\$2,300,000.00	\$0.00	\$2,300,000.00	N/A	10%	90%	100%	YES
06	Galveston	FME	37th Street, Galveston, Drainage Project	061000311	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Addicks Reservoir - Right-Of-Way Acquisition, Design and Construction of a Stormwater Detention Basin on South Mayde Creek	061000312	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Addicks Reservoir - Design and Construction of Dinner Creek Stormwater Detention Basin	061000313	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Addicks Reservoir - Right-Of-Way Acquisition, Design and Construction of Channel Conveyance Improvements, Bypass Channel, and Detention for South Mayde Creek	061000315	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Arcadian Gardens Subdivision Drainage Improvements	061000317	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Fort Bend County Drainage District	FME	Fort Bend County Willow Fork Channel Improvements	061000318	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO

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06	Harris County Flood Control District	FME	Armand Bayou - Design and Construction of the B509-03-00 and B509-04-00 Stormwater Detention Basins	061000319	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Coastal Prairie Conservancy	FME	Warren Lake and Dam Retrofit	061000320	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Armand Bayou Watershed Basin Expansion and Extension and H&H Study (Phases 1 + 2)	061000321	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Jackson Bayou Watershed Planning Project- Immediate: First Street Crossing Mitigation	061000322	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	B106-WP01 & WP02 for Armand Bayou Watershed	061000323	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Willow Fork Drainage District	FME	Barker Reservoir Flood Risk Reduction and Park Project	061000324	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	I100-WP01 Vince Bayou Watershed Planning Project Recommendation	061000326	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Piney Point Village	FME	Blalock Road Drainage Improvement Project	061000327	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Brays Bayou - Keegans Bayou (D118-00-00) Flood Risk Reduction	061000328	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris	FME	I100-WP06 for Vince Bayou Watershed Planning Project	061000329	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	I100-WP10 for Vince Bayou Watershed Planning Project	061000330	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	I100-WP07 for Vince Bayou Watershed Planning Project	061000331	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	I100-WP11 for Vince Bayou Watershed Planning Project	061000332	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Carpenters Planing Study Cloverleaf Community Flood Risk Reduction Project (Phase 1 and 2)	061000333	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Goose Creek Flood Risk Reduction Phase 1	061000334	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Goose Creek Flood Risk Reduction Phase 2	061000335	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Goose Creek Flood Risk Reduction Phase 3	061000336	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Creek Watershed Plan- Recommended Alternative for PA-02: J131-01-00 Storm Sewer improvements & channel modification	061000337	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Willow Creek Watershed Plan- Immediate: Selective Clearing BNRR to Mouth	061000338	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Willow Creek Watershed Plan - M120 Detention/Preservation Site	061000339	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Willow Creek Watershed Plan- FM2920 Stormwater Detention Basin	061000340	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Willow Creek Watershed Plan- Kuykendahl Basin	061000341	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Willow Creek Watershed Plan- M121 Basin Stormwater Detention Basin	061000342	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Galveston Bay Watershed Plan- PA01 (N+6) Channel & Crossing Improvements	061000343	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	White Oak Bayou - Design and Construction of Woodland Trails Stormwater Detention Basin	061000344	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Gully Watershed Planning Project- Project Phase I	061000345	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Gully Watershed Planning Project- Project Phase II	061000346	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Spring Gully Watershed Planning Project- Project Phase III	061000347	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Galveston Bay - Right-of-Way Acquisition, Design and Construction of General Drainage Improvements Along F216-00-00	061000348	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Galveston Bay - Right-of-Way Acquisition, Design and Construction of General Drainage Improvements Along F101-06-00	061000349	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Galveston Bay Watershed Plan- PA04 (S+4) Crossing Improvements	061000350	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	TC Jester Detention Basin	061000353	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou Drainage Project Bond C-26 & C-27	061000354	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou Drainage Project Bond C-01	061000355	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Westador Stormwater Detention Basin	061000356	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Cypress Creek Implementation Plan - Various Detention Sites	061000357	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Little Cypress Creek - Management, Right-of-Way Acquisition, Design and Construction of the Little Cypress Creek Frontier Program	061000358	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	G103-38-00 (Kingwood Diversion Ditch)	061000360	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	G103-80-03.1B (Taylor Gully)	061000361	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Goose Creek O119-00-00-P001 (Alt 2A1)	061000362	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Goose Creek O119-00-00-P001 (Alt 2A3)	061000363	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Sims Bayou C116 Storm Sewer Improvement (C116-00-00-P001) From Mykawa Road to Telephone Road	061000364	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Greens Bayou - Planning, Right-of-Way Acquisition, Design and Construction of Channel Conveyance Improvements along P138-01-01	061000366	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Cedar Bayou Flood Risk Reduction Study - Property Acquisition in segment from SH 146 to Galveston Bay along Cedar Bayou (Q100-00-00)	061000367	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Cedar Bayou Flood Risk Reduction Study - Q130 Channel improvements from Crosby Eastgate Rd. to Q100 Confluence	061000368	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Cedar Bayou Flood Risk Reduction Study - Property Acquisition in segment from IH-10 to SH 146 along Cedar Bayou (Q100-00-00)	061000369	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Tomball	FME	City of Tomball Drainage Improvements	061000373	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Cedar Bayou Flood Risk Reduction Study - Q128 Channel Improvements from US 90 to Q100 Confluence	061000374	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Cedar Bayou Flood Risk Reduction Study - Channel improvements from US 90 to FM 1942	061000376	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Cedar Bayou Flood Risk Reduction Study - Channel improvements upstream of FM 1960	061000379	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Houston	FME	Houston Braeburn Glen Area Flood Mitigation	061000384	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO

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06	Montgomery	FME	Roman Forest Boulevard Bridge Elevation Project	061000388	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	White Oak - SPT and E116 (E116-00-00) Improvements : PA01 thru PA-05	061000389	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-08-00	061000394	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-09-00	061000395	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-21-00	061000396	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-23-00 and P118-23-02	061000397	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-25-00 & P118-25-01	061000399	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Right-Of-Way, Design, and Construction of Channel Conveyance Improvements on P118-27-00	061000400	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Carpenters (N100-00-00) Channel Improvements	061000402	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Design and Construction of a Stormwater Detention Basin in Brock Park	061000403	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Halls Bayou - Planning, Right-Of-Way, Design and Construction of Halls Bayou Flood Risk Management Project	061000404	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Hunting Bayou Wallisville Outfall (H103-00-00) - Gellhorn Drive	061000405	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Hunting Bayou Wallisville Outfall (H103-00-00) - Denver Harbor	061000406	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Luce Bayou (Z100-00-00-P026) Bypass Channel	061000407	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Luce Bayou (Z100-00-00-P026) Channelization	061000412	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES

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06	Harris County Flood Control District	FME	Luce Bayou (Z100-00-00-P026) Upstream Detention	061000413	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Manvel	FME	City of Manvel Rogers Rd. Drainage Improvements	061000415	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Houston	FME	Houston Huntington Village Area Flood Mitigation	061000419	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Clear Creek - Friendswood Detention Basin Near FM 528 in Friendswood	061000420	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Clear Creek - Hughes Stormwater Detention (SWD) Basin	061000421	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Baytown	FME	Danubina Drainage Improvements	061000422	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Baytown	FME	North Alexander Drainage Improvements	061000423	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Friendswood	FME	City of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I	061000424	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FME	Clear Creek - Rehabilitation of the A214-00-00 channel to Restore Channel Conveyance Capacity	061000425	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Montgomery	FME	Sawdust Road Bridge Elevation Project	061000426	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Houston	FME	Spring Shadows South	061000433	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Southside Place	FME	City of Southside Place - Auden Street Drainage Improvement Project	061000435	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO

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06	Galveston	FME	Unincorporated Areas of Bacliff and San Leon Roadside Ditches & Driveway Culverts Improvements	061000436	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris	FME	Evaluation of Dredging of Channels that Exit Into Lake Houston	061000437	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Greens Bayou, Jackson Bayou, White Oak Bayou, Cypress Creek and San Jacinto River Areas Subdivision Drainage Mitigation Project	061000438	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Harris	FME	Greens Bayou, White Oak Bayou and Cypress Creek Areas Subdivision Drainage Mitigation Project	061000439	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Brazoria	FME	Brazoria County Camp Mohawk County Park Development	061000440	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FME	Addicks Reservoir - Design and Construction of a Bridge Replacement for Greenhouse Road at South Mayde Creek	061000441	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Conroe	FME	Forest Estates - Live Oak Creek Watershed Artesian Forest 1 - Artesian Creek Watershed	061000442	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO

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06	Conroe	FME	Artesian Forest 1 - Artesian Creek Watershed	061000443	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Artesian Forest East - Artesian Creek Watershed	061000444	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Lilly - Alligator Creek Watershed	061000445	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	East Fork North - Alligator Creek Watershed	061000446	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	East Fork South - Alligator Creek Watershed "	061000447	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	West Branch - Alligator Creek Watershed	061000448	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Oak Hollow - Alligator Creek Watershed	061000449	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Cable - Alligator Creek Watershed	061000450	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	South Frazier - Grand Lake Creek Watershed	061000451	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Rivershire East - Grand Lake Creek Watershed	061000452	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Rivershire West - Grand Lake Creek Watershed	061000453	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Baretta - Grand Lake Creek Watershed	061000454	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Valley - Stewarts Creek Watershed	061000455	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Hunnington - Stewarts Creek Watershed	061000456	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Avenue M - Stewarts Creek Watershed	061000457	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO

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06	Conroe	FME	South 3rd - Stewarts Creek Watershed	061000458	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Toby - Little Caney Creek Watershed	061000459	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Southern Oak - Little Laney Creek	061000460	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Rush Creek Lake - Lake Conroe Estates Watershed	061000461	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Conroe	FME	Longmire and SH-105 - Live Oak Creek Watershed	061000462	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FME	Southeast Montgomery County Master Drainage Plan	061000463	-	\$1,170,000.00	\$0.00	\$1,170,000.00	N/A	0%	100%	100%	NO
06	Harris	FME	Carpenters Bayou (West Acres, Shadowglen & Old River Terrace Neighborhood)	061000464	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	YES
06	Houston	FME	Catalina	061000465	-	\$30,000.00	\$0.00	\$30,000.00	N/A	0%	100%	100%	NO
06	Bellaire	FMS	City of Bellaire Roadway and Drainage Improvements	062000001	-	\$3,000,000.00	\$0.00	\$3,000,000.00	Bonds/Other Financing	25%	75%	100%	YES
06	Bellaire	FMS	City of Bellaire Non-Structural Flood Risk Reduction Strategies	062000002	-	\$50,000.00	\$0.00	\$50,000.00	Other	25%	75%	100%	YES
06	Bellaire	FMS	City of Bellaire Drainage Requirements and Flood Damage Prevention Ordinance	062000003	-	\$50,000.00	\$0.00	\$50,000.00	General Revenue	25%	75%	100%	YES
06	Bellaire	FMS	City of Bellaire Surrounding Area Drainage Improvements	062000004	-	\$100,000.00	\$0.00	\$100,000.00	General Revenue	25%	75%	100%	YES

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06	Bellaire	FMS	City of Bellaire Floodwater Public Awareness Initiatives	062000005	-	\$50,000.00	\$0.00	\$50,000.00	General Revenue	25%	75%	100%	YES
06	Bunker Hill Village	FMS	City of Bunker Hill Community Outreach	062000006	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Bunker Hill Village	FMS	City of Bunker Hill Dam/Levee Maintenance and Monitoring Plan	062000007	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	NO
06	Harris	FMS	Harris County Hazard Mitigation Action AW-3	062000008	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris	FMS	Harris County Hazard Mitigation Action AW-4	062000009	-	\$300,000.00	\$0.00	\$300,000.00	N/A	0%	100%	100%	YES
06	Harris	FMS	Harris County Hazard Mitigation Action AW-5	062000010	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	YES
06	Harris	FMS	Harris County Hazard Mitigation Action AW-6	062000011	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	YES
06	Alvin	FMS	City of Alvin CRS Application	062000012	-	\$25,000.00	\$0.00	\$25,000.00	Entity Budget/Funds	100%	0%	100%	YES
06	Brazoria	FMS	Brazoria County Increased Cost of Compliance Education	062000013	-	\$20,000.00	\$0.00	\$20,000.00	N/A	0%	100%	100%	NO
06	Galveston	FMS	City of Galveston NFIP CRS Rating	062000014	-	\$10,000.00	\$0.00	\$10,000.00	N/A	0%	100%	100%	NO
06	Galveston	FMS	Develop Applicable Plans and Studies to Address Hazard Mitigation in Galveston County	062000015	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Waller	FMS	Waller County Elevation Certificate Requirement	062000016	-	\$50,000.00	\$0.00	\$50,000.00	General Revenue	50%	50%	100%	YES
06	Kemah	FMS	Develop Program to Optimize Operation of the Flood Gates at Second Cut Outlet in City of Kemah	062000017	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO

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06	Galveston	FMS	Galveston County-wide Education and Outreach	062000018	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	New Waverly	FMS	Public Information and Awareness in City of New Waverly	062000019	-	\$10,000.00	\$0.00	\$10,000.00	N/A	0%	100%	100%	NO
06	Arcola	FMS	Promotion of Flood Insurance in City of Arcola	062000020	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	Todd Mission	FMS	City of Todd Mission Public Outreach & Education	062000021	-	\$20,000.00	\$0.00	\$20,000.00	N/A	0%	100%	100%	NO
06	Arcola	FMS	Increase Public Awareness of Hazards in City of Arcola	062000022	-	\$50,000.00	\$0.00	\$50,000.00	N/A	0%	100%	100%	NO
06	Liberty	FMS	Expand Development of Emergency Notification System in Liberty County	062000023	-	\$10,000.00	\$0.00	\$10,000.00	N/A	0%	100%	100%	NO
06	Galveston	FMS	Galveston County Stormproof/Retrofit Infrastructure	062000025	-	\$5,000,000.00	\$0.00	\$5,000,000.00	N/A	0%	100%	100%	NO
06	Bayou Vista	FMS	Implement Stormwater Management Plan in City of Bayou Vista	062000026	-	\$25,000.00	\$0.00	\$25,000.00	N/A	0%	100%	100%	NO
06	Walker	FMS	Walker County Public Information and Awareness	062000027	-	\$248,000.00	\$0.00	\$248,000.00	N/A	0%	100%	100%	NO
06	Bayou Vista	FMS	City of Bayou Vista Severe Weather Warning Systems	062000028	-	\$35,000.00	\$0.00	\$35,000.00	N/A	0%	100%	100%	NO
06	Coastal Prairie Conservancy	FMS	Natural Infrastructure Project Barker Reservoir Headwater Acquisition and Restoration	062000029	-	\$33,000,000.00	\$0.00	\$33,000,000.00	N/A	0%	100%	100%	NO
06	Coastal Prairie Conservancy	FMS	Natural Infrastructure Project Mound Creek Conservation	062000030	-	\$32,000,000.00	\$0.00	\$32,000,000.00	N/A	0%	100%	100%	NO

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06	Brazoria	FMS	Brazoria County Structure Elevation	062000031	-	\$60,000,000.00	\$0.00	\$60,000,000.00	N/A	0%	100%	100%	NO
06	Brazoria	FMS	Brazoria County Non-structural Mitigation / Land Preservation	062000032	-	\$65,000,000.00	\$0.00	\$65,000,000.00	N/A	0%	100%	100%	NO
06	Bellaire	FMS	City of Bellaire Flood Rescue Plan	062000033	-	\$200,000.00	\$0.00	\$200,000.00	General Revenue	25%	75%	100%	YES
06	Brazoria	FMS	Brazoria County Dam and Levee Failure Outreach and Education campaign	062000034	-	\$20,000.00	\$0.00	\$20,000.00	N/A	0%	100%	100%	NO
06	Grimes	FMS	Amending Grimes County Floodplain Ordinance	062000035	-	\$20,000.00	\$0.00	\$20,000.00	N/A	0%	100%	100%	NO
06	Grimes	FMS	Grimes County Property Acquisition	062000036	-	\$95,000.00	\$0.00	\$95,000.00	N/A	0%	100%	100%	NO
06	Grimes	FMS	Property Acquisition Down-Stream of High Hazard Dams in Grimes County	062000037	-	\$1,000,000.00	\$0.00	\$1,000,000.00	N/A	0%	100%	100%	NO
06	Santa Fe	FMS	City of Santa Fe Stormproof/retrofit New Critical Infrastructure	062000039	-	\$5,000,000.00	\$0.00	\$5,000,000.00	N/A	0%	100%	100%	NO
06	Waller	FMS	Waller County Drainage System Maintenance	062000040	-	\$2,500,000.00	\$0.00	\$2,500,000.00	General Revenue	50%	50%	100%	YES
06	Waller	FMS	Waller County Flood Hazard Public Information Campaign	062000041	-	\$20,000.00	\$0.00	\$20,000.00	General Revenue	50%	50%	100%	YES
06	Waller	FMS	Waller County Freeboard Requirement Update	062000042	-	\$100,000.00	\$0.00	\$100,000.00	General Revenue	100%	0%	100%	YES
06	Walker	FMS	Install Outdoor Early warning System in Walker County	062000043	-	\$850,000.00	\$0.00	\$850,000.00	N/A	0%	100%	100%	NO

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06	Walker	FMS	Walker County Public Hazard Information and Awareness Campaign	062000044	-	\$20,000.00	\$0.00	\$20,000.00	N/A	0%	100%	100%	NO
06	Walker	FMS	Retrofit and Harden the Emergency Operations Center Serving Walker County	062000045	-	\$4,000,000.00	\$0.00	\$4,000,000.00	N/A	0%	100%	100%	NO
06	Cleveland	FMS	City of Cleveland Drainage Maintenance	062000046	-	\$5,000,000.00	\$0.00	\$5,000,000.00	N/A	0%	100%	100%	NO
06	Hillcrest Village	FMS	City of Hilcrest Village Land Acquisition	062000047	-	\$250,000.00	\$0.00	\$250,000.00	N/A	0%	100%	100%	NO
06	Manvel	FMS	City of Manvel Property Acquisition	062000048	-	\$1,700,000.00	\$0.00	\$1,700,000.00	N/A	0%	100%	100%	NO
06	Bellaire	FMS	City of Bellaire Flood Early Warning System Improvements	062000049	-	\$150,000.00	\$0.00	\$150,000.00	General Revenue	25%	75%	100%	YES
06	Bayou Vista	FMS	City of Bayou Vista Management Practices for Securing Windblown Debris in Canals.	062000050	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Friendswood	FMS	Maintain Drainage Systems and Culverts in City of Friendswood	062000051	-	\$1,400,000.00	\$0.00	\$1,400,000.00	N/A	0%	100%	100%	YES
06	League City	FMS	City of League City Property Acquisition and Relocation	062000052	-	\$300,000,000.00	\$0.00	\$300,000,000.00	N/A	0%	100%	100%	YES
06	Santa Fe	FMS	City of Santa Fe - Harden Existing Critical Facilites and Infrastructure	062000053	-	\$2,000,000.00	\$0.00	\$2,000,000.00	N/A	0%	100%	100%	NO
06	Santa Fe	FMS	City of Santa Fe - Drainge System Maintenance	062000054	-	\$5,000.00	\$0.00	\$5,000.00	N/A	0%	100%	100%	NO
06	Liberty	FMS	Liberty County Floodplain Acquistion	062000055	-	\$750,000.00	\$0.00	\$750,000.00	N/A	0%	100%	100%	NO

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06	Galveston	FMS	City of Galveston Floodplain Manager Increase	062000056	-	\$10,000.00	\$0.00	\$10,000.00	N/A	0%	100%	100%	NO
06	Galveston	FMS	City of Galveston SRL and RL Property Mitigation	062000057	-	\$80,000.00	\$0.00	\$80,000.00	N/A	0%	100%	100%	NO
06	Bunker Hill Village	FMS	City of Bunker Hill Village Non-Structural Mitigation Projects	062000058	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Todd Mission	FMS	Hardening of Critical Facilites in City of Mission Todd	062000059	-	\$25,000.00	\$0.00	\$25,000.00	N/A	0%	100%	100%	NO
06	Harris	FMS	Harris County Mitigation Buyout and Relocation Program	062000060	-	\$75,000,000.00	\$0.00	\$75,000,000.00	N/A	0%	100%	100%	YES
06	Alvin	FMS	City of Alvin Full Time Floodplain Administrator	062000061	-	\$100,000.00	\$0.00	\$100,000.00	Entity Budget/Funds	100%	0%	100%	YES
06	Pearland	FMS	City of Pearland SRL and RL Property Acquisition	062000062	-	\$100,000.00	\$0.00	\$100,000.00	Other	0%	100%	100%	YES
06	Harris County Flood Control District	FMS	Harris County Wide Voluntary Buyout Program	062000063	-	\$500,000,000.00	\$0.00	\$500,000,000.00	N/A	0%	100%	100%	YES
06	Galveston	FMS	Mitigate Repetitive Flood Claim & Severe Repetitvte Loss Properties in Galveston County	062000064	-	\$30,000,000.00	\$0.00	\$30,000,000.00	N/A	0%	100%	100%	NO
06	Liberty	FMS	Liberty County Regional Coordination	062000065	-	\$500,000.00	\$0.00	\$500,000.00	N/A	0%	100%	100%	NO
06	League City	FMP	Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Lower Clear Creek Alternative 3	063000026	-	\$0.00	\$1,150,000,000.00	\$1,150,000,000.00	N/A	0%	100%	100%	YES

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									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Harris County Flood Control District	FMP	Brays Bayou Watershed Mitigation Project CDBG MIT Application - Bintliff Ditch Improvements D133-00-00 & Sharptown	063000027	-	\$0.00	\$107,061,000.00	\$107,061,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FMP	Sims Bayou CDBG MIT Application - South Post Oak SWDB C147/C547; South Shaver SWDB C506-01-00-E003; Salt Water Ditch SWDB & Channel Improvements C108-00-00	063000037	-	\$0.00	\$99,653,000.00	\$99,653,000.00	N/A	0%	100%	100%	YES
06	Harris County Flood Control District	FMP	Halls Bayou Watershed Mitigation Application 1 - CDBG MIT	063000040	-	\$0.00	\$99,653,000.00	\$99,653,000.00	N/A	0%	100%	100%	YES
6	Harris County Flood Control District	FMP	White Oak Bayou CDBG MIT Application Projects: Kolbe Road Drainage Improvements, Barwood, E132-00-00, Tower Oaks, & Little White Oak	063000046	-	\$0.00	\$120,015,000.00	\$120,015,000.00	N/A	0%	100%	100%	YES
06	Montgomery	FMP	Caney Creek - Channelization at IH-69 & Detention at FM1097 + SH105	063000058	-	\$0.00	\$469,000,000.00	\$469,000,000.00	N/A	0%	100%	100%	NO
06	San Jacinto	FMP	East Fork San Jacinto River - Winters Bayou Detention	063000059	-	\$0.00	\$134,000,000.00	\$134,000,000.00	N/A	0%	100%	100%	NO

Appendix 9-2: Survey Results Table

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS or FMP or FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or				Survey Response Received?
						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Montgomery	FMP	Lake Creek - Detention on Garretts Creek, Little Caney Creek, & Caney Creek	063000060	-	\$0.00	\$291,000,000.00	\$291,000,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FMP	Peach Creek - Channelization at IH-69 & Detention at SH105 + Walker Creek	063000061	-	\$0.00	\$810,000,000.00	\$810,000,000.00	N/A	0%	100%	100%	NO
06	Montgomery	FMP	Spring Creek - Woodland (200-ft) and I-45 Channelization with detention at Birch Creek and Walnut Creek	063000062	-	\$0.00	\$393,000,000.00	\$393,000,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FMP	West Fork San Jacinto River - Kingwood Benching & HW 242 Channelization	063000064	-	\$0.00	\$994,000,000.00	\$994,000,000.00	N/A	0%	100%	100%	YES
06	Bayou Vista	FMP	City of Bayou Vista Regulations and Permit Requirements Update	063000114	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	League City	FMP	City of League City Freeboard Ordinance	063000115	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	YES
06	Cleveland	FMP	City of Cleveland Floodplain Land-Use Ordinance	063000123	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Cleveland	FMP	City of Cleveland Flooplain Ordinance Update	063000124	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Gulf Coast Protection District	FMP	Galveston Bay Surge Protection Coastal Storm Risk Management	063000127	-	\$0.00	\$24,107,064,000.00	\$24,107,064,000.00	Other	35%	65%	100%	YES
06	Manvel	FMP	City of Manvel City Ordinance	063000129	-	\$103,000.00	\$0.00	\$103,000.00	N/A	0%	100%	100%	NO
06	Manvel	FMP	City of Manvel Land-Use Ordinance Adoption	063000130	-	\$103,000.00	\$0.00	\$103,000.00	N/A	0%	100%	100%	NO

Appendix 9-2: Survey Results Table

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS or FMP or FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or				Survey Response Received?
						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Manvel	FMP	City of Manvel GIS Database Improvements	063000132	-	\$21,000.00	\$0.00	\$21,000.00	N/A	0%	100%	100%	NO
06	Brazoria	FMP	Brazoria County NFIP Technical Material	063000136	-	\$21,000.00	\$0.00	\$21,000.00	N/A	0%	100%	100%	NO
06	Clear Lake Shores	FMP	City of Clear Lake Shores - Implement Stormwater Management Practices	063000139	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Clear Lake Shores	FMP	City of Clear Lake Shores - Improve Regulations and Permit Requirements	063000140	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Hitchcock	FMP	City of Hitcock - Improve Regulations and Permit Requirements	063000142	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Jamaica Beach	FMP	City of Jamicia Beach - Improve Regulations and Permit Requirements	063000143	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Kemah	FMP	City of Kemah - Improve Regulations and Permit Requirements	063000144	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Kemah	FMP	City of Kemah - Update Floodplain Ordinance	063000145	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	La Marque	FMP	City of La Marque - Improve Regulations and Permit Requirements	063000146	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Tiki Island	FMP	City of Tiki Island - Improve Regulations and Permit Requirements	063000148	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO
06	Santa Fe	FMP	City of Santa Fe - Improve Regulations and Permit Requirements	063000149	-	\$109,000.00	\$0.00	\$109,000.00	N/A	0%	100%	100%	NO

Appendix 9-2: Survey Results Table

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS or FMP or FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or				Survey Response Received?
						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	Total (auto) sum must = 100%	
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)			
06	Galveston	FMP	City of Galveston Land Use Mapping	063000152	-	\$11,000.00	\$0.00	\$11,000.00	N/A	0%	100%	100%	NO
06	Galveston	FMP	City of Galveston Freeboard Requirement Enforcement	063000153	-	\$100,000.00	\$0.00	\$100,000.00	N/A	0%	100%	100%	NO
06	Harris County Flood Control District	FMP	Greens CDBG MIT Applicatoin Projects, including the following local drainage improvements: Castlewood, Fountainview, Humble Rd Place, North Forest, and the larger channelization and detention along Greens Bayou known as the Mid-Reach project.	063000167	-	\$0.00	\$120,284,000.00	\$120,284,000.00	N/A	0%	100%	100%	YES
06	Alvin	FMP	City of Alvin Unified Development Ordinance	063000201	-	\$100,000.00	\$0.00	\$100,000.00	Entity/ Budget Funds	100%	0%	100%	YES
06	Houston	FMP	Houston Fifth Area Flood Mitigation	063000417	-	\$0.00	\$89,753,487.00	\$89,753,487.00	N/A	0%	100%	100%	YES
06	Houston	FMP	Houston Port Area Flood Mitigation	063000418	-	\$0.00	\$99,021,350.00	\$99,021,350.00	N/A	0%	100%	100%	YES
06	Houston	FMP	Houston Kashmere Gardens Area Flood Mitigation	063000434	-	\$0.00	\$94,879,859.00	\$94,879,859.00	N/A	0%	100%	100%	YES
06	Houston	FMP	Houston Sunnyside Area Flood Mitigation	063000468	-	\$30,000.00	\$111,251,647.00	\$111,281,647.00	N/A	0%	100%	100%	YES

Appendix 10-1:
Communications and Media Engagement Plan

Appendix 10-2: Monthly E-Blasts

**Appendix 10-3:
SJRFPG Distribution List**

Appendix 10-4:
Technical Committee Meeting Minutes and Materials

Appendix 10-5:
Public Engagement Meeting Minutes and Materials

Appendix 10-6:
May 2021 Pre-Planning Meeting Minutes

Appendix 10-7:
August 2021 Existing Flood Risk Meeting Minutes

Appendix 10-8:
May 2022 Open Houses Meeting Minutes

**Appendix 10-9:
Example Questionnaire**

Appendix 10-10:
TFMA Conference Materials

Appendix 10-11:
Public Engagement Presentation

Appendix 10-12:
Notice and Summary of the Draft Regional Flood Plan

ABOUT THE SAN JACINTO REGIONAL FLOOD PLAN



BACKGROUND

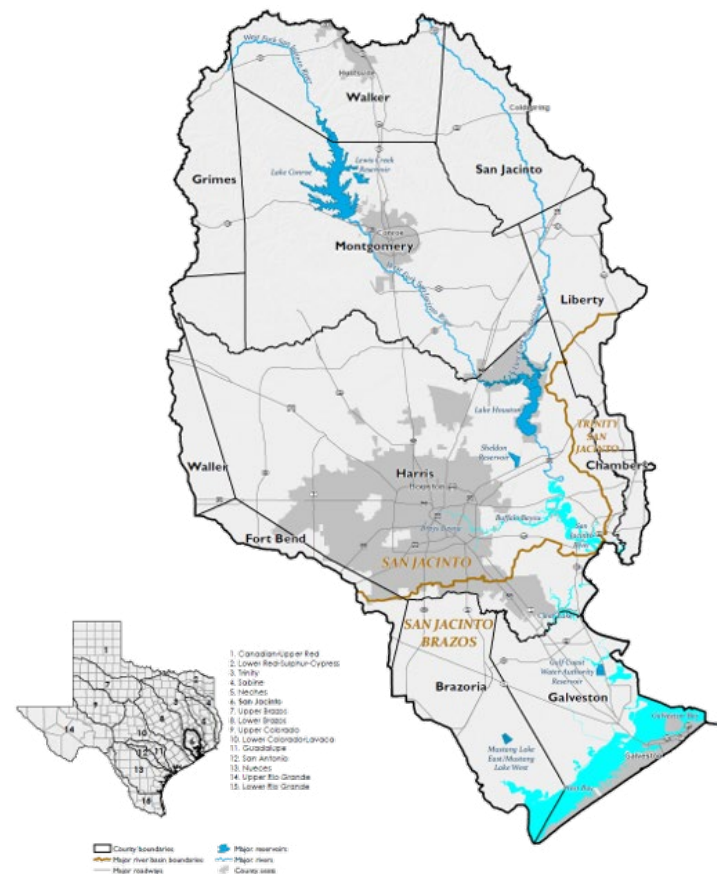
In the wake of historic flooding in Texas, the 2019 Texas Legislature passed legislation to create Texas' first-ever regional and state flood planning process. The Legislature created a state flood planning framework and charged the Texas Water Development Board (TWDB) with creating flood planning regions based on river basins and with administering the ongoing work of flood planning.

The San Jacinto Regional Flood Planning Group (San Jacinto Region) is one of the 15 Regional Flood Planning Groups (RFPGs) formed by the TWDB. San Jacinto Region includes all or part of 11 counties and extends from Galveston in the south to Huntsville in the north.

Through this groundbreaking, first of its kind flood planning effort, the San Jacinto Region received a flood planning grant from the TWDB to help identify specific flood risks as well as strategies to reduce flood risks in coming years. This effort represents a bottom-up approach to flood planning and is intended to be a transparent process which relies on public input.

The San Jacinto region encompasses 5,089 square miles, making it the second smallest flood planning region in the state by area. However, the region is the second most populous, with an estimated population in 2020 of 6.4 million. With a population density of 1,200 people per square mile, the San Jacinto region is also the most densely populated region in the state, with double the population density of any other region. The extensive development and proximity to the coast makes flooding a particular issue of interest and need;

the San Jacinto region has the highest amount of National Flood Insurance Program (NFIP) claims of any region in the state (1975-2019). Approximately 21% of Texas residents live in the area. It is a geographically diverse region where the needs of rural stakeholders must be balanced with those of rapidly developing urban population centers.



SANJACINTOFLOODPLANNING.ORG



OVERVIEW OF THE DRAFT REGIONAL FLOOD PLAN

The overarching goal of regional flood planning is to reduce the risk of flooding that currently exists and preventing creation of new flood risk through responsible floodplain management practices.

As part of this effort, the San Jacinto Region submitted a DRAFT Regional Flood Plan to the TWDB on Aug. 1, 2022. The DRAFT plan will be available for public comment until Oct. 29, 2022. After the public comment period, the Final Regional Flood Plan for the San Jacinto Region will be submitted to the TWDB in January 2023. During this initial round of regional flood planning, the San Jacinto RFPG conducted the following tasks:

- Developed mapping of existing and future flood risk and exposure.
- Leveraged local knowledge to identify flood prone areas.
- Identified regional goals and minimum flood management standards for recommendation across the region.
- Estimated the overall impact of the Regional Flood Plan, like potential impacts to flood prone areas, future flood risks and the environment.

Nearly \$30 billion in funding is needed to implement flood risk reduction actions in the San Jacinto Region, including:

- **374 recommended Flood Management Evaluations**, with a total cost of approximately \$198 million;
- **34 recommended Flood Mitigation Projects** with a total cost of approximately \$28 billion;
- **64 recommended Flood Management Strategies** with a total cost of more than \$1.1 billion

For more information about the San Jacinto Regional Flood Planning Group or to provide comments on the DRAFT Regional Flood Plan, visit our website at sanjacintofloodplanning.org.

JOIN US AT OUR PUBLIC MEETINGS

IN-PERSON OPEN HOUSE
TUESDAY, SEPT. 27, 2022
5:30 – 7:30 PM

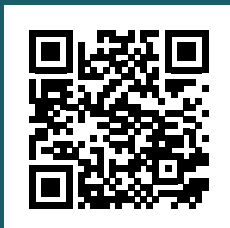
White Oak Conference Center
7603 Antoine Dr.
Houston, TX 77088

VIRTUAL MEETING
THURSDAY, SEPT. 29, 2022
5:30 – 7:30 PM

tinyurl.com/SanJacFloodPlan



Visit Our Linktree for Easy Access to Project Resources:
linktr.ee/sanjacintofloodplanning



Link Includes:
Project Website
Facebook
Twitter
Contact Us

TO VIEW THE DRAFT REGIONAL FLOOD PLAN, VISIT ONE OF THE FOLLOWING LOCATIONS:

Online	The Woodlands	Houston	Galveston
tinyurl.com/ReadSanJacFloodPlan 	George and Cynthia Woods Mitchell Library 8125 Ashlane Way The Woodlands, TX 77382	McGovern-Stella Link Neighborhood Library 7405 Stella Link Road Houston, TX 77025	Rosenburg Library 2310 Sealy Avenue Galveston, TX 77550

Appendix 10-13:
Responses to Comments on the Draft Regional Flood Plan

Addicks Flood Mitigation Network

From: Mariah@hollawayenv.com
Sent: Monday, October 31, 2022 11:44 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good morning,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

Please reach out if you have any questions.

Best,

Mariah

From: HubSpot Forms <noreply@hubspot.com>
Sent: Saturday, October 29, 2022 2:18 PM
To: Mariah Najmuddin <Mariah@hollawayenv.com>
Subject: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



**New submission on HubSpot Form
"Comments on the DRAFT Regional Flood
Plan"**

Page submitted on: **Technical Documents - San Jacinto Regional Flood Planning**

First name:

Michael

Last name:

Dach

City:

Houston

County:

Harris

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

Date: October 29, 2022

From: Mike Dach, Coordinator, Addicks Flood Mitigation Network

6014 Ballina Canyon Ln, Houston, TX 77041

Ph: 281-787-2322;EMA: [REDACTED]

Subject: San Jacinto Regional Flood Planning Group – Region 6

Comments on the DRAFT Regional Flood Plan
Plan for Protecting Addicks Reservoir Perimeter Communities

There is no Consensus Comprehensive Plan for Protecting the more than 10,000 Addicks Reservoir Perimeter Community Residences that were flood damaged by Houston Tax Day Storm (April 18, 2016), and Hurricane Harvey (Aug 28, 2017). Impediments to such a Plan include:

- USACE BBTRS Interim Report (Oct 2020) suggested key Alternatives (construction of Upstream 3rd Reservoir, more Channelization of Buffalo Bayou) were rejected by HCFCD and Community Organizations.
- USACE BBTRS continues studies, far past initial deadline, with no end in sight.
- City of Houston has rejected the HCFCD recommendation to raise the new Clay Road Bridge elevation over Langham Creek, to minimize stormwater flow resistance caused by the roadway large-span support beams.
- CoH refuses to replace the “solid” concrete Bridge Guard Walls, which do not meet TXDOT “open” Guard Rail standards.
- HCFCD Tunnel Study Phase 2 Report (Jun 2022) (regarding 40 ft dia x 23 mile Tunnel from the Reservoirs to Ship Channel) was rejected by Harris County Commissioners Court.
- HCFCD and USACE are stalling “One Creek Wests” proposed South Mayde Creek Bypass from the Greenhouse Road Bridge to the Barker-Cypress Road Bridge.
- USACE continues to resist Desilting major Conveyance Channels on Government Property, even where they connect with upstream Channels extensively Repaired, Desilted, and Improved by HCFCD.
 - o USACE BBTRS Study Report (Oct 2020) reported significant onsite channel silting, and proposed new Settling Basins as Alternatives.
 - o USACE only permits "manual Selective Clearing". This procedure proved impractical during the removal of the Langham Creek Bypass 1.1 Acre Sandbar (started Mar 2018).
 - o HCFCD by agreeing to use “manual Selective Clearing”, enables USACE to restrict the flow of Heavy Rain Event stormwater into the Reservoirs, and subjects

the Perimeter Communities to repeated Channel Conveyance forward-flow over-bank flooding.

- USACE is actively buying "forever" Flowage Easements on private properties (containing no significant structures) at Addicks Reservoir's west side.
- Federal Claims Court has issued rulings in the Liability Phase (June 2022) and Damage Claims Phase (Oct 2022), that are favorable to the Plaintiffs.
- However, the rulings contain no Flood Mitigation components or relief for Perimeter Residents.
- The 2 distinct efforts of "Upstream Litigation" and of "Perimeter Communities Flood Mitigation Planning" appear to be converging. The likely outcome is that there will be no timely and/or significant Flood Mitigation Projects for the Perimeter Communities.
- The "default" Reservoir Perimeter Community Protection Plan appears to recommend Repeat Stormwater Storage and Flooding of Reservoir Perimeter Private Properties, rather than Flood Mitigation for such Properties.

No wonder there is a lot of apathy among Perimeter Community Residents, and Initial Flood Mitigation Activists ... there has been little significant Consensus Building among Residents and our Local Institutions.

Cheers,
Mike Dach

[View in HubSpot](#)



- **CONTACT**
- Michael Dach

This message was sent to mariah@hollawayenv.com because your preferences are set to receive notifications like this. You can change it in your [notification preferences](#) page.

sanjacstudy.com (Hub ID: 20336393)

HubSpot, Inc.
25 First Street, 2nd Floor
Cambridge, MA 02141



December 1, 2022

Michael Dach
Addicks Flood Mitigation Network
6014 Ballina Canyon Lane
Houston, Texas 77041

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Michael,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Addicks Flood Mitigation Network on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

As mentioned, there was not a comprehensive plan for the Addicks Reservoir communities proposed in the existing draft plan. However, inclusion may be considered by the RFPG during future planning cycles pending a project sponsor for the efforts. We encourage the Addicks Flood Mitigation Network to continue to engage in the flood planning process and direct local sponsors to submit proposed flood mitigation actions for inclusion in future flood plans.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of Alvin

Maggie Puckett

From: Michelle Segovia <mlira@psf.cityofalvin.com>
Sent: Tuesday, July 19, 2022 9:12 AM
To: Mariah@hollawayenv.com
Cc: San Jacinto RFPG Technical Consultant
Subject: RE: CTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Follow Up Flag: Follow up
Flag Status: Flagged

Some people who received this message don't often get email from mlira@psf.cityofalvin.com. [Learn why this is important](#)

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Good Morning Mariah,

Please see my responses below.

Thank You,



From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Tuesday, June 14, 2022 8:49 AM
To: Michelle Segovia <mlira@psf.cityofalvin.com>
Cc: 'San Jacinto RFPG Technical Consultant' <SJRFPG.TechCon@freese.com>
Subject: RE: CTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Hi Michelle,

Thank you for the quick response. When you hit "reply" on the email it should allow you to choose the items via the drop down in the body of the email. I have repasted the table below.

If that doesn't work, I have attached a word document with the same information.

Please let me know if you have any questions.

Best,

Flood Mitigation Action ID	Flood Mitigation Action Type	Flood Mitigation Action Name	Flood Mitigation Action Description	Flood Mitigation Action Estimated Total Cost	Sponsor Funding	
					Anticipated Source of Sponsor Funding	Percent Funding Anticipated to be Provided by Sponsor
061000001	FME	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	\$110000	Bonds/Other Financing	100%
061000002	FME	Durant Street Storm Sewer and Pavement Improvements - Phase 2	Further study of Durant Street Phase 2 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	\$90000	Bonds/Other Financing	100%
061000037	FME	City of Alvin Flood Gauges	Study to identify areas where best to purchase additional flood gauges to be placed at bayous and key high water areas within City of Alvin.	\$50000	Other	50%
061000039	FME	City of Alvin Master Drainage Plan	Comprehensive review of current drainage, studies and recommendations for future projects and studies to create a Master Drainage Plan for the City of Alvin.	\$100000	Entity Budget/Funds	50%
061000040	FME	City of Alvin Open Space Preservation	Study for open space preservation with within adjacent development, dedication of	\$500000	Other	0%

			conservation easements or fee simple acquisition of land along Mustang Bayou.			
061000043	FME	City of Alvin Detention Pond Construction - Mustang and Dickinson Bayou	Further assessment and design of detention ponds needed aon Mustang and Dickinson Bayous to reduce flood risk in the City of Alvin.	\$200000	Entity Budget/Funds	25%
061000067	FME	City of Alvin Dickinson Bayou Watershed Study	Study of Dickinson Bayou Watershed to determine drainage improvement alternatives.	\$500000	Entity Budget/Funds	25%
062000012	FMS	City of Alvin CRS Application	Apply and once accepted maintain and/or improve CRS status. Cost is time, data and preparation of a CRS application. Benefit, if approved homeowner with flood insurance could receive a discount based on the City's CRS score.	\$25000	Entity Budget/Funds	100%
062000061	FMS	City of Alvin Full Time Floodplain Administrator	Hire a full-time floodplain administrator who can support CRS application, NFIP, mapping and community floodplain support. A dedicated employee could help the community obtain CRS status and full time flood plain support.	\$100000	Entity Budget/Funds	100%
063000201	FMP	City of Alvin Unified Development Ordinance	A unified land development code combines all land use controls into a single document with a logical	\$100000	Entity Budget/Funds	100%

			structure that is user friendly. Cost is time, data and preparation of a unified land development code.			
--	--	--	---	--	--	--

From: Michelle Segovia <mlira@psf.cityofalvin.com>

Sent: Tuesday, June 14, 2022 8:43 AM

To: Mariah Najmuddin <Mariah@hollawayenv.com>

Cc: SJRFPG.TechCon@freese.com; Michelle Segovia <mlira@psf.cityofalvin.com>

Subject: RE: CTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

CAUTION: Email from outside Hollaway

Good Morning,

At this time 100% of the cost for all actions shown in the table below will need other funding (including State, Federal and/or other funding). The “drop-down” menu in the table below did not work.

Thank You,



From: Mariah Najmuddin <Mariah@hollawayenv.com>

Sent: Monday, June 13, 2022 4:46 PM

To: Michelle Segovia <mlira@psf.cityofalvin.com>

Cc: SJRFPG.TechCon@freese.com

Subject: CTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because Alvin is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood

Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

Flood Mitigation Action ID	Flood Mitigation Action Type	Flood Mitigation Action Name	Flood Mitigation Action Description	Flood Mitigation Action Estimated Total Cost	Sponsor Funding	
					Anticipated Source of Sponsor Funding	Percent Funding Anticipated to be Provided by Sponsor
061000001	FME	Durant Street Storm Sewer and Pavement Improvements - Phase 1	Further study of Durant Street Phase 1 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	\$110000	Choose an item.	Choose an item.
061000002	FME	Durant Street Storm Sewer and Pavement Improvements - Phase 2	Further study of Durant Street Phase 2 to reduce flood risk with upgrades to storm sewer system, concrete curb, gutter, pavement, and sidewalk.	\$90000	Choose an item.	Choose an item.
061000037	FME	City of Alvin Flood Gauges	Study to identify areas where best to purchase additional flood gauges to be placed at bayous and key high water areas within City of Alvin.	\$50000	Choose an item.	Choose an item.
061000039	FME	City of Alvin Master Drainage Plan	Comprehensive review of current drainage, studies and recommendations	\$100000	Choose an item.	Choose an item.

			for future projects and studies to create a Master Drainage Plan for the City of Alvin.			
061000040	FME	City of Alvin Open Space Preservation	Study for open space preservation with within adjacent development, dedication of conservation easements or fee simple acquisition of land along Mustang Bayou.	\$500000	Choose an item.	Choose an item.
061000043	FME	City of Alvin Detention Pond Construction - Mustang and Dickinson Bayou	Further assessment and design of detention ponds needed aon Mustang and Dickinson Bayous to reduce flood risk in the City of Alvin.	\$200000	Choose an item.	Choose an item.
061000067	FME	City of Alvin Dickinson Bayou Watershed Study	Study of Dickinson Bayou Watershed to determine drainage improvement alternatives.	\$500000	Choose an item.	Choose an item.
062000012	FMS	City of Alvin CRS Application	Apply and once accepted maintain and/or improve CRS status. Cost is time, data and preparation of a CRS application. Benefit, if approved homeowner with flood insurance could receive a discount based on the City's CRS score.	\$25000	Choose an item.	Choose an item.
062000061	FMS	City of Alvin Full Time Floodplain Administrator	Hire a full-time floodplain administrator who can support CRS application, NFIP, mapping and community floodplain support. A dedicated employee could help the	\$100000	Choose an item.	Choose an item.

			community obtain CRS status and full time flood plain support.			
063000201	FMP	City of Alvin Unified Development Ordinance	A unified land development code combines all land use controls into a single document with a logical structure that is user friendly. Cost is time, data and preparation of a unified land development code.	\$100000	Choose an item.	Choose an item.

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 - FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Friday, June 17, 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Cory Stull | Technical Consultant (Freese and Nichols, Inc.)

San Jacinto Regional Flood Planning Group

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December 1, 2022

Michelle Segovia, City Engineer
City of Alvin
1100 W. Highway 6
Alvin, TX 77511

Re: ACTION REQUEST: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Dear Michelle,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of Alvin on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The responses provided to the flood financing survey have been incorporated into the plan.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Bayou Land Conservancy



Bayou Land Conservancy
10330 Lake Road, Bldg J
Houston, Texas 77070



October 27, 2022

To: San Jacinto Regional Flood Planning Group (via website)

Bayou Land Conservancy's Comment Letter to Region 6 Regional Flood Planning Group Promoting the Protection of Natural Flood Mitigation Features, and Use of Nature Based Flood Mitigation Solutions

Region 6, along with all the other Regional Flood Planning Groups, have had to work under a tight timeline during the initial planning round—and we appreciate the work the Region has put into making a holistic flood plan. Thank you to the appointed voting members, and the consultant team, for months of hard work.

Bayou Land Conservancy (BLC) is a non-profit, accredited land trust, working to preserve land along streams for flood control, clean water, and wildlife. We have conserved over 14,000 acres since 1996, utilizing conservation agreements with willing landowners. Our comments will be narrowly focused to the upper San Jacinto watershed (area of drainage into Lake Houston) because this is our area of conservation focus. In the draft plan these projects are described in Section 5.D.4.c. San Jacinto Master Drainage Plan. Bayou Land Conservancy participated in public input during the development of the San Jacinto Master Drainage Plan and submitted comments to the plan in August of 2020.

We will not address specific comments to each stream with planned projects in the upper watershed as they follow a similar design: upstream detention/downstream channelization. The comments submitted will focus on the impacts of the proposed channelization of Spring Creek.

Impacts to Conserved Lands and Wetlands Mitigation

BLC protects land within the upper San Jacinto watershed primarily through land ownership and conservation easements. Conservation easements are voluntary, perpetual legal agreements with landowners to preserve the land and prevent development. Of greatest importance to BLC is the impact that the proposed projects could have on conserved lands. These lands provide valuable ecosystem services, including but not limited to, maintaining water quality and quantity, and flood protection.

In addition to ecosystem services, many of BLC's conservation easements were initiated to provide wetlands mitigation for Clean Water Act permitting. As mitigation sites, these lands are providing an additional service. If these mitigation lands are impacted with a proposed channelization project, they would require additional federal permitting and mitigation costs.

These conserved lands also provide important community spaces that are safe and open to all at no cost. BLC is extremely concerned about two proposed project locations: Spring I-45 Channelization and Spring Woodlands Channelization. These projects are proposed in areas with conservation easements that serve as both wetlands mitigation sites and public outdoor recreation spaces. Both projects are along Spring Creek where the Spring Creek Greenway is located.

The Spring Creek Greenway is a multi-decade project beginning in 1979 with land purchases for public use that continues today with creation of the largest, continuous forested urban green space in the United States. The Spring Creek Greenway is championed by both Harris and Montgomery counties, of which Spring Creek is the liquid boundary. This greenway connects and protects approximately 7,000 acres of forest along Spring Creek, preserving this ecological gem as a mecca for ecotourism, education, and outdoor recreation just north of Houston. Both Spring Creek Channelization projects appear to threaten this vital community asset.

The Woodlands Channelization project is proposed along both the Spring Creek Greenway and BLC's Spring Creek Nature Trail. The Spring Creek Nature Trail is a 14-mile unpaved, earthen, trail that complements the greenway. It is a keystone project for BLC that highlights our natural ecology and provides quiet solace in one of the largest cities in America. This trail was constructed with the aid of numerous funding sources including federal highway funds through Texas Parks & Wildlife Department, charitable endowments, foundations, grants, corporate and member donations. It's construction and maintenance required partnerships with Harris County, Montgomery County, The Woodlands Township, and the Howard Hughes Corporation. This trail was built for the community, by the community. BLC volunteers contributed over 2,500 hours to the construction of this trail. After its completion, additional volunteers have dedicated their time, energy, and donations to upkeep of the trail. Since trail construction, there have been over 3,000 volunteer hours spent on improvements and maintenance. The community is invested in this natural recreation space.

Impact of Channelization on Erosion

The level of data collection and analysis regarding erosion in the original study appeared to be high-level and lacking detailed analysis. Erosion and downstream sedimentation are known issues in many watersheds throughout the study area. BLC is concerned that projects along Spring Creek and the West Fork of the San Jacinto River, in particular, do not adequately consider erosion. Detention and channelization projects within an area prone to erosion risks destabilization of the entire system.

BLC strongly suggests additional studies of erosion and sedimentation in the study area, with an analysis of the project impacts over the next 50 years.

Cost/Benefits of Green Infrastructure and Nature Based FMPs

Only projects with significant amounts of details are incorporated as FMPs in the Draft Regional Flood Plans. We are concerned that natural infrastructure projects could be downgraded to Flood Management Strategies (FMS) due to lack of data provided to the Region. It is important to note that analyses like the BCR are not always tailored for natural infrastructure projects. For example, while preserving open space within the floodplain (such as the Spring Creek Greenway) helps protect land from development which could negatively impact flooding, a traditional BCR may not adequately account for protection of development that hasn't occurred yet. *We recommend the RFPG to provide discretion to potential FMPs that are largely nature-based. We also encourage the Region to provide an administrative recommendation to the TWDB to provide guidance to the Regions on how to apply potential FMP requirements to nature-based projects.*

According to the RFPG Region 6 draft plan: "Updated construction cost estimates and estimates of project benefits must also be available to define a benefit-cost ratio (BCR) for each recommended Flood

Management Project (FMP). The Texas Water Development Board (TWDB) recommends that proposed projects have a BCR greater than one, but the San Jacinto RFPG may recommend FMPs with a BCR lower than one with proper justification.”

Even though the RFPG was given discretion to propose projects with a BCR below the TWDB recommended floor of “greater than 1”, it’s worth noting that the BCR for the Spring Creek portion of the upper San Jacinto watershed FMPs is 0.76, and the aggregate for all the projects recommended from the San Jacinto Master Drainage study would be between 0.29 and 0.34. This points to an urgent need to acknowledge the benefits of nature-based FMPs that include floodplain protection, and removing structures at highest level of risk, because the justification for spending more than \$3b for projects that will provide, at best, less than \$1b in benefits has not been addressed in the draft plan.

In addition, potential negative impacts to downstream communities were not addressed in the San Jacinto Master Drainage Plan. **Because of this, and the unfavorable BCR for the Master Drainage Plan projects, we recommend that the San Jacinto Master Drainage Plan projects be removed from the Region 6 plan.**

Since the inception of flood planning in Region 6 a number of public meetings and opportunities for public comment have taken place. Overwhelmingly people have asked for flood plain preservation and nature-based infrastructure (NBI) projects because they recognize the multi benefits provided by connected green spaces along our bayous, creeks, and rivers. Bayou Land Conservancy joins with those members of our community in asking the Region 6 Flood Planning Group to consider the opportunities in approaching flood mitigation in ways that work with nature.

Sincerely,

A handwritten signature in black ink, reading "Jill Boullion". The signature is fluid and cursive, with the first name "Jill" being more prominent than the last name "Boullion".

Jill Boullion
Executive Director



December 1, 2022

Jill Boullion, Executive Director
Bayou Land Conservancy
10330 Lake Road
Building J
Houston, Texas 77070

Re: Bayou Land Conservancy's Comment Letter to Region 6 Regional Flood Planning Group Promoting the Protection of Natural Flood Mitigation Features, and Use of Nature Based Flood Mitigation Solutions

Dear Jill,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Bayou Land Conservancy on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The purpose of the regional flood plan is to collect projects and studies and make recommendations based on criteria developed by the TWDB. Please note that projects included in the RFP are not guaranteed to receive funding assistance and the sponsor must demonstrate that projects meet applicable regulations and criteria, including land acquisition and environmental constraints. Furthermore, documentation provided within the San Jacinto Master Drainage Plan included language stating the project would not have negative impacts – a requirement specified by the TWDB. Therefore, no changes were made to the regional flood plan. Any further comments regarding project specifics can be directed to the project sponsor.

The San Jacinto RFPG has recognized and discussed how the current requirements for a project to qualify as an FMP (including requirement of a BCR) and how the TWDB is currently measuring the portion of a project that is nature-based, require improvement. Several recommendations have been made to the state in Chapter 8 that speak to these concerns. However, the RFPG encourages the Bayou Land Conservancy to remain an active participant in the flood planning process to continue to help inform approaches moving forward.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison



Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

City of Bellaire

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Thursday, October 27, 2022 12:38 PM
To: Ross Gordon
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

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Good afternoon,

On behalf of the Technical Consultant, I want to thank you and the City of Bellaire for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

Mariah Najmuddin, MPP (she/her/ella)
Communications Specialist
Hollaway Environmental + Communications
2500 Summer Street, Suite 1130
Houston, TX 77007
O: 713.868.1043 | D: 346.223.1064
www.hollawayenv.com



HUB + DBE + WBE + WOSB CERTIFIED

De: HubSpot Forms <noreply@hubspot.com>

Enviado el: Thursday, October 27, 2022 12:25 PM

Para: Mariah Najmuddin <Mariah@hollawayenv.com>

Asunto: Contact reconversion by submitting on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



Contact reconversion by submitting on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

Ross

Last name:

Gordon

City:

Bellaire

County:

Harris

Email:

rgordon@bellairetx.gov

Comment on the DRAFT Regional Flood Plan:

General Comment:::

While we understand the exact mechanics may not

have been finalized yet, the City of Bellaire requests that the following be taken into consideration as policies are developed and projects are considered for Flood Infrastructure Funding (FIF) in the future. Specifically, the City of Bellaire wants to ensure that projects classified as FMEs at the date of Regional Flood Plan / State Flood Plan adoption are not limited to applying for Category 1 FIF funding. If, in the intervening time, a local entity advances a project to the point where it has sufficient information to substantiate an FMP (e.g. benefit cost analysis, no adverse impact analysis, cost estimate), that it be eligible to apply for and receive Category 2 FIF funding (acquisition, design, and construction). This should be independent of any amendments to the Regional Flood Plan / State Flood Plan, which may formally transition the status of a project from FME to FMP, as these amendments may not occur in a timely manner.

This is highly important, because penalizing a local entity for advancing a project on their own would be contrary to the goals of the State's flood risk management goals. For hard hit communities, the ability to act with urgency is critical. Furthermore, the ability to access construction funds, rather than only study funds, is also critical for smaller municipalities. And a five-year planning cycle is too long for entities wishing to advance smaller but still very meaningful flood risk management projects on an accelerated schedule. Accordingly, this highlights the importance of quickly accommodating Regional Flood Plan / State Flood Plan amendments, post adoption, in addition to the above request that projects be able to apply for FIF funding at the appropriate category, reflecting their current stage of project development, and not just the stage of project development when the Regional Flood Plan / State Flood Plan was adopted.

FMX Specific Comments:::

In an effort to better reflect the City of Bellaire's anticipated future flood mitigation actions, we request

that the FMXs including in the Draft Regional Flood Plan be replaced with the attached information. We have provided a revised summary spreadsheet (with one tab for information currently in the Draft Regional Flood plan, and with another tab for the City of Bellaire's proposed revisions). This should provide the information necessary to update all FMX information related to the City of Bellaire in the Regional Flood Plan. Most importantly, this provides additional granularity on specific flood risk reduction projects currently underway or anticipated to start soon, which will align these efforts better for funding from TWDB in the future. The City of Bellaire stands ready to assist the RFPG and provide any additional information which would be necessary to complete these updates. Thank you so much for your willingness to work with the City of Bellaire.

Submitted by:::
Ross Gordon
City of Bellaire
Council Member Position 3

File upload:

[Bellaire_SJRFP_Draft_FMXs-COB-Comments.xlsx](#)

View in HubSpot

[City of Bellaire](#)

- **CONTACT**
- Ross Gordon

Found site via:

<https://sanjacintofloodplanning.org/technical-documents/>

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sanjacstudy.com (Hub ID: 20336393)

HubSpot, Inc.
25 First Street, 2nd Floor
Cambridge, MA 02141

Maggie Puckett

From: Cory Stull
Sent: Friday, May 6, 2022 6:07 PM
To: Maggie Puckett; Brian Edmondson
Subject: FW: San Jacinto Regional Flood Plan
Attachments: Bellaire MDCP_Report_20220414.pdf

Cory J. Stull, P.E., CFM
Principal and Vice President
Stormwater Management

Freese and Nichols, Inc.
713-600-6809 direct
713-359-8560 mobile

From: Michael Leech <mleech@bellairetx.gov>
Sent: Friday, May 6, 2022 1:22 PM
To: Cory Stull <Cory.Stull@freese.com>
Cc: Deacon Tittel <dtittel@bellairetx.gov>
Subject: San Jacinto Regional Flood Plan

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Cory,

Ross Gordon recommended that I touch base with you. I'm writing to get some insight on how the City of Bellaire can get some of the drainage projects that were identified through our recently completed Master Drainage Concept Plan (MDCP) incorporated into the San Jacinto Regional Flood Plan. The gist of the MDCP is that it is was a cooperatively funded effort by HCFC, TxDOT and Bellaire to identify causes of flooding as well as potential projects to minimize flooding impacts in the Bellaire area. The MDCP is attached if you'd like to have a look. Our thinking is that the projects identified in the MDCP might be a good fit as "Flood Mitigation Projects (FMP's)" in the San Jacinto Regional Flood Plan.

I'd love to chat with you about this when you have some time. Also, I appreciate and understand the time sensitive nature of this request. We are prepared to jump on this and get you what you need ASAP.

Thanks,
Mike

Michael Leech
Director, Public Works and Development Services

City of Bellaire
4440 Edith Street | Bellaire, TX 77401
O: (713) 662-8154 | C: (713) 201-3379



December 1, 2022

Michael Leech
Director, Public Works and Development Services
City of Bellaire
4440 Edith Street
Bellaire, Texas 77401

Re: City of Bellaire Projects for the San Jacinto Regional Flood Plan

Dear Michael,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Bellaire on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

In regards to requests for inclusion of additional actions in the plan:

At this time, additional projects, studies, and evaluations are not able to be included in the Final Plan. Therefore, no changes were made at this time to the flood plan. However, the RFPG will be engaging entities during the amended planning cycle in 2023 to acquire additional projects, studies, and evaluations and will be updating the plan accordingly. The FME's provided by Bellaire will be considered for inclusion in the Amended Plan due in July 2023.

In regards to updates and revisions to actions currently sponsored by Bellaire

Requested updates to descriptions of actions, cost estimates, and sponsor funding have been updated in the plan.

In regards to the question about future state funding opportunities

The San Jacinto RFPG has received and considered the inquiry submitted by the City of Bellaire as to whether a sponsor can elevate an FME to an FMP between flood planning cycles and be eligible for Category 2 FIF funding. The suggestion that this be allowable independent of the need for formal amendments to the Regional or State Flood Plan will be documented within Chapter 10 of the Final Flood Plan and submitted to the TWDB for consideration.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison



Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB
Ross Gordon | Council Member Position 3, City of Bellaire

Blue Bonnet Groundwater

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Tuesday, October 4, 2022 4:29 PM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for your comment on the DRAFT Regional Flood Plan!

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Good afternoon,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

From: HubSpot Forms <noreply@hubspot.com>
Sent: Tuesday, September 27, 2022 5:00 PM
To: Mariah Najmuddin <Mariah@hollawayenv.com>
Subject: New submission on HubSpot Form "New contact us form (July 6, 2021 1:34:23 PM) "

CAUTION: Email from outside Hollaway



New submission on HubSpot Form "New contact us form (July 6, 2021 1:34:23 PM) "

Page submitted on: [Contact Us - San Jacinto Regional Flood Planning](#)

First name:

Zach

Last name:

Holland

Street address:

303 E. Washington Avenue, Suite D

City:

Navasota

County:

Grimes

Postal code:

77868

Email:

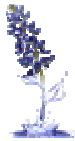
[REDACTED]

Your comment:

Flooding presents a host of planning, action, response, and recovery this group and others have been tasked with fitting into a single source of information for the State of Texas. I believe a unique piece of information pertinent to the Region 6 flood plan should be a documentation of the processes and procedures to treat

and test a flooded water well. These efforts were incredibly vital post Hurricane Harvey for our region. The Texas Well Owners Network was tabbed as a hub for this information and working with local entities to distribute treatments and testing to well owners. I believe our individual regional plan, as well as the State Flood Plan as a whole, would be significantly benefited by including such information for individuals or entities to reference in planning and future flood events.

[View in HubSpot](#)



- **CONTACT**
- Zach Holland

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sanjacstudy.com (Hub ID: 20336393)

HubSpot, Inc.
25 First Street, 2nd Floor
Cambridge, MA 02141



December 1, 2022

Zach Holland
Blue Bonnet Groundwater
303 East Washington Avenue
Suite D
Navasota, Texas 77868

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Zach,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Blue Bonnet Groundwater on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

While information as presented regarding testing for flooded well water is not specifically mentioned within the RFP, this comment will be documented in the Final Regional Flood Plan and will be passed along to the Texas Water Development Board for future consideration.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
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Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Coastal Prairie Conservancy

5615 Kirby Drive, Suite 867
Houston, Texas 77005-2458

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www.coastalprairieconservancy.org
info@coastalprairieconservancy.org



October 27, 2022

San Jacinto Regional Flood Planning Group
Texas Water Development Board
via email to sanjacfldpg@eng.hctx.net

Re: Region 6 Draft Regional Flood Plan

Ladies and Gentlemen,

The San Jacinto Regional Flood Planning Group has requested input on the draft Regional Flood Plan. The Coastal Prairie Conservancy, which owns over 13,500 acres of agricultural and natural lands and protects an additional 5,012 acres through voluntary conservation easements with private landowners in Harris and Waller Counties within the San Jacinto watershed, has reviewed the draft plan and offers suggestions to the SJRFPG to better reflect the community's interest in incorporating nature-based solutions. The SJRFPG adopted a goal that 35% of all FMSs and FMPs identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053. We are disappointed to see that the draft plan has included structural projects, some of which have negative impacts to the environment. In addition, the plan has not included any nature-based projects as FMPs.

One of the key methods of achieving nature-based flood mitigation is the preservation of floodplains, as allowing floodwaters to access their natural floodplains and spread where they do not cause damage also reduces peak flows downstream. However, none of the FMPs included in the plan relate to the preservation of the floodplain. We ask that HCFCD's buyout program, which would remove repeat flooding structures from the floodplain, be included as an FMP, as this is one method that completely eliminates any residual flood risk. It also ensures that new structures are not built again in the floodplain. Public acquisition of these lands would allow for these spaces to be available for public use, to provide wildlife habitat, and to offer other community benefits. Additional low-interest programs to support voluntary city and county buy-back of lands for county parks and flood mitigation should also be included.

Floodplain preservation can be achieved more cost effectively and efficiency on lands that have not yet been developed through the use of purchased conservation easements which restrict development in the floodplain. These floodplain easements would allow private landowners to retain ownership of the floodplain, while being compensated for the fair market value of the development rights that are relinquished. By preserving undeveloped floodplains, land will continue to be available for agricultural production, wildlife habitat and recreation, and can contribute to water quality enhancements. We request that floodplain preservation through public

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PRESIDENT & CHIEF EXECUTIVE OFFICER Mary Anne Piacentini

buyout programs and/or floodplain easements also be included as an FMP. If additional data is required to develop these projects, we ask that funds be allocated to identify these data points.

There are multiple river channelization projects under the San Jacinto Master Drainage Plan included as FMPs. Surprisingly, however, we are concerned that there were no negative impacts identified as associated with the channelization of Caney Creek, Peach Creek, Spring Creek, and the West Fork of San Jacinto river. The channel widening and construction of detention basins in the identified projects have a clear negative impact on some of the few remaining natural habitats within a highly urbanized area. We are disappointed to see these projects included while no nature-based projects were included. Section 6.A.6.a acknowledges that there is the potential to impact wetlands, threatened and endangered species, and the functionality of natural areas, but there are no elements of the plan that aim to remedy those impacts or identify projects that provide similar flood risk reduction while also providing community benefits. We ask that the channelization projects be removed as FMPs.

We are also concerned regarding the inclusion of the Galveston Bay Surge Protection Coastal Storm Risk Management, which involves multiple projects with varying degrees of costs and impacts. We ask that each element be considered independently. The plan noted that one of the requirements for inclusion as an FMP is that the "RFPG must be able to demonstrate that each recommended FMP...is a discrete project (not an entire capital program or drainage master plan)." Despite being made up of multiple storm risk reduction projects, it is included under Region 6's draft plan as one FMP. We believe that inclusion of the Galveston Bay Surge Protection Coastal Storm Risk Management as a single FMP goes against the requirement of submitting discrete projects as an FMP.

The Texas Legislature is urged to make funds available to support nature-based practices through land conservation, restoration programs, and participation in landowner incentive programs to encourage voluntary land stewardship practices to manage floodwaters by slowing runoff and dissipating flood energy to include riparian, wetland, forest, upland, and other habitat protection programs. We also request land coverage studies be performed to effectively identify riparian corridors that should be protected for floodplain mitigation and erosion reduction.

We thank you for your work in addressing flooding in the San Jacinto watershed and look forward to working collaboratively to advancing nature-based projects, especially as they can reduce flood risk and increase regional resilience.

Thank you,

A handwritten signature in black ink, appearing to read "Mary Anne Piacentini". The signature is fluid and cursive, with a prominent initial "M" and "P".

Mary Anne Piacentini
President and CEO



December 1, 2022

Mary Anne Piacentini, President and CEO
Coastal Prairie Conservancy
5615 Kirby Drive
Suite 867
Houston, Texas 77005

Re: Region 6 Draft Regional Flood Plan

Dear Coastal Prairie Conservancy,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Coastal Prairie Conservancy on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The purpose of the regional flood plan is to collect projects and studies and make recommendations based on criteria developed by the TWDB. If structural projects met specific criteria as outlined by the TWDB, they were presented for consideration by the RFPG. With regards to the actions sponsored by other entities discussed in the submitted comment letter, all of these actions were included in the RFP following close coordination with the project sponsors or in compliance with project implementation guidance documented in accompanying reports. Please note that projects included in the RFP are not guaranteed to receive funding assistance and the sponsor must demonstrate that projects meet applicable regulations. Any further comments regarding project specifics can be directed to the project sponsor.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

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Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Danielle Goshen on behalf of the National Wildlife Federation, Bayou Land Conservancy, Bayou City Waterkeeper, Coastal Prairie Conservancy, and Galveston Bay Foundation

Maggie Puckett

From: Mariah@hollawayenv.com
Sent: Monday, October 31, 2022 11:34 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good morning,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region. We received both comment submissions.

Please reach out if you have any questions.

Best,

Mariah

From: HubSpot Forms <noreply@hubspot.com>
Sent: Saturday, October 29, 2022 11:29 PM
To: Mariah Najmuddin <Mariah@hollawayenv.com>
Subject: Contact reconversion by submitting on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



**Contact reconversion by submitting on
HubSpot Form "Comments on the DRAFT
Regional Flood Plan"**

First name:
Danielle

Last name:
Goshen

City:
Austin

County:
Texas

Email:



Comment on the DRAFT Regional Flood Plan:

Additional document providing more background on concerns regarding the Coastal Texas Study.

File upload:

[2021.10.12-Comments-to-coastal-barrier-final-EIS.pdf](#)

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- **CONTACT**
- Danielle Goshen

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Galveston Bay Foundation
Healthy Gulf
Healthy Port Communities Coalition
Lower Brazos Riverwatch
Port Arthur Community Action Network
Public Citizen
Save Buffalo Bayou

Sierra Club Lone Star Chapter
Texas Campaign for the Environment
Texas Health & Environment Alliance
Texas Housers
Turtle Island Restoration Network
West Street Recovery

VIA EMAIL

October 12, 2021

Lt. Gen. Scott A. Spellmon
Chief of Engineers and Commanding General
U.S. Army Corps of Engineers
scott.a.spellmon@usace.army.mil

Coastal Texas Study
CoastalTexas@usace.army.mil

**Re: Comments to Final Feasibility Report & Final Environmental Impact Statement (FEIS)
for the Coastal Texas Protection and Restoration Study [Coastal Texas Study]**

To Lt. Gen. Spellmon:

Nicholas made landfall last month as a Category 1 hurricane and unleashed heavy rains and intense winds, which caused more than \$1 billion in damage for communities along the Upper Texas Coast. Most storms to have hit this region over the last decade have brought a similar combination of heavy rain and wind, like Tropical Storm Beta (2020), Tropical Storm Imelda (2019), the Memorial Day flood (2016), and the Tax Day flood (2015). Hurricane Harvey (2017), the worst, directly killed close to 100 people,¹ displaced tens of thousands more, destroyed key infrastructure, infused floodwaters with sewage and toxic chemicals as wastewater treatment plants and Superfund sites were flooded, and caused an estimated \$125 billion in damage—primarily from flooding, through rain that lasted nearly a week.

The coastal gate system proposed by the Coastal Texas Study would not have protected us from the heavy rains and high winds characterizing these recent storms. The system also does not adequately account for sea-level rise and intensifying weather patterns associated with climate change and may not protect us from storm surges associated with Category 3+ storms. The structures will take years to build, cost billions of dollars, and offer protection for only a generation or two. And yet its effects, despite not fully being studied, will be permanent; the gate structure will forever change our coast and the ecology of Galveston Bay.

¹ In the years following Hurricane Harvey, many more people have died as a result of the storm and obstacles to recovery. This tragic loss of life is not reflected in official counts and is currently the subject of a longitudinal study.

Hurricane Ike (2009), which killed more than 100 people in the United States and caused \$30 billion in damage to our coast, made clear that we must address storm surge. But by focusing on that single threat, the Coastal Texas Study lost sight of the questions that must drive our planning forward: How will those of us living along the Texas coast stay out of harm's way as climate change intensifies over the next several decades? And how will we do this without losing the things that make this place that we call home special?

With those questions in mind, we urge the USACE to return to the drawing board and address gaps in its analysis. The USACE must fully consider:

- Environmental impacts, including those on Galveston Bay's oysters, fish, shrimp, and crab species;
- Alternatives to the coastal gate system, such as a full non-structural, nature-based alternative that minimizes risk to communities, local economies, and the environment;
- Alternatives that will impose a fair share of the cost on the multi-billion dollar industries in need of protection; and
- How to reduce, rather than exacerbate, impacts of disasters on vulnerable communities.

In the meantime, solutions are needed now. Decision-makers at the federal, state, and local levels must work together and invest in shorter-term solutions on a more rapid timeline than contemplated by the Coastal Texas Study. We must embrace the goal of moving people out of harm's way as rapidly as possible, and Harris County's Harris Thrives prioritization framework and the city of Houston's Resilient Houston plan offer models for the region as a whole to build and expand on. By taking a holistic, multi-faceted approach, our region's leaders can lay the groundwork for the resilience of our coastal communities. We must:

- Upgrade homes to withstand high winds, heavy rains, and storm surge, on a rapid timeline;
- Help frontline communities move to safer areas in a proactive, coordinated, equitable, and sustainable way;
- Continue to strengthen building regulations across the watershed to avoid exacerbating existing risks, including identifying at-risk industrial facilities and requiring upgrades in order to protect neighboring communities;
- Preserve wetlands, prairies, floodplains, and the natural flood protection they offer; and
- Center equity, so the most vulnerable among us are not pushed further behind with each disaster our region faces.

The organizations joining together to submit this letter work across the greater Houston region and along the Texas coast on a range of issues relevant to the Coastal Texas Study: land conservation, environmental justice, reducing sources of air, land, and water pollution, climate resilience and disaster recovery, and affordable housing. The recommendations embodied in this letter build on the previous comments submitted by many of these organizations over the past three years. We fully incorporate our previous comments and as more fully discussed below, reiterate the need for a more thorough analysis of the impacts of the project and consideration of proposed alternatives.

Comments

1. The FEIS too narrowly defines the project purpose and fails to adequately consider alternatives

This FEIS does not meet the requirements for an initial tiered EIS. The NEPA directive for agencies includes in part that the Federal Government shall, “include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on... any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.”² Tiering is, “the coverage of general matters in broader environmental impact statements or environmental assessments (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.”³ It is encouraged when used to move from a broad review to a narrower one and it will help the agency focus on the issues ripe for discussion.⁴

That being said, when the USACE tiers, “[t]he initial broad or programmatic EIS must present sufficient information regarding overall impacts of the proposed action so that the decision-makers can make a reasoned judgment on the merits of the action at the present stage of planning or development and exclude from consideration issues already decided or not ready for decision.”⁵ This FEIS selects the suite of measures that will be used to meet the goals of the Water Resources Development Act. As such it must provide a sufficient analysis of the possible alternatives and impacts of those alternatives to support a reasoned decision to select the identified measures in lieu of other possibilities. Because this FEIS will support over \$28 billion in spending, it is vitally important that a careful decision is made considering both the opportunity costs of projects not selected and of the significant timeframe for project implementation and accelerating impacts of climate change. The Final EIS does not provide an analysis of project alternatives and their impacts that is sufficient to allow such reasoned decision making.

a. USACE improperly narrowed the objectives for the Coastal Texas Study by restricting its purposes to storm surge mitigation and ecosystem restoration.

Agencies bear responsibility for outlining the objectives of a major federal action, and those objectives determine the range of feasible alternatives required for consideration in an EIS.⁶ While courts afford agencies discretion in setting the objectives of an action, “an agency may

² 42 U.S.C. § 4332(c).

³ 40 C.F.R. § 1508.1(ff).

⁴ 40 C.F.R. § 15011.11

⁵ 33 C.F.R. § 230.13.

⁶ *City of Alexandria, Va. v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999).

not define the objectives of its action in terms so unreasonably narrow,” that the range of feasible alternatives shrinks to only those that fit the agency’s policy preference.⁷

In defining objectives “agencies must look hard at the factors relevant to the definition of purpose.”⁸ When an agency acts pursuant to express statutory authorization, “the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS.”⁹ This confines agency action to the general principle that agency power “is limited to the authority delegated by Congress.”¹⁰

USACE prepared the Coastal Texas Study under the standing authority granted by section 4091 of the Water Resources Development Act of 2007 (“the Act”).¹¹ The Act provides the following mandate:

- a) In General. — The Secretary shall develop a comprehensive plan to determine the feasibility of carrying out projects for flood damage reduction, hurricane and storm damage reduction, and ecosystem restoration in the coastal areas of the State of Texas.
- b) Scope. — The comprehensive plan shall provide for the protection, conservation, and restoration of wetlands, barrier islands, shorelines, and related lands and features that protect critical resources, habitat, and infrastructure from the impacts of coastal storms, hurricanes, erosion, and subsidence.¹²

These express objectives charge USACE with developing a “comprehensive plan” to protect the Texas coast from both flooding and coastal storms, in addition to providing ecosystem restoration efforts. Hurricanes and storms impact the coast in multiple ways, most significantly from rainfall, high wind speeds, and storm surge.¹³ The Final EIS, however, limited damage reduction objectives to storm surge measures only.¹⁴ Excluding the impacts of rainfall, which causes both storm damage and flooding, and high wind speeds, which cause storm damage, improperly narrowed the objectives of the EIS and departed from the statutory mandate outlined in the Act.

The first Draft EIS signaled impacts from rainfall and high wind speeds would be excluded. Although the initial notice of intent and scoping promulgated in 2016 tracked the broad

⁷ *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991).

⁸ *Id.*

⁹ *Westlands Water Dist. v. U.S. Dep’t of Interior*, 376 F.3d 853, 866 (9th Cir. 2004).

¹⁰ *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988).

¹¹ U.S. Army Corps of Engineers, Coastal Texas Protection & Restoration Feasibility Study Final Environmental Impact Statement (“Coastal Texas Study”) 1-3 (August 2021).

¹² Water Resources Development Act of 2007 § 4091.

¹³ *Hurricane Damage*, UCAR Center for Science Education, <https://scied.ucar.edu/learning-zone/storms/hurricane-damage>.

¹⁴ Coastal Texas Study, 1-12.

objectives of the Act,¹⁵ all seven damage reduction objectives listed in the 2018 Draft EIS purport to mitigate storm surge.¹⁶ Both the 2020 Draft EIS and 2021 Final EIS carried this narrow purpose forward and limited the Study's scope to "measures primarily related to the management of storm surges."¹⁷

Excluding impacts from rainfall and high wind speeds from the risk reduction objectives belies USACE's own recognition of the multiple risks posed by coastal storms. The 2018 Draft EIS noted that "the intensity of precipitation events is likely to increase [with rising sea level],"¹⁸ and both the 2020 Draft EIS and 2021 Final EIS warned "[t]he damages from hurricanes and tropical storms could become more severe as wind speed is projected to increase with higher sea levels and rising ocean temperatures."¹⁹ The Final EIS also described the impacts of Hurricane Harvey in 2017, which brought primarily rainfall to the upper coast and a mixture of impacts from rain, storm surge, and high wind speeds to the mid-coast.²⁰

Each EIS provided only vague rationales for excluding rainfall and wind mitigation from its objectives. The 2018 Draft EIS notes that USACE considered rainfall impacts but "determined that adequate authorities exist to address flood risk management in the study area outside of the Coastal Texas Study, and specific legislation will revisit the opportunities to address those vulnerabilities to precipitation."²¹ Without further explanation of what authorities and legislation were meant by this, it is impossible to determine whether impacts from rainfall will in fact be addressed, as called for by the Act's directive to assess flood damage reduction as part of a comprehensive plan.

The Final EIS adopted the same posture as the initial Draft EIS, acknowledging that, while flood risk management was authorized as an objective for the Coastal Texas Study, it would not be addressed specifically.²² The only additional details in the Final EIS pointed to section 216 of the Rivers and Harbors Flood Control Act of 1970 as a potential source for flood risk mitigation.²³ Mere reference to another statutory authority, however, fails to explain how flood risk will be managed as required by the Act authorizing this Study.

Moreover, just because flood risk could be addressed under other authority, USACE must still describe how those measures would interact with other flood control measures proposed in this EIS. Both storm surge and rainfall mitigation measures address flooding but from different root causes. It is possible these different objectives could either complement or detract from each

¹⁵ Intent To Prepare a Draft Environmental Impact Statement for the Coastal Texas Protection and Restoration Feasibility Study, 81 FR 18601-01.

¹⁶ U.S. Army Corps of Engineers, Coastal Texas Protection & Restoration Feasibility Study Draft Environmental Impact Statement, 1-13 (Oct. 2018) ("October 2018 Draft EIS").

¹⁷ U.S. Army Corps of Engineers, Coastal Texas Protection & Restoration Feasibility Study Draft Environmental Impact Statement, 1-11 (Oct. 2020) ("October 2020 Draft EIS"); Coastal Texas Study at 1-12.

¹⁸ October 2018 Draft EIS, at 1-6.

¹⁹ October 2020 Draft EIS, at 1-11; Coastal Texas Study, at 1-12.

²⁰ Coastal Texas Study, at 1-12.

²¹ October 2018 Draft EIS, at 1-12.

²² Coastal Texas Study, at 1-12.

²³ *Id.*

other and analyzing those interactions must be part of USACE's comprehensive plan for mitigating flood risk on the Texas coast.

b. Narrowing the objectives of the EIS resulted in an inadequate consideration of feasible alternatives.

By not considering any measures for mitigating rainfall or high wind speed impacts, this EIS failed to consider the full range of feasible alternatives required under NEPA.

An agency preparing an EIS must evaluate reasonable alternatives to its proposed action.²⁴ Reasonable alternatives must be objectively feasible and “reasonable in light of [the agency’s] objectives.”²⁵ The first question, however, is “whether the agency has reasonably identified and defined its objectives.”²⁶ An “impermissibly narrow purpose” for a proposed action renders the subsequent analysis of alternatives within the EIS inadequate.²⁷

The alternatives analysis is also shaped by the scope of the proposed action; larger projects require consideration of a larger range of alternatives.²⁸ For large, complicated projects, reasonable alternatives may also include measures outside of the agency’s jurisdiction and control.²⁹ This reflects that an EIS is not just for the agency’s own decision-making process but provides a full accounting of the environmental impacts of a project to inform the President, Congress, and the public.³⁰

When USACE narrowed the objectives for the Coastal Texas Study to address storm surge only, an impermissible limitation on the alternatives considered became inevitable. All seven damage risk reduction objectives in the Final Feasibility Report address storm surge specifically; none pertain to rainfall or high wind speeds.³¹ As a result, each alternative considered in the Final EIS presented a variation on the same theme—structural and nonstructural barriers designed to blunt the impact of coastal storm surge.

The Final EIS’s failure to include any discussion of possible flood risk mitigation projects, the benefits and the environmental impacts of such projects, or information about the extent to which other programs will address coastal flooding, makes it impossible for the public to evaluate the environmental costs and benefits of the Corp’s decision to spend over \$28 billion on storm surge mitigation and minimal ecosystem restoration in lieu of flood mitigation.³² The unprecedented scope of this project, spanning hundreds of miles across the entirety of the Texas coast, necessitates legitimate consideration of flood risk mitigation measures that fall within the express authorization of the Coastal Texas Study.

²⁴ 40 CFR § 1502.14(a).

²⁵ *Theodore Roosevelt Conservation P’ship v. Salazar*, 661 F.3d 66, 72 (D.C. Cir. 2011) (quoting *City of Alexandria, Va. v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999)).

²⁶ *City of Alexandria, Va.*, 198 F.3d at 867.

²⁷ *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 667 (7th Cir. 1997).

²⁸ *Nat. Res. Def. Council, Inc. v. Morton*, 458 F.2d 827, 835 (D.C. Cir. 1972).

²⁹ *Id.*

³⁰ *Id.*

³¹ Coastal Texas Study, Appendix A: Plan Formulation.

³² Coastal Texas Study, Executive Summary at 21.

Even if USACE proves correct in its prediction that flood risk mitigation will receive adequate consideration under other authorities or legislation, the analysis of alternatives here is deficient without an in-depth explanation of what those projects are, how they would interact with measures proposed in this EIS, and whether those projects in toto will contribute to a comprehensive plan for protecting the Texas coast from the full impacts of coastal floods and storms. A full EIS for a project of this scope must consider even measures that will not be constructed by USACE. More importantly, however, an examination of specific flood mitigation measures in this EIS would reveal whether those measures are likely to be constructed at all. Without this information, Congress and the public cannot understand the environmental impacts and tradeoffs inherent in the Corps decision to focus largely on hard infrastructure to address storm surge in lieu of other coastal protection measures.

Although USACE conducted an examination into storm surge measures to benefit the Texas coast, the scale, cost, and complexity of this project demands more. Until the Final EIS for the Coastal Texas Study includes full consideration of measures that would provide protection from all the impacts of coastal floods and storms, the alternatives analysis will be incomplete.

c. Additional Study of Project Alternatives and Impacts Should Be Required

An EIS is normally required for “[f]easibility reports for authorization and construction of major projects.” The independent review of this FEIS concluded that the review conducted did not rise to the level of a feasibility review. A detailed feasibility review of the coastal project is needed and should be accompanied by a full-scale EIS.

If the Corps issues a Record of Decision based on the existing Final EIS, before any funds are committed to the selected projects, the USACE should conduct a supplemental analysis that analyzes alternatives that would address storm impacts due to rainfall and wind and that compares the benefits and costs of such alternatives to those identified in the Final EIS.

In addition, the Corps should conduct an EIS, rather than an EA for the selected Tier 1 alternatives, including:

- B2 - Follets Island Gulf Beach and Dune Restoration
- Bolivar Roads Gate System
- Bolivar and West Galveston Beach and Dune System
- Galveston Ring Barrier System
- Clear Lake Gate System and Pump Station
- Dickinson Bay Gate System and Pump Station
- Nonstructural Improvements

2. The FEIS does not provide sufficient information regarding overall project impacts

Corps regulations require that an initial tiered EIS, “present sufficient information regarding overall impacts of the proposed action so that the decision-makers can make a reasoned judgment.”³³ The FEIS fails to sufficiently analyze project impacts. When an independent

³³ 33 C.F.R. § 230.13(c).

analysis of the Corps' approach was conducted it concluded that the review was only a reconnaissance level look and did not rise to the level of a feasibility review.³⁴

Commenters raised many issues regarding specific deficiencies in comments on the Draft EIS. Those deficiencies were largely unaddressed in the Final EIS, which is insufficient in several respects, including the following.

- The Bolivar Road Gate system's impacts have been under-examined
- The dune system analysis is insufficient and fails to note the sources of the sand

Full impact of the gate system has not been properly analyzed to determine impacts to shrimp, oysters, fish, crab, dolphins and sea turtles.

We, along with the Independent External Peer Review panel, do not believe that the FEIS rises to a feasibility level investigation. Instead, the Coastal Texas Study FEIS only represents a recognizance level investigation, that does not provide sufficient analysis to make a reasoned decision on the merits.

a. The FEIS does not adequately analyze environmental impacts on Galveston Bay's oysters, fish, shrimp, and crab species

While we acknowledge that the refinements to the project, most notably the gate design, have reduced some physical and hydrological impacts to Galveston Bay, the Corps has not provided an adequate analysis of the impacts to the direct and indirect environmental impacts to habitat and the ecologically and economically critical living species of Galveston Bay, most notably to its oysters, fish, shrimp, and crab species. Nor have impacts on other important species such as dolphins or sea turtles been adequately addressed.

On page 136, FR notes the following substantive impacts from the gate structures (emphasis added):

"Species and their habitats in and around Galveston Bay could be altered by changes in the rate of flow of water in and out of the Bay during normal tides and/or rainfall events. Water characteristics such as salinity could affect species that thrive in a narrow range of fresh or saline conditions, such as oysters, vegetation, and marine mammals. Furthermore, **the physical obstruction of the water column could create velocities around the gate as water is driven through a constricted area. Certain velocities could create hazards that could affect species' mobility and ability to feed and could also potentially impact habitat used for breeding.**

Preliminary studies conducted by the USACE also show that navigation gate structures, proposed as features of the Galveston Bay Storm Surge Barrier System, may affect wetland functions by constricting tidal exchange and the associated sediment transport and altering salinity gradients. This could potentially impact the ecology of the Galveston

³⁴ Battelle, Coastal Texas Independent External Peer Review, Final IEPR Report (Jan. 2019).

Bay estuary by decreasing the available habitat that can serve as nurseries, food, and refuge for various fish and shellfish species and could negatively impact birds and other wildlife species, which depend on the resources provided by wetland and marsh habitats. Additionally, two-dimensional and three-dimensional hydraulic modeling conducted by the USACE shows that **construction of the gate structures would impact flow into and out of Galveston Bay by causing a constriction in the channel that would increase velocities along the opening of the gates. These effects could have long-term impacts on estuarine habitats and fauna within the bay.**

Given these impacts, we do not accept the results of rudimentary particle modeling as sufficient to state that there will be no significant difference in larval transport between “with” and “without” project conditions. These results are extremely limited and have not been adequately reviewed by fisheries biologists, thus we are not convinced they simulate known responses of larval transport and recruitment patterns. In addition, none of the project’s effects on adult fish or shellfish movement have been studied. State and federal resource agencies have recommended such studies³⁵, which makes their absence all the more unacceptable. Again, the impacts to Galveston Bay’s fisheries could be substantial, resulting in a loss of jobs, negative local economic impacts as well as a loss of quality of life.

While the Corps states that additional modeling will be conducted in preliminary design phase once refinements are made to the gate design, at that point it will be too late to change the design appreciably.

We are concerned about the project’s impacts on Galveston Bay’s dolphin populations. Galveston Bay Foundation has endeavored to develop a dolphin research and conservation program to protect these important and charismatic marine mammals. It is very troubling that the final EIS can still only speak of the project’s potential to impact dolphins from stressors such as noise, dredging, presence of the barrier, and prey source. It does not appear that any additional details on the potential impacts, as was requested by our organizations in a 2019 letter, have been developed.

In addition, given the likelihood that the Corps will not be able to construct or maintain a dune levee system which would necessitate a change to that portion of the Coastal Barrier to an earthen levee or seawall, the environmental impacts to habitats on Bolivar Peninsula and Galveston Island will fundamentally change. Such a change would affect species which depend on functioning Gulf beach/dune habitats such as the endangered Kemp’s ridley sea turtle, Green sea turtle, Loggerhead sea turtle and Piping plover.

The Corps has not provided detailed mitigation strategies including appropriate adaptive management for any of these impacts to habitat or living species. The only mitigation that is described in detail is for the direct and indirect impacts to jurisdictional wetlands. The Corps has not addressed the impacts to wetlands due to a reduction or cessation of sediment transport from the Gulf side of Bolivar Peninsula and Galveston Island to the Bay side of each that will

³⁵ See e.g., Coastal Texas Study, at 6-25.

result from the placement of a fixed levee system. Such a structure will impact natural transport of sediment by aeolian forces and over wash events.

We understand that land used as compensatory mitigation for habitat impacts from the FR is not required to remain protected in perpetuity. This deficiency must be remedied. A perpetual conservation easement, held by a local land trust, should be placed on all wetland mitigation components of the FR. We recommend that a conservation easement be held by a local land trust that has formally adopted and adheres to the national Standards and Practices protocol of the National Land Trust Alliance. Funding for this land trust should be in place so that the appropriate monitoring can be conducted in perpetuity.

The Corps must work with the state and federal resource agencies to ensure that any mitigation plans do not impact or replace other critical habitats such as oyster reefs, seagrass meadows, and mudflats. In general, restoration of any habitat such as wetlands or oyster reefs should be coordinated with the state and federal resource agencies.

One area of particular environmental concern is San Luis Pass. Existing flow patterns are such that San Luis Pass captures only about 12 percent of the flow between the main body of Galveston Bay and the Gulf of Mexico, as stated in the EIS itself. The Corps acknowledges the increased velocity, flow, and scour through San Luis Pass that would occur if the surge gates were closed during a storm. However, we maintain that the surge gates could malfunction and remain closed for longer than intended, and that a storm could affect the freshwater inputs into Galveston Bay, pushing water out of San Luis Pass if Bolivar Roads was constricted. Also, the gate structures themselves, even in the open position, will create a detrimental constriction. The structures would restrict flow through Bolivar Roads, and even under normal conditions significantly more water would be shunted through the West Bay toward San Luis Pass.

In a storm scenario, with the Bolivar Roads gates closed, in addition to intense scour from high-velocity water forced out of San Luis Pass, sediment and fresher water are more likely to be entrained in the West Bay or wetlands, because of the restriction of flow already present due to the bridge structure over the Pass. The geomorphology, salinity, and hydrologic regimes of San Luis Pass and the West Bay would be significantly altered, and the DFR pays alarmingly little attention to this impact. While the Corps acknowledges some of the geomorphological changes that could occur, a full account of the effects of the Coastal Texas Study system, including sediment modeling and budgeting, is essential before an adequately comprehensive review of the FR can be completed.

Finally, we note the following passage from pages 4-83 of the EIS on impacts (emphasis added):

Potential long-term direct impacts to fish and shellfish with larval and juvenile life stages that depend largely on passive transport could result from the cumulative impacts of the Coastal Barrier. These impacts would include losses resulting from 1) reduced numbers entering the bay proportional to the reduced volume flowing into the bay, 2) loss of individuals trapped in eddies that could form on the backside of the gate structures; 3)

increased exposure to predation while migrating across the open bay to the marshes due to reduced velocities and increased transport times; and 4) reduced area of accessible marsh caused by reduced tidal amplitude. Many of these species are important forage species for other species of fish, birds, and dolphins. These other species could experience indirect impacts resulting from reduced access to forage. **It is difficult to predict what those impacts could be because few gate structures have been constructed in the world and no studies have been conducted on the ecological impacts these gate structures could cause. Therefore, the exact long-term impacts to the Galveston Bay complex are uncertain and additional studies would be required to best predict the impacts the structure may cause.**

This strikes at the heart of our objection to the project. We simply do not have the environmental impact analysis needed that would allow the public to provide informed comment. This project should not proceed until that information is available.

b. The FEIS misrepresents impacts on endangered sea turtles

All five species of sea turtles that use Texas shores are threatened or endangered of becoming extinct are protected under the Endangered Species Act.

The FEIS claims that there would be no significant impact to these protected sea turtles, when in reality the proposed actions of dredging, sand sourcing, shoreline alteration with the dune system and extended shoreline, and the Bolivar Gate System will have massive impacts on sea turtle's nesting, migration, and foraging behaviors. The details of those impacts for each sea turtle species are outlined in Turtle Island Restoration Network's public comments on the DEIS submitted January 13th, 2021.

The FEIS states that because of "insufficient" nesting habitat, that sea turtles are unlikely to nest in the project area and that construction would likely happen during nesting season. Even if the habitat isn't sufficient, annual nest data proves that Kemp's ridley sea turtles, the most endangered species of sea turtle, do indeed nest on the Upper Texas Coast every year. With scientific consensus stating that each egg in each nest is vital to the survival of the species, it is imperative that the construction of the beach and dune system not occur during nesting season.

There is insufficient information on the environmental impacts of the gate system on endangered sea turtles and marine mammals. Construction of navigational and environmental gates across the bay could impair and prevent sea turtle migration, feeding, and reproductive behavior between the Gulf and Galveston Bay. Construction can disrupt such behaviors by producing underwater vibrations and noise at frequencies which could disrupt sea turtles. The configuration of the gates could also increase vehicle construction traffic, increasing the likelihood of ship strikes. Dredging activities can injure and kill sea turtles, and increased turbidity from dredging can impair their ability to find prey. Construction activities on land can disturb nesting behaviors, and artificial lighting associated with beach construction can disorient nesting and hatchling sea turtles, leading to higher levels of sea turtle mortality. The gate

structures, which will also make it increasingly difficult for species to navigate through eddies and differing velocities near the structure.

Eighty percent of tidal flow into and out of Galveston Bay occurs at Bolivar Roads, and any reduction in volume of tidal flow or restriction of this pass will increase shoreline erosion. Any hard structure placed on the Gulf side of this structure will eventually erode and become a shoreface. Kemp's ridley sea turtles nest on shores of Follet's island, Galveston Island and Bolivar peninsula every year, and anticipated increase in shoreline erosion will negatively impact nesting areas. While the ambitious goals of the dune creation system would purportedly create more nesting habitat, the current iteration of this plan is such that construction would not begin for at least 10-15 years. During the interim there are unknown and potentially devastating effects to sea turtle nesting ground. Additionally, renourishment plans are left up to the local sponsors, leaving no guarantee that nesting habitat will be protected in perpetuity. If clay or hard cores are used in the construction of these dunes, the hard structure barrier system and inner clay cores of sand dunes will eventually become the new shoreline without constant beach renourishment plans. In addition, average beach slope is an important parameter influencing nest site selection for Kemp's ridley nests with far less nest density on beaches with a steep average slope or those that are relatively flat. Changes to the beach and dune profile could decimate the only nesting habitat for sea turtles on the Upper Texas Coast.

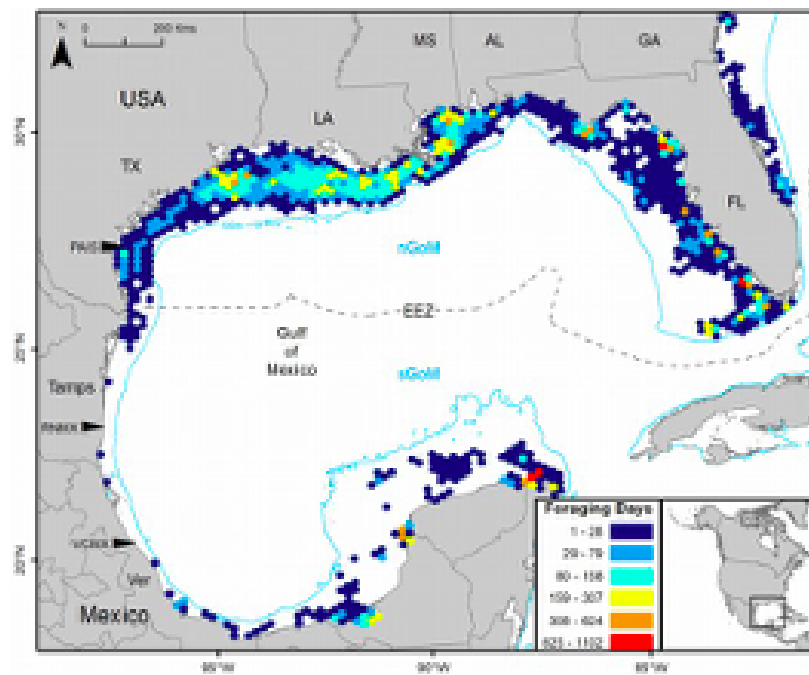
The Beach renourishment plan can also have adverse effects on sea turtles, even if proper and timely renourishment occurs. If the beach profile or sediment type is not compatible with existing shorelines or reference shorelines, this can lead to a disturbance in sea turtle nesting and breeding activities, temporary elevated turbidity levels, changes in near shore bathymetry and associated changes in wave action, burial of intertidal and bottom plants and animals in the surf zone, and/or increased sedimentation in areas seaward of the surf zone as fill material redistributes to a more stable beach profile. These effects must be fully analyzed and disclosed prior to any further action or approval of the Coastal Texas Study.

Effects of dredging on the marine ecosystem is discussed above, but dredging will also have adverse impacts to endangered species that utilize potential areas to be dredged. For example, sand sources identified for dredging include critical habitat for Kemp's ridley sea turtles.³⁶ Removing this sand could detrimentally affect their ability to forage, and impacts from such a massive dredging project would have unknown effects on their overall population level.³⁷ Dredging is also likely to adversely affect Sargassum habitat, which is crucial to the survival of Loggerheads.³⁸

³⁶ Gredzens, C. and Shaver, D.J. (2020) Satellite Tracking Can Inform Population-Level Dispersal to Foraging Grounds of Post-nesting Kemp's Ridley Sea Turtles. *Mar. Sci.* 7:559. doi: 10.3389/fmars.2020.00559

³⁷ Shaver, et al. (2013) Foraging area fidelity for Kemp's ridleys in the Gulf of Mexico. *Ecology and Evolution*. 3(7): 2002-2012 doi: 10.1002/ece3.594

³⁸ See NOAA Fisheries Critical Habitat for Loggerhead Sea Turtle, available at <https://www.fisheries.noaa.gov/action/critical-habitat-loggerhead-sea-turtle> ; see also Loggerhead Critical Habitat map, available at:



Figure, Foraging areas for Kemp's ridley sea turtles³⁹

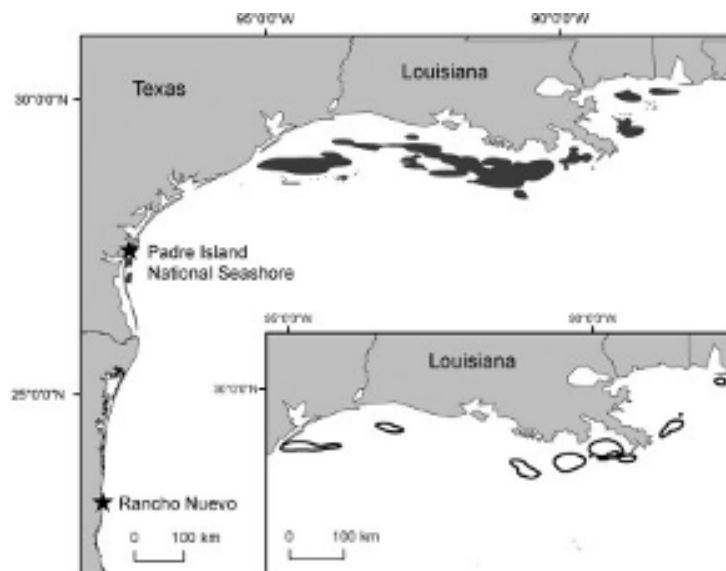


Figure 17, Known Foraging Areas for Kemp's ridley sea turtles⁴⁰

<https://www.fisheries.noaa.gov/resource/map/loggerhead-turtle-northwest-atlantic-ocean-dps-critical-habitat-map>

³⁹ Gredzens, C. and Shaver, D.J. (2020) Satellite Tracking Can Inform Population-Level Dispersal to Foraging Grounds of Post-nesting Kemp's Ridley Sea Turtles. *At 6. Mar. Sci.* 7:559. doi: 10.3389/fmars.2020.00559

⁴⁰ Shaver, et al. (2013) Foraging area fidelity for Kemp's ridleys in the Gulf of Mexico. *Ecology and Evolution*, at 2006. 3(7): 2002-2012 doi: 10.1002/ece3.594

So many unknowns are associated with the dredging portion of the Coastal Texas Study that it is impossible to evaluate the full extent this could have on endangered sea turtles, and these effects must be fully analyzed and disclosed before any further actions or decisions are made. For example, how often will dredging occur? How long will dredging take place in order to obtain the massive amounts of sand needed for the proposed dune and beach restoration system? How long will the anticipated "temporary" effects to the surrounding ecosystem last for years or longer? USACE Galveston District has recorded 113 incidental takes of sea turtles and openly states that dredging of fill material for levees can injure or kill sea turtles and increased turbidity from dredging can impede their foraging ability. We ask USACE to reconcile this and provide greater clarity and analysis of dredging impacts on sea turtles in the Gulf.

It is estimated that only one in a thousand sea turtle hatchlings survive to adulthood, and protection must be ensured for every hatchling at every following life stage. Thousands of federal dollars are budgeted each year to the recovery program for endangered sea turtles and every animal is critical to the program's success. Along the upper Texas coast, the sea turtle recovery program has been successfully running since the mid-1980s and ensures the recovery of the critically endangered Kemp's ridley.

There is a wide array of construction activities that can adversely affect sea turtles at every life stage, from lighting to compaction, to changes in sediment and slope, the presence of large machinery and utilization of drift net fences, to name a few. Although mitigation actions are and should be part of the project description, there is still a high likelihood of sea turtle take that can never be eliminated. This is particularly true given the unknown length and intensity of the project at this time.

c. The proposed Bolivar and West Galveston Beach and Dune nourishment system poses unacceptable environmental risks

The proposed Bolivar and West Galveston beach and dune nourishment system is extremely problematic and poses unacceptable environmental risks. This portion of the Coastal Texas Study would require an initial volume of 22.1 million cubic yards of sand material with a 6- to 10-year renourishment cycle, depending on erosion rates, including an additional 1.9 million cubic yards of sand material for each cycle. The identified sediment sources would be Sabine and Heald Banks, located approximately 30 miles offshore from Bolivar Peninsula. The environmental effects of dredging and moving such massive amounts of sand are highly concerning, and the identified sand sources are located in crucial habitat for endangered sea turtles.

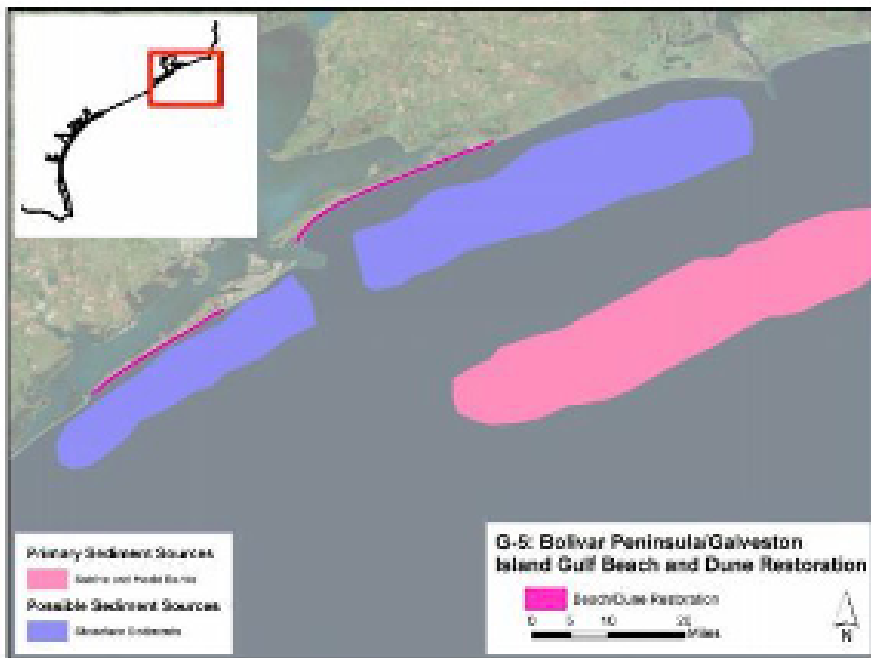


Figure 2-10. Location of the Dual Purpose Beach and Dune Measure for Bolivar Peninsula and Galveston Island with Borrow Sources

Figure 2-10, Location of dune system for Bolivar Peninsula and Galveston Island with borrow sources.

The proposed locations for sediment include Sabine and Heald Banks. Sabine Bank is a crucial foraging area for the critically endangered Kemp's ridley sea turtle. Endangered sea turtles are known to be caught in dredges, and because of their frequent use of this area, the Sabine bank should be off-limits for proposed dredging. Dredging Sabine and Heald Banks not only places the Kemp's ridley at risk, but the multitude of other species that rely on this habitat. Offshore sand deposits are important for fish that preferentially forage on sand banks off the Texas coast. Dredging these areas would involve taking over 60 million cubic yards of sand that is already acting as part of the sediment transport system. This amount of offshore sand to create an onshore beach system has never been attempted before, and prior to taking any steps for approval or Congressional authorization, the USACE must analyze and disclose all potential environmental effects of undertaking such a project.

High-resolution seismic data and sediment cores from the Sabine, Trinity, and Lavaca incised valleys show that sand is typically confined to the lower portion of these valleys and buried beneath several meters of bay and marine mud. (Ongoing study by UTIG)

The beach dune system would consist of approximately 25 miles of Gulf shoreline from High Island on Bolivar Peninsula to Galveston East Jetty and about 18 miles of Galveston Island Shoreline west of Galveston Seawall. This dune system, consisting of 44 miles in total of beach and dune segments, is intended to form a first

line-of-defense against Gulf storm surge, preventing or reducing storm surge volumes that would enter the Bay.

Construction of the dunes would include a dual dune system, which will have a seaward dune elevation of 12 feet and a landward dune elevation of 14 feet, with dune crests 15-feet-wide. This would also include the addition of 250 feet of beach, located where water currently exists. (Appendix D-annex 11: Map Book- Bolivar Dune Alignment & Appendix D-annex 13: Map Book- Galveston Dune Alignment)

This proposed project calls for significant volumes of sand and to date the sources of sand have not been identified, nor has the quality of the sand been determined. The beach is in fact a living ecosystem with critically important habitat. Construction would impact or eliminate intertidal benthic invertebrate infauna and would disturb and displace shorebirds.

The beaches on Galveston Island have been significantly eroded due to three Hurricanes impacting Louisiana in 2020 and Hurricane Nicholas coming ashore in Texas in 2021. The public/private beach line has been blurred, foundations have been compromised and in some areas there is not a beach in front of the homes. This construction of the beach front would be a massive endeavor that has never been attempted on the Upper Texas Coast. Construction would cover existing ocean habitat to create a larger beach front covering miles of shoreline habitat. With the unknown quality of the sand, it could take months upward to years for sediment species diversity and richness to return to pre-construction levels that would have cascading effects up the food web.

We are concerned about the USACE analysis of the beach ecosystem. As described by USACE, "except in specialized habitats (such as the wrack line, where rotting organic material forms both food and a mechanism for water storage), very few animals and no true plants can live in this [beach] zone." We would like to reiterate that the beach is not an eco-desert, but rather a rich ecosystem teaming with microorganisms that support habitat for many plant and animal species. The wrack line, while important, is not the only ecologically crucial part of the beach ecosystem - but so is the surf zone, swash zone, entire intertidal zone, coastal sand zone, bluffs and coastal dunes. Beaches provide ecosystem functions such as nutrient cycling and water filtration. The sand beach ecosystem is a unique habitat containing dense concentrations of benthic invertebrates that feed surf fishes, residents and migrating shorebirds, and crabs, and also provide critical habitat supporting the seasonal nesting of threatened and endangered sea turtles. Beaches provide nursery habitat for birds, mammals, fish, and other animals.

d. Shoreface sand removal will have negative environmental impacts

In general, removing sand from the shoreface is considered a bad practice as it removes sand that is part of an active sediment transport system. Furthermore, results from offshore coring have shown that relatively little sand occurs in the shoreface of Bolivar and west Galveston Island. Shoreface sand thickness based on sediment core transects from offshore Galveston

Island and Bolivar Peninsula show that beach quality sand is confined to the nearshore portions of the shoreface, which is an active part of the longshore sand transport system

3. The FEIS does not adequately address impacts to vulnerable communities

On August 3, 2021, in *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, No. 20-1045 (D.C. Cir. Aug 3. 2021),⁴¹ the U.S. Court of Appeals for the DC Circuit found that the Federal Energy Regulatory Commission (“FERC”) erred in its analysis of climate change and environmental justice factors under both the National Environmental Policy Act and the Administrative Procedure Act when it authorized the construction and operation of three liquified natural gas export terminals and associated pipelines. In doing so, the court concluded that FERC failed to justify that the construction was necessary and in the public interest and remanded the case to FERC.

The reasoning of this case underscores the need for the USACE to adequately consider impacts on vulnerable communities before issuing a record of decision. The USACE has not adequately addressed these impacts, as described below:

a. Localized environmental justice analyses must inform the project from the start

A previous comment letter submitted by Lone Star Legal Aid on behalf of Caring for Pasadena Communities, Port Arthur Community Action Network, Citizens for Clean Air and Water, and community members outlines environmental justice impacts that the USACE must consider and outlines legal and regulatory requirements that the USACE must follow, but has not, in finalizing the EIS and feasibility report associated with the Coastal Texas Study.⁴² And since the draft EIS was circulated, President Biden issued Executive Order 14008 and articulated a broad and unambiguous commitment to environmental justice across all federal programs and spending.

The environmental justice concerns delineated in the LSLA comments still have not been sufficiently addressed. USACE takes the approach that localized impacts on vulnerable communities should only be assessed as the selected alternative moves forward to the design phase. But this misses the point. By refusing to look at localized impacts of the Coastal Texas Study projects at the start, the USACE has closed the door on information that should inform the foundation, design, and placement of the projects embodied by the Study. In particular, the USACE has favored a long-term, expensive alternative over a series of interrelated approaches that may be implemented more quickly for the benefit of those most vulnerable to sea-level rise, coastal erosion, flooding, storm surges, and other storm-related impacts. This ignores the instruction of EO 14008 to “ensure that environmental and economic justice are key considerations in how we govern.”

⁴¹ Available at

[https://www.cadc.uscourts.gov/internet/opinions.nsf/1F97B59429C7D4F6852587260052CC71/\\$file/20-1045-1908759.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/1F97B59429C7D4F6852587260052CC71/$file/20-1045-1908759.pdf).

⁴² The organizations submitting this letter incorporate Lone Star Legal Aid’s letter by reference and urge the USACE to fully account for the comments raised in that letter before proceeding further.

The information contained in the current FEIS remains sufficiently incomplete to show that affected low-income and minority populations will not be adversely affected by the massive selected plan. The USACE should revisit environmental justice concerns to ensure that our most vulnerable residents do not bear a disproportionate burden for this project. See *Cmtys Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004) (showing a petitioner may challenge an agency's environmental justice analysis as arbitrary and capricious under NEPA and the APA).

b. The FEIS flags but does not adequately account for NOx emissions

Appendix G of the FEIS states:

"It was found that the potential project emissions resulting from the construction efforts indicates that the project will be subject to the GCR based on estimated NOx emissions for 10 of the 15 project construction years. The dredging emissions are the large bulk, at approximately 93% of the projected emissions, and were intentionally conservative to show the total potential emissions in a maximum emissions scenario. Based on a comparison to the currently approved SIP ***the project will not be able to demonstrate conformity at this time without some mitigation.***

The overall project emissions are significant compared to the currently approved SIP HGB CMV projections at 16% for the first year and 14% to 15% for the next 7 years. Because of the high percentage of the total budget that the RP would take, it is not reasonable to assume that the RP CMV emissions could be included in the currently approved SIP, especially given the significant number of other actions in the state, such as dredging operations and navigational commerce, that also rely on this budget."

(Emphasis added.) The USACE's assessment seems to only leave mitigation and scheduling as the only real options for the project to conform with the Clean Air Act, but those plans are not identified or sufficiently explained. The Final EIS acknowledges that emissions credits may not be available and moreover that the TCEQ and EPA may require a combination of mitigation methods. We urge the USACE and partners not to rely exclusively on emissions credits and take steps to reduce emissions from projects associated with the Coastal Texas Study. Further, the fact that the "overall project emissions are significant compared to the currently approved SIP" supports the need for the USACE to consider alternatives with less environmental and public health impacts.

4. Community engagement and public participation have fallen short given the magnitude of this project

a. Community working groups

In 2019 the General Land Office, the USACE's state partner in the Coastal Texas Study, implemented coastal working groups for communities affected by the proposed plans. As explained at the kick-off meeting for the Galveston-Harris Counties group, this was "just the beginning of a more thorough and engaging community outreach initiative to support the study." While these groups met periodically that year, they have not been convened since March of

2020. These meetings were important forums for advocates and other community representatives to raise and discuss many of the issues that remain a problem with the Coastal Texas Study—from ecological impacts on Galveston Bay and concerns related to proposed sand dunes—translate and relay these details to communities affected by the projects proposed by the Study.

These groups have not met since, removing one of the primary means for communicating the substance of the Coastal Texas Study to the public. In the absence of this form of community engagement, the USACE must hold public meetings to explain the substance of the final EIS, alternative, and address key concerns raised by the public, including those highlighted in this letter. The USACE must also hold public meetings to address key concerns raised so far, including those highlighted in this letter.

b. Public comment period

The only opportunities for the public at large to engage with and learn about the Coastal Texas Study has been with previous comment periods. The final EIS and feasibility report represent a final step before the final version of the Coastal Texas Study is submitted to the Chief of Engineers for approval by the USACE, which will then seek congressional funding to support this \$29 billion project with wide-ranging implications for the future and resilience of our coast.

We urge the USACE to convert this public review period to a public comment period, publish notice, and allow the public 60 more days to provide meaningful comment. The number of organizations joining in this letter, and the diverse interests we represent, should illustrate for the USACE that the public has an interest in being able to provide input at this phase. The USACE should also hold public meetings to address key concerns raised so far, including those highlighted in this letter.

The organizations listed below reserve the right to rely on all public comments submitted, request a written response to our comments, and request written notification when any action is taken on this Final Feasibility Report & Environmental Impact Statement. If you have any questions, please contact Kristen Schlemmer at kristen@bayoucitywaterkeeper.org.

Thank you for considering these comments.

Sincerely,

Corey Williams, Policy & Research Director
Air Alliance Houston
Houston, Texas

Kristen Schlemmer, Legal Director and
Waterkeeper
Benjamin Brinkman, UT Environmental Clinic
Samuel McCombs, UT Environmental Clinic
Bayou City Waterkeeper
Houston, Texas

Bruce Bodson, President
Christmas Bay Foundation

Iris Gonzales, Coalition Director
**Coalition for Environment, Equity, and
Resilience**
Houston, Texas

Shane Bonnot, Advocacy Director
Coastal Conservation Association, Texas
Houston, Texas

Luke Metzger, Executive Director
Environment Texas
Austin, Texas

Bob Stokes, President
Galveston Bay Foundation
Kemah, Texas

Naomi Yoder, Staff Scientist
Healthy Gulf
New Orleans, Louisiana

Healthy Port Communities Coalition
Houston, Texas

Bruce Bodson, President/Executive Director
Lower Brazos Riverwatch
Sugarland, Texas

John Beard, Jr., CEO
Port Arthur Community Action Network
Port Arthur, Texas

Adrian Shelley, Director, Texas Office
Public Citizen
Texas (Statewide)

Susan Chadwick, President and Executive
Director
Save Buffalo Bayou
Houston, Texas

Alex Ortiz, Water Resources Specialist
Sierra Club Lone Star Chapter
Texas (Statewide)

Robin Schneider, Executive Director
Texas Campaign for the Environment
Texas (Statewide)

Jackie Medcalf, Executive Director
Texas Health & Environment Alliance
Houston, Texas

Julia Orduña, Southeast Texas Regional
Director
Texas Housers
Houston, Texas

Joanie Steinhaus, Gulf Program Director
Turtle Island Restoration Network
Galveston, Texas

Ben Hirsch, Co-Director: Organizing,
Research, and Development
West Street Recovery
Houston, Texas

Comments on Region 6 Regional Flood Planning Group

Background

State legislation enabling the Regional Flood Plan process provided guidelines and deliverables to be accomplished by each flood planning group, with regional plans becoming the basis of a state flood plan. These plans are developed through the creation and identification of projects to be considered for future funding. Enabling legislation also directed the Texas Water Development Board (TWDB) to identify and evaluate natural flood mitigation features and include Nature Based Solutions (NBS) among proposed flood mitigation projects.

Region 6, along with all the other Regional Flood Planning Groups (RFPGs), have had to work under a tight timeline during the initial planning round – and we appreciate the work the Region has put into making a thorough or comprehensive flood plan. In particular, we are encouraged by the following recommendations and goals included in Region 6’s draft Regional Flood Plan:

- *Legislative Recommendations:*
 - Provide recurring biennial appropriations to the Flood Infrastructure Fund (FIF) for study, strategy, and project implementation;
 - Provide state incentives to establishment of a dedicated drainage funding; and
 - Enact legislation updating the state building code to, at minimum, the 2015 or 2018 versions of International Building Code (IBC) and International Residential Code (IRC) as State building standards. Updates should occur biennially during the regular legislative session to comply with the current IBC and any future updates.
- *Administrative/Regulatory Recommendations:*
 - The Texas Department of Transportation (TxDOT) should employ roadway design criteria to require all new and reconstructed state roadways to be designed and constructed, to the extent practicable, at elevations at or above the 1.0% ACE water surface elevation if determined with Atlas 14 rainfall. The 0.2% ACE water surface elevation should be used to determine elevation if Atlas 14 has not yet been adopted. TxDOT should also consider future conditions, such as urbanization and climate variability, in its roadway design criteria for drainage and flood risk reduction;
 - Recommend a statewide building standard of a minimum finished floor elevation to be established at or waterproofed to the FEMA effective 0.2% annual chance flood elevation as shown on effective Flood Insurance Studies except in areas

designated as coastal flood zones or at the 1.0% annual chance flood elevation where Atlas 14 has been adopted;

- Provide support for ongoing education/training regarding floodplain management in the form of no or low-cost online resources including training modules, webinars, and print resources;
 - Develop state incentives for local governments to participate in the FEMA National Flood Insurance Program (NFIP) and Community Rating System (CRS) program;
 - Assist via funding smaller jurisdictions in preparing grant and loan applications or make the application process easier;
 - Develop a model-based future conditions flood hazard data layer using Base Level Engineering (BLE) data and provide it for use by RFPGs and the technical consulting teams during the next flood planning cycle;
 - Incentivize voluntary buyout programs, turning repetitively flooded properties/neighborhoods into green space, parkland, or any other flood risk mitigation measure as a potential alternative to large scale construction projects; and
 - Provide training to state agencies, local governments, engineers, planners, and members of RFPGs in the use of natural floodplain preservation/conservation.
- *State Flood Planning Recommendations:*
 - Utilize project scoring that is equitable to project sponsors regardless of their size or population; and
 - Utilize project scoring for nature-based solutions that give them a competitive chance compared to non-nature-based projects.
 - *Adopted Flood Protection Goals:*
 - There will be 0 flood-related fatalities annually within the San Jacinto region by 2053;
 - Reduce the miles of major roadways subject to inundation during the 100- year event by 10% by 2033 and 25% by 2053;
 - All flood regulatory authorities within the region will adopt standards equal to or exceeding minimums as recommended by the San Jacinto RFPG in the first cycle of regional flood planning;
 - Reduce the number of critical facilities subject to inundation during the 100- year event by 5% by 2033 and 20% by 2053; and

- At least 35% of all flood mitigation strategies (FMSs) and flood mitigation projects (FMPs) identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053.

While Region 6 and the TWDB has been very responsive to the questions and concerns expressed by the public, the process and initial regional planning round has highlighted several areas of concern regarding the evaluation of natural flood mitigation features for their level of function and the incorporation of nature based solutions into flood control strategies.

Equity and nature-based solutions will need to be woven into every facet of this program and incorporated into future policies and strategies in order to empower community collaboration and leverage the state's vast network of natural ecosystems in building resilient communities. The following **comments and recommendations specific to Region 6** seek to better ensure an equitable flood plan, and one that centers natural infrastructure and nature-based projects. We recognize that the region will not be able to address some comments provided in the current planning cycle, however it is our hope that during subsequent rounds these comments will be taken into consideration.

I. Adopt NFIP participation as a minimum floodplain management standard

Region 6 did not adopt any minimum floodplain management standards into its draft plan. Minimum floodplain management standards can be adopted by the region, which local entities must adopt before a FME, FMS, or FMP is included under the Regional Flood Plan, and therefore eligible for funding under FIF.

We encourage Region 6 to consider NFIP participation as a minimum floodplain management standard. According to the Draft RFP, "all of the counties and the majority of municipalities within the San Jacinto region actively participate in the NFIP."¹ Further, only two municipalities are non-participants in the region.² Participation in the NFIP requires participants to adopt a floodplain management ordinance and to designate a floodplain administrator who is responsible for understanding and interpreting local floodplain management regulations and reviewing them for compliance with NFIP standards.

Since floodplain management ordinances and designation of a floodplain administrator are essential to proper flood planning at the local level, requiring the remaining communities to participate in the NFIP seems like an appropriate baseline, before entities can potentially receive funding for flood mitigation projects. We therefore recommend that the Region uses its

¹ Region 6, Draft Regional Flood Plan, at 3-2.

² Id.

power to adopt minimum floodplain standards, by requiring NFIP participation as a minimum standard.

II. Refine outreach and strategy to understand enforcement of floodplain ordinances and add a Flood Protection Goal to have increased enforcement of floodplain ordinances

Region 6 was not able to receive any responses from local entities describing the level of enforcement for floodplain ordinances. Other regions, however, were successful in soliciting information about the level of enforcement of floodplain ordinances in the Region's communities. The Region should consult with other Regional Flood Groups to understand their success, and continue to reach out to communities to understand the level of enforcement for floodplain ordinances. Once sufficient data is available to understand level of enforcement, Region 6 should include a Flood Management Goal to increase enforcement of floodplain ordinances.

III. Reconsider inclusion of the San Jacinto Master Drainage Plan – Caney Creek, Peach Creek, Spring Creek, West Fork San Jacinto River Channelization

There are multiple river channelization projects under the San Jacinto Master Drainage Plan included as FMPs. Surprisingly, however, we are concerned that there were no negative impacts associated with the channelization of Caney Creek, Peach Creek, Spring Creek, and the West Fork of San Jacinto river.

River channelization is a structural flood mitigation solution, which is associated with numerous negative impacts. For decades we have known about the impact of channelization on downstream areas – while typically reducing flooding upstream, “lower reaches usually increase in peak flood levels and have a higher frequency of flooding (Shankman and Pugh, 1992).”³ Additionally, “[s]tream channelization can also produce conditions that initiate continued degradation of the stream channel, including headcutting and channel erosion that can produce extensive bank failures (Robbins and Simon, 1983; Simon and Hupp, 1987; Simon, 1994).”⁴ When compared to unchannelized systems within Harris County, studies have shown that more natural systems like Buffalo Bayou are more successful in “minimizing the adverse impacts of urban development on riverine flooding over time.”⁵

In addition to our concerns regarding whether the no negative impacts were assessed correctly for these projects, these channelization projects also have low BCR values. The BCR for the

³ A.R. Pierce, S.L. King, in [Treatise on Geomorphology](#), 2013, section 12.14.1.2.

⁴ Id.

⁵ Juan, Andrew et al. “Comparing floodplain evolution in channelized and unchannelized urban watersheds in Houston, Texas.” *Journal of Flood Risk Management* 13 (2020).

Spring Creek portion of the upper San Jacinto watershed FMPs is 0.76, and the aggregate for all the projects recommended from the San Jacinto Master Drainage study would be between 0.29 and 0.34. While the TWDB recommended a floor of “greater than 1,” regions were given the discretion to include projects with BCR less than one. Because of the very low BCR, high cost, and negative downstream impacts that will result from these channelization projects, we do not believe that Region 6 should use its discretion to keep these projects as FMPs, and recommend they should be removed given the significant hydrological, ecological, recreational, and other impacts that channelization would cause.

IV. *Include Superfund sites in the Flood Exposure and Flood Mitigation Needs analysis and identify critical facilities that pose a risk to neighboring communities when flooded*

Critical facilities in particular need additional attention when assessing and identifying flood exposure and mitigation needs. Currently, Region 6 identifies all critical facility structures that exist currently in the floodplain and may exist in the floodplain in the future. Critical facilities include structures like hospitals, fire stations, chemical plants, refineries, chemical storage facilities, oil and gas infrastructure and similar facilities. While they are not identified for Region 6, other Regional Flood Planning Groups specify that Superfund sites are included as a critical facility. We believe that Superfund sites, if not already accounted for, must be included in the Flood Exposure analysis.

Further, certain critical facilities pose higher risk to surrounding communities during flooding. Chemical plants, refineries, chemical storage facilities, oil and gas infrastructure, and Superfund sites all can create additional hazards and disasters for neighboring communities and the environment, when flooded. We recommend that the Region include in its approach risks based on the number of industrial facilities that pose environmental justice risks to neighboring and fenceline communities. These facilities should be weighted higher than regular critical facilities when assessing flood mitigation needs. Further, if critical facilities such as these are identified that are within floodplains and are not adequately protected, the region should propose legislative, administrative, and regulatory recommendations to better ensure facilities do not pose a risk to neighboring communities during flooding, and include a flood management goal to reflect the need to reduce the number of those facilities being located in the floodplain.

V. *Include impacts to natural features in No Negative Impacts analysis*

Natural features and nature-based infrastructure provide significant flood mitigation benefits to neighboring communities. The analysis of “No Negative Impacts” should include impacts to natural infrastructure.

VI. Remove the Galveston Bay Surge Protection Coastal Storm Risk Management as a Flood Mitigation Project

The Galveston Bay Surge Protection Coastal Storm Risk Management FMP includes multiple projects under the USACE's Coastal Texas Study, including the Bolivar Gates, Galveston Sea Wall Improvements, Ecosystem Restoration, Galveston Ring Barrier system, Clear Creek & Dickinson Bayou Gates and non-structural measures. Together these projects make up an overwhelming majority of the FMPs included in Region 6's draft plan, costing over \$24 billion.

One of the requirements for inclusion as an FMP is that the "RFGP must be able to demonstrate that each recommended FMP...is a discrete project (not an entire capital program or drainage master plan).⁶ However, despite being made up of multiple storm risk reduction projects, it is included under Region 6's draft plan as one FMP. We believe that inclusion of the Galveston Bay Surge Protection Coastal Storm Risk Management as a single FMP goes against the requirement of submitting discrete projects as an FMP.

Further, we do not understand how the project was shown to have no negative impacts (see **image 1**, below). According to the USACE's Mitigation appendix:

*"implementation of the Galveston Bay Storm Surge Barrier System, is expected to have unavoidable adverse impacts. Impacted habitat types include estuarine emergent wetland, Palustrine emergent wetland, oyster reef and open bay bottom. The impacts to these habitats would result from direct loss and indirectly from anticipated changes in tidal flow."*⁷

*"The operation of the storm surge gate that crosses the entrance to the Houston Ship Channel at Bolivar Road leads to overall inducements in two of the 42 reaches in Region 1."*⁸

Further, the USACE estimates 1102 structures will be induced at San Luis Pass due to the CSRM features, but has not indicated any mitigation measures for this area. Instead, the USACE has indicated that these inducements are an "artifact of the gate modeling limitations encountered in the current study which needs to be addressed in future."⁹ Therefore, the USACE has evidence of inducement, or negative impacts, but has not shown how it plans to mitigate it.

⁶ Region 6, Draft Regional Flood Plan at 5-5.

⁷ Coastal Texas Protection and Ecosystem Restoration Feasibility Study, Mitigation Appendix at 12

⁸ Coastal Texas Protection and Ecosystem Restoration Feasibility Study, Economics Appendix at 12

⁹ Coastal Texas Protection and Ecosystem Restoration Feasibility Study, Engineering Appendix at 2-45.

“The structures showing up as being induced upon on Galveston Island from San Luis Pass to Offatts Bayou should not be considered for mitigation because it is a low risk these observed inducements are caused by omitting HSC Nav Gate operations in the modelling [sic] and will be rectified when developing the HSC Nav Gate Water Control Operations Plan. LOW RISK therefore NO MITIGATION”¹⁰

Projects with design level mitigation measures already identified may be included in the regional flood plan and could be finalized at a later stage to conform to the “No Negative Impact” requirements prior to funding or execution of a project. However, the USACE has not adequately shown design level mitigation measures for incorporation into the Region 6 Regional Flood Plan. Therefore, because negative impacts are associated with the USACE’s Coastal Texas Study, and have not shown design level mitigation, we strongly recommend removing this FMP until the USACE can prove no negative impacts. These concerns and more on the coastal Texas Study are provided as an attachment to these comments Region 6.

VII. Include Floodplain Preservation and HCFCD buyout program as a FMP

There has been broad support for the concept of floodplain preservation, yet none of the FMP’s included in the plan relate to the preservation of the floodplain. Preservation of floodplains allows floodwaters to spread where they do not cause damage and also reduces peak flows downstream. We support buyout programs for repeat flood structures and the purchase of easements to compensate private landowners that agree not to develop lands within the floodplain.

HCFCD’s buyout program, which would remove repeat flooding structures from the floodplain, is one method that completely eliminates any residual flood risk and by ensuring that structures are not built again in the floodplain. Public acquisition of these lands would also allow for these spaces to be available for public use, wildlife habitat, and other community uses.

Floodplain preservation can be achieved more cost efficiently on lands that have not yet been developed through the use of purchased conservation easements which restrict development in the floodplain. These floodplain easements would allow private landowners to retain ownership of the floodplain, while being compensated for the fair market value of the development rights that are relinquished. By preserving undeveloped floodplains, land will continue to be available for agricultural production, wildlife habitat, and recreation, and also contribute to water quality enhancements.

¹⁰ Coastal Texas Protection and Ecosystem Restoration Feasibility Study, Engineering Appendix at 2-53.

The SJRFPG adopted a goal that 35% of all FMS's and FMP's identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053. We urge adoption of nature-based projects and strategies to reach that goal.

VIII. *Include legislative recommendation to provide county authority to expand regulatory authority to manage new development to reduce future flood risk (e.g., provide counties the authority to adopt enforceable building codes).*

Across 14 Regional Flood Planning regions, 7 Regions recommended that the legislature provide county authority to manage new development to reduce future flood risk. This is tied for the third most popular legislative recommendation. This authority is especially important for implementation of enforceable building code standards. While Region 6 recommended the legislature adopt at a minimum the 2015 or 2018 International Building and Residential Codes, this still would not give counties the authority to adopt enforceable building and residential code standards in unincorporated areas. Granting counties this authority will not only allow communities to better protect themselves from flooding, but will also allow communities to receive more prioritization points when applying for funding like FEMA's BRIC program. Therefore, we recommend that Region 6 add a legislative recommendation to provide counties with expanded regulatory authority to manage new development to reduce future flood risk.

IX. *Include a legislative recommendation that would make funds available to support nature based projects*

While Region 6 includes goals to support FMPs with nature-based features, we don't currently see this reflected in the current FMPs. This means that additional education and incentivization will need to occur to encourage local entities to develop nature based FMPs. To facilitate this, Region 6 should make a legislative recommendation to make funds available to support nature based practices through land conservation, restoration programs, and participation in landowner incentive programs to encourage voluntary land stewardship practices to manage floodwaters by slowing runoff and dissipating flood energy to include riparian, wetland, forest, upland, and other habitat protection programs. Region 6 should also request the Texas Legislature fund land coverage studies to effectively identify riparian corridors that should be protected for floodplain mitigation and erosion reduction. Additionally, Region 6 can recommend the Texas Legislature invest in programs to support voluntary city and county buy-back of lands for county parks and flood mitigation.

We appreciate the work the Region is doing to help better plan for and protect our communities from flooding. Further, we appreciate the opportunity to submit these comments.

Sincerely,

Arsum Pathak

Senior Adaptation and Coastal Resilience Specialist, South Central Region

National Wildlife Federation

PathakA@NWF.org

Danielle Goshen

Policy Specialist/Counsel, Texas Coast and Water Program

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Galveston Bay Foundation

bstokes@galvbay.org

Mary Anne Piacentini

President and CEO

Coastal Prairie Conservancy

MaryAnne@coastalprairieconservancy.org



December 1, 2022

Mrs. Danielle Goshen, National Wildlife Federation
Bayou Land Conservancy, Bayou City Waterkeeper
Coastal Prairie Conservancy, and Galveston Bay Foundation

Re: Thank you for Providing Comment on the DRAFT Regional Flood Plan for the San Jacinto Region

Dear Danielle,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments on the Draft Regional Flood Plan for the San Jacinto Region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The purpose of the regional flood plan is to collect projects and studies and make recommendations based on criteria developed by the TWDB. Since the Coastal Texas Study meets these minimum criteria, no changes were made to the regional flood plan. Please note that projects included in the RFP are not guaranteed to receive funding assistance and the sponsor must demonstrate that projects meet applicable regulations and criteria. Any further comments regarding project specifics can be directed to the project sponsor.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of Friendswood

Maggie Puckett

From: Brian Edmondson
Sent: Wednesday, August 24, 2022 9:28 AM
To: Samantha Haritos; Jil Arias; Jim Keith; Maggie Puckett
Cc: Cory Stull; Ericka Reyes
Subject: RE: San Jacinto Regional Flood Plan - Friendswood
Attachments: SJRFP_Friendswood_Coordination_8.23.2022.pdf

Jil and Sam –

Thank you for your time yesterday and feedback. I've copied over the comments below that I wrote during the meeting to help formalize and make sure I got them down correctly. We will work on formal responses from the Planning Group but in the meantime if you have any additional comments to the draft plan or see any updates that are needed to the notes and action items please add below. Also as a reminder comments for the draft plan are due by end of October and new data for the Amended plan due end of 2022.

Action Items:

- SJRFPG to follow up with Friendswood and FNI to obtain required data to elevate the FME "Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I" to a FMP in the Amended Regional Flood Plan.
- Friendswood to consider adding additional projects that they are working with the Drainage District on to the Amended Regional Flood Plan. Samantha to work on putting together information for the amendment.
- Friendswood to provide updated critical facility layer for their community to be incorporated.
- Friendswood to check if "Sunmeadow Drainage Improvements Phase 2" is a project that should still be included in the Plan.
- SJRFPG to update Draft Plan utilizing comments in table below.

Table 1. Friendswood FMXs in the draft San Jacinto Regional Flood Plan dated August 1, 2022

FMX	FMX ID	FMX Name	Description	Estimated Cost	Comments from Friendswood 8/23/22 Meeting	SJRFPG Response
FME	61000089	Update City of Friendswood Storm Surge Maps to Reflect the NWS Predictions	Study to update city storm surge maps based upon the NWS predicted storm surge and projected track for landfall. The new maps may more accurately display water depth in areas within the city.	\$140,000	Awaiting confirmation from where this project came from. Possibility for a regional based FME for coastal surge update. Lower Priority for engineering dept.	
FME	61000091	City of Friendswood - Comprehensive Flood Mitigation Plan	Study to update city floodplain maps and develop flood mitigation plan	\$140,000	MDP Duplicate-remove from plan. Review the Galveston County side for mapping updates.	

FME	61000096	City of Friendswood - Devils Dip	Further study and design of modifications along Mary's creek bridge and channel	\$410,000	Remove from plan. Project already funded and currently ongoing.	
FME	61000104	Sunmeadow Drainage Improvements Phase 2	Further study of component of 1993 master Drainage Plan Phase 1. Initial phase of project completed in 2005. Upsizing storm sewer system to reduce potential flooding. Include Atlas 14 rainfalls	\$160,000	Samantha will check with Public Works on if this project has been completed or is still needed.	
FME	61000105	City of Friendswood - Tributary 2 Drainage/Outfall Improvements	Further study of component of 2004 TXDOT study to include Atlas 14 rainfalls	\$170,000	Remove from plan. Project has been completed.	
FME	61000123	FM518 Drainage Improvements-Phase 2	Further study of component of 2007 Master Drainage Plan to include Atlas 14 rainfall	\$410,000	Remove from plan. Project has been completed.	
FME	61000142	Shadowbend Drainage Improvements Phase 2	Further study of component of 1993 master Drainage Plan Phase 1 to include Atlas 14 rainfall.	\$420,000	Potential to be funded through local street maintenance fund. Updated cost estimate between \$900k to 1M. Awaiting further details to potentially elevate to FMP.	
FME	61000146	Annalea/Whitehall Kings Park Drainage - Drainage Improvements Phase 2	Further study of proposed drainage improvements to Stafford oaks	\$50,000	Remove from plan & include as part of the master drainage plan.	
FME	61000237	City of Friendswood Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs	\$410,000	Update cost estimate to \$750k; actively pursuing grants to fund this. High priority for Friendswood.	

			including Atlas 14 rainfall			
FME	61000424	City of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I	This project, which includes terraces, detention, and a trail network, will reduce water surface elevations on Clear Creek within the City of Friendswood and will make the Blackhawk Wastewater Treatment Facility more resilient.	\$30,000	Separate into 3 independent FMPs. Awaiting further information on BCAs and cost estimates. Included 1959 detention basin, inline and off line detention on the "Wicka" property; also the Black Hawk. Likely can elevate to a FMP. (Jim/Boris) *working on interlocal with HCFCF on the 1959 basin, Update partnership to consider: Galveston County & Galveston consolidated drainage district.	
FMP	63000113	City of Friendswood Ordinances and Regulation Update	Adopt higher codes and update ordinances and regulation to promote hazard mitigation strategies	\$109,000	Remove from plan. Project completed in 2019.	

Best,

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



From: Brian Edmondson

Sent: Tuesday, August 23, 2022 12:09 PM

To: Samantha Haritos <sharitos@friendswood.com>; Jil Arias <jarias@friendswood.com>; Jim Keith <Jim.Keith@freese.com>; Maggie Puckett <Maggie.Puckett@freese.com>

Cc: Cory Stull <Cory.Stull@freese.com>

Subject: RE: San Jacinto Regional Flood Plan - Friendswood

Jil & Samantha -

In the link below you can find a filtered list of the Friendswood projects and also document of one page overviews of each to help facilitate discussion and your comments. Look forward to talking with you soon.

Best,

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



-----Original Appointment-----

From: Brian Edmondson

Sent: Friday, August 12, 2022 11:00 AM

To: Brian Edmondson; Samantha Haritos; Jil Arias; Jim Keith; Maggie Puckett

Cc: Cory Stull; Boris Minot

Subject: San Jacinto Regional Flood Plan - Friendswood

When: Tuesday, August 23, 2022 1:00 PM-3:00 PM (UTC-06:00) Central Time (US & Canada).

Where: Microsoft Teams Meeting

The TWDB has provided additional resources to the Regional Flood Planning Groups with the intention of getting more projects included and eligible for future funding. The goal of this meeting is to coordinate with the City of Friendswood and provide an opportunity to advocate for their projects be included in the amendment process.

Draft Agenda:

- Flood Plan Overview & Amendment Process
- Project Eligibility Requirements
- Data Submittal Deadlines
- City of Friendswood Projects

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December 1, 2022

Mr. Jildardo Arias, MBA, PE, CFM – Director of Engineering
Ms. Samantha Haritos, CFM – Deputy Director of Engineering
City of Friendswood
910 S Friendswood Drive
Friendswood, Texas 77546

Re: San Jacinto Regional Flood Plan - Friendswood

Dear Jildardo and Samantha,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of Friendswood on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The technical consultant team has updated the final plan by updating the status of sponsor-specified projects to no longer be recommended and project costs have been updated per input received. The technical consultant will continue coordination with the City of Friendswood for FMEs requested to be elevated to FMPs in the amended plan, if applicable. The San Jacinto RFPG looks forward to receiving additional information from the City of Friendswood to consider for inclusion in the amended regional flood plan due July 2023.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

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Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

FMX	FMX ID	FMX Name	Description	Comments from Friendswood 8/23/22 meeting	SJRFPG Response
FME	061000089	Update City of Friendswood Storm Surge Maps to Reflect the NWS Predictions	Study to update city storm surge maps based upon the NWS predicted storm surge and projected track for landfall. The new maps may more accurately display water depth in areas within the city.	Awaiting confirmation from where this project came from. Possibility for a regional based FME for coastal surge update. Lower Priority for engineering dept.	Acknowledged.
FME	061000091	City of Friendswood - Comprehensive Flood Mitigation Plan	Study to update city floodplain maps and develop flood mitigation plan	MDP Duplicate- remove from plan. Review the Galveston County side for mapping updates.	The project is now listed as non-recommended due to being a duplicative project.
FME	061000096	City of Friendswood - Devils Dip	Further study and design of modifications along Mary's creek bridge and channel	Remove from plan. Project already funded and currently ongoing.	The project is now listed as non-recommended due to being funded and currently on-going.
FME	061000104	Sunmeadow Drainage Improvements Phase 2	Further study of component of 1993 master Drainage Plan Phase 1. Initial phase of project completed in 2005. Upsizing storm sewer system to reduce potential flooding. Include Atlas 14 rainfalls	Samantha will check with Public Works on if this project has been completed or is still needed.	No changes have been made to this project. Technical consultants will continue communication with Friendswood to determine if any changes need to be made in the amended plan.



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

FME	061000105	City of Friendswood - Tributary 2 Drainage/Outfall Improvements	Further study of component of 2004 TXDOT study to include Atlas 14 rainfalls	Remove from plan. Project has been completed.	The project is now listed as non-recommended due to being completed.
FME	061000123	FM518 Drainage Improvements- Phase 2	Further study of component of 2007 Master Drainage Plan to include Atlas 14 rainfall	Remove from plan. Project has been completed.	The project is now listed as non-recommended due to being completed.
FME	061000142	Shadowbend Drainage Improvements Phase 2	Further study of component of 1993 master Drainage Plan Phase 1 to include Atlas 14 rainfall.	Potential to be funded through local street maintenance fund. Updated cost estimate between \$900k to 1M. Awaiting further details to potentially elevate to FMP.	The estimate cost for FME has been updated to \$950,000 based on sponsor input. Technical consultants will continue coordination with sponsor to work to obtain needed material to elevate project to an FMP in the amendment process.
FME	061000146	Annalea/Whitehall Kings Park Drainage - Drainage Improvements Phase 2	Further study of proposed drainage improvements to Stafford oaks	Remove from plan & include as part of the master drainage plan.	The project is now listed as non-recommended due to being a duplicative project.
FME	061000237	City of Friendswood Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage	Update cost estimate to \$750k; actively pursuing grants to fund this. High priority for Friendswood.	Project cost has been updated to reflect sponsor input.



SAN JACINTO REGIONAL FLOOD PLANNING GROUP
REGION 6

			needs including Atlas 14 rainfall		
FME	061000424	City of Friendswood - Clear Creek Inline & Offline Detention - Bay Area Blvd. Phase I	This project, which includes terraces, detention, and a trail network, will reduce water surface elevations on Clear Creek within the City of Friendswood and will make the Blackhawk Wastewater Treatment Facility more resilient.	Separate into 3 independent FMPs. Awaiting further information on BCAs and cost estimates. Included 1959 detention basin, inline and offline detention on the "Wicka" property: also the Black Hawk. Likely can elevate to an FMP. (Jim/Boris) *working on interlocal with HCFCD on the 1959 basin, Update partnership to consider: Galveston County & Galveston consolidated drainage district.	No changes made at this time. Technical consultants will follow-up with sponsor to obtain needed material to elevate and separate into independent FMPs for the amended plan.
FMP	063000113	City of Friendswood Ordinances and Regulation Update	Adopt higher codes and update ordinances and regulation to promote hazard mitigation strategies	Remove from plan. Project completed in 2019.	The project is now listed as non-recommended due to being completed.

**Sally Bakko on behalf of the City of Galveston and the Gulf Coast Protection
District**

Maggie Puckett

From: Sally Bakko <SBakko@GalvestonTX.Gov>
Sent: Monday, July 18, 2022 12:03 PM
To: San Jacinto RFPG Technical Consultant
Subject: SJRFPG Draft Regional Flood Plan - Sally Bakko Comments
Attachments: Comments on SJRFPG Draft Regional Flood Plan.docx; Sally Bakko (GCPD) Comments on Ch 8_Ch 9 _SJRFPG Draft Regional Flood Plan.docx

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good afternoon,

I wanted to provide the following comments to the Draft Regional Plan.

Executive Summary, Pages 03, 04
Chapter 1, Page 1-2

The City of Galveston holds a population of 53,695 residents, but hosts over 7 million tourists a year. On page 1-3, the draft mentions the 7 million tourists Galveston hosts each year. This number is estimate to grow to 8 million next year. The burden placed on city infrastructure with this volume of tourism, I believe makes the City of Galveston is a major economic force in Galveston County that faces unique infrastructure challenges as a result.

The US Department of Housing and Urban Development and US Department of Transportation allocate formula funding using census urbanized area data. An “urbanized area” is defined as an urban area with a population of 50,000 or greater. Galveston certainly meets this criteria. As such, from an economic and population perspective, the City of Galveston should be included in the lists of cities in tables in the Executive Summary and Chapter 1.

Chapter 1

The compilation of comments doesn’t indicate that the comments I submitted on June 21st were received. I have attached those comments again because I want to draw your attention to my economic comments (I believe NFIP is addressed). I believe it is critical that we emphasize the significant degree to which businesses and manufacturers in the rest of Texas rely upon the supply chains that originate with the human and grey infrastructure along the upper Texas coast. I would urge you to go beyond just listing economic assets in this region and describe the economic and supply chain implications for the rest of the state when human and grey infrastructure is impacted by flood and storm surge.

Chapter 9, Page 9-4

A very important distinction is the Water Resources Development Act (WRDA) is an authorization legislative vehicle that authorizes studies and projects for the US Army Corps of Engineers. Funding is not provided in a WRDA bill. WRDA authorized projects receive funding through the annual appropriations process or through a supplemental appropriations bill. I have attached comments I submitted previously for your consideration.

The annual Energy and Water Development Appropriations bill adopted by Congress appropriates amounts that fund USACE projects and studies that are prioritized in a USACE work plan for authorized projects. On occasion, Congress has appropriated funds for USACE projects in a supplemental appropriations bill. For example, Congress appropriated the full federal funding share of the Sabine to Galveston Bay coastal storm risk management project in the Bipartisan Budget Act of 2018.

I believe it is inaccurate to call this a “grant,” which implies a competitive grant program. Since we are identifying funding sources, I would classify the program as Energy and Water Development Fiscal Year Appropriations. Rather than call it a grant or loan, I would call it “congressional appropriations.” The cost share is 65 federal share/35 non-federal sponsor share.

Thank you,
Sally Bakko



Sally Bakko, Director of Policy and Governmental Relations
Community Outreach Department

P.O. Box 779 Galveston, TX 77553 | 823 Rosenberg, Ste. 306 Galveston, TX 77550
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Sally Bakko comments.

SJRFPD DRAFT REGIONAL FLOOD PLAN COMMENTS:

National Flood Insurance Program (NFIP)

The draft identifies the region as having the highest amount of NFIP claims of any region in the state. However, there is no specific mention of the Community Rating System as a method for addressing reinforcement and advancing greater protection through new development standards. Communities benefit from reduced NFIP premiums by improving their CRS rating. This is a critical point because insurance is an important flood mitigation/recovery tool. Galveston for example is currently ranked as a CRS Class 6, but is working hard towards obtaining a Class 5 rating. CRS is an important incentive tool that is increasingly utilized by coastal communities. The draft would benefit from more specific mention and explanation of CRS as a flood mitigation tool. The draft identifies the heaving claims and costs with NFIP data (1975 – 2019), but no explanation of the NFIP CRS tool that has helped improve flood mitigation. Without further explanation, there is concern such a lack of positive detail might further the stigma “people shouldn’t be living on the coast.” However, people living on the coast work in industries and businesses that benefit the state.

Economic Importance of SJRFPD Region 6

The most compelling argument for San Jacinto Regional Flood Planning Group flood mitigation and storm surge protection projects seeking prioritization in a State Flood Plan and state and federal funding is the importance of the region’s contributions to the state of Texas economy. I recognize the economic analysis is discussed further as part of Task 2, but this critical point should be emphasized clearly and often.

Following major weather events, the human infrastructure severely impacted by storm damage has equal importance as the grey infrastructure towards sustaining the supply chains that benefit the Texas economy. Numerous people living along the coast work for industries that significantly impact these supply chains for businesses and industries across Texas. Reduced worker capacity impedes recovery work at facilities thus exacerbating supply chain disruptions.

Employees’ homes are a big post-storm issue. Recovery is impeded when employees impacted by storm damage can’t come to work on issues at the facilities. Depending upon the severity of the storm(s), the impact and recovery can take months.

Truck driver shortages, a key component of this human infrastructure, intensify following storms. Trucks move the supply chain for the top 10 commodities including electronics, grocery and convenient store goods, hardware, gravel, grains, and gasoline. Agriculture is impacted by supply chains supporting fertilizer, seed, crop protection products, and machinery parts.

Following a storm event, the ability to recover is also affected. Supply chain is affected by slowed recovery due to difficulties with delivery of repair materials.

Delays in receiving raw materials can cause significant disruptions in supply chains. If the region's chemical producers can't produce ingredients, manufacturers can't generate products, truckers and air freight can't move inventories, retailers can't stock shelves, and exports are thwarted.

Access to warehouse and distribution centers can become clogged because of flooding and debris or closures due to staffing shortages.

Several states rely upon Port Houston for receiving essential imports and exporting their manufactured products, with small businesses comprising ninety-six (96) percent of all exporters in the U.S. With the Port Houston Ship Channel shutdown due to storm damage, no port, no cargo, no commerce, no jobs.

- Port Houston is a crucial economic engine as the number one U.S. port in waterborne tonnage, providing \$801.9 billion in national economic value.
- Approximately 60 percent of global oil consumption is used for fuel and the remaining 40 percent is used to generate essential basic chemicals.
- Texas, the largest chemistry producing state, provides forty-two (42) percent of the nation's basic chemical stock that other states rely upon when manufacturing food and drink packaging, appliances and electronics (including semiconductors), hardware and construction materials, pharmaceuticals, fertilizers, and automotive parts and tires.
- Texas ports handle a larger volume of jet and diesel fuel to the US military than any other state.
- Eighty (80) percent of the nation's military grade fuel and sixty (60) percent of aviation fuel is supplied by this region.
- Galveston Harbor is ranked among the top 50 cargo ports in the US.
- The Port of Galveston now ranks as the eleventh largest cruise port in the world, the number four US cruise port in world rankings, and the number one cruise port in the Gulf of Mexico and Texas. Statewide, the cruise industry generated \$1.6 billion in expenditures and 27,000 jobs in 2019.

Sea level change hazard

Sea level change is a growing flood hazard threat that uniquely impacts coastal communities. The explanation below is taken from the City of Galveston Hazard Mitigation Plan (2022 Update) Public Comment Draft.

Reports, studies and data from the international scientific community seem to indicate that current and future sea level changes could be expected to have several impacts, particularly coastal areas, that could increase flood risk and potential loss of life. Such impacts include increased coastal erosion, higher storm-surge flooding, more extensive coastal inundation, changes in surface water quality and groundwater characteristics, and increased loss of property and coastal habitats.

Regardless of its cause, coastal submergence contributes to land loss in several ways. The most easily

recognized effects of submergence are land losses caused by permanent flooding. The passive inundation of the shore typically expands estuaries, lakes, and lagoons at the expense of adjacent uplands and wetlands. The slope of the land surface and rate of sea level rise control the extent of permanent flooding. Steep slopes and low rates of sea-level rise produce negligible flooding, whereas low slopes and rapid rates of sea-level rise inundate such vast areas so rapidly that the submergence can be detected in a few decades. Rapid coastal submergence has been documented at Baytown, Texas near Houston and on the Mississippi Delta. Subsiding land areas experience greater and more prolonged flooding by salt water associated with storms. This means that storm surges of historical record would inundate larger areas if similar storms were to occur today. Eventually the repeated inundation by saltwater expands the flood zones and alters the predominant wetland plant assemblages. This occurs because salinities within the wetlands and estuaries increase, as they are permanently flooded. In many coastal regions the inundation of salt water actually accelerates wetland losses because both fresh-water and salt-water marshes are destroyed faster than new wetlands are created. The intolerant fresh-water marshes are killed by salt-water, whereas the salt-water marshes are drowned and converted to open water.

Submergence also accelerates coastal erosion because it facilitates greater inland penetration of storm waves. Because of submergence, some bluffs that were not previously reached by storm waves are subjected to erosion. In addition to accelerated land loss, coastal submergence causes intrusion of salt-water into coastal aquifers and into the rivers that empty into the estuaries. Submergence also changes surface drainage patterns, raises groundwater levels, and causes areas even above sea level to pond water and to be poorly drained.

DRAFT SAN JACINTO REGIONAL FLOOD PLAN – CHAPTER 8 AND CHAPTER 9

Comments from Sally Bakko, Gulf Coast Protection District Liaison

Chapter 8 Comments

Recognize natural and nature-based solutions appropriate and effective for unique flood mitigation needs. Nature-based features needed and effective for inland heavy rain flood situations is different from flood mitigation protections against sea level rise or storm surge in coastal areas.

US Senator Shelley Moore Capito (R-WV), ranking member of the Senate Committee on Environment & Public Works, observed during a hearing on “The Role of Natural and Nature-based Features in Water Resources Projects” observed:

“Natural infrastructure is an important tool in our toolbox that ought to be available for consideration and application in water resources projects where practicable, cost-effective, and with the buy-in of those communities partnering with the Corps.”

The San Jacinto Region 6 RFP must propose a delicate balance that is a similar approach to natural infrastructure at the state and local level. In some cases, a hybrid approach with nature-based and structural infrastructure may be most effective and efficient. For example, there are many innovative materials that can be used with fortified dunes that are critically needed to protect against storm surge as part of a nature-based sand dune system sensitive to the environment.

Chapter 9 Comments

Local Funding (page 9-6):

General fund is in high demand for police, fire, parks and recreation. Sanitation and utilities are typically supported through fee-based dedicated funds.

Federal Funding Sources:

The draft San Jacinto RFP Chapter 9 fails to identify an important funding factor for flood infrastructure projects authorized by Congress through the Water Resources Development Act (WRDA) and potentially funded through the annual appropriations process. The US Army Corps of Engineers (USACE) Coastal Texas Study storm surge protection system project is an historic project listed as an FMP in the draft plan.

Important Note:

- 1. The Texas Legislature specifically created the Gulf Coast Protection District (GCPD) to act as the non-federal sponsor for the Coastal Texas Study storm surge protection system project (Galveston Surge Protection Coastal Storm Risk Management).**
- 2. The Texas General Land Office will be the non-federal sponsor for the Coastal Texas Study eco-restoration project (Bolivar Peninsula and West Bay Gulf Intracoastal Waterway (GIWW) Shoreline and Island Protection).**
- 3. Cost Share Requirements: 65% federal / 35% non-federal**

Unlike federal funding for other highways and municipal water infrastructure, the majority of federal funds provided to the USACE is not distributed by formula to states or through competitive grants. The Coastal Texas Study project is authorized in the House-passed WRDA 2022 and is included in the Senate WRDA bill currently awaiting floor action. The WRDA 2022 is expected to reach the President's desk prior to the August recess.

Congress funds Corps' civil works through the annual Energy and Water Development appropriations bills. The annual appropriations process begins with three major milestones: President's budget request, congressional enactment of appropriations, and Administration development of a Corps' work plan. New projects funded in the annual appropriations process receive funds through Investigations (including preconstruction engineering and design (PED) work) and Construction accounts. The USACE-Galveston District is already initiating work necessary to set-aside PED funds for the Coastal Texas Study project. Without mention of this process, the draft San Jacinto RFP fails to communicate a significant source of federal funds not acknowledged in the current list of federal funding sources.

Understanding supply chain perspectives when major hurricane disasters hit our region is essential for demonstrating the critical need for the USACE Coastal Texas Study coastal storm surge suppression system project.

This much-needed infrastructure will reduce risks to vital resources that hold significant implications for the state's supply chains and economic security. The region that would be protected by this project has a high concentration of petrochemical manufacturing facilities, with Texas being the largest chemistry producing state. The business of converting these basic chemicals into ingredients used to manufacture electronics, manufactured fibers for furniture and carpet, construction materials including roof shingles, fertilizers for produce, automotive and bicycle parts and tires, and everyday consumer goods packaged in plastic.

With over 70 percent of the nation's freight by weight moved by trucking and 60 percent of aviation fuel produced by our region effecting air freight, supply chain disruptions that occur with a major storm or series of major storms in one season impacting petro-chemical and Texas port infrastructure along the upper Gulf Coast would significantly affect manufacturing, retailers, aviation, and business operations across Texas and the nation.

December 1, 2022

Sally Bakko, Director of Policy and Government Relations, San Jacinto RFPG Liaison
City of Galveston, Gulf Coast Protection District
823 Rosenberg, Ste. 306
Galveston, Texas 77550

Re: SJRFPG Draft Regional Flood Plan - Sally Bakko Comments

Dear Sally Bakko,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments issued on behalf of both the City of Galveston and the Gulf Coast Protection District on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

Comments regarding NFIP

Comments on the Community Rating System (CRS) have been noted. Although the CRS is not explicitly mentioned in Chapters 1 and 2, the RFPG has recognized the significance of the CRS in providing incentives to communities to implement higher flood management standards by reducing flood insurance rate premiums. As part of this first cycle, the RFPG has recommended participation in the National Flood Insurance Program (NFIP) as a minimum standard and have encouraged regulatory entities to participate in the CRS. These recommended minimum standards are documented in Chapter 3.

Comments regarding Economic Importance of Region 6

Comments submitted regarding the importance of industries and infrastructure within the San Jacinto region to the national and global economy have been noted. Chapter 2 Section 2.A.2.e. describes analysis of expected loss of function of infrastructure and Section 2.A.3.b. specifically speaks to the flood risk to the Houston Ship Channel, petrochemical production, and critical supply chains.

Comments regarding Sea Level Change Hazard

Comments submitted emphasizing the growing flood hazard threat sea level change inflicts on coastal communities has been noted. The manner in which sea level change was incorporated into the future flood hazard analysis is described in Chapter 2 Section 2.B.1. The RFPG will continue to update future flood hazard analyses in subsequent flood planning cycles and have the opportunity to consider newly available data.

Comments on Chapter 8

Comments submitted on Chapter 8 regarding the need to strike a balance between incorporation of nature-based solutions and overall flood control benefit provided by recommended mitigation actions within the plan has been noted by the RFPG.

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison



Comments on Chapter 9

Comments submitted on Chapter 9 regarding the significance of the Texas Coastal Study have been noted. The Chapter currently includes discussion on direct appropriations through the Water Resources and Development Act to fund flood control projects, in particular the Coastal Texas Study Storm Surge Protection System. Chapter 9 Section 9.A.3.t. directly speaks to the use of this funding mechanism to fund a recommended FMP, the Texas Coastal Study.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Harris County

Maggie Puckett

From: Berrios, Fatima (Engineering) <Fatima.Berrios@eng.hctx.net>
Sent: Wednesday, August 31, 2022 9:15 AM
To: Maggie Puckett
Cc: Garcia, Claudia (Engineering); Cory Stull; Brian Edmondson
Subject: RE: Duplicate FMEs

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Good morning Maggie,

The FMEs are duplicates and will need to be removed, and yes, you may consider these formal comments from HCED. On this same note, Flood Control also provided an FMPs that might be a duplicate category.

Greens CDBG MIT Application Projects	ID: 063000167
White Oak Bayou CDBG MIT Application Projects	ID: 063000046

I will not recommend removing another agencies FMP, but would will urge you to follow-up. I can bring it up to Tina Peterson before or after the Technical Committee Meeting and ask her to review the list for concurrence.

Thank you!

Fatima Berrios, CFM
Project Manager – San Jacinto Regional Flood Planning Group



Office of the County Engineer
1111 Fannin St, FL 12, Houston, TX 77002
Office: (713) 274-3914 | **Cell:** (571) 733-8577
Email: fatima.berrios@eng.hctx.net



From: Maggie Puckett <Maggie.Puckett@freese.com>
Sent: Wednesday, August 31, 2022 8:36 AM
To: Berrios, Fatima (Engineering) <Fatima.Berrios@eng.hctx.net>
Cc: Garcia, Claudia (Engineering) <Claudia.Garcia@eng.hctx.net>; Cory Stull <Cory.Stull@freese.com>; Brian Edmondson <Brian.Edmondson@freese.com>
Subject: RE: Duplicate FMEs

Fatima,

Thank you for bringing these to our attention. I'll wait for your confirmation before we document, but should we plan to consider these formal comments on the Draft Plan from HCED?

Maggie Puckett, P.E., CFM | Stormwater Management | Freese and Nichols, Inc. | 832.937.5318 direct | 956.465.3900 mobile |



From: Berrios, Fatima (Engineering) <Fatima.Berrios@eng.hctx.net>
Sent: Tuesday, August 30, 2022 10:27 AM

To: Maggie Puckett <Maggie.Puckett@freese.com>

Cc: Garcia, Claudia (Engineering) <Claudia.Garcia@eng.hctx.net>; Cory Stull <Cory.Stull@freese.com>

Subject: Duplicate FMEs

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Good morning Maggie,

As we are funneling through the FMEs, I noticed some of the Harris County FMEs may be duplicates of current RRD projects. For your convenience, attached is the current list of RRD projects that was prepared and sent last year. All RRD projects are fully funded with the 2018 Bond, and do not need additional funds, so no need to include them as recommended FMEs. My thoughts are that these may also have been part of CDBG-MIT applications and submitted that way; I know Northfield and Fallbrook/Ridgepoint/Westpoint are at least. I wanted to run these by you to make sure I am not confusing these with other potential improvements projects. For now, please do not consider the below FMEs for additional evaluation to develop FMPs. I will confirm if they need to be removed.

Beaumont Place Subdivision Drainage Improvement Phase 2	ID: 061000325
Eastex Freeway Forest Subdivisions Drainage Improvements	ID: 061000414
Eastex Freeway Forest Sections 3 & 4 Subdivision Improvements	ID: 061000469
Fallbrook, Ridgepoint and Westpoint Subdivision Drainage	ID: 061000416
Sandpiper Village Subdivision Drainage Improvements	ID: 061000427
Oak Glen Place Subdivision Drainage Improvements	ID: 061000431
Northfield Place Subdivision Drainage Improvements	ID: 061000432
Ralston Acres Subdivision Drainage Improvements	ID: 061000466

Thanks,

Fatima Berrios, CFM

Project Manager – San Jacinto Regional Flood Planning Group



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December 2, 2022

Ms. Fatima Berrios, CFM, Project Manager
Office of the County Engineer
1111 Fannin Street, FL12,
Houston, Texas 77002

Re: Duplicate FMEs

Dear Fatima,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Harris County on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

FMEs identified by Harris County as duplicates will be designated as not recommended with the reason being: "Sponsor requested removal due to project being fully funded." After coordination with both HCED and HCFCD, it was determined that the FMPs consisting of CDBG-MIT applications will remain in the plan as recommended by the San Jacinto RFPG. However, it has been documented that the sponsor entities have made progress towards implementing components of the FMP which reduces the future funding assistance that may be needed.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
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Gene Fisseler
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Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Harris County Flood Control District



October 28, 2022

San Jacinto Regional Flood Planning Group
c/o Claudia Garcia
1111 Fannin Street, 12th Floor
Houston, Texas 77002

RE: Review Comments for Draft 2023 Regional Plan Region 6 Report

Dear Ms. Garcia:

Below are comments provided by the Harris County Flood Control District from our review of the draft 2023 Regional Flood Plan, dated August 2022, and prepared by the Region 6 San Jacinto Regional Flood Planning Group.

Comment 1.

Reference: Chapter 1 Planning Area Description
Page 1-23 (65/302), in reference to the MAAPN project, *"It is anticipated that preliminary FEMA effective maps will be released in late 2022 for public review and comment, however, that release date is tentative and subject to change."*

This should be rewritten to state the following:

FEMA is working to complete the development of data and preliminary maps and will release this information to the public once they are complete, which is currently anticipated to be in 2023

Comment 2.

Reference: Chapter 2 2023 Regional Flood Plan Region 6 San Jacinto Page 2-19 (89/302)
Task 2.B. Future Condition Flood Risk Analysis, Task 2.B discusses steps taken by the study team to develop future conditions 1% and 0.2% ACE flood hazards that are on 30-year future forecast periods.

This section should acknowledge that some political entities within the San Jacinto River Basin (specifically Harris County) have adopted No-Rise/No Adverse Impact policies that require new developments to offset new impervious area with the addition of detention volume to offset possible increases in future development runoff.

Comment 3.

Reference: Chapter 4 2023 Regional Flood Plan Region 6 San Jacinto
Pages 4-12 (144/302) and 4-13 (145/302)

Category 7 and Category 8 assessment of flood mitigation needs utilize FEMA claims, RL, SRL, and claim payouts. In future updates, the team should consider utilizing actual flooded house counts that many municipalities and Counties acquire post major flood events. The FEMA data, as pointed out in the report, will only be available for people who have FEMA Flood Policies. Historically, lower income areas and areas outside of regulatory flood plains will have very low

October 28, 2022
San Jacinto Regional Flood Planning Group
c/o Claudia Garcia

Page 2

percentage of policies, and thus this data may not provide a reliable representation of the greatest flood risks. House counts, conducted after a flood event, and predictive house counts (such as using a system similar to the Flood Control District's structural inventory tool) should be considered in the future.

Comment 4.

Reference: Chapter 4 2023 Regional Flood Plan Region 6 San Jacinto Page 4-14 (146/302), 4.A.1.h. Already Implemented Flood Mitigation Projects (Category 9)

Category 9 attempts to quantify areas with existing flood mitigation projects under consideration. The weighting leans towards scoring areas with no existing projects as higher need, however many flood damage reduction projects, due to funding limitations, may primarily target frequent flooding (i.e. 10% ACE) and may only slightly reduce flooding during extreme events (1% ACE or 0.2% ACE). The existence of project should not, by itself, be reason to discount the needs for future flood damage reduction projects in a particular area. Additionally, the reduction in instances and severity of flooding should be weighted as important factors and the FPG should consider how to weight such factors in the future.

Comment 5.

Reference: Chapter 4 2023 Regional Flood Plan Region 6 San Jacinto Page 4-28 (160/302), 4.B.3.g. Already Implemented Flood Mitigation Projects (Category 9)

The Texas Water Development Board requires calculation of the Benefit-Cost Ratio (BCR) as part of the Regional Flood Plan development. While the Regional Flood Plan does not require a BCR greater than 1.0 to be included in the Plan, in the past, the BCR has been used to determine funding eligibility. This may cause unintended consequences such as undervaluing projects in residential areas with lower to moderate home values and thus elevating projects in areas with higher property values. The Flood Control District recommends that the Flood Planning Team continue to coordinate with the Texas Water Development Board to either develop a substitute methodology to the BCR or to modify the BCR approach to ensure that the scoring criteria balances the comprehensive benefits of a project (including the social, environment, regional benefits in addition to the economic benefits) in conjunction with statewide flood infrastructure needs and the vulnerability of residents to flood risk.

Comment 6.

Reference Page 6-3, Table 6-2

Table 6-2 appears to have an error as the Existing Conditions structure count minus the After Implementation structure count does not equal the Reduction in Exposure structure count.

The Flood Control District appreciates the opportunity to review the 2023 Regional Flood Plan.

Sincerely,
DocuSigned by:



Tina Petersen, Ph. D., P.E.
Executive Director

CP:GB:rop

December 1, 2022

Dr. Tina Peterson, PhD, PE, Executive Director
Harris County Flood Control District
9900 Northwest Freeway
Houston, TX 77092

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Dr. Peterson,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Harris County Flood Control District (HCFCD) on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

Updates were made to the Final Regional Flood Plan in response to multiple comments received from HCFCD. Below is a summary of responses and how the plan was updated or how comments were considered.

- **Comment 1:** Chapter 1 Planning Area Description was updated to reflect the anticipated release date of FEMA Preliminary Maps for Harris County.
- **Comment 2:** Chapter 2 'Task 2.B. Future Condition Flood Risk Analysis' was updated to acknowledge that some political entities within the San Jacinto River Basin (specifically Harris County) have adopted No-Rise/No Adverse Impact policies that require new developments to offset new impervious area with the addition of detention volume to offset possible increases in future development runoff.
- **Comment 3:** Chapter 4 'assessment of flood mitigation needs' utilized FEMA claims, RL, SRL, and claim payouts. In future updates, the team will consider utilizing actual flooded house counts that many municipalities and Counties acquire post major flood events. Historically, lower income areas and areas outside of regulatory flood plains will have very low percentage of policies, and thus this data may not provide a reliable representation of the greatest flood risks.
- **Comment 4:** Chapter 4 Category 9 attempts to quantify areas with existing flood mitigation projects under consideration. The weighting leans towards scoring areas with no existing projects as higher need, however many flood damage reduction projects, due to funding limitations, may primarily target frequent flooding (i.e. 10% ACE) and may only slightly reduce flooding during extreme events (1% ACE or 0.2% ACE). We agree with HCFCD on this point in future flood planning cycles will consider this in the weighting need areas. This particular weighting in the regional plan, however, is not expected to have any impact when TWDB prioritizes FMPs for funding.

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
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Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

- **Comment 5:** The San Jacinto Regional Flood Planning Group acknowledges and confirms the issues HCFCD raises about benefit-cost-ratio (BCRs) and flood mitigation projects. To the credit of TWDB, they have released a new methodology that allows for many additional benefits to be considered such as social, environmental, and recreational with no minimum floor BCA as is required with the standard FEMA BCA calculation. They also allow for other BCA methodologies to be used which could allow for a more locally specific based approach to be developed and used. We recognize this is an ongoing discussion and will continue to coordinate with the TWDB to improve upon BCR methodologies to ensure that comprehensive benefits of a project are considered.
- **Comment 6:** Corrections to table 6-2 are recognized and will be corrected in the final plan.
- **Comment from Alan Black in an emailed dated 9/9/2022:** The Greens Mid-Reach FME (061000365) is recognized to be a duplicate of the Greens Bayou CDBG-MIT FMP (063000167) and will be removed from the plan.
- **Various comments from Dena Green in an email dated 7/19/2022:** Various updates were made the plan through chapters 1, 2, 3, 4 and 8 in response to comments, clarifications, and recommendations for improvements.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

City of Jersey Village

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Tuesday, June 14, 2022 8:38 AM
To: Austin Bleess
Cc: San Jacinto RFPG Technical Consultant
Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Follow Up Flag: Follow up
Flag Status: Completed

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Austin,

Thank you for the response. I will reach back out if we have any follow-up questions.

Best,

Mariah

From: Austin Bleess <ableess@jerseyvillagetx.com>
Sent: Tuesday, June 14, 2022 8:32 AM
To: Mariah Najmuddin <Mariah@hollawayenv.com>; SJRFPG.TechCon@freese.com
Cc: SJRFPG.TechCon@freese.com
Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

CAUTION: Email from outside Hollaway

Thank you.

For Action Number 061000192 I believe this is redundant to what the City and HCFCD are already doing. We are currently in the study phase of the E127. We have an estimated project cost for the construction of it as well, which is about \$10.5MM. Right now we are looking at a 70/30 split from HCFCD.

In 2017 the City undertook a Long Term Flood Recovery Plan on our own. I don't know that we would do a full drainage study again, as we already have the bulk of one completed, so I'm not sure that action number 061000252 would be applicable for us.

But I have put information in for both items below.

If there is interest in learning more about what the city has already done we have a lot of information on our website:
[Long Term Flood Recovery Plan \(jerseyvillagetx.com\)](http://jerseyvillagetx.com/Long Term Flood Recovery Plan)

Please let me know if you have other questions. Thank you!

Austin Bleess, MPA, ICMA-CM
City Manager | Jersey Village, Texas
(p) (713) 466-2109

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Tuesday, June 14, 2022 7:33 AM
To: Austin Bleess <ableess@jerseyvillagetx.com>; SJRFPG.TechCon@freese.com
Cc: SJRFPG.TechCon@freese.com
Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Hi Austin,

See below for the original email. When you hit “reply” the drop-down should work.

I have attached a word document as well in case there are any issues.

Additionally, here is an updated link for Region 6.

[Region 6 Summaries](#)

Please let me know if you have any questions.

Best,

Mariah Najmuddin

Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because Jersey Village is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

Flood Mitigation Action ID	Flood Mitigation Action Type	Flood Mitigation Action Name	Flood Mitigation Action Description	Flood Mitigation Action Estimated Total Cost	Sponsor Funding	
					Anticipated Source of Sponsor Funding	Percent Funding Anticipated to be Provided by Sponsor
061000192	FME	White Oak Bayou - E127-00-00 Fork	Further study of channel improvements from partnership project to restore channel conveyance including Atlas 14 rainfalls.	\$150,000	General Revenue	30%
061000252	FME	City of Jersey Village Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	\$100,000	Taxes	100%

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 - FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Friday, June 17, 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Cory Stull | Technical Consultant (Freese and Nichols, Inc.)
San Jacinto Regional Flood Planning Group

From: Austin Bleess <ableess@jerseyvillagetx.com>

Sent: Monday, June 13, 2022 8:08 PM

To: Mariah Najmuddin <Mariah@hollawayenv.com>; SJRFPG.TechCon@freese.com

Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

CAUTION: Email from outside Hollaway

Good evening,

Mark Bitz forwarded me the email. However, I'm unable to "choose an item" in the drop down menu. Is it possible to get the original email sent to me directly?

Also, the Region 6 link seemed to open the Region 1 files, so that information was not accessible to me.



December 1, 2022

Austin Bleess, MPA, ICMA-CM
City Manager
16327 Lakeview Drive
Jersey Village, Texas 77040

Re: Response to Updated Identified Flood Mitigation Evaluates and/or Strategies in Your Community

Dear Austin,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Jersey Village on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The FMEs identified are now designated as no longer recommended in the plan with the reason being that, "Sponsor already completed evaluation." However, the City of Jersey Village is still listed as an entity with oversight on FME 061000184 – White Oak Bayou Watershed Study and FME 061000439 – Greens Bayou, White Oak Bayou and Cypress Creek Areas Subdivision Drainage Mitigation Project.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of League City

Maggie Puckett

From: Brian Edmondson
Sent: Friday, October 7, 2022 9:47 AM
To: Talluto, Anthony; Chuck Wolf; Cory Stull
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

It should not make a difference who the listed sponsor is. With that feedback we'll plan to update the sponsor to League City for the Lower Clear Creek FMP included on the plan as part of the draft comment process.

We'll be on the lookout for information on the other projects. Thank you Anthony and have a great weekend!

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



From: Talluto, Anthony <Anthony.Talluto@leaguecitytx.gov>
Sent: Friday, October 7, 2022 9:22 AM
To: Chuck Wolf <Chuck.Wolf@freese.com>; Brian Edmondson <Brian.Edmondson@freese.com>; Cory Stull <Cory.Stull@freese.com>
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

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Does it provide us any benefit for flood control to be the sponsor on one of the options?

Otherwise I would expect us to be the sponsor for all of the outcomes from the LCCDB study. I'll take a look at the additional projects listed and see if I can come up with some information next week.

Thanks!

Anthony Talluto
Project Manager
Project Management
City of League City
281-554-1451

From: Chuck Wolf <Chuck.Wolf@freese.com>
Sent: Thursday, October 6, 2022 6:27 PM
To: Brian Edmondson <Brian.Edmondson@freese.com>; Cory Stull <Cory.Stull@freese.com>
Cc: Talluto, Anthony <Anthony.Talluto@leaguecitytx.gov>
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

CAUTION: This email originated from outside of City of League City. Please use caution before clicking any links, downloading pictures within email, or responding to unknown senders. Do NOT sign-in with your COLC account for any unexpected items. Please contact the Technology Helpdesk (x1380) or forward to HELPDESK@leaguecitytx.gov if in doubt.

Thanks, Brian. Anthony will need to confirm as I haven't been in every conversation, but I believe John Baumgartner was still intending on leading the consortium through project implementation.

Chuck

Charles M. Wolf, D.Eng, PE, BCEE | Principal/Vice President | Freese and Nichols, Inc. | 661-993-0028 | chuck.wolf@freese.com | www.freese.com



From: Brian Edmondson <Brian.Edmondson@freese.com>
Sent: Thursday, October 6, 2022 6:22 PM
To: Chuck Wolf <Chuck.Wolf@freese.com>; Cory Stull <Cory.Stull@freese.com>
Cc: Talluto, Anthony <Anthony.Talluto@leaguecitytx.gov>
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

Chuck –

HCFCF is listed as the sponsor. It is my belief based on previous discussion with Dena Green (no longer at HCFCF) that they would support another sponsor being listed.

The official contact is still Tina Petersen but it may soon become Alan Black. I am copying Cory here because he currently in live conversation with him on another Regional Flood Planning matter and you might be able to get this question in there.

Best,

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



From: Chuck Wolf <Chuck.Wolf@freese.com>
Sent: Thursday, October 6, 2022 5:56 PM
To: Brian Edmondson <Brian.Edmondson@freese.com>
Cc: Talluto, Anthony <Anthony.Talluto@leaguecitytx.gov>
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

Brian,

Who is listed as the sponsor for Alternative 3 Mitigation Project FMP? Is that HCFCF or Galveston County? If so, who is the point of contact at HCFCF so Anthony and I can connect with them. We know who it is at Galveston...

Thanks.

Chuck

Charles M. Wolf, D.Eng, PE, BCEE | Principal/Vice President | Freese and Nichols, Inc. | 661-993-0028 | chuck.wolf@freese.com | www.freese.com

From: Brian Edmondson <Brian.Edmondson@freese.com>
Sent: Thursday, October 6, 2022 4:06 PM
To: Anthony.Talluto@leaguecitytx.gov; john.baumgartner@leaguecitytx.gov
Cc: Chuck Wolf <Chuck.Wolf@freese.com>; Jim Keith <Jim.Keith@freese.com>; Maggie Puckett <Maggie.Puckett@freese.com>
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

Anthony –

I am following up with League City on behalf of the TWDB Regional Flood Planning effort to let you know the draft plan has been published, available on the flood planning website for download, and that we are accepting comments through October 29th, 2022. For your convenience I've attached a spreadsheet with the studies (FMEs) and projects (FMPs) that were included with League City as the Sponsor. League City made an excellent showing in the plan with their projects, thank you for your support!

Also to confirm with you, the "Lower Clear Creek & Dickinson Bayou Flood Mitigation Plan - Alternative 3" is included as a FMP in the flood plan however we were required to select only one Sponsor. This shouldn't preclude a change in lead sponsor in a future funding application however if League City feels it would be more appropriate to have them listed in the plan as the Sponsor we can make that update as part of a comment to the draft.

And finally, we are aware of a number of additional projects from prior correspondence, listed below. We can still add these to the amended plan next year but need a bit more information to so. If League City would like to add them we would just need to obtain the source documents noted or at minimum the a map/location for each. If by chance enough data has been already developed to include as a FMP (Project) in the plan rather than a FMEs (Study), we would need to get bit more data from you including a benefit cost analysis (BCA).

Thank you again and we are here if you have any questions.

Potential League City Projects to be included in San Jacinto Regional Flood Plan

Project Name	Description	
Gum Bayou Drainage Improvements	<p>Widen Gum Bayou from approximately SH 96 to the City's ETJ and create a new detention pond approximately 270 ac-ft in size.</p> <p>This is Phase 4 of the Bay Ridge Subdivision Improvements Project. Total cost is estimated to be \$12million. City is currently in preliminary design phase.</p>	Galvesto
Magnolia Creek & Cedar Gully Drainage Improvement Project	<p>Project would look at Magnolia Creek and Cedar Gully upstream of FM 518. Improvements would include (1) the modification of outlets for 3 existing detention basins in the Magnolia Creek sub-watershed so that Stormwater inflows for most events are stored in the basin and the channel forming discharge is allowed to pass through to the downstream channel and (2) the modification of the Summer Place culvert crossing into a staged culvert opening by placing multiple barrels at different elevations. These projects would (1) correct the erosion of the channel bed and low flow sections, (2) stabilize failed side-slopes of earthen channel sections, (3) increase long-term channel stability, (4) reduce long-term maintenance costs, and (5) maintain flood control function of the channel.</p> <p>Total cost is estimated to be approximately \$7.5million. City is currently in design for this project.</p>	Galvesto

Benson Bayou Regional Mitigation Conveyance & Detention Pond Project	<p>Project would require regrading (as needed) Benson Bayou and related tributaries along with land acquisition for the construction of a 300 - 400 acre-foot mitigation pond along with reconstructing road crossings on League City Parkway and Hwy 3 and existing pond outfall structures as needed within this watershed.</p> <p>Total cost for this project is expected to exceed \$50million. City has Phase 1 in preliminary design with a maximum budget of \$11.5million.</p>	Galveston
Patton Subdivision Drainage Improvements Project	<p>Project would require storm sewer improvements along Sanders St., West Wilkins St., and Interurban St. The storm sewer would discharge into an approximate 40 ac-ft new detention pond along W. Galveston/W. Wilkins before discharging into Interurban Ditch.</p> <p>FEMA has 54 reported claims in this area, by improving the storm sewer, there will be 74 homes plus a commercial building benefitting from this project.</p> <p>Construction cost for this project was estimated to be approximately \$7million.</p>	
St. Charles Street Drainage Improvements Project	<p>Currently street drains north towards Walker St., then to Robinson Bayou's western tributary. Proposed project would install 550LF of storm sewer connecting to East Robinson directly. Drainage Easements and an overflow swale would be needed to decrease street ponding and the potential for structural damage. A more detailed analysis is also needed to confirm if a detention pond is needed for this project.</p> <p>Assuming no detention pond is needed, construction costs for this project is estimated at approximately \$0.5million.</p> <p>FEMA has 18 reported claims in this area, by making these improvements, it would benefit all 18 properties.</p>	
Columbia Memorial Parkway Drainage Improvement Project	<p>A detailed drainage analysis is needed to confirm storm sewer sizes and if detention would be needed. Project would replace roadside ditches with a curb and gutter system.</p>	

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



From: Maggie Puckett
Sent: Wednesday, April 27, 2022 5:12 PM
To: Talluto, Anthony <Anthony.Talluto@leaguecitytx.gov>; Chuck Wolf <Chuck.Wolf@freese.com>; Baumgartner, John <john.baumgartner@leaguecitytx.gov>
Cc: Jim Keith <Jim.Keith@freese.com>
Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

Hi Anthony,

Thank you for the organized comments. We have provided responses in the attached and, pending any additional thoughts, will get this incorporated into the regional list of studies and projects. ***Regarding the additional projects listed, would y'all be able to provide any supporting data as requested in the spreadsheet?***

For your information, the TWDB sets a fairly high bar for a project (FMP) to be included in the plan. A project must have the following:

- Available models that demonstrate no adverse impact
- Study reports (signed and sealed) demonstrating the proposed project will not result in an adverse impact

- OPCC
- Cost Benefit Analysis

We are aware that most projects will not have all the required data available at this time – particularly the Benefit Cost Analysis. Projects that do not have sufficient data available to be considered a project, or FMP, will be considered a study, or FME, in the draft Regional Flood Plan due to the TWDB on August 1, 2022. However, as Chuck mentioned, additional funding has already been allocated to RFPGs to amend the draft plan through July 2023 specifically to continue targeted outreach with regional stakeholders and develop projects, or FMPs, for inclusion in the plan. Development of projects, at the direction of the RFPG, consists of performing minor studies and BCAs to ensure all TWDB requirements for a project are met for inclusion in the Regional Flood Plan. If there's any supporting data that y'all can provide (GIS, reports, exhibits, models, etc.) at this time, we would appreciate if you could please pass that along to our team. Please also feel free to connect us with other consultants or persons at League City who may be able to track this information down.

Feel free to reach out via phone or email if you have any questions about this data request or the regional flood planning process.

Thank you,

Maggie Puckett, P.E., CFM | Stormwater Management | Freese and Nichols, Inc. | 832.937.5318 direct | 956.465.3900 mobile |



From: Talluto, Anthony <Anthony.Talluto@leaguecitytx.gov>

Sent: Wednesday, April 27, 2022 10:21 AM

To: Chuck Wolf <Chuck.Wolf@freese.com>; Baumgartner, John <john.baumgartner@leaguecitytx.gov>

Cc: Maggie Puckett <Maggie.Puckett@freese.com>; Jim Keith <Jim.Keith@freese.com>

Subject: RE: Important: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

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All,

Sorry for the delay. I have attached our comments, modifications and additions to the project list provided.

Some comments would obviously be addressed during any other design/study phases. Let me know if yall have any questions or need clarification.

Thanks!

Anthony Talluto
Project Manager
Project Management
City of League City
300 W Walker St
League City, Texas 77573
Phone: 281-554-1451

RESOLUTION NO. 2022-141

A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF LEAGUE CITY, TEXAS, REQUESTING THAT THE SAN JACINTO REGIONAL FLOOD PLANNING GROUP INCORPORATE IN ITS REGIONAL FLOOD PLAN BOTH THE FINDINGS OF THE LOWER CLEAR CREEK AND DICKINSON BAYOU WATERSHED STUDY AS WELL AS THE LIST OF TWENTY-EIGHT (28) PROJECTS RECOMMENDED BY SAID STUDY.

WHEREAS, catastrophic flooding remains a regional problem the amelioration of which requires efforts and contribution by all governmental entities in the region; and

WHEREAS, League City is located within the boundaries of the San Jacinto Regional Flood Planning Group, which is currently soliciting public comment on its Draft Regional Flood Plan; NOW, THEREFORE,

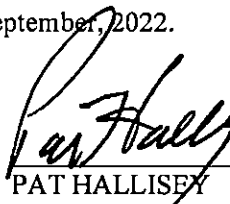
BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LEAGUE CITY, TEXAS, as follows:

Section 1. The City Council respectfully requests that the San Jacinto Regional Flood Planning Group incorporate in its Regional Flood Plan both the findings of the Lower Clear Creek and Dickinson Bayou Watershed Study as well as the list of twenty-eight (28) projects recommended by said study as flood control solutions.

Section 2. The City Council directs the City Manager to forward a copy of this Resolution upon its passage to each Member of the San Jacinto Regional Flood Planning Group.

Section 3. It is hereby found and determined that the meeting at which this resolution was passed was open to the public and that advance public notice of the time, place and purpose of said meeting was given as required by law.

PASSED AND APPROVED the 27th day of September, 2022.


PAT HALLISEY
Mayor

ATTEST:


DIANA M. STAPP
City Secretary

APPROVED AS TO FORM:


NGHIEM V. ĐOÀN
City Attorney



December 1, 2022

Anthony Talluto
Project Manager
City of League City
300 West Walker
League City, Texas 77573

Re: League City/Dickinson Outreach for San Jacinto Regional Flood Plan

Dear Anthony,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from League City on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The sponsor has been updated to reflect City of League City for the FMP identified. The San Jacinto RFPG also acknowledges the resolution provided by the City of League City. The San Jacinto RFPG will continue coordinating with the City of League City to collect information on additional projects and studies. The San Jacinto RFPG looks forward to considering additional actions for inclusion in the amended regional flood plan due July 2023.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
Chairman
Industries

Alia Vinson
Vice Chairman
Water Districts

Erwin Burden
Secretary
Counties

Gene Fisseler
Executive Committee
Public

Matthew Barrett
Executive Committee
River Authorities

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Liberty County Water Control and Improvement District #1

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Tuesday, October 4, 2022 4:26 PM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for commenting on the DRAFT Regional Flood Plan!

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Good afternoon,

On behalf of the Technical Consultant, I want to thank you for providing comments on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

Mariah Najmuddin, MPP (she/her/ella)
Communications Specialist
Hollaway Environmental + Communications
2500 Summer Street, Suite 1130
Houston, TX 77007
O: 713.868.1043 | D: 346.223.1064
www.hollawayenv.com



HUB + DBE + WBE + WOSB CERTIFIED

From: HubSpot Forms <noreply@hubspot.com>

Sent: Friday, September 30, 2022 3:42 PM

To: Mariah Najmuddin <Mariah@hollawayenv.com>

Subject: Contact reconversion by submitting on HubSpot Form "New form (August 9, 2022 12:48:18 PM EDT)"

CAUTION: Email from outside Hollaway



Contact reconversion by submitting on HubSpot Form "New form (August 9, 2022 12:48:18 PM EDT)"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

James

Last name:

Canfield

City:

The Woodlands

County:

Montgomery

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

First, thank you for letting us participate in this process. Liberty County WCID#1 is responsible for the maintenance of 85 miles of drainage ditches in the southwest portion of Liberty County. One of our concerns is until recently we were unaware of the Flood Planning Group and therefore have not had a chance to fully engage with the development of the plan. We would recommend that in future outreach programs special efforts could be made to include smaller districts such as ourselves. As we reviewed the draft plan, we noticed that WCID#1 was not shown on any of your maps or displays. Could you please include us in future updates. Also, could you include our ditch system on your maps.

View in HubSpot



- **CONTACT**
- James Canfield

Found site via:

<https://sanjacintofloodplanning.org/>

This message was sent to mariah@hollawayenv.com because your preferences are set to receive notifications like this. You can change it in your [notification preferences](#) page.

sanjacstudy.com (Hub ID: 20336393)



December 1, 2022

James Canfield
Liberty County Water Control and Improvement District #1

Re: Submittal of WCID#1 FMEs

Dear Liberty County Water Control and Improvement District #1,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Liberty County Water Control and Improvement District #1 on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

At this time, additional projects, studies, and evaluations are not able to be included in the draft plan. Therefore, no changes were made at this time to the draft plan. However, the RFPG will be engaging entities during the amended planning cycle in 2023 to acquire additional projects, studies, and evaluations and can include the Liberty County WCID #1 in this engagement process.

The San Jacinto RFPG acknowledges the WCID#1's comments on future outreach efforts being more inclusive of smaller entities in future flood planning cycles.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
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Alia Vinson
Vice Chairman
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Executive Committee
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River Authorities

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Montgomery County MUDs 83 and 84

J. Stephen Wilcox, P.E., CFM

Partner / Division Manager
Hydrology & Hydraulics

office 713.783.7788

direct 713.579.3852

cell 832.443.9977



Engineering & Surveying

costelloinc.com

2107 CityWest Blvd. | 3rd Floor | Houston, Texas 77042

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From: Cory Stull <Cory.Stull@freese.com>

Sent: Tuesday, June 28, 2022 9:36 AM

To: J. Stephen Wilcox, P.E., CFM [REDACTED] San Jacinto RFPG Technical Consultant
<SJRFPG.TechCon@freese.com>

Cc: Keith R. Billé, P.E. [REDACTED]

Subject: RE: Region 6 - Montgomery County MUD 83 and 84 Flood Improvements

Thanks for reaching out, Stephen. The initially prepared draft plan is being approved by the Regional Planning Group over the next couple of weeks, but the TWDB has initiated a process through which all of the regional flood plans will be amended in summer of 2023. We will be accepting submissions through about the end of 2022 for inclusion in that amendment.

We can take a look through the report, but wanted to note a few key items that are required by TWDB for something to be considered a "project", or FMP in the plan:

- Benefit Cost Analysis showing the project's BCR
- Demonstration of No Adverse Impacts as a result of the proposed, standalone project and supporting modeling
- Engineer's Cost Estimate (planning level is acceptable)
- Preferred: pre-project and post-project inundation rasters

If the above information has not been developed yet, the TWDB allows for the project to be included as a FME, or Flood Management Evaluation, which allows for further study of the concepts. Let me know if you have any questions on any of these items.

Thanks!

Cory J. Stull, P.E., CFM

Principal and Vice President
Stormwater Management

Freese and Nichols, Inc.

713-600-6809 direct

713-359-8560 mobile

From: J. Stephen Wilcox, P.E., CFM [REDACTED]

Sent: Tuesday, June 28, 2022 7:40 AM

To: Cory Stull <Cory.Stull@freese.com>

Cc: Keith R. Billé, P.E. [REDACTED]

Subject: Region 6 - Montgomery County MUD 83 and 84 Flood Improvements


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Cory, hope all is well. We represent Montgomery County MUD 83 and 84 and have been investigating various flood reduction improvements for both MUDs resulting from structural flooding that occurred during Imelda. MUD 83 and 84 are just east of I69 in Porter generally along Sorters Road. The county recommended we contact you in regards to including some of the potential projects in the Region 6 plan.

We performed a flood reduction assessment and developed initial alternatives for flood reductions along the Bentwood Diversion Channel which ultimately discharges into the West Fork of the San Jacinto River. Below is a link to download that report. The MUDs would like to request that the flood improvements along the Bentwood Diversion channel (alternative 6B) be included in the Regional 6 plan as a potential project.

We are unsure of the process or next steps for the MUDs to request the project be included in the Region 6 plan and if there is any additional information you might need. I can be available for a phone call to discuss further. We appreciate your help in this.

 [MUD 83 and 84 - Flood Reduction Study 032521 - Full.pdf](#)

Respectfully,

J. Stephen Wilcox, P.E., CFM

Partner / Division Manager
Hydrology & Hydraulics

office 713.783.7788

direct 713.579.3852

cell 832.443.9977



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December 1, 2022

J. Stephen Wilcox, P.E., CFM
Montgomery MUD 83 & 84

Re: Region 6 - Montgomery County MUD 83 and 84 Flood Improvements

Dear Stephen,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from Montgomery County MUDs 83 & 84 on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

At this time, additional projects, studies, and evaluations are not able to be included in the draft plan. Therefore, no changes were made at this time to the draft plan. However, the RFPG will be engaging entities during the amended planning cycle in 2023 to acquire additional projects, studies, and evaluations and will be updating the plan accordingly. The FMEs provided by the Montgomery County MUDs 83 and 84 will be considered during this time.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

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Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of Pasadena

Maggie Puckett

From: Sarah Benavides <sbenavides@pasadenatx.gov>
Sent: Tuesday, October 25, 2022 5:03 PM
To: Brian Edmondson; Robin Green; Mark Gardemal; Ana Espinoza; Marie Estrada
Cc: Maggie Puckett; Cory Stull
Subject: Re: Pasadena - San Jacinto Regional Flood Planning Opportunity

Follow Up Flag: Follow up
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Brian,

The City is no longer pursuing these projects and can be removed from the plan. The one project we are already working on is not listed but it doesn't need to be included in the plan. Please let me know if you need any additional information.

Sarah Benavides, PE, CFM
Sr. Assistant Director of Public Works
City of Pasadena
D 713-475-7834
C 713-822-9291

From: Brian Edmondson <Brian.Edmondson@freese.com>
Sent: Friday, October 21, 2022 10:07 AM
To: Sarah Benavides <sbenavides@pasadenatx.gov>; Robin Green <RGreen@pasadenatx.gov>; Mark Gardemal <MGardemal@pasadenatx.gov>; Ana Espinoza <ANEspinoza@pasadenatx.gov>; Marie Estrada <MEstrada@pasadenatx.gov>
Cc: Maggie Puckett <Maggie.Puckett@freese.com>; Cory Stull <Cory.Stull@freese.com>
Subject: RE: Pasadena - San Jacinto Regional Flood Planning Opportunity

Good morning Sarah,

I am following up my previous email and from our brief conversation last month concerning Pasadena projects currently included in the draft TWDB flood plan and to confirm my understanding of your comments. Our public comment period on the draft plan comes to a close next week, October 27th, 2022 and we would appreciate any feedback that the City of Pasadena may have. Additionally, the TWDB is funding the elevation of certain projects in the draft plan and at least one of the projects below has been prioritized. We would need a confirmed interest for us to do so and more information regarding the projects.

It was my understanding that the City of Pasadena may have already been successful in obtaining grant funds and maybe did not need the projects listed below included in the plan? If these projects are already funded or are no longer needed or wanted in the plan, we can update the plan to remove them. If they are still valid projects and the City of Pasadena is interested in elevating them in the TWDB Flood Plan, we can discuss at your earliest convenience.

Thank you for your time.

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



From: Brian Edmondson

Sent: Monday, September 12, 2022 2:59 PM

To: sbenavides@pasadenatx.gov; RGreen@pasadenatx.gov; MGardemal@pasadenatx.gov; ANEspinoza@pasadenatx.gov; MEstrada@pasadenatx.gov

Cc: Maggie Puckett <Maggie.Puckett@freese.com>; Cory Stull <Cory.Stull@freese.com>

Subject: Pasadena - San Jacinto Regional Flood Planning Opportunity

Sarah –

I am reaching out to today on behalf of the San Jacinto Regional Flood Planning Group to speak with you about an opportunity for Pasadena to get projects qualified for funding applications as part of the first ever Texas Regional Flood Planning effort. To be eligible for funding from future allocations of the Flood Infrastructure Funds (FIF), your projects must be included in this new state-wide plan. We were able to pull publicly available information into the draft plan, including Pasadena's past FIF applications. However at this time we don't have enough information on them to include them as what the TWDB calls "Flood Mitigation Projects (FMPs)" and instead they are currently included as "Flood Mitigation Evaluations (FMEs)". It is expected that it is FMPs that will received the lion's share of funding in the next round and our goal is help you and the sponsors in this region get more of their projects qualified as FMPs on this plan.

We are especially interested in getting information on your projects because we suspect that most if not all of the data that is required for inclusion in the plan already exists since it should have been required at the time of the FIF application. If the projects are still viable and Pasadena is interested in still pursuing, our hope we can get your projects elevated and included in this plan. A link to your regional flood planning website for more information and a list of the currently included evaluations (FMEs) for Pasadena is below.

At your convenience we'd like to offer to sit down with you and your team to discuss the draft plan, any comments on the projects included so far, and to see how we might be obtain data to elevate your projects in the plan. More than happy to meet in person or online at your convenience; please let me know if you have any questions or would to discuss in the meantime.

Draft Project List for the San Jacinto Regional Flood Plan

FME ID	FME Name	Description	Estimated Study Cost
061000370	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 1	Further study to develop this project into a FMP. FIF application information unavailable.	\$30,000.00
061000371	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 2	Further study to develop this project into a FMP. FIF application information unavailable.	\$30,000.00

061000372	City of Pasadena - Hurricane Harvey Drainage Mitigation Project 3	Further study to develop this project into a FMP. FIF application information unavailable.	\$30,000.00
061000467	Middle Armand Bayou Protection Project	Further study to develop this project into a FMP. FIF application information unavailable.	\$30,000.00

<https://sanjacintofloodplanning.org/>

Best,

Brian Edmondson, PE, CFM | Stormwater Management | Freese and Nichols, Inc. | 281-650-7934 | Brian.edmondson@freese.com | www.freese.com



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December 1, 2022

Sarah Benavides, PE, CFM, Sr. Assistant Director of Public Works
City of Pasadena
3105 San Augustine Ave,
Pasadena, TX 77503

Re: Pasadena - San Jacinto Regional Flood Planning Opportunity

Dear Ms. Benavides, PE, CFM,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of Pasadena on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

We have updated the Flood Management Evaluations (FMEs) for the City of Pasadena based on the comments received indicating that the City is no longer pursuing them. The FMEs were revised to be “not recommended” by the RFPG to indicate the City is no longer pursuing the FMEs along with a note included as documentation of this change.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
Chairman
Industries

Alia Vinson
Vice Chairman
Water Districts

Erwin Burden
Secretary
Counties

Gene Fisseler
Executive Committee
Public

Matthew Barrett
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Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of Pearland

Maggie Puckett

From: Rajendra Shrestha <RShrestha@pearlandtx.gov>
Sent: Thursday, June 16, 2022 1:00 PM
To: Mariah@hollawayenv.com
Cc: San Jacinto RFPG Technical Consultant; San Jacinto RFPG Technical Consultant; Robert Upton; Rasika Perera
Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community
Attachments: Region 6 FMX_Pearland.xlsx

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Mariah,
Please find the attached spreadsheet. Please note that I have picked 8 projects applicable to the city. The rest of the projects are located outside of the city limit but located in the Drainage Districts' jurisdiction. As discussed, it is expected that the projects will be completed with no contribution from the City. Could you please update the status of project selection, assignment etc to me? Please let me know if you need additional information.

Thank you
Raj

Rajendra Shrestha, P.E.
City Engineer | Engineering & Capital
Projects
City of Pearland | 2016 Old Alvin | Pearland, TX
77581
P: 281.652.1649
pearlandtx.gov
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From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Monday, June 13, 2022 5:56 PM
To: Rajendra Shrestha <RShrestha@pearlandtx.gov>
Cc: 'San Jacinto RFPG Technical Consultant' <SJRFPG.TechCon@freese.com>; SJRFPG.TechCon@freese.com
Subject: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because Pearland is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table attached for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 - FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Wednesday, June 22 , 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Cory Stull | Technical Consultant (Freese and Nichols, Inc.)
San Jacinto Regional Flood Planning Group



December 1, 2022

Rajendra Shrestha, P.E.
City Engineer
City of Pearland
2016 Old Alvin
Pearland, Texas 77581

Re: Response to Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Dear Rajendra,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of Pearland on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The project sponsor for the identified FMEs has been updated from the City of Pearland to Brazoria County District No.4.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

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Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

**Public Comments related to the Texas Coastal Study and Lower Clear Creek
and Dickinson Bayou Flood Study**

Website Comments on the SJRFP DRAFT Plan

First name	Last name	City	County	Comment	Submission Date
Hank	Dugie	League City	Galveston	I support the inclusion of the Lower Clear Creek & Dickinson Bayou Study list of projects in the Regional Flood Plan. The Clear Creek Watershed Steering Committee and Dickinson Bayou Watershed Steering Committee both have been working with their more than 30 combined member entities to realize flood mitigation for their constituents. I believe moving these projects forward will save lives and livelihoods.	9/6/2022
Dave	Person	League City	Galveston	I support the Regional Flood Plan, particularly the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou as part of the Gulf Coast Protection District plan. I also endorse and support the 28 projects put forth by the Lower Clear Creek and Dickinson Bayou Watershed studies by their Committees. Thank you for enable me to provide my comment and support.	10/26/2022
Kyle	Duckett	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/27/2022
Rebecca	Hearn	League City	Galveston	Please support the funding for the Ike Dike project.	10/27/2022
Paul	Stringer	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/27/2022
Manssor	mokhtari	league city	Texas	I support the "IKE and Dike" snd serge protection for CCreek and Dickinson Bayou submitted by the (GCPD) to the San. Jacinto Flood Group as well as the 28 projects submitted by lower CCreek and Dickinson bayou water shed committees.	10/27/2022
Charles	Wrightington	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/27/2022
Bruce	Hochstetler	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/27/2022
Annie	Kennedy	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees. Thank you, Annie Kennedy	10/27/2022
Cynthia	Smedstad	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/27/2022
Yvette	Jones	League City	TX	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees. Thank you	10/27/2022
Lau	Kinney	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Cheryl	Steller	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Protection (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022

Website Comments on the SJRFP DRAFT Plan

First name	Last name	City	County	Comment	Submission Date
harry	engelhardt	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Johnnie	Person	Lea	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Marilyn	Smith	League City	Tx	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Kenneth	Cook	League city	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
John	Elton	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Melissa	Elton	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
George	Edgar	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Craig	Sovinsky	League City	TX	I DO NOT support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group. I DO support the other projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
David	Johnson	League City	TX	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Aline	Wilson	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
David	Thomas	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/28/2022
Michele	Dawson-Cash	League City	TX	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed Committees.	10/28/2022
Michele	Dawson-Cash	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed Committees.	10/28/2022
STEVE	ALSUP	LEAGUE CITY	GALVESTON	I support the Ike Dike and surge protection for Clear Creek and Dickson Bayou submitted by the Texas Gulf Coast Protection District to the San Jacinto Flood Group as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed Committes	10/29/2022
Amanda	Mapes	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/29/2022

Website Comments on the SJRFP DRAFT Plan

First name	Last name	City	County	Comment	Submission Date
Allen	Martin	LEAGUE CITY	TX	<p>I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.</p> <p>Can you help with the drainage in the Whispering Lake Ranch subdivision? My cell phone: (832) 724-6770</p> <p>Thank you, Ray Martin 3929 Pebble Brook Dr. League City, TX. 77573</p>	10/29/2022
John	Vollmer	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/29/2022
Alisa	Greer	League City	Galveston	I support the "Ike Dike" and surge protection for Clear Creek and Dickinson Bayou submitted by the Texas Gulf Coast Protection District (GCPD) to the San Jacinto Flood Group, as well as the 28 projects submitted by the Lower Clear Creek and Dickinson Bayou Watershed committees.	10/29/2022



December 1, 2022

Dave Person

Re: Thank you for Providing Comment on the DRAFT Regional Flood Plan for the San Jacinto Region

Dear Dave,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed your comments on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The RFPG has acknowledged the support for the projects listed. Please note that projects included in the RFP are not guaranteed to receive funding and the sponsor must demonstrate that projects meet applicable regulations and criteria. Any further comments regarding project specifics can be directed to the project sponsor.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment – Brandt Mannchen

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Friday, October 28, 2022 8:35 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good morning, Brandt,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

De: HubSpot Forms <noreply@hubspot.com>
Enviado el: Friday, October 28, 2022 7:37 AM
Para: Mariah Najmuddin <Mariah@hollawayenv.com>
Asunto: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

Brandt

Last name:

Mannchen

City:

Houston

County:

Harris

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

Dear TWDB and the San Jacinto Region Flood Planning Group,

I appreciate the opportunity to comment on the Draft San Jacinto Regional Flood Planning Group (Group) Flood Plan. I recreate in the San Jacinto River Watershed, especially in the upper watershed where Sam Houston National Forest is located. SHNF headwaters are the heart of this basin and should be

protected and not channelized due to their ground and surface water supply, storage, flood control, wildlife, wetland, aesthetics and scenic, and forest habitat values and benefits. A long-range flood plan should include these elements and protection of the entire riparian woodland and bottomland hardwood forested wetlands corridors along the entire river watershed. We need natural area protection and not more damaging and altering construction projects that allow development where it should never be allowed.

It's incomprehensible that the draft plan only includes structural projects with potential negative impacts and has failed to include any nature-based projects, like land acquisition and protection and conservation easements, as Flood Mitigation Projects.

The SJRFPG should recommend projects and legislative solutions to accomplish the goal that the regional flood plan adopted and that has at least what the law requires, "35% of all Flood Mitigation Strategies and Flood Mitigation Projects identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053." If the Group waits until 2033 and 2053, it will be too late, and development and population growth will have destroyed the natural riparian ecosystems that ensure flood and Nature protection.

The Group should approve projects that result in the preservation of the floodplain which allow floodwaters to spread where they do not cause damage.

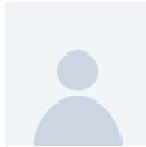
We need a major and significant program of buyouts for repeat flood structures, further land acquisition for natural floodplain protection, and the purchase of easements to pay private landowners who agree not to develop lands within the floodplain.

Funds must be made available through the legislative process and local, state, and federal administrative

processes to support nature-based practices through land conservation, restoration programs, and participation in landowner incentive programs to encourage voluntary land stewardship practices to manage floodwaters by slowing runoff and dissipating flood energy to include riparian, wetland, forest, upland, and other habitat protection programs.

Thank you.

[View in HubSpot](#)



- **CONTACT**
- Brandt Mannchen

This message was sent to mariah@hollawayenv.com because your preferences are set to receive notifications like this. You can change it in your [notification preferences](#) page.

sanjacstudy.com (Hub ID: 20336393)

HubSpot, Inc.
25 First Street, 2nd Floor
Cambridge, MA 02141



December 1, 2022

Brandt Mannchen

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Brandt Mannchen,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from HubSpot Form on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

In order for a project to meet the qualifications for inclusion in the plan as an FMP, the project must demonstrate no adverse impact as defined by the TWDB in *Exhibit C Technical Guidelines*. The San Jacinto RFPG encourages individuals to advocate for flood mitigation solutions, including those that incorporate nature-based components, in their communities and to encourage local entities to sponsor these actions. It should be noted that recommendation of an action by the San Jacinto RFPG does not serve as a specific endorsement of the action, but rather recommendation that the action be eligible for future funding assistance through the TWDB.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
Chairman
Industries

Alia Vinson
Vice Chairman
Water Districts

Erwin Burden
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Counties

Gene Fisseler
Executive Committee
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Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment – Erin Bainbridge

October 29, 2022

Erin Bainbridge
11606 Cypresswood Place Dr
Houston TX
77070

To Whom It May Concern,

Thank you for considering stakeholder input towards long-term flood mitigation planning in the San Jacinto region. As a resident of Houston, my family personally experienced flooding of our home and children's school during the Hurricane Harvey flood. Since that time, I've noticed continued development, and structural mitigation projects, being constructed in my area. It's critical for an experienced team such as the Region 6 San Jacinto Regional Flood Planning Group to be overseeing high-level planning that is integrated and provides a long-term, balanced approach to flood mitigation throughout this region.

As drafted, the plan currently lacks details regarding nature-based initiatives as part of the proposed Flood Mitigation Projects. Nature-based projects, such as riparian and wetland conservation and enhancement, and critical area or riparian setbacks could be included in certain areas as a complimentary tool to structural flood mitigation. Please consider funding for landowner incentive programs that encourage land stewardship - in my role as a Riparian Specialist with the Queensland Murray-Darling Committee, I witnessed first-hand the benefits of Landowner incentive programs for conservation and flood mitigation outcomes. These programs work! There are many opportunities for nature-based mitigation tools to be integrated into the planning now, so that both structural and nature-based initiatives can be managed concurrently for win-win scenarios.

Please consider recommending projects and legislative solutions to accomplish the goal that our regional flood plan has already adopted: “35% of all Flood Mitigation Strategies and Flood Mitigation Projects identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053.” The public (and obviously the environment) would benefit from including some details now regarding the types of nature-based planning that will be needed in the region as we move into the future.

Sincerely,
Erin Bainbridge, M.Sc. Vegetation Ecology
Houston TX
77070



December 1, 2022

Ms. Erin Bainbridge

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Ms. Bainbridge,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from you on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

We acknowledge your concern for a lack of detail regarding nature-based initiatives as part of the Flood Mitigation Projects (FMP). Nature-based solutions are a major interest of the RFPG, and we look to promote the use of nature-based solutions in flood mitigation efforts. There are Flood Management Evaluations (FME) within the Plan that considered nature-based approaches as singular alternatives but – taken collectively as part of broad strategy – did not meet the multi-objective FMP criteria as initially established by the TWDB. The Amended Regional Flood Plan will continue to seek the advancement of FMEs to FMPs. Furthermore, the RFPG has placed an emphasis on the promotion of nature-based FMEs. Additionally, two of the goals of the RFPG are to increase the number of Flood Management Strategies (FMS) and FMPs that include nature-based practices to at least 35% in the regional flood plan by 2033 and increase to 90% by 2053.

Recommendations by the San Jacinto RFPG do not serve as an endorsement of the actions, but rather that the actions be eligible for future funding assistance through the TWDB.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
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Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment – Leslie Gould

Maggie Puckett

From: Mariah@hollawayenv.com
Sent: Monday, October 31, 2022 11:42 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

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Good morning,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

Please reach out if you have any questions.

Best,

Mariah

From: HubSpot Forms <noreply@hubspot.com>
Sent: Saturday, October 29, 2022 5:29 PM
To: Mariah Najmuddin <Mariah@hollawayenv.com>
Subject: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



**New submission on HubSpot Form
"Comments on the DRAFT Regional Flood
Plan"**

First name:

Leslie

Last name:

Gould

City:

Katy

County:

Harris

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

I live at FM 529 and Katy Hockley Cut Off in a 22-year-old neighborhood that was built before we were placed in the flood plain in 2007. Consequently our homes are lower than the prolific neighboring development. Two homes out of 22 flooded in 2016 and 2017 and a new neighborhood is built downdip of us at least 4 feet higher than our homes, creating a dam where the floodwaters previously soaked into the "sponge" of the ground. We are concerned that these dams will cause our entire neighborhood to flood in the next extreme event.

We appreciate that the Texas Water Development Board is undertaking this technical and public process to create a long-range flood plan. We also appreciate the efforts by Region 6 San Jacinto Regional Flood Planning Group (SJRFPG)

We are disappointed to see that the draft plan has included only structural projects – some with potential negative impacts to the environment – and has not included any nature-based projects as Flood Mitigation Projects. We saw first-hand how preserving undeveloped land saved our neighborhood from flooding. We urge you to recommend projects and legislative solutions to accomplish the goal that the

regional flood plan adopted: "35% of all Flood Mitigation Strategies and Flood Mitigation Projects identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053." We understand that "cash is king" and developers rule, but at what cost to existing homes? Please approve projects that result in the preservation of the floodplain to allow floodwaters to spread where they do not cause damage.

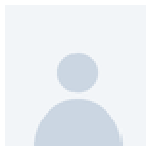
We support buyout programs for repeat flood structures and the purchase of easements to compensate private landowners who agree not to develop lands within the floodplain. As one county official told me, "It's like the wild west out there since they opened Grand Parkway north of I-10." The number of new neighborhoods and homes in this area is astonishing. Please allow funds to be made available through the legislative process to support nature-based practices through land conservation, restoration programs, and participation in landowner incentive programs to encourage voluntary land stewardship practices to manage floodwaters by slowing runoff and dissipating flood energy to include riparian, wetland, forest, upland, and other habitat protection programs.

Thank you for consideration of our request.

Leslie Gould

Hidden Forest Estates HOA

[View in HubSpot](#)



- **CONTACT**
- Leslie Gould



December 1, 2022

Ms. Leslie Gould

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Ms. Gould,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from you on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

We acknowledge your concern for a lack of detail regarding nature-based initiatives as part of the Flood Mitigation Projects (FMP). Nature-based solutions are a major interest of the RFPG, and we look to promote the use of nature-based solutions in flood mitigation efforts. There are Flood Management Evaluations (FME) within the Plan that considered nature-based approaches as singular alternatives but – taken collectively as part of broad strategy – did not meet the multi-objective FMP criteria as initially established by the TWDB. The Amended Regional Flood Plan will continue to seek the advancement of FMEs to FMPs. Furthermore, the RFPG has placed an emphasis on the promotion of nature-based FMEs. Additionally, two of the goals of the RFPG are to increase the number of Flood Management Strategies (FMS) and FMPs that include nature-based practices to at least 35% in the regional flood plan by 2033 and increase to 90% by 2053.

Recommendation by the San Jacinto RFPG does not serve as a specific endorsement of the actions, but rather recommendation that the actions be eligible for future funding through the TWDB.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
Chairman
Industries

Alia Vinson
Vice Chairman
Water Districts

Erwin Burden
Secretary
Counties

Gene Fisseler
Executive Committee
Public

Matthew Barrett
Executive Committee
River Authorities

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment - Margaret Schulenberg

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Friday, October 28, 2022 10:18 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good morning,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

De: HubSpot Forms <noreply@hubspot.com>
Enviado el: Friday, October 28, 2022 8:55 AM
Para: Mariah Najmuddin <Mariah@hollawayenv.com>
Asunto: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

Margaret

Last name:

Schulenberg

City:

Round Rock

County:

Williamson

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

Thank yo for undertaking long term flood planning.

I do have reservations about the dominance of structural efforts.

We have a long history of attempting to control flooding through structural efforts, and we have a long history of those failing, and often exacerbating the situation.

We have an opportunity to learn from the past and employ best practices.

I urge you to use focus on natural solutions that will allow us to both mitigate against flood and use nature to mitigate against extreme events for us.

One straight-forward measure is to use buy outs of homes in flood plains, and offering land owners compensation for managing their lands to slow runoff.

I urge you to adopt measures that will allow floods to dissipate, reducing their strength and allowing return of the waters to the land.

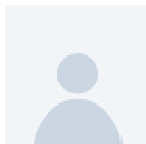
I urge you to favor, forward, and propose nature based solutions in accordance with the goal of “35% of all Flood Mitigation Strategies and Flood Mitigation Projects identified within the regional flood plan will incorporate nature-based practices by 2033 and 90% by 2053.”

Flood damage is expensive.

We have an important and critical opportunity to benefit people and the environment, land owners and the economy, if we take it and apply the nature based solutions known to work.

Thank you.

[View in HubSpot](#)



- **CONTACT**
- Margaret Schulenberg



December 1, 2022

Ms. Margaret Schulenberg

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Ms. Schulenberg,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from you on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

We acknowledge your concern for a lack of detail regarding nature-based initiatives as part of the Flood Mitigation Projects (FMP). Nature-based solutions are a major interest of the RFPG, and we look to promote the use of nature-based solutions in flood mitigation efforts. There are Flood Management Evaluations (FME) within the Plan that considered nature-based approaches as singular alternatives but – taken collectively as part of broad strategy – did not meet the multi-objective FMP criteria as initially established by the TWDB. The Amended Regional Flood Plan will continue to seek the advancement of FMEs to FMPs. Furthermore, the RFPG has placed an emphasis on the promotion of nature-based FMEs. Additionally, two of the goals of the RFPG are to increase the number of Flood Management Strategies (FMS) and FMPs that include nature-based practices to at least 35% in the regional flood plan by 2033 and increase to 90% by 2053.

Recommendation by the San Jacinto RFPG does not serve as a specific endorsement of the actions, but rather recommendation that the actions be eligible for future funding assistance through the TWDB.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

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Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment – Mark Hull

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Thursday, September 1, 2022 9:31 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Comments Received -- DRAFT Regional Flood Plan

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good morning Mr. Hull,

On behalf of the Technical Consultant, I want to thank you for your engagement with the San Jacinto Regional Flood Planning Group (SJRFPG).

I am confirming receipt of your comment regarding the analyses within the DRAFT Regional Flood Plan, and I have shared your comments with our Technical Consultant.

Additionally, the SJRFPG will host two open houses (in-person and virtual options) this month where you can learn more about the DRAFT Regional Flood Plan:

- Tuesday, Sept. 27, 2022, from 5:30 – 7:30 p.m. at the White Oak Conference Center, 7603 Antoine Dr., Houston, TX 77088
- Virtual Public Open House: Thursday, Sept. 29, 2022, from 5:30 – 7:30 p.m. (Register here to receive Zoom access information).

We hope you will be able to attend and look forward to engaging with you further regarding the DRAFT Regional Flood Plan.

Best,

Mariah Najmuddin

Mariah Najmuddin, MPP (she/her/ella)
Communications Specialist
Hollaway Environmental + Communications
2500 Summer Street, Suite 1130
Houston, TX 77007
O: 713.868.1043 | D: 346.223.1064
www.hollawayenv.com



HOLLAWAY
ENVIRONMENTAL + COMMUNICATIONS

HUB + DBE + WBE + WOSB CERTIFIED

From: HubSpot Forms <noreply@hubspot.com>

Sent: Thursday, September 1, 2022 9:15 AM

To: Mariah Najmuddin <Mariah@hollawayenv.com>

Subject: New submission on HubSpot Form "New form (August 9, 2022 12:48:18 PM EDT)"

CAUTION: Email from outside Hollaway



New submission on HubSpot Form "New form (August 9, 2022 12:48:18 PM EDT)"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

Mark

Last name:

Hull

City:

Balch Springs

County:

TX

Email:

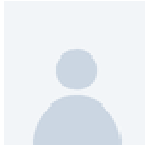
[REDACTED]

Comment on the DRAFT Regional Flood Plan:

I am seeing a consistent oversight in these kind of analysis. It is critical that sediment source/sinks within the watershed be evaluated, stream stability, sediment load sources hillslope or in channel (which is dominate)

to name just a few critical data points. Streams perform two function one is the movement of water and the other is the movement of sediment. It is critical to know what are the sediment sources, transport parameters, stream stability, etc. so areas of instability can be addressed lessening the impact on the system and reducing flooding risk. Engineers also need this data so they can design properly sized and oriented culverts and other structures reducing maintenance cost and flooding risk associated with system infilling (sedimentation which increase flooding).

View in HubSpot



- **CONTACT**
- Mark Hull

This message was sent to mariah@hollawayenv.com because your preferences are set to receive notifications like this. You can change it in your [notification preferences](#) page.

sanjacstudy.com (Hub ID: 20336393)

HubSpot, Inc.
25 First Street, 2nd Floor
Cambridge, MA 02141



December 1, 2022

Mr. Mark Hull

Re: Comment on the DRAFT Regional Flood Plan

Dear Mark,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed your comments on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

As mentioned, stream sedimentation and erosion can be an important aspect in flood planning. While not included in this initial regional flood planning cycle, information regarding stream erosion and sedimentation can be included in future planning cycles. This comment will be documented in Chapter 10 of the Regional Flood Plan and submitted to the Texas Water Development Board.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
Chairman
Industries

Alia Vinson
Vice Chairman
Water Districts

Erwin Burden
Secretary
Counties

Gene Fisseler
Executive Committee
Public

Matthew Barrett
Executive Committee
River Authorities

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment – Matt Gregory

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Monday, October 24, 2022 9:52 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: RE: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

This is an email from an EXTERNAL source. DO NOT click links or open attachments without positive sender verification of purpose. Never enter USERNAME, PASSWORD or sensitive information on linked pages from this email. Please report all suspicious messages using the Report Message button in Outlook.

Good morning, Matt,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

De: HubSpot Forms <noreply@hubspot.com>
Enviado el: Thursday, October 20, 2022 6:22 PM
Para: Mariah Najmuddin <Mariah@hollawayenv.com>
Asunto: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

Matt

Last name:

Gregory

City:

The Woodlands

County:

Harris

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

I oppose the plan due to the likely cost overruns and the fact that it will do little for actual flood control. Natural buffers such as flood plains and vegetation do far more for mitigating flood risks than dredging, channeling and other antiquated engineering methods.



December 1, 2022

Mr. Matt Gregory

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Matt,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed your comments on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The purpose of the regional flood plan is to collect projects and studies and make recommendations based on criteria developed by the TWDB. Please note that projects included in the RFP are not guaranteed to receive funding assistance and the sponsor must demonstrate that projects meet applicable regulations and criteria. Any further comments regarding project specifics can be directed to the project sponsor.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

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Matthew Barrett
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Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
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Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Public Comment – Melissa Krieg

Maggie Puckett

From: Mariah Najmuddin <Mariah@hollawayenv.com>
Sent: Monday, October 24, 2022 9:54 AM
To: [REDACTED]
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for your comment on the DRAFT Regional Flood Plan!

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Good morning, Melissa,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region.

As a reminder, the comment period ends on October 29th, 2022. You may provide additional comments via our website at the link below:

<https://sanjacintofloodplanning.org/technical-documents>

Additionally, printed copies of the DRAFT Regional Flood Plan are available at three locations across the San Jacinto Region:

**George and Cynthia Woods
Mitchell Library**
8125 Ashlane Way
The Woodlands, TX 77382

**McGovern -Stella Link
Neighborhood Library**
7405 Stella Link Road
Houston, TX 77025

Rosenburg Library
2310 Sealy Avenue
Galveston, TX 77550

Thank you again for your engagement with the San Jacinto Regional Flood Planning Group.

Best,

Mariah

De: HubSpot Forms <noreply@hubspot.com>
Enviado el: Thursday, October 20, 2022 5:06 PM
Para: Mariah Najmuddin <Mariah@hollawayenv.com>
Asunto: New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



New submission on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

Page submitted on: [Technical Documents - San Jacinto Regional Flood Planning](#)

First name:

Melissa

Last name:

Krieg

City:

The Woodlands

County:

Harris

Email:

[REDACTED]

Comment on the DRAFT Regional Flood Plan:

I'm appalled at the idea of turning the George Michell Preserve and Spring Creek into a drainage ditch. There is no way this is in keeping with the vision of The Woodlands to develop sensibly in harmony with nature. The solution is to stop allowing developers to build in flood plains. Also, what is the point in setting aside a nature preserve only to destroy it?



December 1, 2022

Mrs. Melissa Krieg

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Melissa,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed your comments on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

Thank you for engaging the RFPG regarding projects presented in the San Jacinto Master Drainage Plan. The purpose of the regional flood plan is to collect projects and studies and make recommendations based on criteria developed by the TWDB. Please note that projects included in the RFP are not guaranteed to receive funding assistance and the sponsor must demonstrate that projects meet applicable regulations and criteria. Documentation provided for the master plan included language stating the project would not have negative impacts according to guidelines specified by the TWDB. Therefore, no changes were made to the regional flood plan. Any further comments regarding project specifics can be directed to the project sponsor.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
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Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

San Jacinto River Authority

Maggie Puckett

From: Mariah@hollawayenv.com
Sent: Monday, October 31, 2022 12:01 PM
To: Matt Barrett
Cc: San Jacinto RFPG Technical Consultant
Subject: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region

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Good morning, Matt,

On behalf of the Technical Consultant, I want to thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto Region. We received both comment submissions.

Please reach out if you have any questions.

Best,

Mariah

From: HubSpot Forms <noreply@hubspot.com>
Sent: Saturday, October 29, 2022 6:58 PM
To: Mariah Najmuddin <Mariah@hollawayenv.com>
Subject: Contact reconversion by submitting on HubSpot Form "Comments on the DRAFT Regional Flood Plan"

CAUTION: Email from outside Hollaway



**Contact reconversion by submitting on
HubSpot Form "Comments on the DRAFT
Regional Flood Plan"**

First name:

Matt

Last name:

Barrett

City:

Conroe

County:

Montgomery

Email:

mbarrett@sjra.net

Comment on the DRAFT Regional Flood Plan:

Please find attached additional comments from Matt Barrett (San Jacinto River Authority).

File upload:

[06_RFP_Draft_Plan_V1-\(Matt-Barrett-Comments-on-Chapter-6\).pdf](#)

[Matt-Barrett-Comments-on-Draft-SJRFPG-RFP-Appendices-and-Additional-RFP-Comments.docx](#)

[View in HubSpot](#)



- **CONTACT**
- Matt Barrett



December 1, 2022

Matt Barrett
San Jacinto River Authority

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Matt,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The RFPG has acknowledged the comments made. Appropriate changes were made to the information presented and changes were incorporated into the final regional flood plan. This includes updating the information on Lake Conroe and Lake Houston, verifying the use of HMP and HMAP, verifying the existing infrastructure as stated, and updating relevant tables. We appreciate your comments and attention to the details of this plan. Detailed responses to markups provided on the draft regional flood plan will be coordinated with SJRA separate from this letter.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
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Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Texas Parks and Wildlife Department

October 27, 2022



Life's better outside.®

San Jacinto Regional Flood Planning Group
Harris County Engineering Department - SJRFPG Sponsor
1111 Fannin, 11th Floor
Houston, TX 77002

Re: 2023 San Jacinto Regional Flood Plan

Commissioners

Arch "Beaver" Aplin, III
Chairman
Lake Jackson

Dick Scott
Vice-Chairman
Wimberley

James E. Abell
Kilgore

Oliver J. Bell
Cleveland

Paul L. Foster
El Paso

Anna B. Galo
Laredo

Jeffery D. Hildebrand
Houston

Robert L. "Bobby" Patton, Jr.
Fort Worth

Travis B. "Blake" Rowling
Dallas

Lee M. Bass
Chairman-Emeritus
Fort Worth

T. Dan Friedkin
Chairman-Emeritus
Houston

Carter P. Smith
Executive Director

Dear Tim Buscha:

In 2019 Senate Bills 7 and 8 established a regional and state flood planning process for Texas, aimed at better managing flood risk to reduce loss of life and property. As part of the process, Texas Parks and Wildlife Department (TPWD) was identified as a member of the regional flood planning groups (Texas Water Code Sec. 16.062). The mission of TPWD is to manage and conserve the natural and cultural resources of Texas and its ability to provide opportunities of hunting, fishing, and outdoor recreation for the use and enjoyment of present and future generations. TPWD values this opportunity to contribute to the flood planning process with the goal of enhancing flood risk management and achieving beneficial flood mitigation outcomes. Toward this effort TPWD members serve a dual role of supporting the voting membership in development of the plans and representing the natural resource interests of the state.

TPWD applauds the San Jacinto Regional Flood Planning Group (RFPG) for their efforts in completing the inaugural regional flood plan (RFP). Through the exceptional efforts of the RFPG, this plan will be a meaningful tool for reducing flood impacts to society, especially in those disastrous events that cause loss of life and injury. Because this represents the initial region-wide plan, it has the potential to be precedent setting for subsequent iterations. As such, it is important this plan recognizes the role nature and nature-based solutions can play in flood risk management and promotes opportunities to protect, enhance and restore the flood mitigation benefits provided by natural landforms.

TPWD is supportive of the planning process outlined by the Texas Water Development Board (TWDB) because it aims to achieve an integrative flood risk management (FRM) approach that prioritizes risk reduction through implementation of floodplain management, land use regulations, policy, and a balanced use of grey and natural and nature-based (NNBS) flood mitigation measures that are formed by inclusive participation at all levels of society. TPWD believes this integrative approach when implemented holistically will achieve the maximum benefits for society and natural ecosystems while minimizing environmental impacts. Recent published works on FRM and NNBS (Bridges et al 2021, Glick et al 2020, World Wildlife Fund 2016, Sayers et al 2013) support TWDB integrative flood management approach and provide extensive resources for flood planners.

In the interest of achieving the states flood risk management goals while protecting the state's fish and wildlife resources, TPWD reviewed regional flood plans based on the

TWDB guidance principals as described in 31 TAC § 361 and 362. Special focus was provided on the following subset of guidance principals due to its relevance to fish and wildlife management.

- Does the draft flood plan use the best available science, data, models, and flood risk mapping?
- Does the draft flood plan consider the potential upstream and downstream effects, including environmental, of potential flood management strategies (and associated projects) of neighboring areas?
- Does the draft flood plan include strategies and projects that provide for a balance of structural and non-structural flood mitigation measures, including projects that use nature-based features that lead to long-term mitigation of flood risk?
- Does the draft flood plan consider natural systems and beneficial functions of floodplains, including flood peak attenuation and ecosystem services?
- Does the draft flood plan encourage flood mitigation design approaches that work with, rather than against, natural patterns and conditions of floodplains?
- Does the draft flood plan seek to not cause long-term impairment to the designated water quality as shown in the state water quality management plan as a result of a recommended flood management strategy or project?
- Does the draft flood plan consider benefits of flood management strategies to water quality, fish and wildlife, ecosystem function, and recreation, as appropriate?
- Does the draft flood plan minimize adverse environmental impacts and be in accordance with adopted environmental flow standards?
- Does the draft flood plan consider multi-use opportunities such as green space, parks, water quality, or recreation, portions of which could be funded, constructed, and or maintained by additional, third-party project participants?

Additionally, TPWD emphasizes that the following FRM concepts identified in the forementioned literature be incorporated into the RFP.

- Flood is a natural process that has many benefits to human and natural systems.
- Promoting some flooding as desirable and making room for water promotes native species, maintains vital ecosystem services, and reduces the chance of flooding elsewhere.
- Natural landscapes and watersheds provide flood mitigation functions that should be promoted, protected, enhanced, and restored.
- Prioritize risk reduction over flood control by focusing first on reducing loss of life and injury.
- Utilize limited resources fairly.
- Address flood risk using a portfolio approach, first implement non-structural (policy, land management, emergency management) followed by structural (grey and natural and nature-based) strategies.
- Criteria for assessing projects strategies should include a comprehensive suite of measures spanning economical, operational, societal, and environmental

- advantages and disadvantages. Assessments focusing on economics alone (number of buildings, acres) should be avoided.

San Jacinto Regional Flood Planning Comments

TPWD recommends including the benefits of flooding and the ecological role it plays in Chapter 1 of the RFP. Leaving this critical information out could be a missed opportunity to capitalize on existing natural infrastructure and ecosystem services. Some of the human benefits of floods include recharging of groundwater systems and filling water supply reservoirs. Floodwaters also transport and deposit sediment

and nutrients which can increase the soils fertility. Many fish and wildlife species also depend on periodic or seasonal flooding for some aspect of their life history. Waterfowl, for example, utilize inundated bottomland hardwood floodplains for habitat and source food supplies during winter months. Also, Alligator Gar utilize shallow inundated floodplains during the spring and summer to reproduce.

Additionally, TPWD recommends describing forested cover and land areas with ranching use as potential natural infrastructure rather than only specifying the potentially negative impacts of flooding to these areas. It is true that flooding can eventually cause damage to these areas with long periods of inundation. However, these areas have the potential to greatly increase water storage during flooding events.

When recommending minimum standards for floodplain management practices in Chapter 3, preservation of the floodplain was mentioned. TPWD recommends including additional emphasis on floodplain restoration as well, wherever applicable. This would ultimately increase the overall benefits that functioning natural floodplains provide.

Multiple recommended FMPs in Chapter 5 involve channelization of streams. These projects may increase drainage and water velocity of the stream but ultimately have negative impacts on the ecosystem. When stream channelization occurs, the natural morphology is lost which decreases the habitat quality for a whole host of fish and wildlife species. Also, the potential for erosion is significantly increased and water quality is diminished. Restoring and conserving the natural stream channel and the land adjacent to is optimal for the ecosystem's health as well as flood mitigation efforts.

October 28, 2022

Page 4

Thank you for your consideration of these comments. TPWD looks forward to continuing to work with the planning group to develop flood plans that protect life and property but are also beneficial to the environment. Please contact me at (512) 389 – 8214 or at Marty.Kelly@TPWD.Texas.gov or Hope Zubek at (936) 553 – 7641 or at Hope.Zubek@TPWD.Texas.gov if you have any questions or comments.

Sincerely,

A handwritten signature in black ink that reads "Marty Kelly". The signature is written in a cursive, flowing style.

Marty Kelly
Water Resources Program Coordinator

MK:hb

References

Bridges, T. S., J. K. King, J. D. Simm, M. W. Beck, G. Collins, Q. Lodder, and R. K. Mohan, eds. 2021. International Guidelines on Natural and Nature-Based Features for Flood Risk Management. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Glick, P., E. Powell, S. Schlesinger, J. Ritter, B.A. Stein, and A. Fuller. 2020. The Protective Value of Nature: A Review of the Effectiveness of Natural Infrastructure for Hazard Risk Reduction. Washington, DC:

World Wildlife Fund. 2016. Natural and Nature-based Flood Management: A Green Guide. Washington, DC: World Wildlife Fund. <http://envirom.org/flood-managment> 2016 WWF.

P. Sayers, Y. L.i, G. Galloway, E. Penning-Rowsell, F. Shen, K. Wen, Y. Chen, and T. Le Quesne. 2013. Flood Risk Management: A Strategic Approach. Paris, UNESCO.



December 1, 2022

Mr. Marty Kelly, Water Resources Program Coordinator
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744-3291

Re: Thank you for providing comment on the DRAFT Regional Flood Plan for the San Jacinto

Dear Mr. Kelly,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the Texas Parks and Wildlife Department (TPWD) on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The Draft Regional Flood Plan utilizes the best available data for the planning level study. Extensive data collection efforts were conducted for the San Jacinto region to collect the most up to date data available for use in the development of the Regional Flood Plan.

Chapter 1 of the Draft Regional Flood Plan has been revised to incorporate discussion on the use of forested and ranching areas as potential natural infrastructure (Section 1.A.6) and discussion on the benefits of flooding and its ecological role (Section 1.A.2.a).

The Draft Regional Flood Plan considers potential upstream and downstream effects with a requirement that projects show no negative impacts to neighboring areas to be included as a Flood Mitigation Projects (FMP) in the Regional Flood Plan. Environmental effects of potential projects and strategies may not be explicitly reviewed within the Regional Flood Plan but should adhere to all requirements and guidelines when the projects or strategies are implemented. Additionally, the Regional Flood Plan states that design and construction of projects should be performed in a manner that avoids or minimizes environmental impacts as well as consideration be given to environmentally sensitive areas to reduce environmental impact and maintain the undisturbed condition and existing drainage of natural areas.

Nature-based solutions are a major interest of the RFPG, and we look to promote the use of nature-based solutions in flood mitigation efforts. There are Flood Management Evaluations (FME) that consider the use of nature-based solutions but did not meet the criteria to be considered an FMP. An additional effort will be conducted as part of the Amended Regional Flood Plan that seeks to elevate FMEs to FMPs and the RFPG has placed an emphasis on the promotion of nature-based solutions in the FMEs that are evaluated. Two goals of the RFPG are to increase the number of Flood Mitigation Strategies (FMS) and FMPs that include nature-based practices to at least 35% in the regional flood plan by 2033 and increase to 90% by 2053. Further encouragement of

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

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Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison



nature-based solutions by the RFPG has the potential to lead to flood mitigation design approaches that work with natural patterns and conditions of floodplains.

The Draft Regional Flood Plan does not explicitly consider benefits of FMSs to water quality, fish and wildlife, ecosystem function, and recreation. However, these are all important benefits to consider for FMSs and could potentially be incorporated into future Regional Flood Planning cycles as a benefit metric for FMSs.

The Draft Regional Flood Plan places emphasis on the preservation of floodplains including a recommended minimum standard to preserve areas of floodplain. Floodplain restoration is an important topic and may be incorporated into future Regional Flood Planning cycles as a potential goal of the RFPG. Encouraging floodplain preservation throughout the San Jacinto region serves as the foundation for future Regional Flood Plans to build from.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Texas Department of Transportation

TABLE 8-2: REGULATORY AND ADMINISTRATIVE RECOMMENDATIONS

	Recommendation	Discussion
5	<p>The Texas Department of Transportation <u>Houston District</u> (TxDOT (Houston District)) <u>uses design criteria for drainage commensurate with the roadway classification. should For highways and evacuation routes, Houston District uses drainage criteria requiring that the roadway profile is at or above the 1% water surface elevation profile. Houston District already considers using a stricter design criteria for Farm to Market roadways and State Highway roadways up to and including the 1% event profile where this is warranted, feasible and practical. employ roadway design criteria to require all new and reconstructed state roadways to be designed and constructed, to the extent practicable, at elevations at or above the 1.0% ACE water surface elevation if determined with Atlas 14 rainfall. The 0.2% ACE water surface elevation should be used to determine elevation if Atlas 14 has not yet been adopted. TxDOT should also consider future conditions, such as urbanization and climate variability, in its roadway design criteria for drainage and flood risk reduction.</u></p>	<p>TxDOT is not a participant in the NFIP and does not in all cases design roadways in a manner consistent with minimum NFIP requirements. It is recognized that, by their nature, The Houston District strives to design projects to better roadway drainage using sound drainage criteria. It is often not feasible or practicable to design and construct roadways to provide a level of flood protection equivalent to or greater than the 1.0% annual chance storm event. However, as a matter of policy and practice, TxDOT Houston District should continue to strive to meet this standard, especially for critical infrastructure such as evacuation and emergency routes. By not acting on this recommendation, newly built transportation infrastructure could be at risk of extreme event flooding.</p>
6	<p>Recommend a statewide building standard of a minimum finished floor elevation to be established at or waterproofed to the FEMA effective 0.2% annual chance flood elevation as shown on effective Flood Insurance Studies except in areas designated as coastal flood zones or at the 1.0% annual chance flood elevation where Atlas 14 has been adopted.</p>	<p>The TWDB should encourage and incentivize higher building standards than those minimally required by federal regulations. This is especially true on minimum base flood elevations (BFEs) where recent events of historic flooding and updated rainfall totals by the National Oceanic and Atmospheric Administration Atlas 14 have revealed how much BFEs can change over time. New studies occurring across the state now expect to see increases of BFEs once the new Atlas 14 data is incorporated into models and maps. Jurisdictions that have required a freeboard over the current BFE have mitigated the risk of these increasing BFEs.</p>

Commented [AG1]: This doc is for San Jac Region. Please specify Houston District throughout. TxDOT implies statewide.

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7	Clarify the process and investment required to take Base Level Engineering (BLE) data to regulatory BLE information on a Flood Insurance Rate Map (FIRM) panel and alternatively, detailed study on a FIRM panel.	BLE is an efficient modeling and mapping approach that aims to provide technically credible flood hazard data at various geographic scales such as community, county, watershed, and/or state level. Currently the state and FEMA are heavily investing in BLE across the state and there is a need to clearly communicate to local jurisdictions how to make this data regulatory or, if desired, improve upon it to make it eligible for incorporation into a detailed study on a FIRM. The steps for both paths remain unclear to many local jurisdictions and this large investment could be further leveraged.
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December 1, 2022

Mr. Alfred Garcia, PE, MS
Texas Department of Transportation

Re: San Jacinto Regional Flood Planning Group

Dear Alfred,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from The Texas Department of Transportation (TxDOT) on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The San Jacinto region does not follow county boundaries and does not fully encompass all counties within the TxDOT – Houston District’s boundary. The San Jacinto region also includes counties beyond the TxDOT - Houston District, therefore it would not be appropriate for the San Jacinto regional flood plan to specify TxDOT as Houston District throughout the plan. The proposed updates to the regulatory and administrative recommendation (5) within Chapter 8 of the plan were reviewed. Changes proposed to Chapter 8 would restrict recommendation to the Houston District and substantively alter the recommendation that was previously approved by the RFPG. For these reasons, the requested content updates will not be made.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Texas Water Development Board

October 13, 2022

Fatima Berrios
Assistant Project Manager
Harris County Engineering - Recovery and Resilience Division
13105 Northwest Freeway
Houston, TX 77040

RE: Texas Water Development Board Comments on Region 6 San Jacinto RFPG's Draft Regional Flood Plan Contract No. 210179249

Dear Ms. Berrios,

Texas Water Development Board (TWDB) staff has performed a review of the draft regional flood plan submitted by August 1, 2022, on behalf of the Region 6 San Jacinto Regional Flood Planning Group (RFPG). The attached comments will follow this format:

- **LEVEL 1:** Comments and questions that must be satisfactorily addressed to meet specific statute, rule, or contract requirements; and,
- **LEVEL 2:** Comments and suggestions for consideration that may improve the readability and/or overall understanding of the regional flood plan

Please note that while Level 2 comments are provided for the planning group's consideration, Level 1 comments must be addressed prior to the submission of final Regional Flood Plans by the January 10, 2023, deadline.

It is expected that the data contained in all written report sections, tables, excel spreadsheets, and the geodatabase will be consistent throughout. In cases where there are any discrepancies in data, the geodatabase dataset will supersede other data and the TWDB will utilize the geodatabase dataset when developing the state flood plan.

TWDB review of the draft regional flood plans is comprised of many spot checks of data across several deliverables and is not an all-encompassing data review. Please note that TWDB's review does not imply accuracy of the draft regional flood plan. Each RFPG is responsible for ensuring the completeness and accuracy of the plan and all associated data.

To facilitate efficient and timely completion, and Board approval, of your final regional flood plan, please provide your TWDB Regional Flood Planner with a draft of your response to these comments (e.g., informally via email) on the draft RFP as soon as possible. This will allow TWDB staff to provide preliminary feedback on proposed RFPG responses to assist you in meeting your RFPG's timeline for approval and submission to TWDB of the final plan by the deadline. It will also help to minimize the need for subsequent follow-ups after final regional flood plan submission to TWDB.

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Board Members

Brooke T. Paup, Chairwoman | George B. Peyton V, Board Member
Jeff Walker, Executive Administrator

Title 31 TAC §361.50(c) requires the regional flood planning group to consider any written or oral Comment received from the public on the draft regional flood plan (RFP); and the EA's written comment on the draft RFP prior to adopting a final RFP. Section 361.50(d) requires the final adopted plan include summaries of all timely written and oral comments received, along with a response, for each, explaining any resulting revisions or why changes are not warranted. Copies of TWDB's Level 1 and 2 written comments and the RFPG's responses must be included in the final, adopted RFP. While the comments included in this letter represent TWDB's review to date, please anticipate the need to respond to additional comments or questions, as necessary, regarding data integrity related to the Board's State Flood Plan Database (that is built from the 15 regional databases), even after submission of the final plan to TWDB.

Standard to all RFPGs is the need to include certain content in the final RFPs that was not yet available at the time that drafts were prepared and submitted. In your final RFP, please be sure to incorporate in the final submitted plan, documentation, for example, that a public meeting to receive comments were held as required and that comments received on the draft RFP was considered in the development of the final plan [31 TAC §361.50(d)].

If you have any questions regarding these comments or would like to discuss your approach to addressing any of these comments, please do not hesitate to contact Megan Ingram at 512-475-1590 or via email at megan.ingram@twdb.texas.gov. TWDB staff are available to assist you in any way possible to ensure successful completion of your final regional flood plan.

Lastly, on behalf of TWDB, I would like to thank you, the sponsor, the RFPG members and the technical consultants for accomplishing this major milestone of a herculean effort and advancing the flood risk reduction mission in our state.

Sincerely,

Reem J. Zoun, PE, CFM, ENV SP
Director
Flood Planning

Attachment: TWDB Comments

Cc: Tim Buscha, RFPG Chair
Cory Stull, Freese and Nichols
Maggie Puckett, Freese and Nichols
Matt Nelson, TWDB
James Bronikowski, TWDB
Anita Machiavello, TWDB
Megan Ingram, TWDB

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Jeff Walker, Executive Administrator

October 13, 2022

TWDB Comments on Region 6 San Jacinto Regional Flood Planning Group's Draft Regional Flood Plan

Level 1: Comments and questions must be satisfactorily addressed to meet statutory, agency rule, and/or contract requirements.

General Comments

1. Please ensure that all "Submittal requirements" identified in each of the Exhibit C Guidance document sections are submitted in the final flood plan.

Executive Summary

2. Please clearly identify Chapter 0. Introduction as the Executive Summary in the table of contents of the report.

SOW Task 1

3. Entities GIS Feature Class, *Entities*:
 - a. There appears to be more entities in the GIS feature class (#1092) than what is stated in the in-text Table 1-3 (#1088). Please ensure data consistency across all related deliverables.
 - b. It appears that some entities crossing regional boundaries do not start with "00" as required. For additional entities crossing region boundaries, an ID should be requested from TWDB to ensure consistency across regions. Regions may create their own IDs for additional entities entirely within the region, and please refer to the TWDB email sent on December 3, 2021 for more information on adding new entities.
 - c. It appears that some fields contain invalid entries, including 'ENT_TYPE'. Please complete all required fields with valid entries per Exhibit D Table 3 [31 TAC §361.30(4) & (5), Exhibit D Section 3.1].
4. Existing Projects Table (Exhibit C Table 2): Please include the project costs for listed projects or address why the information is not included in the summary description [31 TAC §361.32].
5. Existing Infrastructure GIS Feature Class, *ExFldInfraPt*: Please include all low water crossings (LWCs) identified during the flood planning process in this feature layer. The *ExFldExpAll* feature class appears to contain LWCs that are not included in the *ExFldInfraPt* feature class. Note: This is required in contrast to the optional LWC feature class. See Table 7 of Exhibit D for a list of valid entries [31 TAC §361.31].
6. Existing Projects GIS Feature Class, *ExFldProjs*:
 - a. Please use the specified format for all ID fields, such as EXHAZ_ID. Please confirm that all "NULL" or "999999" values utilized represent either "not applicable" or "unknown" unless, otherwise specified. It appears that some required fields are missing entries, including 'COST' and 'COMP_YR'. Please utilize Null for numeric fields represent either "not applicable" or "unknown". Please ensure all required fields are populated with valid entries per Exhibit D Table 8 [31 TAC §361.32].

SOW Task 2A

7. Existing Condition Flood Hazard Analysis: Please include total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency as per guidance document (Exhibit C page 24): Submittal requirement number 2. A mention of total land area in the report text and a reference to the appropriate appendix with detailed information will suffice.
8. Existing Condition Flood Exposure Table (Exhibit C Table 3):
 - a. For Brazoria County, the Population total does not appear to match the maximum of day and night populations in the table. Please review and reconcile.
 - b. The Structure and Residential Structure counts in Table 3 do not appear to match the *ExFldExpAll* feature class. Please ensure consistency across all related deliverables [31 TAC §361.33(b)].
9. Existing Condition Flood Exposure + Vulnerability GIS Feature Class, *ExFldExpAll*: It appears that some fields are missing entries, including 'FLOOD_FREQ' and 'ENTITY_ID'. Please complete all required fields with valid entries per Exhibit D Table 14. Please ensure there are no "NULL" values for the 'FLOOD_FREQ' field [31 TAC §361.33(c), (d)].
10. Model Coverage GIS Feature Class, *ModelCoverage*: It appears that some fields contain invalid/missing entries, including 'MODEL_TYPE' and 'MODEL_SOFTW'. Please complete all required fields with valid entries per TWDB email Jan 31, 2022 [31 TAC §361.33(b)(2)].

SOW Task 2B

11. Future Condition Flood Hazard Analysis: Please include total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency as per Exhibit C Guidance document (page 33): Submittal requirement number 3. A mention of total land area in the report text and a reference to the appropriate appendix with detailed information will suffice [31 TAC §361.34].
12. Future Condition Flood Exposure + Vulnerability GIS Feature Class, *FutFldExpAll*: It appears that some fields are missing entries, including 'FLOOD_FREQ'. Please complete all required fields with valid entries per Exhibit D Table 19. Please ensure there are no "NULL" values for the 'FLOOD_FREQ' field [31 TAC §361.34(c)].

SOW Task 3A

13. Existing Floodplain Management Practices Table (Exhibit C Table 6): Table 6 appears to include cities and counties but appears to not include other political subdivision types with flood-related authority. Please review and reconcile [31 TAC §361.35, Exhibit C Section 2.3.A].

SOW Task 4B

14. Streams GIS Feature Class, *Streams*: Please ensure that all ID fields are entered correctly. For example, the field 'STREAM_ID' appears that it should have one additional digit. Unique IDs must be accurate for the database to connect and work properly. Please refer to Exhibit D Table 2 or more recent updates for Unique ID guidance [Exhibit D Section 3.9].
15. Flood Management Evaluations (FME) Table (Exhibit C Table 12):
 - a. The City of West University Place Master Drainage Plan FME (FME_ID=061000297) appears to have different costs when comparing Table 12 to the *FME* feature class.

In the *FME* feature class, it is shown with an 'FME_COST' of \$30,000,000, while Table 12 lists an Estimated Study Cost of \$190,000. Please review and reconcile.

- b. Please ensure that data is provided for all required fields. Acceptable entries can include "0", "Unknown", or "NA", as appropriate [31 TAC §361.38(i), Exhibit C Section 2.4.B].
16. Flood Management Evaluations GIS Feature Class, *FME*: Please refrain from using numeric placeholders (such as '999999') in numeric fields such as 'FUND_AMNT' as this causes errors in calculations. Please use "Null" when the field is not applicable or unknown [31 TAC §361.38(i), Exhibit D Section 3.10].
17. Flood Management Evaluations (FME) Map (Exhibit C Map 16): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study [31 TAC §361.38(m), Exhibit C Section 2.4.B].
18. Flood Mitigation Projects (FMP) Table (Exhibit C Table 13): All field values with 999999 in the FMP feature class appear to be represented as 0.0 in Table 13. Please consider revising for consistency [31 TAC §361.38(c-e), Exhibit C Section 2.4.B].
19. Flood Mitigation Projects GIS Feature Class, *FMP*:
 - a. Please review the 'BC_RATIO' values as many entries include "999999". Please review and revise, as appropriate, to include required 'BC_RATIO' values.
 - b. Please avoid using numeric placeholders (such as '-999999') in numeric fields as this causes errors in calculations. Please leave NULL when the field is not applicable or unknown [31 TAC §361.38(c-e), Exhibit D Section 3.11.1].
20. Flood Management Strategies GIS Feature Class, *FMS*:
 - a. Please avoid using numeric placeholders (such as "-999999") in numeric fields because this causes errors in calculations. Please leave NULL when the field is not applicable or unknown.

SOW Task 5

21. Flood Management Evaluation Recommendations Table (Exhibit C Table 15):
 - a. Please avoid using numeric placeholders (such as '-999999') in numeric fields because this causes errors in calculations. Please leave NULL when the field is not applicable or unknown [31 TAC §361.39(f)].
22. Flood Management Evaluation Recommendations Map (Exhibit C Map 19): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study [31 TAC §361.39].
23. Flood Mitigation Project (FMP) Recommendations GIS Feature Class, *FMP*:
 - a. Please avoid using numeric placeholders (such as '-999999') in numeric fields because this causes errors in calculations. Please leave NULL when the field is not applicable or unknown.
 - b. It appears that some fields are missing entries. Please complete all required fields with valid entries per Exhibit D Table 24 [31 TAC §361.39, Section Exhibit D Section 3.11.1].

24. FMP Details Table (Exhibit C Tables 23-40) and FMP Details Geodatabase, *FMP_Details*: There appear to be inconsistencies in dollar amounts between 'FMP_COST' in Exhibit C summary table, and the *FMP_DETAILS* and *FMP* feature classes. Please review and reconcile [31 TAC §361.39, Exhibit C Section 2.5.B].
25. Flood Management Strategy (FMS) Recommendations GIS Feature Class, *FMS*:
- Please avoid using numeric placeholders (such as '-999999') in numeric fields because this causes errors in calculations. Please leave NULL when the field is not applicable or unknown.
26. Flood Mitigation Project (FMP) Recommendations: Each recommended FMP must be accompanied with an associated model or supporting documentation to show no negative impact. Please confirm that this was done and provide reference to supporting materials. As per the draft report (page 4-125), "For structural FMPs and FMSs, signed and sealed reports were checked for certified statements that the associated project or strategy would not cause negative impacts upstream, downstream, or within the project area in events up to and including the 1.0% ACE." For each recommended FMP, please identify in the plan how no negative impact was determined as required by the Exhibit C Section 3.6.A (page 108), either via a model or a study, and submit the associated model or include the study name in tabular format.

SOW Task 6B

27. Water Supply text: Please include north arrow and a reference scale as part of all map submissions per Exhibit C Section 3.10. For example, Figure 6-1 appears to be missing a north arrow and reference scale [31 TAC §361.41].

SOW Task 9

28. Flood Infrastructure Financing text: It appears that the draft plan does not describe how the data was collected. Please provide this required information. [31 TAC §361.44, Exhibit C Section 2.9]

Level 2: Comments and suggestions for consideration that may improve the readability and overall understanding of the regional flood plan.

SOW Task 1

29. Entities GIS Feature Class, Entities: Some entities appear to be listed as not active in planning yet are NFIP participants. Please consider reviewing and reconciling, as appropriate.
30. Watersheds GIS Feature Class, Watersheds: Please consider linking this feature class to any relevant FME, FMS, or FMP when appropriate by populating the associated ID fields.
31. Existing Infrastructure text: Please provide a description of how Low Water Crossings were identified within the text of Chapter 1.
32. Existing Infrastructure GIS Feature Class, ExFldInfraPt: There appear to be Low Water Crossings in the TNRIS dataset, which are not included in this feature class. Please consider revising, as appropriate.

SOW Task 2A

33. Existing Condition Flood Exposure + Vulnerability GIS Feature Class, ExFldExpAll:

- a. There appear to be several features with SVI value of 0. Please consider reviewing these points.
 - b. If the 'CRITICAL' field contains a 'No' entry, then please leave 'CRIT_TYPE' as NULL.
- 34. Existing Condition Flood Exposure GIS Feature Class, *ExFldExpPol*: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please review and revise, as appropriate [31 TAC §361.33(c)].
- 35. Model Coverage text:
 - a. Please consider providing additional details consistent with the *ModelCoverage* feature class in the Appendix 2A-5 table.
 - b. Please consider elaborating the text to describe how models have been and/or will be selected.

SOW Task 2B

- 36. Future Condition Flood Vulnerability text: The top of Figure 2-18 appears blurry and may be hard for some readers to read, especially when printed with green text on green background. Please consider modifying.
- 37. Future Condition Flood Exposure GIS Feature Class, *FutFldExpPol*: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon. Please review and revise, as appropriate [31 TAC §361.34(c)].
- 38. Future Condition Flood Exposure GIS Feature Class, *FutFldExpLn*: There are several features with 'EXP_DESC' listed as "Y GRADE PRODUCTS", that appear to be disconnected single line segments. For example, FTEXPLN_ID 060072963. Please consider reviewing those lines to make sure they are correct.

SOW Task 3A

- 39. Existing Floodplain Management Practices text: Please consider adding the phrasing "at or above" on Page 120 in the description of structures elevated above the BFE, if appropriate.
- 40. Floodplain Management Table (Exhibit C Table 6): There appear to be inconsistencies within the table. For example, City of Bayou Vista is listed as "No" for Higher Standards Adopted but is listed as Moderate for Floodplain Management Practices, and City of Cold Spring is listed as "No" for Floodplain Management Regulations, but Yes to NFIP Participant. Please consider revisiting for accuracy, as appropriate.
- 41. Floodplain Management GIS Feature Class, *ExFpMp*:
 - a. This feature class appears to include COGs and LIDs, please consider, as appropriate, confirming that these have flood authority.
 - b. Coldspring is listed as "No" for the 'FLD_REG' field, yet it is a NFIP participant. Please consider revisiting for accuracy, as appropriate.

SOW Task 3B

- 42. Goals text: Please consider elaborating the text section of "Transformed and Residual Risk" to include descriptions of such risks as they apply if goals are achieved.

SOW Task 4B

43. Streams GIS Feature Class, Streams: Please consider linking this feature class to any relevant FME, FMS, or FMP when appropriate by populating the associated ID fields.
44. Flood Management Evaluation (FME) text:
- Please consider reviewing *Watersheds* and *FME* feature classes for alignment. For example, FME_ID 061000181 does not appear to align with the boundaries in the *Watersheds* feature class.
 - For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please include justification how the strategy benefits the region and please coordinate with other RFPGs to make sure the efforts are not duplicated.
 - For those areas in RFPG with existing BLE models, state how the FME will improve upon the current BLE models. BLE is available for the entire Region 6. For reference the BLE data is available here: <https://webapps.usgs.gov/infrm/estbfe/>
 - In areas where there is an ongoing TWDB-funded FIF Category 1 study, please describe how this would be incorporated into the proposed FME. For example, FME_ID 061000463. Please review FIF IDs 40016, 40074, 40035, 40037, 40047, 40061.
 - Please consider if some FMEs should be FMPs. For example, see FME_IDs 061000147 and 061000148, where the name and description appear to indicate this action involves an infrastructure project. Please consider expanding description field to clarify why it is an FME or consider moving to FMP category if appropriate.
45. Flood Management Evaluation GIS Feature Class, *FME*: Please consider filling out 'MODEL_DESC' field for clarity on existing studies to be used. Please make sure to document existing or ongoing BLE and TWDB-funded FIF studies.
46. Flood Management Evaluations Recommendations GIS Feature Class, *FME*: Please consider adding the 'ASSOCIATED' field to the *FME* feature class and populating as applicable.
- Please ensure all required fields are populated with valid entries.
47. Flood Management Evaluation Map (Exhibit C Map 16): Countywide FMEs appear to be clipped to the RFPG boundary in the map, but not in the *FME* feature class. Please consider revising.
48. Flood Mitigation Project GIS Feature Class, *FMP*:
- The Brazoria countywide FMP_ID 063000136 appears to be clipped to RFPG boundary in the map but not in the FMP feature class which extends to Regions 8 and 10. Please consider revising depending on what area is covered by the FMP.
 - It appears that some fields are missing entries, including 'MODEL_ID'. Please consider complete all required fields with valid entries per TWDB email Jan 31, 2022.
49. Flood Mitigation Project Map (Exhibit C Map 17):
- FMP_ID 063000136 appears to be clipped to RFPG boundary in the map, but not in the FMP feature class which extends to Flood Planning Regions 8 and 10. Please consider revising depending on what area is covered by the FMP.
 - Polygons in the *FMP* feature class appear to be represented as points in the map. Please consider revising for consistency.
50. Flood Management Strategy (FMS) Table (Exhibit C Table 14): It appears that all field values with 999999 in the *FMS* feature class are represented as 0.0 in the table. Please revisit for accuracy and consistency.

51. Flood Management Strategy GIS Feature Class, *FMS*: Several countywide FMSs appear to be clipped to the RFPG boundary but not in the *FMS* feature class. Please consider revising and providing clarification regarding if the FMS covers the whole county and how it is being coordinated with other regions to avoid duplication.
52. Flood Management Strategy (Exhibit C Map 18): Several FMSs appear to be clipped to RFPG boundary in the map, but not in the *FMS* feature class which extends to Flood Planning Regions 8 and 10. Please consider revising depending on what area is covered by the FMS.

SOW Task 5

53. Flood Management Evaluation (FME) Recommendations text:
 - a. Please consider reviewing *Watersheds* and *FME* feature classes for alignment. For example, FME_ID 061000181 does not appear to align with the boundaries in the *Watersheds* feature class.
 - b. For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please include justification how the strategy benefits the region and please coordinate with other RFPGs to make sure the efforts are not duplicated
 - c. For those areas in RFPG with existing BLE models, state how the FME will improve upon the current BLE models. BLE is available for the entire Region 6. For reference the BLE data is available here: <https://webapps.usgs.gov/infrm/estbfe/>
 - d. In areas where there is an ongoing FIF Category 1 study, please describe how this would be incorporated into the proposed FME. For example, FME 061000463. Please review FIF IDs 40016, 40074, 40035, 40037, 40047, 40061.
 - e. Please consider if some FMEs should be FMPs. For example, see FME_IDs 061000147 and 061000148, where the name and description appear to indicate this action as an infrastructure project. Consider expanding the description (field) to clarify why some items are FMEs or consider moving to FMP category, if appropriate.
54. Flood Management Evaluation Recommendations Map (Exhibit C Map 19): Countywide FMEs appear to be clipped to the RFPG boundary in the map, but not in the *FME* feature class. Please consider revising.
55. Flood Mitigation Project (FMP) Recommendations GIS Feature Class, *FMP*: The Brazoria countywide FMP_ID 063000136 appears to be clipped to RFPG boundary in the map but not in the FMP feature class which extends to Flood Planning Regions 8 and 10. Please consider revising depending on what area is covered by the FMP.
56. Flood Mitigation Project Recommendations Map (Exhibit C Map 20):
 - a. FMP_ID 063000136 appears to be clipped to RFPG boundary in the map, but not in the FMP feature class which extends to Flood Planning Regions 8 and 10. Please consider revising depending on what area is covered by the FMP
 - b. Polygons in the *FMP* feature class appear to be represented as points in the map. Please consider revising for consistency.
57. Flood Management Strategy (FMS) Recommendations GIS Feature Class, *FMS* and FMS Recommendations Map (Exhibit C Map 21): Several countywide FMSs appear to be clipped to the RFPG boundary in the map, but not in the *FMS* feature class, which appears to extend beyond the region. Please consider revising as appropriate.

SOW Task 9

58. Flood Infrastructure Financing text:

- a. Table 9-1 appears to contain duplicate entries for TWDB CWSRF and FIF programs. Please consider checking and removing duplicates.
- b. Table 9-1: The table mentions CWSRF. Please note that this program does not offer grants; however, it does offer Principal Forgiveness, which is like a grant. Please make a note of this on within the table. The CWSRF also has emergency funding under Urgent Need criteria. Please review the FY 2023 IUP for the definition of Urgent Need and the circumstances of when funding is available.
- c. Section 9.A.2.b lists the CWSRF as a state program, however, it is a federal program. Please move this section to 9.A.3. Section 9.B.

TWDB Comment Response Matrix

Comment #	Comment Level	SOW Task	Comment	Response
1	Level 1	General	Ensure all "submittal requirements" are submitted in the final plan.	The Technical Consultant will ensure that all submittal requirements are included in submittal of the Final Plan. If there are specific requirements that were missing in the Draft Plan submittal that the TWDB would like to highlight, would it be possible to provide that specific information?
2	Level 1	Executive Summary	Clearly identify Chapter 0. Introduction as the Executive Summary in the table of contents of the report.	The Technical Consultant will clearly identify Chapter 0 as serving as the Executive Summary.
3.a.	Level 1	Task 1	There appear to be more entities in the GIS feature class (#1092) than what is stated in the in-text Table 1-3 (#1088). Please ensure data consistency across all related deliverables	The Technical Consultant will revise for consistency across all related deliverables.

TWDB Comment Response Matrix

3.b.	Level 1	Task 1	<p>It appears that some entities crossing regional boundaries do not start with "00" as required. For additional entities crossing region boundaries, an ID should be requested from TWDB to ensure consistency across regions. Regions may create their own IDs for additional entities entirely within the region, and please refer to the TWDB email sent December 3, 2021 for more information on adding new entities.</p>	<p>The Technical Consultant will update these feature classes to have '0' in the Region Number field and have a '00' at the beginning of the ID.</p> <p>There are a number of entities that are not contained within the Region 6 boundary and extend into Galveston Bay, Clear Lake, or other local bodies of water that were excluded from the Region 6 boundary delineated by TWDB. However, these entities were not considered to cross into an adjacent flood planning region and entity IDs continue to start with '06.' The North Harris County Regional Water Authority and Brazoria County MUD 53 entities do have negligible areas beyond the San Jacinto region, but for these instances it is appropriate that these entities are considered for only San Jacinto as their jurisdiction is primarily in the San Jacinto region.</p> <p>A new entity ID was requested of the TWDB for the Coastal Prairie Conservancy entity as it does extend jurisdiction beyond the San Jacinto region.</p>
3.c.	Level 1	Task 1	<p>It appears that some fields contain invalid entries, including 'ENT_TYPE'. Please complete all required fields with valid entries per Exhibit D Table 3 [31 TAC §361.30(4) & (5), Exhibit D Section 3.1]</p>	<p>The entry "Business or Private Land Owner" is not valid. These have been updated to "Other".</p>
4	Level 1	Task 1	<p>Existing Projects Table (Exhibit C Table 2): Please include the project costs for listed projects or address why the information is not included in the summary description</p>	<p>The Technical Consultant will seek to collect additional data necessary to populate associated project costs. For those project costs that could not be identified, explanation will be provided.</p>

TWDB Comment Response Matrix

5	Level 1	Task 1	Existing Infrastructure GIS Feature Class, ExFldInfraPt: Please include all low water crossings (LWCs) identified during the flood planning process in this feature layer. The ExFldExpAll feature class appears to contain LWCs that are not included in the ExFldInfraPt feature class.	<p>This comment seems to be backwards. There are more LWC features in the ExFldInfraPt layer than in the ExFldExpAll layer. There are 12 less features in ExFldExpAll that were not picked up in the exposure analysis from the ExFldInfraPt. All LWC identified in the flood planning process are included in the ExFldInfraPt.</p> <p>The 12 features not picked up were identified to be slightly close to the ExFldHazard layer, but did not spatially intersect the layer. These 12 features appear to have spatial locations inconsistent with aerial imagery, however updating these spatial locations would require all exposure analysis to be repeated and these 12 feature do not significantly impact or misrepresent reported LWCs captured with the current results of the exposure analysis. In the next planning cycle, verification of these spatial locations will be performed and updated.</p>
6.a.	Level 1	Task 1	Existing Projects GIS Feature Class, ExFldProjs: Please use the specified format for all ID fields, such as EXHAZ_ID. Please confirm that all "NULL" or "999999" values utilized represent either "not applicable" or "unknown" unless, otherwise specified. It appears that some required fields are missing entries, including 'COST' and 'COMP_YR'. Please utilize Null for numeric fields represent either "not applicable" or "unknown".	<p>The Technical Consultant will remove all "999999" place holders and change to "<NULL>".</p> <p>To evaluate fields that failed we have ran the TWDB QC Check tool. It has informed us that we have fields that are missing entries within multiple feature classes. We will use the results from this tool to determine what fields still need to be populated and will address.</p>

TWDB Comment Response Matrix

7	Level 1	Task 2A	Existing Condition Flood Hazard Analysis: Please include total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency as per guidance document (Exhibit C page 24): Submittal requirement number 2. A mention of total land area in the report text and a reference to the appropriate appendix with detailed information will suffice.	The Technical consultant will add detail to the plan such that total area (sqmi) influenced by each flood risk type will be provided broken down by county, region, and frequency. Applicable columns will be added to Table 3 that speak to flood risk type and text will be updated within the Chapter. Flood Risk Type per county columns added in Table 3 & 5.
8.a.	Level 1	Task 2A	Existing Condition Flood Exposure Table (Exhibit C Table 3): For Brazoria County, the Population total does not appear to match the maximum of day and night populations in the table. Please review and reconcile.	The Technical Consultant will re-calculate population values to use either the day or night population for all structures within a county, which ever is greater. Population updated in Table 3 & 5.
8.b.	Level 1	Task 2A	Existing Condition Flood Exposure Table (Exhibit C Table 3): The Structure and Residential Structure counts in Table 3 do not appear to match the ExFldExpAll feature class. Please ensure consistency across all related deliverables	The SDE database is showing 240,093 structures for the 100yr and 276,804 structures for the 500yr. The technical consultant will rerun these counts and update the table to match the GIS data. The same will be done for residential structures.
9	Level 1	Task 2A	Existing Condition Flood Exposure + Vulnerability GIS Feature Class, ExFldExpAll: It appears that some fields are missing entries, including 'FLOOD_FREQ' and 'ENTITY_ID'.	To evaluate fields that failed we have ran the TWDB QC Check tool. It has informed us that we have fields that are missing entries within multiple feature classes. The technical consultant will use the results from this tool to determine what fields still need to be populated. The Technical Consultant will update populate required fields.
10	Level 1	Task 2A	Model Coverage GIS Feature Class, ModelCoverage: It appears that some fields contain invalid/missing entries, including 'MODEL_TYPE' and 'MODEL_SOFTW'	The Technical Consultant will populate fields with valid entries.

TWDB Comment Response Matrix

11	Level 1	Task 2B	Future Condition Flood Hazard Analysis: Please include total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency	Tables 3 and 5 have been revised to account for total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency.
12	Level 1	Task 2B	Future Condition Flood Exposure + Vulnerability GIS Feature Class, FutFldExpAll: It appears that some fields are missing entries, including 'FLOOD_FREQ'. Please complete all required fields with valid entries	All required fields will be populated.
13	Level 1	Task 3A	Table 6 appears to include cities and counties but appears to not include other political subdivision types with flood-related authority. Please review and reconcile	All districts will be added to Table 6, as noted in Exhibit C guidance.
14	Level 1	Task 4B	Streams GIS Feature Class, Stream: The field 'STREAM_ID' appears that it should have one additional digit. Unique IDs must be accurate for the database to connect and work properly.	The Technical Consultant will revise IDs to comply with requirements. In the exhibit D: data submittal guidelines the streams feature class needs a unique ID of Region No. + 7 Digits. We are off by one zero and will plan to address the Stream_ID field by adding an additional digit.
15.a.	Level 1	Task 4B	FME Table (Exhibit C Table 12): The City of West University Place Master Drainage Plan FME (FME_ID=061000297) appears to have different costs when comparing Table 12 to the FME feature class.	The Technical Consultant will revise for consistency.
15.b.	Level 1	Task 4B	Please ensure that data is provided for all required fields. Acceptable entries can include "0", "Unknown", or "NA", as appropriate	All required fields will be populated.

TWDB Comment Response Matrix

16	Level 1	Task 4B	Flood Management Evaluations GIS Feature Class, FME: Please refrain from using numeric placeholders (such as '999999') in numeric fields such as 'FUND_AMNT' as this causes errors in calculations.	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.
17	Level 1	Task 4B	FME Map (Exhibit C Map 16): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study	Map 16 and 19 have been revised to symbolize areas where mapping requires an update or initial model development is necessary to utilize the latest software. However, there is significant overlap of FME study areas in the San Jacinto region. Detailed delineations of FME boundaries can be viewed in Appendix 5-5C.
18	Level 1	Task 4B	All field values with 999999 in the FMP feature class appear to be represented as 0.0 in Table 13. Please consider revising for consistency.	The technical consultant will revise for consistency across GIS attribute tables and tabular appendices.
19.a.	Level 1	Task 4B	FMP GIS Feature class, FMP: Please review the 'BC_RATIO' values as many entries include "999999". Please review and revise, as appropriate, to include required 'BC_RATIO' values	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.
19.b.	Level 1	Task 4B	FMP Table (Exhibit C Table 13): Please avoid using numeric placeholders (such as '-999999') in numeric fields as this causes errors in calculations. Please leave NULL when the field is not applicable or unknown	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.
20	Level 1	Task 4B	FMS GIS feature class, FMS: Please avoid using numeric placeholders (such as "-999999") in numeric fields because this causes errors in calculations. Please leave NULL when the field is not applicable or unknown.	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.

TWDB Comment Response Matrix

21	Level 1	Task 5	FME recommendation table (Exhibit C Table 15): Please avoid using numeric placeholders (such as '-999999') in numeric fields because this causes errors in calculations. Please leave NULL when the field is not applicable or unknown [31 TAC §361.39(f)].	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.
22	Level 1	Task 5	FME recommendation map (Exhibit C Map 19): Please indicate on the map whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study	Map 16 and 19 have been revised to symbolize areas where mapping requires an update or initial model development is necessary to utilize the latest software. However, there is significant overlap of FME study areas in the San Jacinto region. Detailed delineations of FME boundaries can be viewed in Appendix 5-5C.
23.a.	Level 1	Task 5	Recommended FMP GIS feature class: Please avoid using numeric placeholders (such as '-999999') in numeric fields because this causes errors in calculations	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.
23.b.	Level 1	Task 5	Recommended FMP GIS feature class: It appears that some fields are missing entries. Please complete all required fields with valid entries	The Technical Consultant will review and populate required fields, as applicable. For fields that are not applicable to an FMP, fields will be populated with 'NA' or '<NULL>'.
24	Level 1	Task 5	FMP details table & FMP details GDB: There appear to be inconsistencies in dollar amounts between 'FMP_COST' in Exhibit C summary table, and the FMP_DETAILS and FMP feature classes. Please review and reconcile	The Technical Consultant will review costs reflect across the plan and revise for consistency.
25	Level 1	Task 5	FMS Recommendations GIS Feature class: Please avoid using numeric placeholders (such as '-999999') in numeric fields because this causes errors in calculations	The Technical Consultant will ensure there are no '999999' placeholders in numeric fields.

TWDB Comment Response Matrix

26	Level 1	Task 5	FMP Recommendations: Each recommended FMP must be accompanied with an associated model or supporting documentation to show no negative impact. Please confirm that this was done and provide reference to supporting materials.	A summary table will be added within Chapter 5 that clearly indicates how each FMP has demonstrated NAI and will explain whether that has been provided through a signed and sealed report or submitted model.
27	Level 1	Task 6B	Water Supply text: Please include north arrow and a reference scale as part of all map .submissions per Exhibit C Section 3.10	A north arrow and scale will be added to Figure 6-1 within the text.
28	Level 1	Task 9	Flood Infrastructure Financing text: It appears that the draft plan does not describe how the data was collected. Please provide this required information	Section 9.B. speaks to the survey that was distributed to sponsors and used to populate reported values in the appendix.
29	Level 2	Task 1	Entities GIS Feature Class, Entities: Some entities appear to be listed as not active in planning yet are NFIP participants. Please consider reviewing and reconciling, as appropriate	The Technical Consultant will review the entities feature class and indicate that any entities that are NFIP participants are also active in flood planning.
30	Level 2	Task 1	Watersheds GIS Feature Class, Watersheds: Please consider linking this feature class to any relevant FME, FMS, or FMP when appropriate by populating the associated ID fields.	The watershed feature class will be associated with relevant FMEs, FMSs, and FMPs.
31	Level 2	Task 1	Existing Infrastructure text: Please provide a description of how Low Water Crossings were identified within the text of Chapter 1	A definition of a low water crossing was provided in the introductory section 'List of Abbreviations and Definitions.' Chapter 1 text also added to indicate LWC data was provided by TWDB.

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32	Level 2	Task 1	Existing Infrastructure GIS Feature Class, ExFldInfraPt: There appear to be Low Water Crossings in the TNRIS dataset, which are not included in this feature class. Please consider revising, as appropriate	The Technical Consultant compared the LWCs currently captured within the ExFldInfra against the TNRIS dataset and found that there was 1 LWC within the TNRIS dataset not captured currently in Task 1 data. Given the revisions that would be necessary throughout the plan to ensure data is consistently represented and the minor difference that this addition will have in reported tables, the Technical Consultant will plan to incorporate the additional LWC as part of the amended plan.
33.a.	Level 2	Task 2A	Existing Condition Flood Exposure + Vulnerability GIS Feature Class, ExFldExpAll: There appear to be several features with SVI value of 0. Please consider reviewing these points	Roadway segments and roadway stream crossings were assigned an SVI of 0. The SVI of these features as well as the -999 SVI values received in the original dataset were not considered when calculating SVI of exposed populations.
33.b.	Level 2	Task 2A	Existing Condition Flood Exposure + Vulnerability GIS Feature Class, ExFldExpAll: . If the 'CRITICAL' field contains a 'No' entry, then please leave 'CRIT_TYP' as NULL	Will populate the CRIT_TYP field for noncritical infrastructure as '<NULL>'
34	Level 2	Task 2A	Existing Condition Flood Exposure GIS Feature Class, ExFldExpPol: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon	The agricultural coverage layer was not simplified and re-processed at this time given the likely minimal impact to reported values. There is opportunity to smooth and simplify the agricultural layer in subsequent planning cycles.
35.a.	Level 2	Task 2A	Model Coverage text: Please consider providing additional details consistent with the ModelCoverage feature class in the Appendix 2A-5 table.	The Technical Consultant will update the list of existing H&H models to include recently submitted models by sponsors to support the inclusion of FMPs in the RFP.
35.b.	Level 2	Task 2A	Model Coverage text: Please consider elaborating the text to describe how models have been and/or will be selected.	Text has been updated in Section 2.A.1.b. to speak to how the model coverage feature class was populate.

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36	Level 2	Task 2B	Future Condition Flood Vulnerability text: The top of Figure 2-18 appears blurry and may be hard for some readers to read.	Figure 2-18 has been updated.
37	Level 2	Task 2B	Future Condition Flood Exposure GIS Feature Class, FutFldExpPol: The agricultural coverage layers appear to have irregular triangle and rectangular features that may be a result of the conversion of a raster to polygon.	At this time, the agricultural cover layer was not revised. Revision would not drastically change results reported in the Final Plan. In future cycles, this layer can be smoothed and simplified.
38	Level 2	Task 2B	Future Condition Flood Exposure GIS Feature Class, FutFldExpLn: There are several features with 'EXP_DESC' listed as "Y GRADE PRODUCTS", that appear to be disconnected single line segments.	Line segments remain disconnected so as to retain detail in the attribute table.
39	Level 2	Task 3A	Existing Floodplain Management Practices text: Please consider adding the phrasing "at or above" on Page 120 in the description of structures elevated above the BFE, if appropriate.	This text will be added to provide clarity.
40	Level 2	Task 3A	Floodplain Management Table (Exhibit C Table 6): There appear to be inconsistencies within the table. For example, City of Bayou Vista is listed as "No" for Higher Standards Adopted but is listed as Moderate for Floodplain Management Practices, and City of Cold Spring is listed as "No" for Floodplain Management Regulations, but Yes to NFIP Participant	The Technical Consultant was unable to locate floodplain management regulations adopted by the City of Coldspring and the RFPG did not receive a survey response from the City. However, we were able to confirm that they are listed as an NFIP participant in the Community Status Book Report maintained by FEMA. No change was made to reporting for the City of Coldspring at this time. Updates were made to reflect that the City of Bayou Vista does have higher standards in place.

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41.a.	Level 2	Task 3A	Floodplain Management GIS Feature Class, ExFpMp: Coldspring is listed as “No” for the ‘FLD_REG’ field, yet it is a NFIP participant.	The Technical Consultant was unable to locate floodplain management regulations adopted by the City of Coldspring and the RFPG did not receive a survey response from the City. However, we were able to confirm that they are listed as an NFIP participant in the Community Status Book Report maintained by FEMA. No change was made to reporting for the City of Coldspring at this time.
41.b.	Level 2	Task 3A	Floodplain Management GIS Feature Class, ExFpMp: This feature class appears to include COGs and LIDs, please consider, as appropriate, confirming that these have flood authority.	Per feedback from the TWDB on 11/8/2022, all districts will be reported in both Table 6 and the ExFpMP geodatabase table.
42	Level 2	Task 3B	Goals text: Please consider elaborating the text section of “Transformed and Residual Risk” to include descriptions of such risks as they apply if goals are achieved	The Technical Consultant has added language to Chapter 3 to better clarify the terminology of transformed and residual risk in addition to providing example descriptions of such risks as they apply if goals are achieved.
43	Level 2	Task 4B	Streams GIS Feature Class, Streams: Please consider linking this feature class to any relevant FME, FMS, or FMP when appropriate by populating the associated ID fields	The stream feature class will be associated with relevant FMEs, FMSs, and FMPs.
44.a.	Level 2	Task 4B	FME text: Please consider reviewing Watersheds and FME feature classes for alignment	<p>The Technical Consultant will review and verify FME delineations. In instances where FME delineations do not align with watershed delineations, it is likely due to:</p> <ul style="list-style-type: none"> - The FME is more appropriately represented by the political jurisdiction - The FME was delineated using more detailed drainage area delineations supported by a study (ex: FEMA effective subbasins)

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44.b.	Level 2	Task 4B	FME text: For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please include justification how the strategy benefits the region and please coordinate with other RFPGs to make sure the efforts are not duplicated	Text has been updated in Section 5.C.1 that speaks to the coordination between adjacent regions to prevent duplication.
44.c.	Level 2	Task 4B	FME text: For those areas in RFPG with existing BLE models, state how the FME will improve upon the current BLE models. BLE is available for the entire Region 6.	Flood mapping provided by BLE is approximate in nature - the data source does not consider watershed-specific hydrology and hydraulic models incorporated in the data do not account for structures such as roadway crossings. It is the purpose of the FMEs identified to conduct modeling that will be more detailed in scope than what has been conducted for BLE studies. For FMEs identified in areas that have FIF or GLO studies, there is potential for the FME itself to identify alternatives that had initially not been examined in the FIF/GLO studies. Additionally, FIF, BLE, and GLO focus on riverine flood studies whereas some identified FMEs pertain to urban flooding. Clarification will be added to the text of Chapter 5.
44.d.	Level 2	Task 4B	FME text: In areas where there is an ongoing TWDB-funded FIF Category 1 study, please describe how this would be incorporated into the proposed FME. For example, FME_ID 061000463. Please review FIF IDs 40016, 40074, 40035, 40037, 40047, 40061	The technical consultant will add a section within Chapter 5 Section 5.C. that speaks to the ongoing FIF category 1 projects within the region.

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44.e.	Level 2	Task 4B	FME text: Please consider if some FMEs should be FMPs. For example, see FME_IDs 061000147 and 061000148, where the name and description appear to indicate this action involves an infrastructure project.	The 2 FMEs noted in the comment were found to not have sufficient detail to qualify as an FMP.
45	Level 2	Task 4B	Flood Management Evaluation GIS Feature Class, FME: Please consider filling out 'MODEL_DESC' field for clarity on existing studies to be used & ensure all required fields are populated with valid entries.	The Technical Consultant will populate this field, as appropriate.
46	Level 2	Task 4B	Flood Management Evaluations Recommendations GIS Feature Class, FME: Please consider adding the 'ASSOCIATED' field to the FME feature class and populating as applicable	The Technical Consultant will add this field and populate, as appropriate.
47	Level 2	Task 4B	Flood Management Evaluation Map (Exhibit C Map 16): Countywide FMEs appear to be clipped to the RFPG boundary in the map, but not in the FME feature class.	Required maps have been revised to include the full extent of recommended FMEs.
48.a.	Level 2	Task 4B	FMP GIS feature class: The Brazoria countywide FMP_ID 063000136 appears to be clipped to RFPG boundary in the map but not in the FMP feature class which extends to Regions 8 and 10.	Required maps have been revised to include the full extent of recommended FMEs.
48.b.	Level 2	Task 4B	FMP GIS feature class: It appears that some fields are missing entries, including 'MODEL_ID'. Please consider complete all required fields with valid entries	The Technical Consultant will populate this feature class for FMPs with supporting modeling. It should be noted that not all recommended FMPs are associated with a model.
49.a.	Level 2	Task 4B	FMP map: FMP_ID 063000136 appears to be clipped to RFPG boundary in the map, but not in the FMP feature class which extends to Flood Planning Regions 8 and 10.	Required maps have been revised to include the full extent of recommended FMEs.

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49.b.	Level 2	Task 4B	FMP map: Polygons in the FMP feature class appear to be represented as points in the map.	Required maps have been revised to include the full extent of recommended FMPs.
50	Level 2	Task 4B	Flood Management Strategy (FMS) Table (Exhibit C Table 14): It appears that all field values with 999999 in the FMS feature class are represented as 0.0 in the table	Discrepancies will be resolved between values reported in GIS attribute tables and appendices.
51	Level 2	Task 4B	Flood Management Strategy GIS Feature Class, FMS: Several countywide FMSs appear to be clipped to the RFPG boundary but not in the FMS feature class.	Required maps have been revised to include the full extent of recommended FMSs.
52	Level 2	Task 4B	Flood Management Strategy (Exhibit C Map 18): Several FMSs appear to be clipped to RFPG boundary in the map, but not in the FMS feature class which extends to Flood Planning Regions 8 and 10.	Required maps have been revised to include the full extent of recommended FMSs.
53.a.	Level 2	Task 5	FME Recommendations text: Please consider reviewing Watersheds and FME feature classes for alignment. For example, FME_ID 061000181 does not appear to align with the boundaries in the Watersheds feature class.	The delineation of FME 061000181 is consistent with the local Cypress Creek Watershed delineation maintained by HCFCD and FEMA effective subbasins for Cypress Creek. No change was made at this time.
53.b.	Level 2	Task 5	FME Recommendations text: For county-wide watershed strategies where majority of the county falls outside of the RFPG boundary, please include justification how the strategy benefits the region and please coordinate with other RFPGs to make sure the efforts are not duplicated	Text has been updated in Section 5.C.1 that speaks to the coordination between adjacent regions to prevent duplication.

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53.c.	Level 2	Task 5	FME Recommendations text: For those areas in RFPG with existing BLE models, state how the FME will improve upon the current BLE models. BLE is available for the entire Region 6.	Text will be updated within Chapter 5.
53.d.	Level 2	Task 5	FME Recommendations text: In areas where there is an ongoing FIF Category 1 study, please describe how this would be incorporated into the proposed FME. For example, FME 061000463. Please review FIF IDs 40016, 40074, 40035, 40037, 40047, 40061.	The technical consultant will add a section within Chapter 5 Section 5.C. that speaks to the ongoing FIF category 1 projects within the region.
53.e.	Level 2	Task 5	FME Recommendations text: Please consider if some FMEs should be FMPs. For example, see FME_IDs 061000147 and 061000148, where the name and description appear to indicate this action as an infrastructure project.	The 2 FMEs noted in the comment were found to not have sufficient detail to qualify as an FMP.
54	Level 2	Task 5	Flood Management Evaluation Recommendations Map (Exhibit C Map 19): Countywide FMEs appear to be clipped to the RFPG boundary in the map, but not in the FME feature class. Please consider revising	Required maps have been revised to include the full extent of recommended FMEs.
55	Level 2	Task 5	Flood Mitigation Project (FMP) Recommendations GIS Feature Class, FMP: The Brazoria countywide FMP_ID 063000136 appears to be clipped to RFPG boundary in the map but not in the FMP feature class which extends to Flood Planning Regions 8 and 10.	Required maps have been revised to include the full extent of recommended FMPs.

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56.a.	Level 2	Task 5	FMP Recommendations map (Exhibit C Map 20): FMP_ID 063000136 appears to be clipped to RFPG boundary in the map, but not in the FMP feature class which extends to Flood Planning Regions 8 and 10.	Required maps have been revised to include the full extent of recommended FMPs.
56.b.	Level 2	Task 5	FMP Recommendations map (Exhibit C Map 20): Polygons in the FMP feature class appear to be represented as points in the map. Please consider revising for consistency	Required maps have been revised to include the full extent of recommended FMPs.
57	Level 2	Task 5	Flood Management Strategy (FMS) Recommendations GIS Feature Class, FMS and FMS Recommendations Map (Exhibit C Map 21): Several countywide FMSs appear to be clipped to the RFPG boundary in the map, but not in the FMS feature class	Required maps have been revised to include the full extent of recommended FMSs.
58.a.	Level 2	Task 9	FIF text: Table 9-1 appears to contain duplicate entries for TWDB CWSRF and FIF programs. Please consider checking and removing duplicates.	The duplicate reference to CWSRF will be removed.
58.b.	Level 2	Task 9	FIF text: Table 9-1: The table mentions CWSRF. Please note that this program does not offer grants; however, it does offer Principal Forgiveness, which is like a grant.	The reference to CWSRF within the current Chapter 9 lists that funding mechanism as a loan. Additional detail to note principal forgiveness is provided in chapter text in section 9.A.2.b.
58.c.	Level 2	Task 9	FIF text: Section 9.A.2.b lists the CWSRF as a state program, however, it is a federal program. Please move this section to 9.A.3. Section 9.B.	Additional clarification will be added to state that the CWSRF is a federal program administered by the TWDB.

United States of America Corps of Engineers

RFPG Comments Regarding Legislative Recommendations, Regulatory and Administrative Recommendations and State Flood Planning Recommendations

Name	Flood Plan Recommendations	Comments
Jerry Cotter	Table 8.1 Legislative	
	Non regulatory regional flood control or drainage districts should be established and funded for rapidly growing urban areas such as DFW, Houston, San Antonio, etc. Responsibility would be to provide consistency, technical resources, funding and reviews in support of FME's, FMS's. These organizations would also implement or support implementation of FMP's. These organizations would augment communities and counties that just don't have the resources and expertise to manage flooding.	Rapidly developing areas surrounding larger urban centers are at greater risk of having runoff patterns increasing because of development. These urban areas are comprised of many communities and unincorporated county areas. Many of the smaller communities are not funded or resourced to deal with the complexities of floodplain management and therefore there is a lack of or inconsistencies in floodplain management practices.
	Clarify the early 2000's state legislation that provide counties the authority to regulate floodplains to explicitly allow and encourage activities associated with floodplain management such as development of land use plans, regulatory authorities, e.g. permitting.	Although state legislation was passed in the early 2000's which gave counties the ability to regulate floodplains, interpretation of these regulations varies widely from county to county. The legislative bill lacks implementation guidance in the form of administrative rules. If development is occurring in unincorporated areas, this development can dynamically impact flood risk.
Jerry Cotter	Table 8.2 Regulatory	
	Require the use of n-values and channel conditions which would likely result if the channel or project were not maintained. Exceptions would be golf courses or other areas where an organization exists which would maintain the channel in perpetuity. Disallow maintenance by marginal organizations such as home owners associations to justify acceptance of lower n-values as this is an unrealistic expectation.	When channels are constructed, most often channel bed, banks and overbanks are cleared; however; with many miles of these channels, it is often difficult for communities to maintain those beds, banks and overbanks at their design conditions. Generally, there is a lack of channel maintenance to ensure flood conveyance areas, established as part of a development or improvement projects, to retain their design level n-values. This results in unexpected changes in channel conveyance and increased flooding. Channel maintenance is very expensive activity that can trigger environmental permitting requirements.

	<p>No loss of valley storage to the 500-year level. Communities could allow redistribution of valley storage to allow interactions with natural areas but no loss of storage.</p> <p>Land development in upstream areas increases runoff in downstream areas. This happens because of increased impervious cover and decreased tree cover, and therefore less ability to absorb rainfall. Additionally, development, in most communities, encroaches into riparian areas and decreases the amount of storage available to accommodate flood waters. Just the main thread of the Trinity River though DFW stores more flood waters during of flood than any three of the USACE reservoirs that provide flood protection for DFW. The many other stream provide even more storage than the main stem. There is limited capacity in rivers and streams to convey floodwaters. This means that all areas above any given conveyance point have to store flood water until sufficient time has lapsed to pass the water away from the impacted area. The streams are where this water is stored and depleting these storage areas will impact DS areas.</p>
	<p>Establish future land use plans for unincorporated areas associated with rapidly growing urban areas.</p> <p>"</p>
	<p>Use of ultimate development land use conditions in the development of future flows. Require use of future flows for regulation of floodplains and development of FMP's.</p> <p>"</p>
Jerry Cotter	Table 8.3 State Flood Planning Recommendations
	None
	Potential FMS
	<p>Encourage storm shifting to validate 100-yr estimates and to provide a broader understanding of communities actual flood risk Storms identified and cataloged as part of the GLO funded USACE led Texas Storm Study could be the primary source of storms to be shifted.</p> <p>Notes: Great deal of uncertainty in 100-yr estimates. Use of observed storms that approximately match depth duration data from NOAA Atlas 14 or other precipitation frequency sources validates 100-yr estimates. Additionally wet, dry and average conditions as well as conditions at the time the storm occurred can be presented. Additionally, communities have and can experience storms that exceed the 100-yr. While not regulatory, this information will provide additional hazard mitigation data so communities can address critical infrastructure impacts and be better prepared.</p>

	<p>Add detail to Watershed Hydrology Assessments (WHA) for communities within basins with completed WHA's. The WHA for the Trinity has been completed.</p>	<p>The WHA's, funded by FEMA, are considered the best available flood flow frequency estimates, e.g. 100-yr. These estimates consider the latest precipitation frequencies, the variations in watershed response and determine critical flood drivers by employing a wide range of sensitivity analysis for each computation point.</p>
	<p>Update WHA's when future precipitation frequency estimates become available. Efforts to develop future precipitation frequency estimates for Texas are starting.</p>	
	<p>Establish regional efforts, for large urban centers to develop future land use data for all developing areas, not just incorporated areas, for use in developing future flood flow frequency estimates and future 100-yr (and other recurrence interval) hazard boundaries.</p>	
Landon Erickson	Table 8.2 Regulatory or Administrative Recommendations	Example
	<p>Flood studies where Bulletin 17C analysis is performed on a streamflow gage should document how statistical results have changed over time with each year of record being added.</p>	<p>In Texas, Bulletin 17C estimates for the 100-yr event have been observed to vary by 10 feet in some locations due to variability in weather and limited record lengths. This has even been observed at gages with very long record lengths where going from a record of 70 years to 95 years resulted in a 100-year elevation increase of 9-feet (See Blanco River at Wimberley USGS gage). The possibility of changes like this is not common knowledge and it would be beneficial for decision makers to be aware of this information as they make floodplain and flood risk management decisions for their communities. It is very important to note that this recommendation would not increase the cost to a study since this information can be developed at the same time the analysis that uses the full record of the gage. The tool that automates this process is included in the HEC-SSP 2.3 program. https://www.hec.usace.army.mil/confluence/sspdocs/ssptutorialsguides/applying-the-variable-time-window-option-in-a-bulletin-17-analysis</p>

December 1, 2022

Ms. Sonia Sams, Project Coordinator
Water Resources Branch
U.S. Army Corps of Engineers
Fort Worth, TX District

Re: RFP Comments

Dear Sonia,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from U.S. Army Corps of Engineers on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

Regarding Comments on Chapter 8, Table 8.1 Legislative:

A similar recommendation regarding the request for the establishment of and funding opportunities for regional flood control and drainage districts has already been included in the plan. Table 8-1: Legislative Recommendations, recommendation 2 advocates for a state incentive for the establishment of dedicated drainage funding. Municipalities have the authority to establish local drainage utilities. Having a stable and predictable source of funding is conducive to both long-range planning and the timely development and implementation of flood risk reduction projects. Absent the creation of a drainage utility, local governments typically rely on federal partners to fund floodplain management and regulatory programs or utilization of general tax revenues and/or municipal bonds secured and serviced with local tax revenues. The recommendation being that the state should incentivize local communities to invest and plan for participation in, and funding of, dedicated drainage projects rather than rely solely on federal funding.

Similarly, recommendations have also been included to enact legislation updating the state building code to, at minimum, the 2015 or 2018 version of the International Building Code (IBC). The recommendation to grant counties the authority to develop land use plans will be considered in future update cycles.

Regarding Comments on Chapter 8, Table 8.2 Regulatory: The regulatory specific comments advocate for higher standards that require robust discussion and review with the public and planning group members. Scheduled delivery of the final plan will not allow for these discussions to occur and therefore these recommendations will be considered in future update cycles.

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Regarding Comments on Chapter 8, Table 8.3 State Flood Planning Recommendations:

Encouraging storm shifting to validate 100-yr estimates to provide broader understanding of flood risk is a higher standard that requires robust discussion and review with the public and planning group members. Scheduled delivery of the final plan will not allow for these discussions to occur and these recommendations will be considered in future update cycles.

The comments requesting additional detail to Watershed Hydrology Assessments (WHA) and updates to WHAs when future precipitation frequency estimates become available did not provide enough details to craft a legislative, regulatory, or state flood planning recommendation.

The recommendation to develop a model-based future conditions flood hazard data layer was updated to reflect the suggestion to develop future land use data for developing areas. This recommendation can be found in Table 8-2: Regulatory and administrative recommendations.

Regarding San Jacinto Region Specific Recommendations:

Documenting how statistical results have changed over time is a high standard that requires robust discussion and review with the public and the planning group members. Scheduled delivery of the final plan will not allow for this discussion to occur and therefore this recommendation will be considered in future planning cycles.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

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Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

Waller County

Maggie Puckett

From: Yancy Scott <y.scott@wallercounty.us>
Sent: Tuesday, July 26, 2022 3:53 PM
To: Mariah@hollawayenv.com; San Jacinto RFPG Technical Consultant
Cc: Jared Chen
Subject: FW: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community
Attachments: Region 6 FMX_Waller_HALFF.xlsx

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Sorry I just noticed I hadn't sent this back to you.

#NoFear

Yancy Scott, P.E., CFM
County Engineer
Floodplain Administrator
Waller County
775 Business 290 East
Hempstead, TX 77445
979.221.3406 (Cell)
979.826.7670 (Office)
979.826.7673 (Fax)
y.scott@wallercounty.us (E)

County Website: <http://www.co.waller.tx.us/>

Website: <http://www.co.waller.tx.us/page/County.Engineer>

Facebook: <http://fb.me/WallerCountyRoadandBridge>

GIS site: <https://apps.lja.com/wallerco>

From: Moore, Andrew [mailto:aMoore@Halff.com]
Sent: Friday, June 17, 2022 11:56 AM
To: Yancy Scott <y.scott@wallercounty.us>
Cc: Hinojosa, Sam <sHinojosa@Halff.com>; Jared Chen <j.chen@wallercounty.us>
Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

CAUTION: This email originated from outside of the County. Do not click links or open attachments unless you recognize the sender and know that the content is safe.

Yancy,

I updated the spreadsheet with our thoughts. Most of these, the County won't have much local funding for. Feel free to adjust and send back!

Andrew

Andrew Moore, PE, CFM
Water Resources Team Leader
Halff Associates, Inc.

O: (936) 777-6377
C: (903) 220-8230



[Halff.com](#) | [LinkedIn](#) | [Facebook](#) | [Twitter](#) | [Instagram](#) | [YouTube](#)

From: Yancy Scott <y.scott@wallercounty.us>
Sent: Tuesday, June 14, 2022 9:00 AM
To: Moore, Andrew <aMoore@Halff.com>
Cc: Hinojosa, Sam <sHinojosa@Halff.com>; Jared Chen <j.chen@wallercounty.us>
Subject: Fw: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

GM,

Pls see below and attached and let me know your thoughts.

Thank you,

****Please note new work cell number below****

Yancy Scott, P.E., CFM
County Engineer
Floodplain Administrator
Waller County
775 Business 290 East
Hempstead, TX 77445
979.221.3406 (Cell)
979.826.7670 (Office)
979.826.7673 (Fax)
y.scott@wallercounty.us (E)

County Website: <http://www.co.waller.tx.us/>

Website: <http://www.co.waller.tx.us/page/County.Engineer>

Facebook: <http://fb.me/WallerCountyRoadandBridge>

GIS site: <https://apps.lja.com/wallerco>

(via Outlook Web App)

From: Mariah Najmuddin <Mariah@hollawayenv.com>

Sent: Monday, June 13, 2022 17:57

To: Yancy Scott

Cc: 'San Jacinto RFPG Technical Consultant'; SJRFPG.TechCon@freese.com

Subject: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

CAUTION: This email originated from outside of the County. Do not click links or open attachments unless you recognize the sender and know that the content is safe.

Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because Waller is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table attached for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 - FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Wednesday, June 22, 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Cory Stull | Technical Consultant (Freese and Nichols, Inc.)
San Jacinto Regional Flood Planning Group



December 1, 2022

Yancy Scott, P.E., CFM, County Engineer
Waller County
1100 W. Highway 6
Alvin, TX 77511

**Re: ACTION REQUEST: Update Identified Flood Mitigation Evaluations and/or Strategies
in your Community**

Dear Michelle,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of Alvin on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

The responses provided to the flood financing survey have been incorporated into the plan.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
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*Executive Committee
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Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of Webster

Maggie Puckett

From: Webster Engineering <websterengineering@cityofwebster.com>
Sent: Wednesday, June 22, 2022 2:31 PM
To: Mariah@hollawayenv.com
Cc: Warnement, John; Dave Glasco; KMears; San Jacinto RFPG Technical Consultant
Subject: FW: [External] ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Some people who received this message don't often get email from websterengineering@cityofwebster.com. [Learn why this is important](#)

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Mariah and Cory,

We are fine with you recommending a Master Drainage Plan for the City of Webster, but please note in the table that we would sponsor 0% of the funding required.

Here are three projects that we would like to see requested on the form to provide additional capacity. Each of these is within our City limits, but all of the facilities are Flood Control's. These projects would help to provide capacity for us to complete neighborhood drainage improvements.

- Increase capacity of HCFCF drainage channel just west of IH 45 in front of Costco through Webster City limits.
- Increase capacity of HCFCF box culverts and channel along Texas Avenue from Bay Area Boulevard to Magnolia Avenue.
- Increase capacity of HCFCF box culverts on Kobayashi from NASA Bypass to Rice Creek Lane, on Rice Creek Lane from Kobayashi to Myrtle Avenue, and on Myrtle Avenue from Rice Creek Lane to HCFCF drainage channel.

Katherine A. Mears, PE, ENV SP

City Engineer
P: (281) 316-3761
C: (713) 419-5583

From: Warnement, John <JWarnement@cityofwebster.com>
Sent: Tuesday, June 14, 2022 6:58 AM
To: Glasco, David <dglasco@cityofwebster.com>; Webster Engineering <websterengineering@cityofwebster.com>; KMears <kmears@huitt-zollars.com>
Subject: FW: [External] ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Good morning,

We need to review this too.

Respectfully,



John D. Warnement, CPWP-M, CPRP
Director
City of Webster Public Works Department
855 Magnolia Avenue, Webster, TX 77598
P: (281) 316-3711 F: (281) 316-3728

From: Mariah Najmuddin <Mariah@hollawayenv.com>

Sent: Monday, June 13, 2022 3:07 PM

To: Warnement, John <JWarnement@cityofwebster.com>

Cc: SJRFPG.TechCon@freese.com

Subject: [External] ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because Webster is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

Flood Mitigation Action ID	Flood Mitigation Action Type	Flood Mitigation Action Name	Flood Mitigation Action Description	Flood Mitigation Action Estimated Total Cost	Sponsor Funding	
					Anticipated Source of Sponsor Funding	Percent Funding Anticipated to be Provided by Sponsor
061000296	FME	City of Webster Master Drainage Plan	Study to develop Master Drainage Plan using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	\$200000	Choose an item.	Choose an item.

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 -](#)

[FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Wednesday, June 22, 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Cory Stull | Technical Consultant (Freese and Nichols, Inc.)
San Jacinto Regional Flood Planning Group

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December 1, 2022

Katherine A. Mears, PE, ENV SP, City Engineer
City of Webster Public Works Department
855 Magnolia Avenue,
Webster, TX 77598

**FW: [External] ACTION REQUESTED: Update Identified Flood Mitigation Evaluations
and/or Strategies in your Community**

Dear Ms. Mears, PE, ENV SP,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of Webster on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

We have incorporated the update to the percent funding anticipated to be provided by the sponsor for the recommended Flood Management Evaluation (FME) "Master Drainage Plan for the City of Webster".

Additional coordination will be conducted with the City of Webster to gather necessary data for each potential FME or Flood Mitigation Project (FMP) identified by the City to be included in the Regional Flood Plan. The additional FMEs or FMPs can be incorporated into the Amended Regional Flood Plan due to the TWDB in July 2023.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
Counties*

Gene Fisseler
*Executive Committee
Public*

Matthew Barrett
*Executive Committee
River Authorities*

Elisa Donovan
Agricultural Interests

Connie Pothier
Small Business

Paul Lock
Electric Generating Utilities

Rachel Powers
Environmental Interests

Stephen Costello
Municipalities

Todd Burrer
Water Utilities

Brian Maxwell
Coastal Communities

Christina Quintero
Public

Neil Gaynor
Upper Watershed

Tina Peterson
Flood Districts

Megan Ingram
TWDB Liaison

City of West University Place

Maggie Puckett

From: Tim Buscha (IDS) <TBuscha@idseg.com>
Sent: Monday, June 27, 2022 3:04 PM
To: Cory Stull; San Jacinto RFPG Technical Consultant
Subject: FW: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

Importance: High

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Cory

On behalf of West University Place wanted to offer feedback on this request. I missed sending last week. Thoughts below are provided and would assume West U and FN could visit after August to determine what efforts West U can do to support movement to an FMP?

Tim



Timothy E. Buscha, P.E., CFM
President

13430 Northwest Freeway, Suite 700, Houston, Texas 77040
Main: 713.462.3178 | Direct: 832.590.7255 | Cell: 713.582.4737
TBuscha@idseg.com

[Website](#) | [Facebook](#) | [LinkedIn](#)

TxEg Firm 2726 | TxSurv Firm 10110700

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From: Gerardo Barrera <GBarrera@westutx.gov>
Sent: Friday, June 24, 2022 8:31 PM
To: Tim Buscha (IDS) <TBuscha@idseg.com>
Cc: Carol Harrison (IDS) <CHarrison@idseg.com>
Subject: RE: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community
Importance: High

[EXTERNAL EMAIL]

Tim,

What action was required from the City on this?

Can you review and advise next week?

Thanks,

.....
Gerardo Barrera

Public Works Director

City of West University Place

3826 Amherst, West University Place, TX 77005

Tel 713-662-5845

Fax 713.662.5369



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A "reply to all" of this e-mail could lead to violations of the [Texas Open Meetings Act](#). Please reply only to the sender.

From: Susan Sample <ssample@westutx.gov>

Sent: Monday, June 13, 2022 3:59 PM

To: Dave Beach <DBeach@westutx.gov>; Gerardo Barrera <GBarrera@westutx.gov>

Subject: Fw: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

.....
Susan Sample

Mayor

City of West University Place

3800 University Boulevard, West University Place, TX 77005



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A "reply to all" of this e-mail could lead to violations of the [Texas Open Meetings Act](#). Please reply only to the sender.

From: Mariah Najmuddin <Mariah@hollawayenv.com>

Sent: Monday, June 13, 2022 3:06:47 PM

To: Susan Sample

Cc: SJRFPG.TechCon@freese.com

Subject: ACTION REQUESTED: Update Identified Flood Mitigation Evaluations and/or Strategies in your Community

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Dear Community Official –

On behalf of the San Jacinto Regional Flood Planning Group (RFPG), we are reaching out because West University Place is listed as a potential sponsor for one or more Flood Management Evaluations (FMEs), Flood Mitigation Strategies (FMSs), or Flood Mitigation Projects (FMPs) that will be considered for recommendation by the Region 6 San Jacinto Regional Flood Plan (RFP).

We need your input to estimate how much State or Federal funding assistance your community may need to implement the actions that have been identified. The table below lists the actions for which your community has been identified as a potential sponsor, along with the estimated costs of implementation. Recommended solutions must be included in the RFP to be eligible for potential future State funding but inclusion in the plan does not guarantee State funding.

Please reply to this email and fill out the drop-down menu in the table for each of your Flood Mitigation Evaluations and/or Strategies. There is no commitment associated with being a sponsor for an action in the RFP. This is a high-level planning exercise to determine flood risk and flood mitigation funding need across Texas. If we do not receive a response, we will assume that 100% of the cost for that action will need other funding (including State, Federal and/or other funding).

Flood Mitigation Action ID	Flood Mitigation Action Type	Flood Mitigation Action Name	Flood Mitigation Action Description	Flood Mitigation Action Estimated Total Cost	Sponsor Funding	
					Anticipated Source of Sponsor Funding	Percent Funding Anticipated to be Provided by Sponsor
061000297	FME	City of West University Place Master Drainage Plan	Study to develop refine Master Drainage Plan and Projects using future and existing land use and flood/storm water drainage needs including Atlas 14 rainfall	\$100000 \$30,000,000	Internal CIP Dollars	20% / \$6,000,000

For more information regarding the specific Flood Mitigation Actions listed in the RFP, visit the following link: [Region 6 - FMX Summaries By Sponsor](#). Additional information about your RFP can be found on the [San Jacinto RFPG website](#). If you have any further questions, please email SJRFPG.TechCon@freese.com to get in touch with a member of our team.

We kindly request a reply **no later than Wednesday, June 22, 2022** in order to meet the State's legislative deadline for flood planning. Thank you for your input on this important project.

Sincerely,

Cory Stull | Technical Consultant (Freese and Nichols, Inc.)
San Jacinto Regional Flood Planning Group



December 1, 2022

Gerardo Barrera, Public Works Director
City of West University Place
3826 Amherst St.,
West University Place, TX 77005

**FW: [External] ACTION REQUESTED: Update Identified Flood Mitigation Evaluations
and/or Strategies in your Community**

Dear Mr. Barrera,

The San Jacinto Regional Flood Planning Group (RFPG) has received and reviewed the comments from the City of West University Place on the Draft Regional Flood Plan for the San Jacinto region. The San Jacinto RFPG appreciates your thorough examination of the Draft Regional Flood Plan and thoughtful input in the public process associated with the development of the 2023 Regional Flood Plan.

We have incorporated the updates requested for the Flood Management Evaluation (FME) "City of West University Place Master Drainage Plan" into the Regional Flood Plan.

Additional coordination will be conducted with the City of West University Place to discuss any effort the City may be able to make to support movement of an FME to a Flood Mitigation Project (FMP). Additional actions can be incorporated into the Amended Regional Flood Plan due July 2023.

Should you have any further questions, please feel free to contact the San Jacinto (Region 6) consultant, Cory Stull, at 713.600.6809 or SJRFPG.TechCon@freese.com.

Sincerely,

Tim Buscha
Chairman, San Jacinto Regional Flood Planning Group

CC: Fatima Berrios | Sponsor Contact, Harris County Engineering Department
Cory Stull | Technical Consultant, Freese and Nichols, Inc.
Megan Ingram | Regional Flood Planner, TWDB

Tim Buscha
*Chairman
Industries*

Alia Vinson
*Vice Chairman
Water Districts*

Erwin Burden
*Secretary
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Municipalities

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Coastal Communities

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Upper Watershed

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Flood Districts

Megan Ingram
TWDB Liaison