

**FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT No. 2
\$88,000,000 BOND AUTHORIZATION REPORT
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I. INTRODUCTION

This 7 page report is intended to be used as supporting documentation to the Board of Directors and voters within Fort Bend County Levee Improvement District No. 2 (District) in preparing for a bond authorization election whereby voters in the District will decide whether to approve \$88,000,000 in bonds to support the proposed continued resiliency and flood control of the District. A cost summary is included on page 5 through 7.

The District was created by Commissioner's Court of Fort Bend County on February 15, 1975 as a conservation and reclamation district. The District was created to provide floodplain reclamation, flood protection and outfall drainage necessary for the orderly development of First Colony. The District protects more than 5,300 acres of property and operates and maintains 11 miles of levees, 8 miles of drainage ditches and two pump stations.

The flood control works constructed and operated by the District protects over 9,000 homes and hundreds of businesses including Sugar Land Town Square and First Colony Mall. The combined value of all property and structures located inside the district exceeds \$5 billion in appraised value. Important public infrastructure located inside the District includes the major transportation arteries of U.S. 59 and S.H. 6, multiple hospital complexes, and Sugar Land's City Hall.

The improvements proposed to be funded with this bond election are for the continued flood protection, outfall drainage, and reclamation that may become necessary in the future.

II. PROPOSED IMPROVEMENTS

The following pages describe improvements for which the District could use the proposed bond funds.

West Levee Armoring Phase II

In 2018, the District approved a pilot project to armor the levee top using articulated concrete block from I69/US59 to the William "Bill" Little Pump Station. The purpose of the improvements was to provide an all-weather access along the levee to assist with flood fighting and inspections during wet conditions to avoid damaging the levee due to the increased traffic. Using bond funds, the District would install additional armoring from SH6 to I69/US59 and from the William "Bill" Little Pump Station to Elkins Road. This will give the District a continuous all-weather access along Ditch H during emergency and non-emergency events.

Oyster Creek Armoring

Similar to the West Levee Armoring Project, the District would install articulated concrete block as an all-weather access from SH6 to Lexington Boulevard along Oyster Creek to assist with flood fighting and inspections during wet conditions to avoid damaging the levee due to the increased traffic.

Steepbank Creek Commonwealth Outfall Modifications

The majority of the District's internal drainage flows through a channel network which is divided into the Ditch A and Ditch F Watersheds. These two watersheds outfall through the west levee into Ditch H, which ultimately drains directly into the Brazos River. A small portion, approximate 135 acres of the District, drains to the east into Steepbank Creek through a structure underneath the District's east levee near LJ Parkway. The ultimate drainage path of this area drains through the neighboring districts, Fort Bend County Levee Improvement District Nos. 15 and 19. Using bond funds, the District would modify the Steepbank Creek Levee Crossing and install a storm sewer relief system to redirect the 135 acres from Steepbank Creek to Ditch A. The system would include the construction of additional

internal detention to minimize impacts to the surrounding area and Commonwealth Boulevard due to additional runoff into the Ditch A System.

Michael "Mike" Thelen Pump Replacement

The four (4) existing stormwater pumps at the Michael "Mike" Thelen Pump Station are reaching their recommended design life and need to be replaced before they become undependable. Using bond funds, the District would replace the existing pumps with newer, higher capacity pumps that fit within the existing pump station.

Michael "Mike" Thelen Pump Station Expansion

In 2018, the National Oceanic and Atmospheric Administration (NOAA) published Atlas 14 for the State of Texas, which defines the updated rainfall amounts for various design storms, such as the 1%, or 100-Year Storm. This report has increased the design rainfall amounts for Fort Bend County which has an impact on the required capacity needed per the Fort Bend County Drainage District (FBCDD). Based on studies completed by the District, in order to meet the criteria for leveed systems, the District will need an additional pump capacity of 150,000 gallons per minute (gpm) to provide the same level of protection as new levee systems in Fort Bend County. Using bond funds, the District will expand the existing pump station to increase its capacity to meet the updated/new Fort Bend County Drainage District criteria.

Internal Storage Improvements

During flood events on the Brazos River, gravity conditions out of the District is restricted increasing the District's dependence on its pump stations and internal storage when rain falls inside of the levee system. Using bond funds, the District will evaluate the feasibility to increase the District's internal storage and will fund the construction of expanding the District's channel network and/or providing separate storage areas necessary to provide the increased internal storage.

South and East Levee Improvements

In 2007, the District's west levee was raised as part of the Sugarstone Perimeter Levee System. The purpose of the improvements was to meet the FEMA Levee Certification requirements for freeboard in response to revised Flood Insurance Rate Maps (FIRMs) that increased the Base Flood Elevations along the Brazos River. As part of the perimeter system, the District's south and east levees were not raised. Using bond funds, the District would raise the south and east levees to meet FEMA's Levee Certification requirements giving the District an increased level of protection along the entire limits of the District's levee system, if required due to an inability to certify the perimeter system.

South and East Levee Armoring

Similar to the West Levee Armoring Project, the District would install articulated concrete block as an all-weather access along the south and east levees to assist with flood fighting and inspections during wet conditions to avoid damaging the levee due to the increased traffic.

Ditch H Repairs and Drop Structure Replacement

Due to flood events that have occurred, the Ditch H drop structure and side slopes are beginning to fail. Currently, these failures are not threatening the integrity of the District's levee system. Using bond funds, the District would work with Fort Bend County, the City of Sugar Land, and Fort Bend Levee Improvement District No. 14 to replace the drop structure and repair the side slopes before it impacts the levee systems along Ditch H. At the same time, the District will evaluate the feasibility of improving the drop structure to potentially increase the capacity of Ditch H.

Flat Bank Creek Closure Improvements (District Share)

Based on historical flood events and potential updates to the Base Flood Elevations of the Brazos River, the perimeter system may need to construct a gate structure and pump station on Flat Bank Creek to prevent Brazos River from backing up Flat Bank Creek and inundating SH6 and the eastern portions of the perimeter system. The costs for the proposed project would be shared among the districts within the Sugarstone Perimeter Levee System as well as various Municipal Utility Districts, the Cities of Missouri City and Sugar Land, and Fort Bend County. The District would use bond funds to pay its share the of design and construction costs for these improvements, if needed.

III. PROBABLE CONSTRUCTION COSTS AND PROPOSED BOND ISSUE REQUIREMENTS

As shown on the attached cost summary and details on pages 5 through 7, the total estimated probable cost to construct facilities for flood protection, outfall drainage, and reclamation needed to serve the District is \$88,000,000. The District has exhausted its initial bonding capacity and the additional bonding capacity obtained in 2008 and 2013 by improving the west levee and by constructing various channel and pump station improvements. The purpose of this bond authorization is to allow the District to continue to construct, refurbish, repair, or modify all of their existing facilities as well as construct new facilities as may be needed.

IV. PROJECTED DISTRICT TAX RATE

Since the District is completely built out, the proposed bonds will be issued on an “as needed” basis. The District’s Board of Directors will ultimately decide if and when the proposed bonds would be issued. Since it is unclear if and when the proposed bonds will be issued, an anticipated tax rate analysis is not included. However, the District’s financial adviser will inform the Board of the impact to the District’s tax rate in the event a portion of the proposed bonds should need to be issued. The Board will then make the final decision concerning bond issuance. A tax rate analysis would be performed at that time. Before any bonds can be issued, the District shall have to obtain approval of such bonds by the Texas Commission on Environmental Quality and the Attorney General of Texas.

V. CONCLUSION

Fort Bend County Levee Improvement District No. 2’s proposed \$88,000,000 bond authorization is needed in order to continue to provide adequate flood protection, outfall drainage, and reclamation to serve the existing development in the District. It is anticipated that the District’s debt service tax rate would be minimally affected in the event the proposed bonds were issued. However, since it is unclear if and when the bonds would be issued, a projected tax rate analysis is not provided. Therefore, it is our opinion that the District’s proposed bond authorization is practical and feasible from both the engineering and economic perspectives and necessary for the continued service of the District.

ATTACHMENT A

COST SUMMARY PROPOSED FORT BEND COUNTY LEVEE IMPROVEMENT DISTRICT NO. 2 2019 BOND ELECTION BOND ISSUE REQUIREMENT (BIR)

| PROJECT | ESTIMATED COSTS |
|---|----------------------|
| WEST LEVEE ARMORING PHASE II | \$ 2,809,000 |
| OYSTER CREEK LEVEE ARMORING | \$ 3,669,000 |
| STEEPBANK CREEK COMMONWEALTH OUTFALL MODIFICATIONS | \$ 2,125,500 |
| MICHAEL "MIKE" THELEN PUMP REPLACEMENT | \$ 1,012,000 |
| MICHAEL "MIKE" THELEN PUMP STATION EXPANSION | \$ 15,094,000 |
| INTERNAL FLOOD STORAGE IMPROVEMENTS | \$ 14,375,000 |
| EAST AND SOUTH LEVEE IMPROVEMENTS | \$ 25,875,000 |
| EAST AND SOUTH LEVEE ARMORING | \$ 6,958,000 |
| DITCH H REPAIRS AND DROP STRUCTURE REPLACEMENT | \$ 4,270,000 |
| FLAT BANK CREEK CLOSURE IMPROVEMENTS (DISTRICT SHARE) | \$ 1,079,000 |
| INFLATION OF CONSTRUCTION COSTS | \$ 5,733,500 |
| SUBTOTAL CONSTRUCTION COSTS | \$ 83,000,000 |
| TOTAL NON-CONSTRUCTION COST | \$ 5,000,000 |
| TOTAL BOND ISSUE REQUIREMENT | \$ 88,000,000 |

ATTACHMENT B

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COSTS:

2019 BOND ELECTION
FORT BEND LEVEE IMPROVEMENT DISTRICT NO. 2
SUGAR LAND, FORT BEND COUNTY, TEXAS

| ITEM | DESCRIPTION | UNIT | QUANTITY | \$ | UNIT COST | \$ | TOTAL COST |
|---|-----------------------------------|------|----------|----|---------------|-----|----------------------|
| WEST LEVEE ARMORING PHASE II | | | | | | | |
| 1 | ARTICULATED CONCRETE BLOCK | LF | 11,100 | \$ | 200.00 | \$ | 2,220,000.00 |
| SUBTOTAL WEST LEVEE ARMORING PHASE II | | | | | | \$ | 2,220,000.00 |
| CONTINGENCIES | | | | | | 10% | \$ 222,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | | 15% | \$ 367,000.00 |
| TOTAL WEST LEVEE ARMORING PHASE II | | | | | | \$ | 2,809,000.00 |
| OYSTER CREEK LEVEE ARMORING | | | | | | | |
| 1 | ARTICULATED CONCRETE BLOCK | LF | 14,500 | \$ | 200.00 | \$ | 2,900,000.00 |
| SUBTOTAL OYSTER CREEK LEVEE ARMORING | | | | | | \$ | 2,900,000.00 |
| CONTINGENCIES | | | | | | 10% | \$ 290,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | | 15% | \$ 479,000.00 |
| TOTAL OYSTER CREEK LEVEE ARMORING | | | | | | \$ | 3,669,000.00 |
| STEEP BANK CREEK COMMONWEALTH OUTFALL MODIFICATIONS | | | | | | | |
| 1 | 60-INCH RCP OUTFALL | LF | 950 | \$ | 160.00 | \$ | 152,000.00 |
| 2 | 12'X6' RCB | LF | 1,130 | \$ | 250.00 | \$ | 282,500.00 |
| 3 | 60-INCH FLAP GATE | EA | 1 | \$ | 75,000.00 | \$ | 75,000.00 |
| 4 | INTERNAL STORAGE | CY | 48,400 | \$ | 20.00 | \$ | 968,000.00 |
| SUBTOTAL STEEP BANK CREEK COMMONWEALTH OUTFALL MODIFICATIONS | | | | | | \$ | 1,477,500.00 |
| CONTINGENCIES | | | | | | 25% | \$ 370,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | | 15% | \$ 278,000.00 |
| TOTAL STEEP BANK CREEK COMMONWEALTH OUTFALL MODIFICATIONS | | | | | | \$ | 2,125,500.00 |
| MICHAEL "MIKE" THELEN PUMP REPLACEMENT | | | | | | | |
| 1 | PUMP REPLACEMENT | LS | 1 | \$ | 800,000.00 | \$ | 800,000.00 |
| SUBTOTAL MICHAEL "MIKE" THELEN PUMP REPLACEMENT | | | | | | \$ | 800,000.00 |
| CONTINGENCIES | | | | | | 10% | \$ 80,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | | 15% | \$ 132,000.00 |
| TOTAL MICHAEL "MIKE" THELEN PUMP REPLACEMENT | | | | | | \$ | 1,012,000.00 |
| MICHAEL "MIKE" THELEN PUMP STATION EXPANSION | | | | | | | |
| 1 | SITE WORK AND PUMPS (175,000 GPM) | LS | 1 | \$ | 10,500,000.00 | \$ | 10,500,000.00 |
| SUBTOTAL MICHAEL "MIKE" THELEN PUMP STATION EXPANSION | | | | | | \$ | 10,500,000.00 |
| CONTINGENCIES | | | | | | 25% | \$ 2,625,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | | 15% | \$ 1,969,000.00 |
| TOTAL MICHAEL "MIKE" THELEN PUMP STATION EXPANSION | | | | | | \$ | 15,094,000.00 |
| INTERNAL FLOOD STORAGE IMPROVEMENTS | | | | | | | |
| 1 | EXCAVATION AND DISPOSAL | CY | 500,000 | \$ | 20.00 | \$ | 10,000,000.00 |
| SUBTOTAL INTERNAL FLOOD STORAGE IMPROVEMENTS | | | | | | \$ | 10,000,000.00 |
| CONTINGENCIES | | | | | | 25% | \$ 2,500,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | | 15% | \$ 1,875,000.00 |
| TOTAL INTERNAL FLOOD STORAGE IMPROVEMENTS | | | | | | \$ | 14,375,000.00 |

ATTACHMENT B

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COSTS:

2019 BOND ELECTION
FORT BEND LEVEE IMPROVEMENT DISTRICT NO. 2
SUGAR LAND, FORT BEND COUNTY, TEXAS

| ITEM | DESCRIPTION | UNIT | QUANTITY | UNIT COST | TOTAL COST |
|---|---|-------|----------|------------------|-------------------------|
| <i>EAST AND SOUTH LEVEE IMPROVEMENTS</i> | | | | | |
| 1 | RAISE EXISTING LEVEES | LS | 1 | \$ 8,000,000.00 | \$ 8,000,000.00 |
| 2 | MODIFY ROAD CROSSINGS | LS | 1 | \$ 10,000,000.00 | \$ 10,000,000.00 |
| SUBTOTAL EAST AND SOUTH LEVEE IMPROVEMENTS | | | | | \$ 18,000,000.00 |
| CONTINGENCIES | | | | | 25% \$ 4,500,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | 15% \$ 3,375,000.00 |
| TOTAL EAST AND SOUTH LEVEE IMPROVEMENTS | | | | | \$ 25,875,000.00 |
| <i>EAST AND SOUTH LEVEE ARMORING</i> | | | | | |
| 1 | ARTICULATED CONCRETE BLOCK | LF | 27,500 | \$ 200.00 | \$ 5,500,000.00 |
| SUBTOTAL EAST AND SOUTH LEVEE ARMORING | | | | | \$ 5,500,000.00 |
| CONTINGENCIES | | | | | 10% \$ 550,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | 15% \$ 908,000.00 |
| TOTAL EAST AND SOUTH LEVEE ARMORING | | | | | \$ 6,958,000.00 |
| <i>DITCH H REPAIRS AND DROP STRUCTURE REPLACEMENT</i> | | | | | |
| 1 | REMOVE EXISTING STRUCTURE | SY | 13,500 | \$ 20.00 | \$ 270,000.00 |
| 2 | REPLACE EXISTING STRUCTURE / SIDE SLOPE REPAIRS | SY | 13,500 | \$ 200.00 | \$ 2,700,000.00 |
| SUBTOTAL DITCH H REPAIRS AND DROP STRUCTURE REPLACEMENT | | | | | \$ 2,970,000.00 |
| CONTINGENCIES | | | | | 25% \$ 743,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | 15% \$ 557,000.00 |
| TOTAL DITCH H REPAIRS AND DROP STRUCTURE REPLACEMENT | | | | | \$ 4,270,000.00 |
| <i>FLAT BANK CREEK CLOSURE IMPROVEMENTS (DISTRICT SHARE)</i> | | | | | |
| 1 | DISTRICT PORTION PROJECT | SHARE | 1% | \$ 75,000,000.00 | \$ 750,000.00 |
| SUBTOTAL FLAT BANK CREEK CLOSURE IMPROVEMENTS (DISTRICT SHARE) | | | | | \$ 750,000.00 |
| CONTINGENCIES | | | | | 25% \$ 188,000.00 |
| DESIGN AND CONSTRUCTION MANAGEMENT SERVICES | | | | | 15% \$ 141,000.00 |
| TOTAL FLAT BANK CREEK CLOSURE IMPROVEMENTS (DISTRICT SHARE) | | | | | \$ 1,079,000.00 |
| TOTAL PROJECT COSTS | | | | | \$ 77,266,500.00 |