

## STORM DRAINAGE SYSTEM

The Storm Drainage Facilities Improvements Program consists of the following major components:

- The Storm Water Management Program (SWMP), which is to reduce the risk of structural flooding by protecting properties from flood damage during a 100-year (1% probability) rainfall event. The program targets local drainage systems and integrates with the primary drainage channels and bayous, which are the responsibility of the Harris County Flood Control District (HCFCD). The FY2008-2013 SWMP projects include the drainage improvements in the TMC as well as several other projects. This includes: Rustling Oaks and Fonn Villas; Edloe; Trinity Houston Gardens; and Kirby Relief Phase IV. FY2008-2013 SWMP construction projects total approximately \$204 million.
- The Localized Drainage Improvements Program, which consists of small drainage improvement projects, typically less than \$500,000.

- There is a backlog of small drainage issues which when resolved can protect many homes from structural flooding. In many cases one section of pipe, a missing overflow section, or inadequate inlets are the only improvements needed to solve the problem. A quick solution will resolve the problems of an otherwise adequate system. On-call engineering and construction contacts will be used to address these problems quickly and cost effectively. The FY2008-2013 program totals approximately \$18.5 million.
- The Comprehensive Drainage Plan (CDP), which prioritizes projects based on specific criteria such as the number of reported structural flooding incidents and repetitive loss properties, has identified approximately \$1.6 billion of inadequate systems in the City to be upgraded. This program prioritizes, scopes, designs, and constructs solution to the inadequacies identified for this long-term program.

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- The projects selected to start this program have the highest numbers of flood-damaged properties by drainage area. Each project will be designed to keep the localized drainage in the piping or street sheet flow system to protect the structures from flooding during the 100-year rainfall event. Properties within a riverine 100-year flood zone will be protected from local drainage flooding, but may not be protected from the riverine flooding until the Harris County Flood Control District projects are completed. Funding for these projects total approximately \$100 million.
- Street reconstruction projects sponsored by TxDOT require the local sponsor (City of Houston) to pay for storm drainage improvements associated with its street reconstruction projects. The FY2008-2013 program has identified approximately \$8.6 million to support these projects.
- Trinity Houston Gardens has been identified as an eligible project for CDBG participation for \$2 million in FY2008 and \$1 million in FY2009.
- In summary, the FY2008-2013 Storm Drainage Facilities Improvements Program totals \$321 million and is funded primarily by general obligation debt supported by a transfer from the Combined Utility Fund (Water and Wastewater Enterprise Fund).

## Storm Drainage

2008-2013 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project Name	Estimated 2007	Fiscal Year Planned Appropriations					2008-2013	
			2008	2009	2010	2011	2012		2013
M-000126	Local Drainage Improvement Projects	2,000	3,000	2,000	2,500	3,000	4,000	4,000	18,500
M-000209	Wycliffe Dr Relief Storm Sewer (Brittmoore)	426			1,600				1,600
M-000217	Sunnyside Court Storm Sewer Laterals	2,000							
M-000220	SWMP: Program Management and Technical Services	2,500	1,750	1,500	1,250	1,000	1,000	1,000	7,500
M-000228	Lancaster Relief Storm Sewer	2,000							
M-000230	Kirby Relief Storm Sewer				8,500				8,500
M-000241	Stormwater Pump Station Improvements at Various Underpasses	609	3,000	3,000					6,000
M-000247	Kirkwood: Memorial to I-10				8,250				8,250
M-000248	Wilchester, Memorial Way, & Memorial Trails Drainage Improvements	7,352							
M-000249	Memorial Area Storm Sewer Improvements		13,000	4,550					17,550
M-000250	Kirkwood Briar Forest Drainage Improvements		450			3,000			3,450
M-000253	Edloe Street Area Storm Sewer Relief	3,950		2,850					2,850
M-000255	Braes Boulevard and Academy Street Storm Drainage Trunk Line	600	3,900		4,750				8,650
M-000256	Sharpstown Storm Sewer Improvements	2,000							
M-000257	Woodland Heights Storm Sewer Improvements	9,206							
M-000260	Texas Medical Center Drainage Improvements	9,850							
M-000261	Buffalo Bayou Detention Basin		1,900						1,900
M-000262	Whiteheather Storm Sewer Improvements (Fuqua, Buffalo Speedway to Hiram Clark)	1,400	8,650	7,500	7,500	7,500			31,150
M-000263	Sherwood Forest Storm Sewer System (I-10: Antoine to Silber)	300				5,750			5,750

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CIP No.	Project Name	Estimated 2007	Fiscal Year Planned Appropriations					2008-2013	
			2008	2009	2010	2011	2012		2013
M-000265	Renwick Street Drainage Improvements	340			1,000	1,000	8,000	8,000	18,000
M-000266	Kirkwyn, Sagemont Park Area Drainage Improvements		1,300						1,300
M-000267	Shepherd Drive: Buffalo Bayou to Westheimer	340	650		650	5,850	5,200	5,200	17,550
M-000269	Wayside from Larua Koppe to Crestview		1,550						1,550
M-000271	Braesheather, Doud, and Endicott Street Drainage Improvements					600			600
M-000272	Martin Luther King Boulevard from Orem to Airport		500	2,850					3,350
M-000273	Broadway from Belfort to Park Place	405				6,200			6,200
M-000276	Astoria from Flushing Meadows to Binghampton		460			2,150			2,610
M-000277	Crestridge Drainage Improvements from Mykawa to Doolittle				700	1,450	3,450		5,600
M-000278	Upper Kirby			5,750					5,750
M-000279	Braesheather Drainage Improvements						600		600
M-000280	Boone from Harwin to Oakcenter Drainage Improvements	340			6,000				6,000
M-000281	Meyerland, Westbury					500			500
M-000282	Homestead Road Area Drainage Improvements		250			5,477			5,727
M-000283	Riptide Area Drainage Improvements	389			3,500				3,500
M-000284	Airline Drive from Canino to Little York Drainage Improvements					1,100	1,100	5,100	7,300
M-000285	Ella Boulevard from IH-610 to Candlelight Drainage Improvements					1,200	800	6,800	8,800
M-000286	Pleasantville					750	750	5,150	6,650
M-000287	Wirt Road from Kempwood to I-10 Drainage Improvements					700	3,300		4,000
M-000288	Edgebrook from Klondike to I-45 Drainage Improvements					800	3,750		4,550

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			2008	2009	2010	2011	2012		2013
M-000289	Cullen from Schurmier to Orem Drainage Improvements					300		5,900	6,200
M-000290	Fourth Ward, Avondale					1,100	6,100	6,100	13,300
M-000291	Sageorchard and Sagearbor Drainage Improvements						300		300
M-000292	Trinity-Houston Gardens (Ernie: Lockwood to Homestead)		9,000						9,000
M-000293	Inwood Forest Area						350		350
M-000294	Cullen from IH-610 to Old Spanish Trail Drainage Improvements						950	950	1,900
M-000295	Scott Street from IH-610 to Old Spanish Trail Drainage Improvements						1,050	1,050	2,100
M-000296	Regional/Subregional Stormwater Detention	393		950	2,500	4,500	3,000	11,000	21,950
M-000574	Monroe from Almeda Genoa to Fuqua								
M-000582	South Shaver: Gulf Freeway to Highway 3		1,300						1,300
M-000589	Tanner Road: Hempstead to Beltway 8				2,100				2,100
M-000597	Brittmoore: Hammerly to Clay Detention Basin			2,000					2,000
M-000771	Kirby Drive Storm Sewer Improvements: Southwest Freeway to Brays Bayou	17,000		15,400					15,400
M-000800	Developer Participation	1,521	1,500	1,500	1,500	1,500	1,500	1,500	9,000
M-001002	White Oak Bayou Drainage Improvements						3,000		3,000
M-001010	Western Village, Sherwood Estates						900		900
M-001013	Willow Waterhole Area Relief Storm Sewer						500		500
M-NA	Contingencies					50	400		450
	<b>Total:</b>	<b>64,921</b>	<b>52,160</b>	<b>49,850</b>	<b>52,300</b>	<b>55,477</b>	<b>50,000</b>	<b>61,750</b>	<b>321,537</b>