



STORM DRAINAGE SYSTEM

Storm Drainage System

The Storm Water Drainage Program designs and constructs drainage improvement projects in areas of the City with a demonstrated need in order to provide increased levels of flood protection for Houston and its citizens. The Storm Water Drainage System consists of sheet flow of rainfall runoff overland to the street, street conveyance to an inlet, inlet interception to underground pipe (storm sewer), and pipe conveyance to project outfall at receiving system. The receiving system can be a bayou, tributary channel, or another storm sewer. The Program consists of the following major components (Totals do not include water and wastewater funding):

Capital Improvement Projects:

- The City has developed and is now using a tool that is based on a Geographic Information System (GIS) to evaluate and compare information citywide. This tool is named the Storm Water Enhanced Evaluation Tool or SWEET. The SWEET, uses objective criteria to develop a ranked list of the highest priority need areas across the city, and is also used to prioritize candidate storm drainage projects based on the benefit/cost. The projects selected for funding have the highest numbers of benefited users for the least amount of cost. Each project will be designed to convey the 2-year rainfall event in the storm sewer and reduce the risk of structural flooding during the 100-year storm event. Properties within a special flood hazard area or 100-year flood zone will be protected from localized event flooding, but may not be protected from flooding related to inadequate level of service of the receiving system.

Local Drainage Projects:

- The Local Drainage Projects (LDP) Program is required to address localized storm water drainage system problems identified by the owner/operator, including inadequate level of service due to underground storm sewer capacity, inlet capacity, and/or structural failure of the storm sewer or outfall where a simple solution will resolve the problems of an otherwise adequate storm water drainage system. Engineering and construction are accomplished by work order contracts, in order to address these problems quickly and cost effectively. The FY2016-2020 program totals approximately \$27 million.

The Capital Improvement Plan (CIP) provides an estimate of delivery by fiscal year for the next five years. The delivery schedule is affected by unanticipated external forces outside of the control of the City, such as, private utilities, property acquisition, other agencies, outside funding partners, etc. However, the City makes every attempt to deliver a good product in a timely manner. In summary, the FY2016-2020 Capital Improvement Plan for the Storm Water Drainage Capital Improvements Program totals \$414 million that is funded by the Dedicated Drainage and Street Renewal Fund (DDSRF) as approved by the voters on November 2, 2010.

Project Allocation	Fiscal Year Planned Appropriations					2016-2020
	2016	2017	2018	2019	2020	
Planning						
Acquisition-Land	3,307	1,476	933			5,716
Design	18,505	13,662	7,361	7,698	8,035	55,261
Construction	62,877	46,888	66,821	80,320	86,117	343,023
Equipment Acquisition						
Salary Recovery						
Other	1,020	1,040	1,590	3,240	3,300	10,190
Total Allocation	85,709	63,066	76,705	91,258	97,452	414,190
Source of Funds						
4042 - Street & Trfc Control & Strm Drain DDSRF	85,709	63,066	76,705	91,258	97,452	414,190
8500 - PWE-W&S Syst Consolidated Constr Fd						
Total Funds	85,709	63,066	76,705	91,258	97,452	414,190

**STORM DRAINAGE SYSTEM - Summary of Funds
2016-2020 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project	Fiscal Year Planned Appropriations					2016-2020
		2016	2017	2018	2019	2020	
M-000247	Nottingham & Yorkshire Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF			13,942			13,942
	8500 - PWE-W&S Syst Consolidated Constr Fd			2,971			2,971
	Project Total			16,913			16,913
M-000261	Buffalo Bayou Detention Basin						
	4042 - Street & Trfc Control & Strm Drain DDSRF			3,697			3,697
	Project Total			3,697			3,697
M-000265	Rampart Street Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			17,578			17,578
	Project Total			17,578			17,578
M-000277	Southpark and Southcrest Drainage						
	4042 - Street & Trfc Control & Strm Drain DDSRF			5,696			5,696
	Project Total			5,696			5,696
M-000284	Airline Dr. Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			18,443			18,443
	8500 - PWE-W&S Syst Consolidated Constr Fd			1,118			1,118
	Project Total			19,561			19,561
M-000285	Garden Oaks and Shepherd Forest Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF			21,011			21,011
	8500 - PWE-W&S Syst Consolidated Constr Fd			1,011			1,011
	Project Total			22,022			22,022
M-000288	Easthaven Blvd(Bryant to Ledge) Drainage						
	4042 - Street & Trfc Control & Strm Drain DDSRF			4,663			4,663
	Project Total			4,663			4,663

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2016-2020 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project						2016-2020
		2016	2017	2018	2019	2020	
M-000293	Binglewood, Inwood Forest, & Oak Forest						
	4042 - Street & Trfc Control & Strm Drain DDSRF		10,864				10,864
	8500 - PWE-W&S Syst Consolidated Constr Fd		1,611				1,611
	Project Total		12,475				12,475
M-000294	Cullen Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF		10,464				10,464
	8500 - PWE-W&S Syst Consolidated Constr Fd		2,048				2,048
	Project Total		12,512				12,512
M-000295	Scott Street Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF		13,843				13,843
	8500 - PWE-W&S Syst Consolidated Constr Fd		1,381				1,381
	Project Total		15,224				15,224
M-001010	Wycliffe Drive (Chatterton to Melronome)						
	4042 - Street & Trfc Control & Strm Drain DDSRF		2,091				2,091
	8500 - PWE-W&S Syst Consolidated Constr Fd		773				773
	Project Total		2,864				2,864
M-410001	Woodshire Area Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF		13,237				13,237
	8500 - PWE-W&S Syst Consolidated Constr Fd		4,362				4,362
	Project Total		17,599				17,599
M-410002	Potomac & Nantucket Area Drng and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			9,396			9,396
	8500 - PWE-W&S Syst Consolidated Constr Fd			2,237			2,237
	Project Total			11,633			11,633

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2016-2020 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2016-2020
		2016	2017	2018	2019	2020	
M-410003	Roosevelt, Edel Plaza, Little York Acres						
	4042 - Street & Trfc Control & Strm Drain DDSRF			2,724			2,724
	8500 - PWE-W&S Syst Consolidated Constr Fd			224			224
	Project Total			2,948			2,948
M-410004	Little York, Courlandt Mdws, York Mdws						
	4042 - Street & Trfc Control & Strm Drain DDSRF	338		4,666			5,004
	8500 - PWE-W&S Syst Consolidated Constr Fd			893			893
	Project Total	338		5,559			5,897
M-410005	Spring Shadows (North)						
	4042 - Street & Trfc Control & Strm Drain DDSRF	468		8,835			9,303
	Project Total	468		8,835			9,303
M-410006	Arlington Heights Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF		1,040	10,459		9,527	21,026
	8500 - PWE-W&S Syst Consolidated Constr Fd			4,767		1,413	6,180
	Project Total		1,040	15,226		10,940	27,206
M-410007	Gulf Terrace Sec 1, Acre Homes Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	687	215		8,818		9,720
	Project Total	687	215		8,818		9,720
M-410008	Freeway Manor: South of Edgebrook Dr.						
	4042 - Street & Trfc Control & Strm Drain DDSRF	692	114		6,152		6,958
	Project Total	692	114		6,152		6,958
M-410009	Briar Meadow Subdivision Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	563			7,846		8,409
	8500 - PWE-W&S Syst Consolidated Constr Fd				4,588		4,588
	Project Total	563			12,434		12,997

STORM DRAINAGE SYSTEM - Summary of Funds
2016-2020 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project						2016-2020	
		2016	2017	2018	2019	2020		
M-410010	Freeway Manor: North of Edgebrook							
	4042 - Street & Trfc Control & Strm Drain DDSRF	922	114		8,048		9,084	
	Project Total	922	114		8,048		9,084	
M-410013	Melrose Park Sec 2 Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	337			3,461		3,798	
	Project Total	337			3,461		3,798	
M-410014	Wynnewood Acres Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	886			3,890		4,776	
	8500 - PWE-W&S Syst Consolidated Constr Fd				1,174		1,174	
	Project Total	886			5,064		5,950	
M-410015	Magnolia Park Sec 2 Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,848			13,482		15,330	
	8500 - PWE-W&S Syst Consolidated Constr Fd				362		362	
	Project Total	1,848			13,844		15,692	
M-410016	Westridge and Braes Terrace Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,681			6,981		8,662	
	8500 - PWE-W&S Syst Consolidated Constr Fd				2,406		2,406	
	Project Total	1,681			9,387		11,068	
M-410017	Garden Oaks and Shepherd Park (West)							
	4042 - Street & Trfc Control & Strm Drain DDSRF				16,226		16,226	
	8500 - PWE-W&S Syst Consolidated Constr Fd				700		700	
	Project Total				16,926		16,926	
M-410021	Pinewood Village Area 2							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,357			7,717		9,074	
	Project Total	1,357			7,717		9,074	

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2016-2020 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2016-2020	
		2016	2017	2018	2019	2020		
M-410022	Garden Oaks and Shepherd Park (East)							
	4042 - Street & Trfc Control & Strm Drain DDSRF					17,058		17,058
	Project Total					17,058		17,058
M-410023	Richmond Plaza Area 2							
	4042 - Street & Trfc Control & Strm Drain DDSRF		1,440			8,834		10,274
	Project Total		1,440			8,834		10,274
M-410024	Southland Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		2,740			16,377		19,117
	8500 - PWE-W&S Syst Consolidated Constr Fd					1,650		1,650
	Project Total		2,740			18,027		20,767
M-410028	Westbury Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		1,418			4,068		5,486
	8500 - PWE-W&S Syst Consolidated Constr Fd					1,301		1,301
	Project Total		1,418			5,369		6,787
M-410290	Gillette Trunk-line Improvements							
	4042 - Street & Trfc Control & Strm Drain DDSRF			12,402				12,402
	8500 - PWE-W&S Syst Consolidated Constr Fd			992				992
	Project Total			13,394				13,394
M-420126	Local Drainage Program (LDP)							
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,100	5,200	5,300	5,400	5,500		26,500
	Project Total	5,100	5,200	5,300	5,400	5,500		26,500
M-430004	Rehab of City Owned Drainage Channels							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,530	1,560	1,590	1,620	1,650		7,950
	Project Total	1,530	1,560	1,590	1,620	1,650		7,950

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2016-2020 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2016-2020	
		2016	2017	2018	2019	2020		
M-430005	Roadside Drainage Improvements							
	4042 - Street & Trfc Control & Strm Drain DDSRF	500	520	530	540	550	2,640	
	Project Total	500	520	530	540	550	2,640	
M-430100	Pre-Engineering for Storm Water Drainage							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,250	2,500	2,750	3,000	3,250	13,750	
	Project Total	2,250	2,500	2,750	3,000	3,250	13,750	
M-430220	Storm Drainage Program Support							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,550	1,560	1,590	1,620	1,650	8,970	
	Project Total	2,550	1,560	1,590	1,620	1,650	8,970	
M-430241	Stormwater Pump Station & Flood Warning							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,040					2,040	
	Project Total	2,040					2,040	
M-430296	Mitigation Program for CIP Projects							
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,092	2,769	3,113	1,350	1,375	13,699	
	Project Total	5,092	2,769	3,113	1,350	1,375	13,699	
M-430800	Developer Participation							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,020	1,040	1,590	3,240	3,300	10,190	
	Project Total	1,020	1,040	1,590	3,240	3,300	10,190	
M-NA0000	Contingencies							
	4042 - Street & Trfc Control & Strm Drain DDSRF	-6,880	-13,360	-6,845	22,791	-6,611	-10,905	
	8500 - PWE-W&S Syst Consolidated Constr Fd	-2,129	-10,175	-12,084	-6,124	-7,470	-37,982	
	Project Total	-9,009	-23,535	-18,929	16,667	-14,081	-48,887	
	Total Appropriations:	85,709	63,066	76,705	91,258	97,452	414,190	



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