



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 LDP program totals approximately \$31 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 Capital Improvement Plan for the Storm Water Drainage Capital Improvements Program totals \$510 million that is funded primarily by the Dedicated Drainage and Street Renewal Fund (DDSRF) as approved by the voters on November 2, 2010.

Project Allocation	Fiscal Year Planned Appropriations					2018-2022
	2018	2019	2020	2021	2022	
Planning						
Acquisition-Land	3,111		874			3,985
Design	17,302	20,592	6,070	6,443	9,323	59,730
Construction	43,331	72,959	89,763	66,219	151,325	423,597
Equipment Acquisition						
Salary Recovery						
Other				20,992	1,306	22,298
Total Allocation	63,744	93,551	96,706	93,654	161,954	509,609
Source of Funds						
4042 - Street & Trfc Control & Strm Drain DDSRF	62,744	92,551	95,706	92,654	160,954	504,609
5430 - Proposed HUD	1,000	1,000	1,000	1,000	1,000	5,000
8500 - PWE-W&S Syst Consolidated Constr Fd						
Total Funds	63,744	93,551	96,706	93,654	161,954	509,609

STORM DRAINAGE SYSTEM - Summary of Funds
2018-2022 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project	Fiscal Year Planned Appropriations					2018-2022
		2018	2019	2020	2021	2022	
M-000247	Nottingham & Yorkshire Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,655	12,091				17,746
	8500 - PWE-W&S Syst Consolidated Constr Fd	203	4,859				5,061
	Project Total	5,858	16,950				22,807
M-000284	Airline Dr. Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF		18,274				18,274
	8500 - PWE-W&S Syst Consolidated Constr Fd		562				562
	Project Total		18,836				18,836
M-000288	Easthaven Blvd (Bryant to Ledge)						
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,765					5,765
	8500 - PWE-W&S Syst Consolidated Constr Fd	1,041					1,041
	Project Total	6,806					6,806
M-000294	Cullen Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			10,851			10,851
	8500 - PWE-W&S Syst Consolidated Constr Fd			1,338			1,338
	Project Total			12,189			12,189
M-000295	Scott Street Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			9,611			9,611
	8500 - PWE-W&S Syst Consolidated Constr Fd			1,726			1,726
	Project Total			11,337			11,337
M-000700	Kress Street Area Paving and Drainage						
	4042 - Street & Trfc Control & Strm Drain DDSRF	4,510					4,510
	Project Total	4,510					4,510

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2018-2022 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2018-2022
		2018	2019	2020	2021	2022	
M-410001	Woodshire Area Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF		14,800				14,800
	8500 - PWE-W&S Syst Consolidated Constr Fd		1,600				1,600
	Project Total		16,400				16,400
M-410002	Potomac & Nantucket Area Drng and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF		10,501				10,501
	8500 - PWE-W&S Syst Consolidated Constr Fd		2,624				2,624
	Project Total		13,125				13,125
M-410003	Roosevelt, Edel Plaza, Little York Acres						
	4042 - Street & Trfc Control & Strm Drain DDSRF	4,458					4,458
	8500 - PWE-W&S Syst Consolidated Constr Fd	563					563
	Project Total	5,021					5,021
M-410004	Little York, Courlandt Mdws, York Mdws						
	4042 - Street & Trfc Control & Strm Drain DDSRF	7,505					7,505
	8500 - PWE-W&S Syst Consolidated Constr Fd	724					724
	Project Total	8,228					8,228
M-410005	Spring Shadows (North)						
	4042 - Street & Trfc Control & Strm Drain DDSRF	13,371					13,371
	Project Total	13,371					13,371
M-410006	Arlington Heights Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,601			9,527		15,128
	8500 - PWE-W&S Syst Consolidated Constr Fd	4,258					4,258
	Project Total	9,859			9,527		19,386

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CIP No.	Project						2018-2022
		2018	2019	2020	2021	2022	
M-410007	Gulf Terrace Sec 1 Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF			5,961			5,961
	Project Total			5,961			5,961
M-410008	Freeway Manor South Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF		6,177				6,177
	Project Total		6,177				6,177
M-410009	Briar Meadow Subdivision Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF		10,955				10,955
	8500 - PWE-W&S Syst Consolidated Constr Fd		6,895				6,895
	Project Total		17,850				17,850
M-410010	Freeway Manor: North of Edgebrook						
	4042 - Street & Trfc Control & Strm Drain DDSRF		8,027				8,027
	Project Total		8,027				8,027
M-410013	Melrose Park Sec 2 Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF		5,300				5,300
	Project Total		5,300				5,300
M-410014	Wynnewood Acres Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF			4,230			4,230
	Project Total			4,230			4,230
M-410015	Magnolia Park Sec 2 Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,889	13,894		7,660		23,443
	Project Total	1,889	13,894		7,660		23,443
M-410016	Westridge and Braes Terrace Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF			5,798			5,798
	Project Total			5,798			5,798

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CIP No.	Project						2018-2022	
		2018	2019	2020	2021	2022		
M-410019	Sharpstown Area 2							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,200	1,061		19,752	19,041	41,054	
	Project Total	1,200	1,061		19,752	19,041	41,054	
M-410021	Pinewood Village Area 2 (South)							
	4042 - Street & Trfc Control & Strm Drain DDSRF			10,225			10,225	
	Project Total			10,225			10,225	
M-410022	Garden Oaks and Shepherd Park (East)							
	4042 - Street & Trfc Control & Strm Drain DDSRF			17,740			17,740	
	Project Total			17,740			17,740	
M-410023	Richmond Plaza Area 2							
	4042 - Street & Trfc Control & Strm Drain DDSRF			9,267			9,267	
	Project Total			9,267			9,267	
M-410024	Southland Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF				16,079		16,079	
	Project Total				16,079		16,079	
M-410025	Inwood Forest Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,555		330	7,753		10,638	
	Project Total	2,555		330	7,753		10,638	
M-410027	Richmond Plaza 1 (North)							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,121			3,174		4,295	
	Project Total	1,121			3,174		4,295	
M-410028	Westbury Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF			3,994			3,994	
	Project Total			3,994			3,994	

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CIP No.	Project						2018-2022	
		2018	2019	2020	2021	2022		
M-410029	Chateau Forest West Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,764				6,605	9,369	
	Project Total	2,764				6,605	9,369	
M-410030	Fuqua 48 in STW							
	4042 - Street & Trfc Control & Strm Drain DDSRF		201				201	
	Project Total		201				201	
M-410031	72 In. SWT line Midtown/Montrose							
	4042 - Street & Trfc Control & Strm Drain DDSRF			1,467			1,467	
	Project Total			1,467			1,467	
M-410032	West Alabama 72 in. SWT							
	4042 - Street & Trfc Control & Strm Drain DDSRF				519		519	
	Project Total				519		519	
M-410033	Avalon Place							
	4042 - Street & Trfc Control & Strm Drain DDSRF			2,929			2,929	
	Project Total			2,929			2,929	
M-410034	72 in. SWT EADO							
	4042 - Street & Trfc Control & Strm Drain DDSRF	3,414					3,414	
	Project Total	3,414					3,414	
M-410035	Jefferson Davis School Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		3,399	543		16,047	19,990	
	Project Total		3,399	543		16,047	19,990	
M-410036	Spring Shadows Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		2,617			23,468	26,084	
	Project Total		2,617			23,468	26,084	

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CIP No.	Project						2018-2022	
		2018	2019	2020	2021	2022		
M-410038	Central Park Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		3,490			11,242	14,731	
	Project Total		3,490			11,242	14,731	
M-410039	Cottage Grove East Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		4,068			15,718	19,786	
	Project Total		4,068			15,718	19,786	
M-420126	Local Drainage Program (LDP)							
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,185	5,291	5,395	5,505	10,000	31,376	
	Project Total	5,185	5,291	5,395	5,505	10,000	31,376	
M-430004	Off-Road Ditch Projects Programs							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,580	1,612	1,645	1,678	5,000	11,515	
	Project Total	1,580	1,612	1,645	1,678	5,000	11,515	
M-430005	Roadside Drainage Improvements							
	4042 - Street & Trfc Control & Strm Drain DDSRF	519	529	540	550	2,500	4,638	
	Project Total	519	529	540	550	2,500	4,638	
M-430006	Storm Water Action Team (SWAT)							
	4042 - Street & Trfc Control & Strm Drain DDSRF				10,000	20,000	30,000	
	Project Total				10,000	20,000	30,000	
M-430007	Outfall Rehabilitation & Reconstruction							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,000	1,000	1,500	2,000	2,000	7,500	
	Project Total	1,000	1,000	1,500	2,000	2,000	7,500	
M-430100	Pre-Engineering for Storm Water Drainage							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,036	2,076	2,224	2,430	3,000	11,766	
	Project Total	2,036	2,076	2,224	2,430	3,000	11,766	

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CIP No.	Project						2018-2022	
		2018	2019	2020	2021	2022		
M-430220	Project Mgmt. Incl. Testing & Inspection							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,400	1,587	1,619	1,652	1,700	8,958	
	Project Total	2,400	1,587	1,619	1,652	1,700	8,958	
M-430241	Stormwater Pump Station & Flood Warning							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,000	1,000	1,000	1,000	1,000	5,000	
	5430 - Proposed HUD	1,000	1,000	1,000	1,000	1,000	5,000	
	Project Total	2,000	2,000	2,000	2,000	2,000	10,000	
M-430296	Mitigation Program for CIP Projects							
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,712					5,712	
	Project Total	5,712					5,712	
M-430800	Developer Participation							
	4042 - Street & Trfc Control & Strm Drain DDSRF				1,240	1,306	2,546	
	Project Total				1,240	1,306	2,546	
M-NA0000	Contingencies							
	4042 - Street & Trfc Control & Strm Drain DDSRF	-16,495	-35,399	-1,163	2,135	22,327	-28,595	
	8500 - PWE-W&S Syst Consolidated Constr Fd	-6,789	-16,540	-3,064			-26,393	
	Project Total	-23,284	-51,939	-4,227	2,135	22,327	-54,988	
	Total Appropriations:	63,744	93,551	96,706	93,654	161,954	509,609	