



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 \$26 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 \$457 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					2017-2021
	2017	2018	2019	2020	2021	
Planning						
Acquisition-Land	435	3,111		337		3,882
Design	17,331	17,572	6,073	6,655	6,739	54,371
Construction	50,703	42,903	107,163	86,736	104,437	391,943
Equipment Acquisition						
Salary Recovery						
Other	1,018	1,037	1,587	1,619	1,652	6,913
Total Allocation	69,487	64,623	114,824	95,347	112,828	457,109
Source of Funds						
4042 - Street & Trfc Control & Strm Drain DDSRF	69,487	64,623	114,824	95,347	112,828	457,109
8500 - PWE-W&S Syst Consolidated Constr Fd						
Total Funds	69,487	64,623	114,824	95,347	112,828	457,109

STORM DRAINAGE SYSTEM - Summary of Funds
2017-2021 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project	Fiscal Year Planned Appropriations					2017-2021
		2017	2018	2019	2020	2021	
M-000247	Nottingham & Yorkshire Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF		19,319				19,319
	8500 - PWE-W&S Syst Consolidated Constr Fd		2,122				2,122
	Project Total		21,441				21,441
M-000284	Airline Dr. Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			19,147			19,147
	Project Total			19,147			19,147
M-000288	Easthaven Blvd(Bryant to Ledge) Drainage						
	4042 - Street & Trfc Control & Strm Drain DDSRF		5,873				5,873
	Project Total		5,873				5,873
M-000291	Sagemont Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF	4,789					4,789
	Project Total	4,789					4,789
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	12,476					12,476
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			9,227			9,227
	8500 - PWE-W&S Syst Consolidated Constr Fd			844			844
	Project Total			10,071			10,071

STORM DRAINAGE SYSTEM - Summary of Funds
2017-2021 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project						2017-2021
		2017	2018	2019	2020	2021	
M-000700	Kress Street Area Paving and Drainage						
	4042 - Street & Trfc Control & Strm Drain DDSRF	3,054					3,054
	Project Total	3,054					3,054
M-001010	Wycliffe Drive (Chatterton to Melronome)						
	4042 - Street & Trfc Control & Strm Drain DDSRF	11,655					11,655
	8500 - PWE-W&S Syst Consolidated Constr Fd	2,047					2,047
	Project Total	13,702					13,702
M-410001	Woodshire Area Drainage and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF	11,481		10,000			21,481
	8500 - PWE-W&S Syst Consolidated Constr Fd	1,529		1,589			3,118
	Project Total	13,010		11,589			24,599
M-410002	Potomac & Nantucket Area Drng and Paving						
	4042 - Street & Trfc Control & Strm Drain DDSRF			10,283			10,283
	Project Total			10,283			10,283
M-410003	Roosevelt, Edel Plaza, Little York Acres						
	4042 - Street & Trfc Control & Strm Drain DDSRF		3,245				3,245
	Project Total		3,245				3,245
M-410004	Little York, Courlandt Mdws, York Mdws						
	4042 - Street & Trfc Control & Strm Drain DDSRF		7,645				7,645
	Project Total		7,645				7,645
M-410005	Spring Shadows (North)						
	4042 - Street & Trfc Control & Strm Drain DDSRF		13,620				13,620
	Project Total		13,620				13,620

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2017-2021 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2017-2021	
		2017	2018	2019	2020	2021		
M-410006	Arlington Heights Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	6,006	10,429			9,712	26,147	
	8500 - PWE-W&S Syst Consolidated Constr Fd		3,170				3,170	
	Project Total	6,006	13,599			9,712	29,317	
M-410007	Gulf Terrace Sec 1, Acre Homes Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	910	1,659	5,955			8,525	
	Project Total	910	1,659	5,955			8,525	
M-410008	Freeway Manor: South of Edgebrook Dr.							
	4042 - Street & Trfc Control & Strm Drain DDSRF	816		6,171			6,988	
	Project Total	816		6,171			6,988	
M-410009	Briar Meadow Subdivision Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF			8,335			8,335	
	Project Total			8,335			8,335	
M-410010	Freeway Manor: North of Edgebrook							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,051	3,318	8,020			12,389	
	Project Total	1,051	3,318	8,020			12,389	
M-410013	Melrose Park Sec 2 Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	509		3,740			4,249	
	Project Total	509		3,740			4,249	
M-410014	Wynnewood Acres Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF			4,142			4,142	
	Project Total			4,142			4,142	
M-410015	Magnolia Park Sec 2 Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF		1,887	13,880		7,653	23,420	
	Project Total		1,887	13,880		7,653	23,420	

STORM DRAINAGE SYSTEM - Summary of Funds
2017-2021 CAPITAL IMPROVEMENT PLAN (\$ Thousands)

CIP No.	Project						2017-2021
		2017	2018	2019	2020	2021	
M-410016	Westridge and Braes Terrace Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	953			6,545		7,498
	Project Total	953			6,545		7,498
M-410017	Garden Oaks and Shepherd Park (West)						
	4042 - Street & Trfc Control & Strm Drain DDSRF				16,860		16,860
	Project Total				16,860		16,860
M-410019	Sharpstown Area 2						
	4042 - Street & Trfc Control & Strm Drain DDSRF		3,258			19,734	22,993
	Project Total		3,258			19,734	22,993
M-410021	Pinewood Village Area 2						
	4042 - Street & Trfc Control & Strm Drain DDSRF				8,098		8,098
	Project Total				8,098		8,098
M-410022	Garden Oaks and Shepherd Park (East)						
	4042 - Street & Trfc Control & Strm Drain DDSRF				17,724		17,724
	Project Total				17,724		17,724
M-410023	Richmond Plaza Area 2						
	4042 - Street & Trfc Control & Strm Drain DDSRF				9,259		9,259
	Project Total				9,259		9,259
M-410024	Southland Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,682			16,064		18,747
	Project Total	2,682			16,064		18,747
M-410025	Inwood Forest Area						
	4042 - Street & Trfc Control & Strm Drain DDSRF		2,552		337	7,746	10,634
	Project Total		2,552		337	7,746	10,634

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2017-2021 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2017-2021	
		2017	2018	2019	2020	2021		
M-410027	Richmond Plaza 1 (North)							
	4042 - Street & Trfc Control & Strm Drain DDSRF		1,120			3,171	4,291	
	Project Total		1,120			3,171	4,291	
M-410028	Westbury Area							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,388			3,990		5,378	
	Project Total	1,388			3,990		5,378	
M-410029	Chateau Forest Area 1							
	4042 - Street & Trfc Control & Strm Drain DDSRF		2,762			6,467	9,229	
	Project Total		2,762			6,467	9,229	
M-410290	Gillette Trunk-line Improvements							
	4042 - Street & Trfc Control & Strm Drain DDSRF	18,807					18,807	
	8500 - PWE-W&S Syst Consolidated Constr Fd	1,825					1,825	
	Project Total	20,631					20,631	
M-420126	Local Drainage Program (LDP)							
	4042 - Street & Trfc Control & Strm Drain DDSRF	5,090	5,185	5,290	5,395	5,505	26,465	
	Project Total	5,090	5,185	5,290	5,395	5,505	26,465	
M-430004	Rehab of City Owned Drainage Channels							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,551	1,580	1,612	1,645	1,678	8,067	
	Project Total	1,551	1,580	1,612	1,645	1,678	8,067	
M-430005	Roadside Drainage Improvements							
	4042 - Street & Trfc Control & Strm Drain DDSRF	509	519	529	540	551	2,647	
	Project Total	509	519	529	540	551	2,647	
M-430100	Pre-Engineering for Storm Water Drainage							
	4042 - Street & Trfc Control & Strm Drain DDSRF	2,000	2,000	2,000	2,500	2,500	11,000	
	Project Total	2,000	2,000	2,000	2,500	2,500	11,000	

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2017-2021 CAPITAL IMPROVEMENT PLAN (\$ Thousands)**

CIP No.	Project						2017-2021	
		2017	2018	2019	2020	2021		
M-430220	Storm Water Engineering Program Support							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,654	1,556	1,587	1,619	1,652	8,068	
	Project Total	1,654	1,556	1,587	1,619	1,652	8,068	
M-430241	Stormwater Pump Station & Flood Warning							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,558					1,558	
	Project Total	1,558					1,558	
M-430296	Mitigation Program for CIP Projects							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,527	778	794	809	826	4,733	
	Project Total	1,527	778	794	809	826	4,733	
M-430800	Developer Participation							
	4042 - Street & Trfc Control & Strm Drain DDSRF	1,018	1,037	1,587	1,619	1,652	6,913	
	Project Total	1,018	1,037	1,587	1,619	1,652	6,913	
M-450500	Storm Water Improvements Under R/S							
	4042 - Street & Trfc Control & Strm Drain DDSRF			3,354	1,385	676	5,415	
	Project Total			3,354	1,385	676	5,415	
M-NA0000	Contingencies							
	4042 - Street & Trfc Control & Strm Drain DDSRF	-20,385	-35,570	-830	958	43,306	-12,521	
	8500 - PWE-W&S Syst Consolidated Constr Fd	-7,013	-6,630	-2,433			-16,076	
	Project Total	-27,398	-42,200	-3,263	958	43,306	-28,597	
	Total Appropriations:	69,487	64,623	114,824	95,347	112,828	457,109	



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