

CAPITAL IMPROVEMENT AND REPLACEMENT PROGRAM

SUMMARY

The identification and prioritization of projects to be included in the Capital Improvement and Replacement Program is a multi-step process, requiring monitoring and updating to ensure that the highest priority problems within the District are addressed in a timely manner, given funding limitations. These stages include: project identification, conceptual solution, preliminary study, final design, and construction.

At each step in the process, the project scope is reevaluated to verify that it continues to meet regulatory requirements and customers' needs. The project cost is updated based on available information, and the project's priority is assessed with the goal that the highest priority projects are funded first.

Project cost estimates used in the budget preparation process and shown in the Budget Supplement are usually based on the preliminary study stage of the process. At this stage there is typically a minimal amount of detailed information available regarding geotechnical conditions, utility relocation requirements, easement requirements, and other site-specific issues that have the potential to significantly affect the project's construction cost. Preliminary study cost estimates are intended to be within thirty percent of the design engineer's final estimates. Individual projects may vary to a greater degree than the average, due to unanticipated site-specific conditions that impact the project cost.

New projects are identified on an ongoing basis to ensure that the District is in compliance with the regulatory requirements of the United States Environmental Protection Agency and Missouri Department of Natural Resources, to address customer stormwater or wastewater problems, remedy deficiencies identified through planning studies and hydraulic

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analysis of the system, and implement required collection system and wastewater treatment plant repairs and upgrades.

Upon the initial identification of regulatory issues, localized problems, or system deficiencies, a conceptual solution is developed, which includes a project scope, cost estimate, and priority ranking of the project relative to similar projects. This solution and associated cost estimate are general, based on a single site visit and a “table-top” analysis of the problem. The project may then be incorporated into the Capital Improvement and Replacement Program in a specific fiscal year, based on the availability of funds and priority of the project.

Before the year in which funding of the project is anticipated, a preliminary study is performed. In this study, scope is reevaluated in greater detail to ensure that the conceptual solution is still viable, given current conditions, regulatory requirements, and updated project cost estimate and priority ranking. In performing this preliminary study, the District may make multiple site visits to inspect the problem area and estimate alignment of the sewer or channel to be constructed. Preliminary survey information may be obtained and a more detailed hydraulic analysis performed than was done at the conceptual solution level. Preliminary studies are typically performed by the Engineering Department. However, the District may use engineering consultants to perform preliminary studies during periods of heavy workload, or for large, complex projects such as new treatment plants, upgrades to existing treatment plants, tunnel projects, or major sewer upgrades.

Upon completion of a preliminary study, the project’s priority ranking is reevaluated relative to other, similar projects. A project may be rescheduled to a later fiscal year within the Capital Improvement and Replacement Program, should its priority ranking be reduced due to

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increased project cost estimate or modification of its scope.

The final design of a project is performed by either the District’s Engineering Department staff or via engineering consultant services. As part of the final design process, topographic and geotechnical information is collected, utility conflicts are identified, construction plans and specifications are prepared, easement plats are drafted, and easements are obtained.

In FY 2019, 47 engineering budget items have been procured using the Watershed Consultant approach, retaining firms for multi-year efforts on a related suite of projects, in order to increase efficiency, expedite the program and meet Consent Decree requirements and schedule. Following is a listing of the Watershed Consultant related engineering projects and associated professional service firms:

Project Number	Project Name	Page Number	Budget
	Watershed Program Consultant - 11151 - Construction Management Services - Tank/Treatment/Pump Station Facilities. Consultant: Kennedy Associates / Architects, Inc.		
11151	CONSTRUCTION MANAGEMENT SERVICES - TANK/TREATMENT/PUMP STATION FACILITIES	17	7,000,000
	Watershed Program Consultant - 11152 - Construction Management Services - Lower and Middle RDP Tunnel Facilities. Consultant: Shannon & Wilson, Inc.		
11152	CONSTRUCTION MANAGEMENT SERVICES - LOWER AND MIDDLE RDP TUNNEL FACILITIES	15	3,400,000
	Watershed Program Consultant - 11826 - Construction Management Services - Lower Meramec and Deer Creek Tunnels. Consultant: Black & Veatch Corporation		
11826	CONSTRUCTION MANAGEMENT SERVICES - LOWER MERAMEC AND DEER CREEK TUNNELS	16	7,400,000
	Watershed Program Design Consultant - 11109 - Lower & Middle RDP CSO Controls System Improvements. Consultant: Jacobs Engineering Group, Inc.		
11711	JEFFERSON BARRACKS TUNNEL (LEMAY WWTP TO MARTIGNEY PS)	49	485,000
11817	LEMAY NO. 3 PUMP STATION AND FORCE MAIN	51	50,000
12721	LEMAY WWTF REDUNDANT WATER SERVICE	54	47,000
11820	LMRDP CSO STORAGE TUNNEL (BROADWAY TO RDP TUBES)	55	365,000
11109	LOWER & MIDDLE RDP CSO CONTROLS SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	56	320,000
11109	LOWER & MIDDLE RDP CSO CONTROLS SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	57	365,000
11656	MALINE CREEK CSO BP 051 & 052 LOCAL STORAGE FACILITY (CHAIN OF ROCKS DR TO CHURCH DR)	61	285,000
	Watershed Program Design Consultant - 11110 - Deer Creek Sanitary System Improvements. Consultant: Parsons Water & Infrastructure, Inc.		
11731	DEER CREEK SANITARY TUNNEL (CLAYTON RD TO RDP)	23	1,500,000

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Watershed Program Design Consultant - 11144 - Bissell - Coldwater - Missouri - Meramec Sanitary System Improvements. Consultant: AMEC Foster Wheeler Environment & Infrastructure, Inc.			
12033	BISSELL - COLDWATER - MISSOURI - MERAMEC PUBLIC I/I REDUCTION (2020) CONTRACT A	2	85,000
12030	BISSELL - COLDWATER - MISSOURI - MERAMEC PUBLIC I/I REDUCTION (2020) CONTRACT B	3	50,000
12027	BISSELL - COLDWATER - MISSOURI - MERAMEC PUBLIC I/I REDUCTION (2020) CONTRACT C	4	85,000
11144	BISSELL - COLDWATER - MISSOURI - MERAMEC SANITARY SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	5	617,000
11144	BISSELL - COLDWATER - MISSOURI - MERAMEC SANITARY SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	6	65,000
12096	BISSELL HILLS SANITARY RELIEF (ST CYR RD TO LEETON AVE)	7	300,000
12110	CANTERBURY DRIVE LATERAL SANITARY RELIEF (NELSON DR TO CANTERBURY DR)	8	264,000
11724	COLDWATER SANITARY RELIEF SECTION B, C & D - SECTION B REHABILITATION	14	650,000
12142	DACEY BRANCH SANITARY RELIEF (BELLA CLARE DR TO PRIOR DR)	21	161,000
11745	FEE FEE TRUNK SEWER RELIEF (SKME-002, LONG LEAF CIRCLE TO THAMES COURT)	25	400,000
12325	LANG ROYCE SANITARY RELIEF (FARGO DR TO FLORIDALE CT)	50	116,000
12352	MIDLAND SANITARY RELIEF (MIDLAND BLVD TO SIMS AVE)	62	332,000
12191	ROLAND SANITARY RELIEF (NELSON DR TO ROLAND BLVD)	69	90,000
12221	SUB-TRUNK #2 SANITARY RELIEF (BIRMINGHAM CT TO COVE LN)	74	526,000
11669	SUB-TRUNK #3 SANITARY RELIEF (MURIEL DR TO JENNER LN)	75	452,000
Watershed Program Design Consultant - 11145 - Lemay Sanitary System Improvements. Consultant: Burns & McDonnell Engineering Co., Inc.			
12152	E. WATSON SANITARY RELIEF (RUDSON LN TO RICHVIEW DR)	24	482,000
12569	GRAVOIS TRUNK SANITARY STORAGE FACILITY (PARDEE LN AND PARDEE RD)	46	700,000
12057	LEMAY PUBLIC I/I REDUCTION (2020) CONTRACT A	52	50,000
11145	LEMAY SANITARY SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	53	400,000
12201	SHREWSBURY SANITARY RELIEF SEWER AND I/I REDUCTION (WEIL AVE AND I-44)	70	670,000
12208	SPRING AVE SANITARY RELIEF (YEATMAN AVE TO DALE AVE)	71	332,000
12239	TULANE-WILBUR OUTFALL SANITARY RELIEF SEWER (WEBER RD TO HILDESHEIM AVE)	76	900,000
11679	WEST LOCKWOOD SANITARY RELIEF	81	432,000
Watershed Program Design Consultant - 11153 - RDP Tributaries (Deer Creek) Controls System Improvements. Consultant: HDR Engineering, Inc.			
12139	CSO - BRENTWOOD AND RED BUD AVE CSO INTERCEPTOR (I-118)/OUTFALL (L-111) ELIMINATION AND SEWER SEPARATION	19	1,200,000
12140	CSO - MARY AVENUE SOUTH OF MANCHESTER. CSO INTERCEPTOR (I-132)/OUTFALL (L-106) ELIMINATION	20	1,750,000
12472	DC-02 & DC-03 SANITARY RELIEF (BRENTWOOD BLVD TO CONWAY RD) PHASE III AND PHASE IV	22	400,000
12334	HAMPTON CREEK SANITARY RELIEF (DEER CREEK TRUNK TO OXFORD DR) PHASE I	47	1,500,000
11746	LOWER MERAMEC RIVER SYSTEM IMPROVEMENTS - BAUMGARTNER TO FENTON WWTF TUNNEL	58	350,000
11153	RDP TRIBUTARIES & UPPER RDP CSO CONTROLS & LOWER MERAMEC SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	66	200,000
11153	RDP TRIBUTARIES & UPPER RDP CSO CONTROLS & LOWER MERAMEC SYSTEM IMPROVEMENTS (WATERSHED CONSULTANT)	67	600,000
12441	RDP TRIBUTARIES (DEER CREEK) CSO TUNNEL	68	4,000,000
12440	UPPER RDP (UNIVERSITY CITY) CSO STORAGE TUNNEL	77	2,000,000

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For projects of significant scope and impact, coordination with property owners who will benefit or who will be affected by the construction of the project is achieved at neighborhood meetings hosted by the District. For smaller projects, property owners are individually contacted during the design of the project.

Many projects require that new easements be acquired to enable the project to be constructed. The time required to acquire these easements is lengthy and may result in delays in the planned construction schedule. When necessary, the District may condemn for easements in order to ensure that a project is constructed. Any required condemnation proceedings are performed in full compliance with state and federal law. Some projects may additionally require specific permitting from other government agencies, such as the Missouri Department of Natural Resources or US Army Corps of Engineers, prior to bidding.

A project is advertised for public bidding a minimum of 30 days, followed by a formal bid opening. Bids are evaluated to determine the lowest responsive, responsible bidder. Appropriation and contract ordinances are submitted to the Board of Trustees for their approval. Upon ordinance passage, contracts are executed and notices to proceed are issued.

In addition to wastewater and stormwater projects, the District may construct sanitary sewer sub-district projects at the request of property owners currently served by private systems or individual septic tank systems. These sub-districts are financed by the benefiting property owners, using special benefit assessments. The affected property owners initiate the projects by submitting a petition to the District, which provides design and construction management assistance. Because of the uncertainty of the viability and/or schedule of sub-district projects, they are not always listed in the Budget Supplement.

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Wastewater projects are funded via revenue from the wastewater user charge paid by ratepayers. The user charge also supports the sale of revenue bonds to fund the wastewater program. Generally, Fund 6660, the Sanitary Replacement Fund, is used to pay for capital wastewater work, while Fund 1101, the General Fund, is used to pay for non-capital wastewater related work. The allocation of a given project's costs between these two funds is an accounting function necessary to facilitate capitalization of District assets. Wastewater projects may also be funded by various Operation, Maintenance, Construction and Improvement (OMCI) funds, Construction Funds, Special Funds, or the Improvement Fund.

Stormwater projects may be funded via the Districtwide Stormwater Fund, the Stormwater Regulatory Fund, the Improvement Fund, or from various Operation, Maintenance, Construction, and Improvement (OMCI) funds. These OMCI funds are established in certain areas of the District, are supported by property tax collection, and must be spent only within their specific areas of tax collection.

The sections included in this Budget Supplement document are:

- Program Summary – summary of budget, and number and type of projects. Includes general description of the capital program and budgeting process, and a glossary of terms.
- Wastewater Engineering Projects – summary and details on wastewater engineering consulting services and other professional services necessary to implement the wastewater program.
- Wastewater Construction Projects – summary and details on wastewater construction projects and other expenses such as property rights acquisition necessary to implement the wastewater program.
- Wastewater Continued Projects – summary of wastewater projects continued from previous fiscal years, due to difficulties in easement acquisition, permitting process or coordination with other agencies, design revisions or status, or other special issues.

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- Wastewater Contingency Projects – summary and details on wastewater projects currently budgeted in the next fiscal year, but having the chance to be expedited into the current fiscal year, if scheduling or budget allow.
- Wastewater Program – annual alphabetical listing of wastewater projects by fund, including the type of service (task) budgeted.
- Stormwater Engineering Projects - summary and details on stormwater engineering consulting services and other professional services necessary to implement the stormwater program.
- Stormwater Construction Projects - summary and details on stormwater construction projects and other expenses such as property rights acquisition necessary to implement the stormwater program.
- Stormwater Continued Projects - summary of stormwater projects continued from previous fiscal years, due to difficulties in easement acquisition, permitting process or coordination with other agencies, design revisions or status, or other special issues.
- Stormwater Contingency Projects - summary and details on stormwater projects currently budgeted in the next fiscal year, but having the chance to be expedited into the current fiscal year, if scheduling or budget allow.
- Stormwater Program - annual alphabetical listing of stormwater projects by fund, including the type of service (task) budgeted.
- Appendix – list of projects by municipality.

Please note that the detail sheets for each project in this document include locations and quantities of work to be performed. These maps and quantities are approximate only, and final location and extent of work may vary depending on final design and/or field conditions during construction.