

FY2023

**Capital Improvement Plan
Overview Report**



June 27, 2022

Louisville MSD FY23 CIP Overview

DISCLAIMER: This document was prepared to provide a perspective of MSD’s FY 23-27 CIP. The overview is based upon the best available information as of June 2022. The projects included in this overview may shift among fiscal years; change in scope; or be replaced with higher priority needs. This document presents a reasonable representation of MSD’s CIP. It adequately demonstrates the level of investment warranted for MSD’s wastewater, stormwater, flood protection, and support systems assets. The costs presented in this document have been escalated to future dollars when appropriate.

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
0	6/14/22	Draft report	LLP	SLY	YM, DS, BG	
Final	6/27/22	Final Report	Reviewer Comments	LLP		DWJ

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments
Final	LLP	6/27/22	CIP Mgmt Team, Variance Team, PMs	

Louisville MSD FY23 CIP Overview

Executive Summary

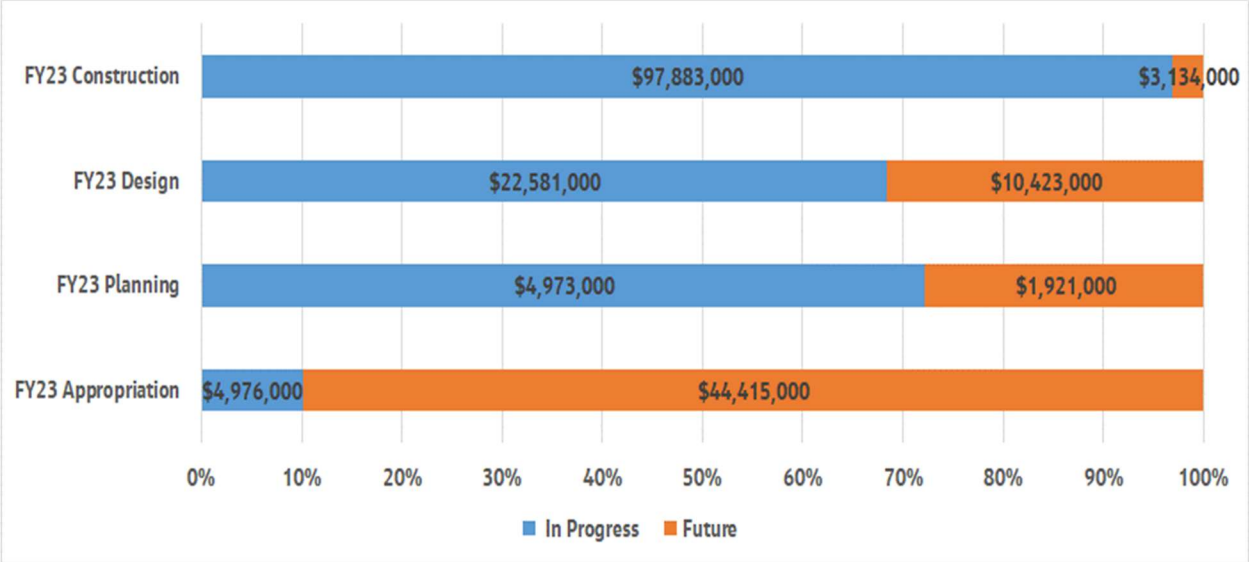
On May 23, 2022, the MSD Board approved the FY23 CIP as presented and recommended by MSD’s Chief Engineer and the Board’s Infrastructure Committee. The FY23 projects fit into a 5-Year CIP forecast totaling more than \$1 billion. A summary of the 5-Year CIP by service type is provided in Table 1.

Table 1 – Summary of 5-Year CIP by Service Type

Service Type	FY23	FY24	FY25	FY26	FY27	5-Year
Wastewater	\$ 126,842,459	\$ 173,786,672	\$ 147,813,706	\$ 160,519,885	\$ 156,288,953	\$ 765,251,676
Stormwater	\$ 28,677,723	\$ 31,602,287	\$ 52,193,509	\$ 60,803,346	\$ 41,958,723	\$ 215,235,586
Support Systems	\$ 34,785,966	\$ 13,705,984	\$ 5,092,353	\$ 4,871,900	\$ 4,135,475	\$ 62,591,678
MGT RES	\$ 5,000,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000,000
Total	\$ 195,306,148	\$ 219,094,943	\$ 205,099,568	\$ 226,195,131	\$ 202,383,150	\$ 1,048,078,941

The FY23 CIP includes 189 projects totaling \$190.3 million and \$5 million in Management Reserve. Nearly 70-percent of the FY23 budget (\$135.4 million) is required to continue advancing 84 existing projects (refer to blue bars in Figure 1). The FY23 CIP includes \$59.9 million to fund 105 new projects. A breakdown of the FY23 CIP funding by activity is shown in Figure 1.

Figure 1 – Summary of FY23 CIP by Activity



This report documents the process used to develop the FY23 and 5-Year CIP. The level of funding included in the CIP is broken down into the specific programs including: Regulatory Compliance, Wastewater, Stormwater and Flood Protection, and Support Systems. Progress with implementing the FY23 CIP will be reported in the Monthly Executive Reports.

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Acronyms and Abbreviations

AI	Artificial Intelligence
BC	Bullitt County
CAP	Corrective Action Plan
CCWQTC	Cedar Creek Water Quality Treatment Center
CD	Consent Decree
CIP	Capital Improvement Plan
CMF	Centralized Maintenance Facility
CMOM	Capacity, Management, Operation, & Maintenance
CRRP	Critical Repair and Reinvestment Plan
DRGWQTC	Derrick R Guthrie Water Quality Treatment Center
DRI	Drainage Response Initiative
EAC	Estimate at Complete
FEMA	Federal Emergency Management Agency
FEPS	Final Effluent Pump Station
FFWQTC	Floyds Fork Water Quality Treatment Center
FM	Force Main
FOG	Fats, Oils, and Grease
FPS	Flood Pump Stations
FY	Fiscal Year
GIS	Geographical Information System
HCWQTC	Hite Creek Water Quality Treatment Center
IOAP	Integrated Overflow Abatement Plan
IT	Information Technology
KDEP	Kentucky Department of Environmental Protection
LG	Louisville Green
LOJIC	Louisville-Jefferson County Information Center
LTCP	Long Term Control Plan
LTMN	Long Term Monitoring Network
MCC	Motor Control Center
MFWQTC	Morris Forman Water Quality Treatment Center
MS4	Municipal Separate Storm Sewer System Program
MSD	Louisville and Jefferson County Metropolitan Sewer District
NMC	Nine Minimum Controls
OC	Oldham County
PMIS	Project Management Information System
PS	Pump Station
PSE	Pump Station Elimination
RR	Repair and Replacement
RTC	Real Time Control
SCADA	Supervisory Controls and Data Acquisition
SSDP	Sanitary Sewer Discharge Plan
SSES	Sanitary Sewer Evaluation Survey
SWPS	Southwest Pump Station
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WAS	Waste Activated Sludge
WQTC	Water Quality Treatment Center

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Section 1 Process for Development of the FY23 CIP

MSD staff began developing the FY23 and updated 5-Year CIP in January 2022. A schematic of the overall process used to prepare the draft CIP is presented in Figure 2. A list of key activities performed by month is provided in Table 2.

Table 2 – Key Activities during CIP Budget Development Cycle

Month	CIP Development Activities
January	<ul style="list-style-type: none"> Guardrail meeting with Executive Manager & Chiefs to set expectations Budget Summit with Directors (risks, lessons learned, packaging, priorities) Review current forecasted FY23 CIP in cashflow tool & identify unknowns Determine FY23 financial targets Discuss grant and low-interest loan strategies (SRF, BRIC, other) with Planning
February	<ul style="list-style-type: none"> Conduct a series of staff meetings to vet projects and confirm current priorities Assess CIP impacts from regional planning efforts & asset management plans Allowances requests submitted by staff Forecast FY22 carryforward cost impacts to FY23 and 5-Year CIP
March	<ul style="list-style-type: none"> Cashflow forecast built with collected information Allowances set by Chiefs Draft CIP budget reviewed at CIP Mgmt Team Meeting with comments
April	<ul style="list-style-type: none"> CIP Management Team Meeting review and approval Review FY23 CIP staffing and resource plan Develop FY23 performance metrics (identify qualifying projects)
May	<ul style="list-style-type: none"> Finance & Infrastructure Committee Meeting – May 12th MSD Board Approval – May 23rd Start procuring FY23 professional services (use budget pending language)
June	<ul style="list-style-type: none"> Issue budget IDs for new projects Set FY23 Baseline and upload approved FY23 CIP into financial system Issue FY23 CIP Overview Report

1.1 Confirming Asset Priorities for FY23

To determine the CIP needs beyond the in-progress work, the projects in the forecast were discussed with asset owners to confirm they remain of highest priority. Additional needs not previously considered were also identified and discussed.

A Working Group comprised of the Chief Engineer, Chief of Operations, Chief Financial Officer, Enterprise Program Manager, Project Controls, Planning, Operations, and Engineering staff, held a series of workshops to discuss capital priorities for FY23. The following CIP development meetings were held:

- Executive Leadership “Guardrail” Meeting – January 24, 2022
- Planning Group Coordination – January 28, 2022
- Morris Forman WQTC CIP Workshop – February 7, 2022

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- Regional WQTCs CIP Workshop – February 7, 2022
- Wastewater Collection System CIP Workshop – February 8, 2022
- Flood Protection System CIP Workshop – February 14, 2022
- Development & Regionalization CIP Workshop – February 9, 2022
- Stormwater & MS4 Program CIP Workshop – February 14, 2022
- Meetings to confirm level of investment for Bullitt and Oldham Counties
- Additional one-on-one Meetings with Project and Appropriation Owners
- Additional Coordination Meetings with MSD’s Chiefs
- Review and discussion of pertinent topics at multiple CIP Management Team Meetings

1.2 Accounting for Uncertainty

During FY22, MSD experienced unprecedented challenges related to supply-chain delivery delays; unavailability of materials and equipment; and local, national, and global labor shortages. These challenges have created multiple areas of uncertainty.

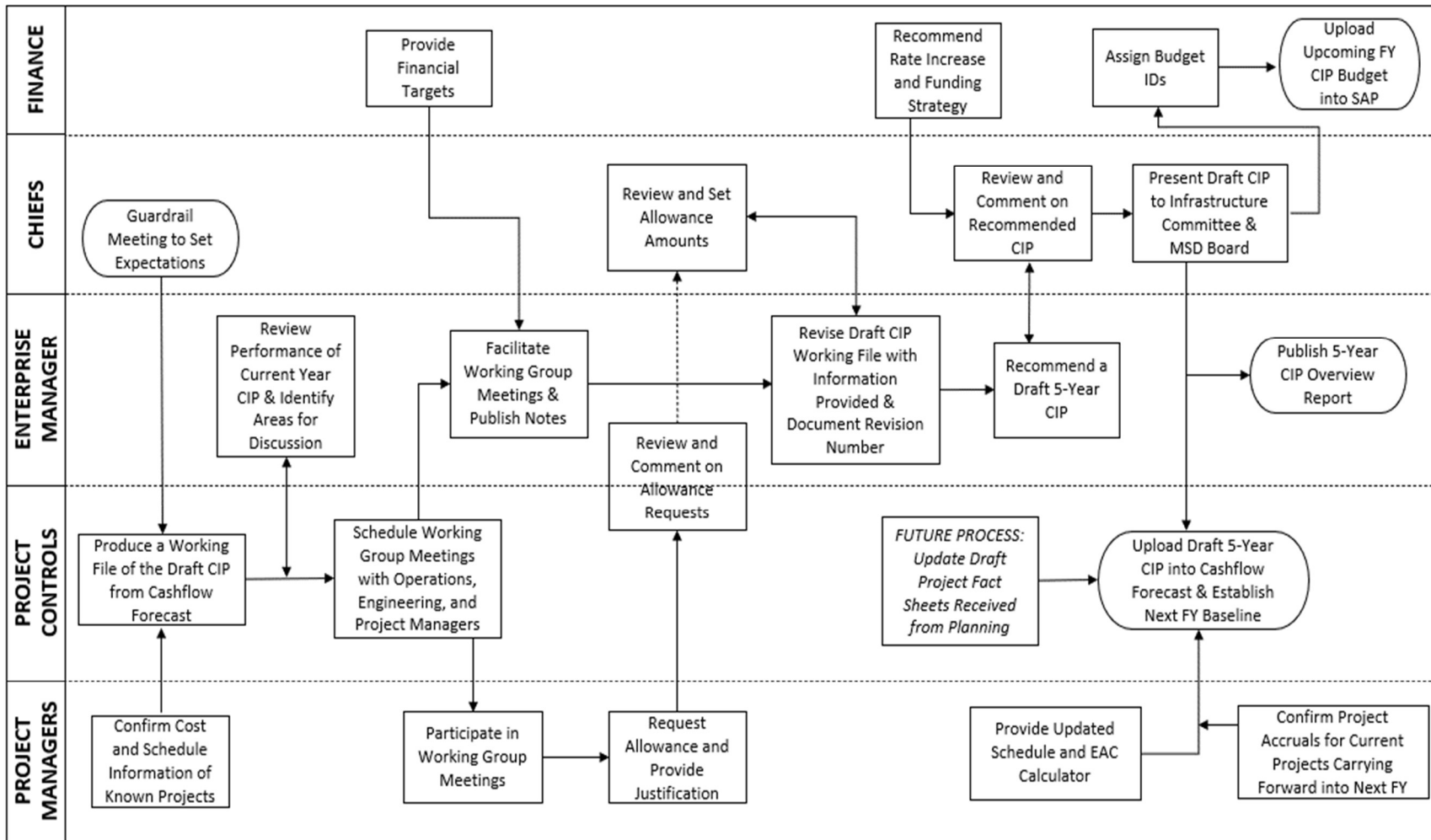
- Uncertainty with ability to fully implement the FY23 CIP due to external influences
- Uncertainty with receiving competitive solicitations due to limited resources
- Uncertainty with the level of risk that contractors are assuming which results with higher and unpredictable construction bids
- Uncertainty with project schedules and spending curves and forecasts for active contracts

During FY22, these challenges impacted project schedules resulting with spending only approximately \$150 million of the \$200.7 million FY22 budget. The challenges are continuing to occur and the impact on the FY23 CIP is uncertain. To account for the uncertainty, a “delivery factor” was applied to the FY23 projection for projects likely to be impacted. This was applied to forecast a CIP that more realistically reflects the actual spending to occur during FY23. If the factor was not applied, the FY23 CIP forecast would have been more than \$220 million – which does not seem to be realistic. It is important to use a realistic CIP budget to coordinate with financial metrics and retain a positive financial perspective. Note: The amount reduced in calculating a “delivery factor” was not redistributed in future years. Therefore, total 5-Year forecast at the project level may not reflect the total EAC (Estimate at Complete) for all projects.

MSD also included \$5 million in Management Reserve to provide additional flexibility related to the uncertainty. If project costs are higher than estimates; new priorities arise during the fiscal year; or emergencies exceed their budget, then MSD staff can request to use of a portion of the Management Reserve. The CIP Management Team must approve use of Management Reserve funds.

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Figure 2- Workflow For CIP Development Process



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Section 2 Approved & Forecasted CIP Programs

MSD has several programs requiring capital investment during FY23 and throughout the 5-Year CIP (FY23 – FY27). A summary of each program is provided herein and presented in Table 3.

- Regulatory Compliance Programs**: Mandates per a federal, state, or local regulation, rule, code, permit, Consent Decree, Agreed Order, or Administrative Order. This includes the provision included in the Second Amendment to the Consent Decree to spend an average of \$25 million per year through the Year 2035 for maintaining MSD’s existing wastewater assets. This program represents 83-percent of the 5-Year CIP.
- Wastewater Programs (non-regulatory)**: Through 2035 this program excludes asset management needs and includes development coordination and funding set aside to address infrastructure emergencies. It is envisioned after 2035 this program category will include asset management based work. This program represents 2-percent of the 5-Year CIP.
- Stormwater & Flood Protection Programs (non-regulatory)**: This program includes infrastructure improvements related to drainage and the Ohio River Flood Protection System that are not mandated by regulatory requirements. This program represents 8-percent of the 5-Year CIP.
- Support Systems Programs**: This program includes improvements needed to keep MSD’s infrastructure operating as intended including vehicles and large equipment; buildings and structures, information technology hardware and software, and general facility improvements. This program represents 6-percent of the 5-Year CIP.
- Management Reserve**: Funding set aside to assess unforeseen circumstances, bids over engineer’s estate, and changing/new infrastructure priorities for FY23.

Table 3 – Summary of 5-Year CIP by Program Type

CIP Program	FY23	FY24	FY25	FY26	FY27	5-Year
Regulatory Compliance Programs	\$ 134,923,071	\$ 182,546,608	\$ 183,735,663	\$ 199,483,293	\$ 171,767,829	\$ 872,456,464
Wastewater Programs (non-regulatory)	\$ 3,457,122	\$ 4,974,513	\$ 4,595,930	\$ 6,032,636	\$ 6,508,934	\$ 25,569,135
Stormwater & Flood Protection Programs	\$ 19,074,369	\$ 19,558,614	\$ 11,959,384	\$ 15,807,302	\$ 19,970,914	\$ 86,370,581
Support Systems Programs	\$ 32,851,586	\$ 12,015,208	\$ 4,808,591	\$ 4,871,900	\$ 4,135,475	\$ 58,682,761
Management Reserve	\$ 5,000,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000,000
Total	\$ 195,306,148	\$ 219,094,943	\$ 205,099,568	\$ 226,195,131	\$ 202,383,150	\$ 1,048,078,941

Given the fluctuating nature of the current economy and post-pandemic supply chain challenges, MSD recognizes the importance of building flexibility into the 5-Year CIP. Projects may not be fully implemented as anticipated and will need to carry-over into the next fiscal year CIP.

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However, MSD needs to maintain a cap on the 5-year CIP to remain compliant with financial metrics.

Each of the programs is detailed in this section including the spending forecasted in FY23 and the 5-Year CIP.

2.1 Regulatory Compliance Projects

MSD is faced with many regulations comprised of mandated programs, consent decree mandates, and agreed orders with the state or local jurisdictions. Nearly 70-percent of the FY23 CIP is required for regulatory compliance and more than 80-percent of the 5-Year CIP addresses mandated infrastructure improvements. A summary of the Regulatory Compliance Projects in the 5-Year CIP is presented in Table 4. Each regulatory program is summarized herein.

Table 4 – Summary of Regulatory Compliance Projects in 5-Year CIP

Regulatory Program	FY23	FY24	FY25	FY26	FY27	5-Year
Consent Decree	\$ 95,918,892	\$ 146,388,517	\$ 171,177,751	\$ 185,137,392	\$ 159,255,974	\$ 757,878,525
State Agreed Orders	\$ 26,200,132	\$ 21,065,062	\$ 1,574,217	\$ 408,432	\$ -	\$ 49,247,843
CMOM Program	\$ 10,331,504	\$ 11,586,914	\$ 9,049,599	\$ 11,862,878	\$ 10,497,577	\$ 53,328,472
NMC Program	\$ 510,000	\$ 400,000	\$ 300,000	\$ 300,000	\$ 280,000	\$ 1,790,000
MS4 Program	\$ 1,962,543	\$ 3,106,116	\$ 1,634,096	\$ 1,774,591	\$ 1,734,278	\$ 10,211,624
Total	\$134,923,071	\$ 182,546,608	\$183,735,663	\$199,483,293	\$171,767,829	\$ 872,456,464

2.1.1 Consent Decree Spending

The second amendment to the Consent Decree continues to undergo public review and comment by USEPA. MSD is continuing to advance projects to comply with all aspects of the Consent Decree as noted below in Table 5. MSD funds seven categories of projects that fall under the umbrella of the Consent Decree. The Integrated Overflow Abatement Plan (IOAP) outlined in the First Amendment to the Consent Decree included projects to reduce/eliminate sewer overflows through the Long-Term Control Plan (LTCP); Sanitary Sewer Discharge Plan (SSDP); and Green Infrastructure Program. The Second Amendment to the Consent Decree added projects related to Asset Management, Critical Sewers, and Specific Remedy projects. MSD utilizes consultant support for program management and modeling to deliver the CIP and Consent Decree requirements.

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Table 5 – Consent Decree Projects in 5-Year CIP

Consent Decree Projects	FY23	FY24	FY25	FY26	FY27	5-Year
Asset Management	\$ 52,798,050	\$ 94,045,276	\$ 74,216,164	\$ 39,657,438	\$ 46,999,027	\$ 307,715,955
Critical Sewers	\$ 15,651,621	\$ 13,686,331	\$ 15,113,904	\$ 1,660,138	\$ -	\$ 46,111,995
Green Infrastructure	\$ 134,462	\$ -	\$ -	\$ -	\$ -	\$ 134,462
Long-Term Control Plan	\$ 1,510,298	\$ -	\$ -	\$ -	\$ -	\$ 1,510,298
Sanitary Sewer Discharge Plan	\$ 6,708,649	\$ 8,492,195	\$ 8,816,273	\$ 17,894,973	\$ 33,551,043	\$ 75,463,133
Specific Remedy Projects	\$ 16,140,811	\$ 26,964,715	\$ 70,631,409	\$ 123,524,843	\$ 76,465,904	\$ 313,727,682
CD Support	\$ 2,975,000	\$ 3,200,000	\$ 2,400,000	\$ 2,400,000	\$ 2,240,000	\$ 13,215,000
Total	\$ 95,918,892	\$ 146,388,517	\$171,177,751	\$ 185,137,392	\$ 159,255,974	\$ 757,878,525

2.1.1.1 Consent Decree Asset Management Projects

The Second Amendment to the Consent Decree requires MSD to invest an average of \$25 million per year for asset management improvements for the wastewater system – a total of at least \$375 million through 2035. MSD is required to report progress with this annual spending metric in the annual Consent Decree Progress Report. Given the level of investment needed throughout the District for aging assets, there is no reason to believe MSD will not meet the \$25 million per year.

- Costs eligible to be counted toward the asset management spend requirement** include work or services performed by MSD, its consultants, vendors, and contractors associated with facility plans, master plans, asset management plans, hydraulic and process modeling, asset inspection, condition assessment, risk assessment, field testing, design services, bidding services, asset performance evaluations, construction, construction inspection, commissioning (asset start-up), asset rehabilitation, asset replacement or upgrade, infiltration/inflow mitigation projects, and projects related to existing sewers, pump stations, storage facilities, treatment facilities, large equipment, utility vehicles, emergency repairs, and power/electrical systems.
- Costs not eligible include work or services associated with** basin/watershed studies, permit renewal applications, financing, grant/loan applications, website updates or upgrades, facility remodeling, property acquisitions and land purchases, urban forestation or tree planting, landscaping, wetlands restoration, river/stream bank erosion or protection projects, aesthetic improvements not related to asset performance, Drainage Response Initiative (DRI) projects, construction of new sewers in unsewered areas, litigation, and annual operating budget line items such power, chemicals, labor, crane rental, or services associated with preventative or minor corrective maintenance costing less than \$5,000 (not capitalized).
- FY23 CIP:** Although the annual totals listed in Table 5 for “Asset Management” are greater than \$25 million, MSD is required to spend an average of \$25 million per year. Given several high priority asset management projects will span multiple years, MSD prefers to front-load the CIP to accommodate long project durations. Some years will be higher than

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\$25M, other years may be lower than \$25 million. The Consent Decree mandate is for an annual average of \$25 million that is evaluated every five years. The first Consent Decree asset management reconciliation will occur in FY26 for years FY21 through FY25.

MSD anticipates spending on more than 60 eligible Consent Decree defined asset management projects during FY23. Given the uncertainty with supply chain economics and the condition of many existing assets, delays are expected for several equipment types, large equipment, and traditionally long-lead time items. To protect the integrity of MSD’s system, the number of projects advanced under this asset management program has been maximized.

2.1.1.2 Consent Decree Critical Sewer Projects

Nine (9) critical sewer projects were added to the Consent Decree via the Second Amendment. Two of the projects are complete; six are currently underway; and one project (Buechel Trunk Sewer Repair) scheduled to begin in FY24 as shown in Table 6.

Table 6 – Consent Decree Critical Sewer Projects in 5-Year CIP

Consent Decree Critical Sewer Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
Buechel Trunk Sewer Repair	\$ -	\$ 478,011	\$ 1,583,851	\$ 1,660,138	\$ -	\$ 3,722,000
Harrods Creek Force Main Repair	\$ 24,058	\$ -	\$ -	\$ -	\$ -	\$ 24,058
I-64 and Grinstead Infrastructure Rehabilitation	\$ 4,300,000	\$ 6,143,091	\$ -	\$ -	\$ -	\$ 10,443,091
Large Diameter Sewer Rehabilitation - Stage 1 and 2	\$ 1,234,770	\$ -	\$ -	\$ -	\$ -	\$ 1,234,770
Prospect Phase II Rehab	\$ 1,484,511	\$ -	\$ -	\$ -	\$ -	\$ 1,484,511
Rudd Ave Sewer Infrastructure Rehabilitation	\$ 8,183,282	\$ -	\$ -	\$ -	\$ -	\$ 8,183,282
Western Outfall Infrastructure Rehabilitation	\$ 425,000	\$ 7,065,229	\$ 13,530,054	\$ -	\$ -	\$ 21,020,283
Total	\$ 15,651,621	\$ 13,686,331	\$ 15,113,904	\$ 1,660,138	\$ -	\$ 46,111,995

Note: These critical sewer projects are required to be completed by December 31, 2026, per the Second Amendment to the Consent Decree.

2.1.1.3 Green Infrastructure Projects

MSD has completed all Consent Decree obligations associated with green infrastructure projects. The FY23 CIP includes \$134,462 for additional green infrastructure projects that remain in progress or under discussion with private property owners.

2.1.1.4 Long-Term Control Plan Projects

MSD has completed construction of the projects included in the LTCP including the Ohio River Waterway Protection Tunnel Project. The FY23 CIP includes budget for final invoicing related to finishing the connection of the I-64 and Grinstead Interceptor to the Tunnel.

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Table 7 – Consent Decree LTCP Projects in 5-Year CIP

Consent Decree LTCP Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
Downtown CSO Interceptor Construction Services	\$ 279,785	\$ -	\$ -	\$ -	\$ -	\$ 279,785
I-64 and Grinstead CSO Interceptor	\$ 1,230,513	\$ -	\$ -	\$ -	\$ -	\$ 1,230,513
Total	\$ 1,510,298	\$ -	\$ -	\$ -	\$ -	\$ 1,510,298

2.1.1.5 Sanitary Sewer Discharge Plan (SSDP) Projects

MSD has 16 remaining SSDP projects to complete. The 5-Year CIP includes the projects required to be completed by 2025 (Cinderella PS Elimination, Gunpowder PS, Idlewood Storage, Kavanaugh PS, Leven PS Elimination, Little Cedar Creek Interceptor, and Monticello PS Elimination) and those required to be completed by 2030 (Bardstown Road PS, Dell Road Interceptor, Mellwood System, Raintree & Marian Phase 2, and the Upper Middle Fork projects). The forecasted spending for these projects is shown in Table 8. Two other SSDP projects are slated to begin after FY27 and be complete by 2035.

Table 8 – Consent Decree SSDP Projects in 5-Year CIP

Consent Decree SSDP Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
Bardstown Road PS Improvements	\$ -	\$ -	\$ 381,779	\$ 2,647,558	\$ 687,564	\$ 3,716,900
Cinderella Pump Station Elimination	\$ 209,472	\$ 1,253,563	\$ -	\$ -	\$ -	\$ 1,463,034
Dell Road & Charlane Pkwy Interceptor Improvements	\$ -	\$ -	\$ 555,293	\$ 4,814,522	\$ 4,323,585	\$ 9,693,400
Gunpowder Pump Station	\$ 474,271	\$ 242,034	\$ -	\$ -	\$ -	\$ 716,305
Idlewood Inline Storage	\$ 3,651,264	\$ -	\$ -	\$ -	\$ -	\$ 3,651,264
Kavanaugh Road Pump Station Improvements	\$ 600,486	\$ 3,593,546	\$ -	\$ -	\$ -	\$ 4,194,032
Leven Pump Station Elimination	\$ 846,147	\$ 606,533	\$ -	\$ -	\$ -	\$ 1,452,680
Little Cedar Creek Interceptor Improvements	\$ 575,110	\$ 1,394,798	\$ 296,055	\$ -	\$ -	\$ 2,265,962
Mellwood System Improvements & PSEs	\$ -	\$ -	\$ -	\$ 229,368	\$ 1,236,120	\$ 1,465,488
Monticello Pump Station Elimination	\$ 351,900	\$ -	\$ -	\$ -	\$ -	\$ 351,900
Raintree & Marian Ct 2 - Pipe Upgrades	\$ -	\$ 245,838	\$ 814,564	\$ 853,798	\$ -	\$ 1,914,200
Upper Middle Fork #2 PS Replacements	\$ -	\$ 392,092	\$ 2,296,000	\$ 3,171,561	\$ 9,261,829	\$ 15,121,481
Upper Middle Fork Forcemain	\$ -	\$ 312,181	\$ 1,828,061	\$ 2,525,178	\$ 7,374,214	\$ 12,039,634
Upper Middle Fork Relief Interceptor	\$ -	\$ 451,610	\$ 2,644,522	\$ 3,652,989	\$ 10,667,731	\$ 17,416,851
Total	\$ 6,708,649	\$ 8,492,195	\$ 8,816,273	\$ 17,894,973	\$ 33,551,043	\$ 75,463,133

2.1.1.6 Specific Remedy Projects

The Second Amendment to the Consent Decree added the two projects shown in Table 9. The Paddy's Run Pump Station Improvements are required to be completed by 12/31/2026. The Morris Forman WQTC New Biosolids Facility is required to be completed by 12/31/2030. Both projects are under contract with design-build teams. The 30-percent design submittals will be submitted in early FY23 and will better inform the spending forecast for both projects.

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Table 9 – Consent Decree Specific Remedy Projects in 5-Year CIP

Consent Decree Specific Remedy Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
MFWQTC New Biosolids Facilities	\$ 8,500,000	\$ 17,252,857	\$ 32,031,380	\$ 80,303,390	\$ 56,212,373	\$ 194,300,000
Paddys Run FPS Capacity Upgrade	\$ 7,640,811	\$ 9,711,857	\$ 38,600,029	\$ 43,221,453	\$ 20,253,531	\$ 119,427,682
Total	\$ 16,140,811	\$ 26,964,715	\$ 70,631,409	\$123,524,843	\$ 76,465,904	\$ 313,727,682

2.1.1.7 Consent Decree Support Projects

The support services forecasted for implementation of the Consent Decree work are shown in Table 10.

Table 10 – Consent Decree Support Projects in 5-Year CIP

Consent Decree Support Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
CIP Task Assistance	\$ 1,700,000	\$ 2,000,000	\$ 1,500,000	\$ 1,500,000	\$ 1,400,000	\$ 8,100,000
Modeling	\$ 1,275,000	\$ 1,200,000	\$ 900,000	\$ 900,000	\$ 840,000	\$ 5,115,000
Total	\$ 2,975,000	\$ 3,200,000	\$ 2,400,000	\$ 2,400,000	\$ 2,240,000	\$ 13,215,000

2.1.2 State Agreed Orders

MSD entered into an Agreed Order with the Kentucky Department of Environmental Protection’s Energy and Environment Cabinet (KDEP) to complete the \$175 million Corrective Action Plan (CAP) for mitigating permit non-compliance at the Morris Forman WQTC. MSD has been working on the CAP projects since 2015. The last four projects totaling \$41 million are underway. The spending forecast is shown in Table 11.

MSD also entered into an Agreed Order with the Louisville Metro Air Pollution Control Board related to odors from its collection system. An Odor Management Plan continues to be developed and specific improvements are underway for the West Louisville Community (refer to Table 11).

Finally, MSD entered into an Agreed Order with KDEP to address deficiencies in the recently acquired Oldham County collection system. A new interceptor will be constructed along Ash Avenue to improve the connectivity of service throughout Oldham County (refer to Table 11).

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Table 11 – Agreed Order Projects in 5-Year CIP

Agreed Order	Regulatory Agreed Order Projects	FY23	FY24	FY25	FY26	5 Year CIP
Morris Forman WQTC Corrective Action Plan	MFWQTC FEPS Loadcenter and MCC Replacement	\$ 136,064	\$ -	\$ -	\$ -	\$ 136,064
	MFWQTC LG Dryer Replacements	\$ 7,034,294	\$ -	\$ -	\$ -	\$ 7,034,294
	MFWQTC Sedimentation Basin RR	\$15,000,000	\$18,025,081	\$ 707,059	\$ -	\$33,732,140
	MFWQTC Sodium Hypochlorite Building Relocation	\$ 688,287	\$ -	\$ -	\$ -	\$ 688,287
Louisville Metro Air Pollution Control	Odor Management Plan	\$ 241,131	\$ 283,683	\$ 283,683	\$ -	\$ 808,498
	West Louisville Community Odor Control Improvements	\$ 125,357	\$ 232,736	\$ 583,475	\$ 408,432	\$ 1,350,000
Oldham County	OC Ash Avenue Interceptor	\$ 2,975,000	\$ 2,523,561	\$ -	\$ -	\$ 5,498,561
Total		\$26,200,132	\$21,065,062	\$1,574,217	\$ 408,432	\$49,247,843

Note: All work associated with these Agreed Orders is forecasted to be complete as shown above and no spending is forecasted for FY27.

2.1.3 Nine Minimum Controls (NMC) Program

USEPA requires utilities to implement technology-based actions or measures designed to reduce the number of sewer overflow events and to mitigate the effects on water quality. MSD continues to advance its NMC Program and operate real time control systems. The projects included in the 5-Year CIP for this program are listed in Table 12.

Table 12 – NMC Program in 5-Year CIP

NMC Program Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
NMC RTC	\$ 425,000	\$ 300,000	\$ 225,000	\$ 225,000	\$ 210,000	\$ 1,385,000
NMC Support	\$ 85,000	\$ 100,000	\$ 75,000	\$ 75,000	\$ 70,000	\$ 405,000
Total	\$ 510,000	\$ 400,000	\$ 300,000	\$ 300,000	\$ 280,000	\$ 1,790,000

2.1.4 CMOM Program

The original Consent Decree required MSD to develop and implement a Capacity, Maintenance, Operations, and Management (CMOM) Program. The intent of the Program as established by USEPA is to continuously incorporate new information to help MSD better manage, operate, and maintain its infrastructure. The CMOM-related investments for each of MSD's three service areas (Jefferson County, Bullitt County, and Oldham County) are listed in Table 13.

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Table 13 – CMOM Program in 5-Year CIP

Collection System	CMOM Program Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
Jefferson County System	AI Aquasight Software at CCWQTC	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
	AI Aquasight Software at HCWQTC	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ 200,000
	CCWQTC WAS Cycle Automation	\$ -	\$ -	\$ 187,200	\$ -	\$ -	\$ 187,200
	Cedar Creek SSES	\$ 139,648	\$ 835,708	\$ -	\$ -	\$ -	\$ 975,356
	Comprehensive Facility Plan Update	\$ -	\$ -	\$ 465,500	\$ 465,500	\$ -	\$ 931,000
	Cypress Springs PS Elimination	\$ -	\$ 330,188	\$ 914,612	\$ -	\$ -	\$ 1,244,800
	CMOM SCAP, AAM, FOG	\$ 127,500	\$ 150,000	\$ 112,500	\$ 112,500	\$ 105,000	\$ 607,500
	Construction Inspection	\$ 1,000,000	\$ 500,000	\$ 375,000	\$ 375,000	\$ 350,000	\$ 2,600,000
	CRRP Emergency Access Evaluation	\$ -	\$ -	\$ -	\$ 667,000	\$ 667,000	\$ 1,334,000
	Plumbing Modification Program	\$ 212,500	\$ 500,000	\$ 375,000	\$ 375,000	\$ 350,000	\$ 1,812,500
	Lea Ann Way Pump Station Elimination	\$ -	\$ -	\$ 1,472,316	\$ 5,372,878	\$ 6,334,106	\$ 13,179,300
	MFWQTC Sludge Disposal	\$ 4,500,000	\$ -	\$ -	\$ -	\$ -	\$ 4,500,000
	Ohio River Area Facilities Plan	\$ 243,145	\$ -	\$ -	\$ -	\$ -	\$ 243,145
	Private Property I/I Program	\$ -	\$ 523,900	\$ 523,900	\$ -	\$ -	\$ 1,047,800
	Total - Jefferson County System		\$ 6,247,793	\$ 3,039,797	\$ 4,426,028	\$ 7,367,878	\$ 7,806,106
Bullitt County System	Bullitt Hills and Hillview #1 WWTP Elimination	\$ 750,000	\$ 1,821,429	\$ 2,428,571	\$ -	\$ -	\$ 5,000,000
	BC CMOM Infrastructure Rehab	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 350,000	\$ 2,350,000
	BC PS RR	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ -	\$ 400,000
	BC WQTC RR	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
	Collection System Modeling	\$ 63,750	\$ 25,000	\$ 25,000	\$ 25,000	\$ 35,000	\$ 173,750
	Long-Term Monitoring Network (LTMN)	\$ 63,750	\$ 75,000	\$ 75,000	\$ 75,000	\$ -	\$ 288,750
	SCADA System and Rain Gauge Network	\$ 297,500	\$ -	\$ -	\$ -	\$ -	\$ 297,500
	System Flow Monitoring	\$ 85,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ -	\$ 145,000
	System Planning and Reg. Support	\$ 127,500	\$ 150,000	\$ 100,000	\$ 100,000	\$ -	\$ 477,500
	Sewer System Evaluation Surveys	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000
	Collection Sys Gravity Sewer Rehab.	\$ -	\$ -	\$ 500,000	\$ 500,000	\$ 70,000	\$ 1,070,000
	Hillview #2 WWTP Elimination	\$ -	\$ -	\$ -	\$ -	\$ 600,000	\$ 600,000
	Hillview PS#2 Elimination	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ 100,000
	Hunters Hollow PS & FM	\$ 380,499	\$ 3,025,501	\$ -	\$ -	\$ -	\$ 3,406,000
	Material Handling PS Elimination	\$ -	\$ -	\$ 500,000	\$ 1,000,000	\$ -	\$ 1,500,000
South System Improvements	\$ -	\$ -	\$ -	\$ -	\$ 1,391,471	\$ 1,391,471	
Total - Bullitt County System		\$ 2,867,999	\$ 6,316,930	\$ 4,248,571	\$ 2,320,000	\$ 2,446,471	\$ 18,199,971
Oldham County System	OC CMOM Linear Infrastructure Rehab	\$ 85,000	\$ 100,000	\$ 75,000	\$ 75,000	\$ 49,000	\$ 384,000
	OC CMOM Vertical Infrastructure Rehab	\$ 255,000	\$ 300,000	\$ 225,000	\$ 225,000	\$ 147,000	\$ 1,152,000
	OC Modeling	\$ 85,000	\$ 100,000	\$ 75,000	\$ 75,000	\$ 49,000	\$ 384,000
	OC WQTC Eliminations	\$ -	\$ -	\$ -	\$ 1,800,000	\$ -	\$ 1,800,000
	Ohio River Service Area Lift Station Rehab	\$ 790,713	\$ 697,688	\$ -	\$ -	\$ -	\$ 1,488,400
	Mockingbird Valley WWTP Elimination	\$ -	\$ 1,032,500	\$ -	\$ -	\$ -	\$ 1,032,500
Total - Oldham County System		\$ 1,215,713	\$ 2,230,188	\$ 375,000	\$ 2,175,000	\$ 245,000	\$ 6,240,900

Note: All projects forecasted for the 5-Year CIP for Bullitt and Oldham Counties are included in Table 13, excluding the Oldham County Ash Avenue Interceptor that is listed in Table 11.

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2.1.5 MS4 Program

The Municipal Separate Storm Sewer System Program (MS4) Program is a drainage-related program to improve the quality of surface waters through controls on stormwater runoff quality in Jefferson County and to protect the public health, safety, and welfare by reducing the introduction of harmful materials into the MS4s that discharge into community streams. The FY23 CIP includes MS4 projects totaling approximately \$1.9 million with a total of \$10.2 million forecasted for the 5-Year CIP as presented in Table 14.

Table 14 – MS4 Program in 5-Year CIP

MS4 Program Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
Env'L Data Collection – MS4 & IOAP	\$ 340,000	\$ 875,000	\$ 656,250	\$ 656,250	\$ 612,500	\$ 3,140,000
MS4 Program	\$ 510,000	\$ 600,000	\$ 450,000	\$ 450,000	\$ 420,000	\$ 2,430,000
Urban Reforestation	\$ 240,000	\$ 76,101	\$ 216,596	\$ 357,091	\$ 411,278	\$ 1,301,067
USGS Stream Monitoring	\$ 690,400	\$ 410,000	\$ 311,250	\$ 311,250	\$ 290,500	\$ 2,013,400
MS4 Basin Retrofits	\$ -	\$ 85,000	\$ -	\$ -	\$ -	\$ 85,000
Maple Street Land Use project	\$ 182,143	\$ 285,714	\$ -	\$ -	\$ -	\$ 467,857
SCADA Master Plan	\$ -	\$ 774,300	\$ -	\$ -	\$ -	\$ 774,300
Total	\$ 1,962,543	\$ 3,106,116	\$ 1,634,096	\$ 1,774,591	\$ 1,734,278	\$ 10,211,624

2.2 Wastewater Non-Regulatory Projects

The 5-Year CIP includes funding for development coordination and emergency projects. Most of the wastewater system funding is included in the asset management annual Consent Decree spend mandate. The projects listed herein do not have a regulatory component.

2.2.1 Development Coordination

The Critical Repair and Reinvestment Plan (CRRP) identified potential regionalization corridors where MSD can further extend sewers to improve surface water quality. Economic development and regionalization are opportunities for optimizing resources across watersheds, improving water quality and facilitating economic growth.

Three (3) facility plan projects (Ohio River, Lower Floyds Fork, and Upper Floyds Fork) in the FY23 CIP will better inform the future needs in the Floyds Fork Area. In order to ensure growth correlates with the conveyance and treatment capacity of MSD’s infrastructure and healthy waterways, long term planning is needed to identify economical and environmentally sensitive solutions for future growth and development in the communities not currently served by public sewers. The facility plans will include analysis for the following topics: sewershed development potential, growth patterns, projections of future flows, and potential projects to accommodate sustainable growth. Costs and benefits of project alternatives will be completed in accordance with the State of Kentucky’s regional facility plan requirements. MSD anticipates the three facility plans will inform the CIP starting in FY24.

The projects intended to establish place-holder budgets for anticipated projects are listed in Table 15. The only two projects having funding in FY23 are the Hite Creek WQTC Expansion Project

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and the annual budget for coordinating with developers on an as-needed basis. The Hite Creek WQTC began expansion several years ago and will be complete in FY23.

Table 15 – Wastewater Development Projects in 5-Year CIP

Development Projects	FY23	FY24	FY25	FY26	FY27	5-Year
CC Zone F Collection System	\$ -	\$ 389,081	\$ 722,361	\$ 1,810,975	\$ 1,267,683	\$ 4,190,100
CC Zone G Collection System	\$ -	\$ 200,432	\$ 372,119	\$ 932,911	\$ 653,038	\$ 2,158,500
HCWQTC Expansion	\$ 834,872	\$ -	\$ -	\$ -	\$ -	\$ 834,872
KTC Greenwood Rd Assmt	\$ -	\$ -	\$ 212,700	\$ -	\$ -	\$ 212,700
Lower Floyds Fork Zone H Collection System	\$ -	\$ -	\$ -	\$ -	\$ 1,518,713	\$ 1,518,713
Development Infrastructure Support	\$ 72,250	\$ 85,000	\$ 63,750	\$ 63,750	\$ 59,500	\$ 344,250
Total	\$ 907,122	\$ 674,513	\$ 1,370,930	\$ 2,807,636	\$ 3,498,934	\$ 9,259,135

2.2.2 Emergencies

Given the age of MSD’s system, it is prudent to set aside funds for emergency line breaks and other situations where the Operations Division’s operating budget is insufficient to expedite repair. MSD funds two projects for emergency use as deemed appropriate by the Director of Engineering, Chief Engineer, or Chief of Operations. The Operations Renewal & Replacement Project is used to address equipment failures at MSD’s facilities. The Renewal and Replacement Project is used to address line breaks and field conditions requiring immediate attention. In the event these funds are not sufficient for a FY, staff can request use of Management Reserve funds from the CIP Management Team.

Table 16- Emergency Funding for 5-Year CIP

Emergency CIP Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
Operations Renewal & Replacement	\$ 850,000	\$ 2,300,000	\$ 1,725,000	\$ 1,725,000	\$ 1,610,000	\$ 8,210,000
Renewal & Replacement	\$ 1,700,000	\$ 2,000,000	\$ 1,500,000	\$ 1,500,000	\$ 1,400,000	\$ 8,100,000
Total	\$ 2,550,000	\$ 4,300,000	\$ 3,225,000	\$ 3,225,000	\$ 3,010,000	\$ 16,310,000

2.3 Stormwater & Flood Protection Programs

In addition to managing wastewater, MSD is responsible for stormwater management and flood protection. MSD’s strategy has been to prioritize wet weather issues contributing to sewer overflows followed by maintaining operation of the 16 flood pump stations followed by addressing localized problems identified through the DRI Program. The combined sewer system improvements were constructed over the past several years (and continuing through FY23) in accordance with Consent Decree mandates. The Flood Pump Stations have continued to be improved to ensure reliable pumping capacity is available as needed. Drainage-based projects continue to be advanced throughout the District. MSD is in the process of collecting data to support development of a Stormwater Master Plan to determine the best options for managing

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stormwater throughout Jefferson County. The Master Plan projects will be subsequently prioritized to fit within MSD's long-term CIP.

2.3.1 Drainage Projects

Stormwater management is a vital component of MSD's system, because it directly impacts the health and safety of all Louisville and Jefferson County residents. The CRRP included a number of programs related to drainage and floodplain management. The level of spending forecasted for drainage projects over the next five years is presented in Table 17.

- **Drainage Response Initiative Program (DRI)**: Since 2003, MSD has been implementing an aggressive program to address a wide variety of drainage issues that were pointed out by customers to address problems ranging from structural flooding to alleviating minor standing water problems. The FY23 CIP includes DRI projects totaling approximately \$5.7 million as noted in Table 17.
- **Floodplain Management Program**: Since 1997, MSD has purchased homes located in flood prone areas through federal grant programs (particularly FEMA). Following a number of spring flooding events in 2015, the Mayor formed a multiagency Flood Mitigation Workgroup to address impacted residents who were unable, for a variety of reasons, to get back in their homes after the floodwaters receded. The Flood Mitigation Workgroup recommended several mitigation approaches, including establishment of a "quick-buy" program to allow property owners to sell flood-impacted property in a much shorter time than would typically be possible. The Workgroup recommended an annual fund be established to provide timely relief to property owners impacted by future extreme storm events. The projects continue to be advanced but are not specifically included as part of the CIP due to the FEMA reimbursement portion of the program.
- **Stormwater Master Plan Implementation Program**: MSD is developing an extensive stormwater asset inventory. The FY23 work will continue collecting field inventory data and pilot monitoring activities. The FY23 CIP includes \$311,000 to support this effort. The information collected during FY23 will support drafting the Stormwater Master Plan in the future. The 5-Year CIP includes approximately \$4.5 million for development of the Stormwater Master Plan. Placeholder funds have been set-aside for the FY27 CIP to begin \$3.2 million of the projects to be recommended from the Master Plan.

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Table 17 – Stormwater Drainage Projects in 5-Year CIP

Stormwater Projects	FY23	FY24	FY25	FY26	FY27	5 Year CIP
2695 Pennacook Road Bank Repair	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ 175,000
Floodplain Mapping	\$ 102,000	\$ -	\$ -	\$ -	\$ -	\$ 102,000
Drainage Response Initiative (DRI) Program	\$ 2,380,000	\$ 2,800,000	\$ 2,100,000	\$ 2,100,000	\$ 1,960,000	\$ 11,340,000
DRI Program Hydraulic Analysis Support	\$ 25,500	\$ -	\$ -	\$ -	\$ -	\$ 25,500
Stormwater Asset Inventory & Analysis	\$ 136,000	\$ -	\$ -	\$ -	\$ -	\$ 136,000
Logan St. Basin and Main Office Rain Garden	\$ 127,500	\$ -	\$ -	\$ -	\$ -	\$ 127,500
Melco Basin Improvement	\$ 1,314,286	\$ -	\$ -	\$ -	\$ -	\$ 1,314,286
Oak Valley Drainage Remedies	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ 85,000
Pencook Drainage Improvements	\$ 680,000	\$ -	\$ -	\$ -	\$ -	\$ 680,000
Southfork Dry Bed Access	\$ 255,000	\$ -	\$ -	\$ -	\$ -	\$ 255,000
Stormwater Data Mgmt & Asset Knowledge Pr	\$ 272,000	\$ -	\$ -	\$ -	\$ -	\$ 272,000
Stormwater Implementation	\$ -	\$ -	\$ -	\$ -	\$ 3,232,891	\$ 3,232,891
Stormwater Master Plan	\$ -	\$ -	\$ 2,158,650	\$ 2,158,650	\$ -	\$ 4,317,300
Stormwater Pilot Monitoring	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ 175,000
Total	\$ 5,727,286	\$ 2,800,000	\$ 4,258,650	\$ 4,258,650	\$ 5,192,891	\$ 22,237,476

2.3.2 Flood Protection Projects

Flood protection is a critical public health service that MSD provides. As the FY22 CIP was being developed, it was anticipated the majority of MSD’s flood protection system improvements for the next five years would be addressed through the United States Army Corps of Engineers (USACE) Reliability Improvements Program. Unfortunately, the USACE was not successful in receiving sufficient congressional appropriation funds for the system needs. Discussions remain planned for FY23 with MSD and the USACE.

In the meantime, as the FY23 CIP was being developed, MSD identified the high risk components of the Flood Protection Program. Given the fact that most of the Flood Pump Stations (FPS) have original electrical and switchgear systems and original gates dating back to the 1950s or 1960s, MSD is advancing several projects to replace outdated parts and systems (refer to Table 18).

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Table 18 – Flood Protection Projects in 5-Year CIP

Ohio River Flood Protection Projects		FY23	FY24	FY25	FY26	FY27	5 Year CIP
Flood Pump Stations	27th Street FPS - Capacity and Generator Impv	\$ -	\$ -	\$ -	\$ -	\$ 1,026,007	\$ 1,026,007
	4th Street FPS - Capacity and Electrical Service Impv	\$ -	\$ -	\$ -	\$ -	\$ 1,104,664	\$ 1,104,664
	5th Street FPS - Generator Improvements	\$ 335,155	\$ 2,005,700	\$ -	\$ -	\$ -	\$ 2,340,855
	Beargrass Creek FPS Electrical Improvements	\$ 372,415	\$ 561,864	\$ -	\$ -	\$ -	\$ 934,280
	Bingham Way FPS - Capacity and Generator Impv	\$ -	\$ 515,614	\$ 567,176	\$ 2,079,936	\$ 2,495,923	\$ 5,658,648
	Bingham Way FPS - Electrical Improvements	\$ -	\$ 256,857	\$ 851,075	\$ 892,068	\$ -	\$ 2,000,000
	Lower Mill Creek FPS - Electrical Improvements	\$ -	\$ 295,386	\$ 978,736	\$ 1,025,878	\$ -	\$ 2,300,000
	Pond Creek FPS - Electrical Service Improvements	\$ -	\$ -	\$ -	\$ -	\$ 3,332,057	\$ 3,332,057
	Pond Creek FPS - Electrical/Breaker Replacement	\$ 279,296	\$ 1,671,417	\$ -	\$ -	\$ -	\$ 1,950,713
	Riverport FPS - Electrical Improvements	\$ -	\$ -	\$ 295,386	\$ 978,736	\$ 1,025,878	\$ 2,300,000
	Riverport FPS - Generator Improvements	\$ -	\$ -	\$ -	\$ -	\$ 668,070	\$ 668,070
	Shawnee Park FPS - Electrical Improvements	\$ 474,803	\$ 2,841,409	\$ -	\$ -	\$ -	\$ 3,316,211
	Starkey FPS Electrical Service Improvements	\$ 196,906	\$ 983,431	\$ 784,915	\$ -	\$ -	\$ 1,965,252
	Upper Mill Creek FPS Transformer Replacement	\$ 108,640	\$ 372,714	\$ 249,475	\$ -	\$ -	\$ 730,828
	FPS Equipment RR	\$ 3,700,000	\$ 1,000,000	\$ 750,000	\$ 750,000	\$ 700,000	\$ 6,900,000
	Total - Flood Pump Stations	\$ 5,467,213	\$10,504,393	\$ 4,476,763	\$ 5,726,618	\$10,352,599	\$ 36,527,586
Gates & Floodwalls	Canal Street Floodwall	\$ 5,665,248	\$ 261,444	\$ -	\$ -	\$ -	\$ 5,926,692
	Flood Gate 114 Replacement	\$ 327,493	\$ 2,614,714	\$ -	\$ -	\$ -	\$ 2,942,207
	Flood Protection System Outfall Assessment	\$ 425,000	\$ -	\$ -	\$ -	\$ -	\$ 425,000
	Gate 102 Replacement	\$ 144,196	\$ -	\$ -	\$ -	\$ -	\$ 144,196
	Sluice Gate Repair Program	\$ -	\$ 928,571	\$ 1,723,971	\$ 4,322,034	\$ 3,025,424	\$ 10,000,000
	Water Stop Repair	\$ 297,932	\$ 449,492	\$ -	\$ -	\$ -	\$ 747,424
	Flood Structures RR	\$ 1,020,000	\$ 2,000,000	\$ 1,500,000	\$ 1,500,000	\$ 1,400,000	\$ 7,420,000
Total - Gates and Floodwalls	\$ 7,879,870	\$ 6,254,221	\$ 3,223,971	\$ 5,822,034	\$ 4,425,424	\$ 27,605,519	

2.4 Support System Programs

The Support Systems projects reflect the non-process related investments that must be made to keep the MSD businesses running. Facility improvements, computer systems (IT implementations), and vehicle acquisitions are some of the project types that fall under the Support System Program.

2.4.1 Facility Improvement Projects

MSD maintains more than 200 buildings as part of its infrastructure. The 5-Year CIP includes \$19.7 million related to buildings and site improvements and repairs as noted in Table 19.

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Table 19 – Facility Improvements in 5-Year CIP

Facility Improvement Projects		FY23	FY24	FY25	FY26	FY27	5 Year CIP
Structural Repairs	Admiral Pump Station Foundation Repairs	\$ 209,865	\$ -	\$ -	\$ -	\$ -	\$ 209,865
	CMF Floor Replacement	\$ 46,750	\$ -	\$ -	\$ -	\$ -	\$ 46,750
	CMF Structural Investigation	\$ 29,750	\$ -	\$ -	\$ -	\$ -	\$ 29,750
	CMF Structural Repairs	\$ -	\$ -	\$ -	\$ -	\$ 880,000	\$ 880,000
	Facility Lead Paint Abatement	\$ -	\$ 407,800			\$ -	\$ 407,800
	Facility Mold Abatement	\$ -	\$ 191,000			\$ -	\$ 191,000
	Facility Structural Investigations	\$ -	\$ 33,667	\$ 33,667	\$ 33,667	\$ -	\$ 101,000
Total - Structural		\$ 286,365	\$ 632,467	\$ 33,667	\$ 33,667	\$ 880,000	\$ 1,866,165
Site Improvements	CMF Garage Fluid Delivery System	\$ 140,250	\$ -	\$ -	\$ -	\$ -	\$ 140,250
	CMF Automated Vehicle Wash Facility (design)	\$ 60,139	\$ -	\$ -	\$ -	\$ -	\$ 60,139
	CMF Guard Building Entrance Enhancements (design)	\$ 5,100,000	\$ -	\$ -	\$ -	\$ -	\$ 5,100,000
	CMF Loading Dock Improvements	\$ 42,500	\$ -	\$ -	\$ -	\$ -	\$ 42,500
	SWPS Site Security	\$ 975,372	\$ -	\$ -	\$ -	\$ -	\$ 975,372
	Miscellaneous Facility Repairs	\$ 170,000	\$ 200,000	\$ 150,000	\$ 150,000	\$ 140,000	\$ 810,000
	Security Upgrades	\$ 212,500	\$ -	\$ -	\$ 375,000	\$ -	\$ 587,500
Total - Site		\$ 6,700,761	\$ 200,000	\$ 150,000	\$ 525,000	\$ 140,000	\$ 7,715,761
Roof Replacement	CMF Roof A, C and D Replacement	\$ 2,136,657	\$ -	\$ -	\$ -	\$ -	\$ 2,136,657
	DRGWQTC WWPS WWSB HVAC, Roof, Transformers	\$ 1,829,243	\$ 2,261,341	\$ -	\$ -	\$ -	\$ 4,090,584
	FFWQTC Tertiary Trtmt Bldgs Roof Replacement	\$ 355,850	\$ 11,795	\$ -	\$ -	\$ -	\$ 367,645
	MSD Owned Building Roof Replacements	\$ 340,000	\$ 400,000	\$ 300,000	\$ 300,000	\$ 280,000	\$ 1,620,000
	Total - Roof Replacements		\$ 4,661,750	\$ 2,673,136	\$ 300,000	\$ 300,000	\$ 280,000
Building Interiors & Equipment	Conference Room Upgrades	\$ 297,500	\$ -	\$ -	\$ -	\$ -	\$ 297,500
	Carpet Replacement	\$ 340,000	\$ -	\$ -	\$ -	\$ -	\$ 340,000
	Main Office HVAC Chillers	\$ 170,000	\$ -	\$ -	\$ -	\$ -	\$ 170,000
	MFWQTC Computer Room Upgrades	\$ 445,380	\$ 614,738	\$ -	\$ -	\$ -	\$ 1,060,119
	MFWQTC Admin. Bldg. Computer Room Renovation	\$ 8,500	\$ -	\$ -	\$ -	\$ -	\$ 8,500
	Studio Office Build	\$ 34,000	\$ -	\$ -	\$ -	\$ -	\$ 34,000
Total - Bldg Interior & Equipment		\$ 1,295,380	\$ 614,738	\$ -	\$ -	\$ -	\$ 1,910,119

2.4.2 IT & Capital Equipment Projects

MSD owns more than 600 vehicles and portable equipment ranging from passenger vehicles and pick-up trucks to large excavators and sewer-cleaning trucks. Most of these vehicles are in need replacement. MSD began an extensive vehicle replacement program in FY22, but the program was stalled due to supply-chain challenges and the lack of vehicle chips. As such, some of the costs included in the FY22 CIP need to carry-over into FY23. The 5-Year CIP for these projects is provided in Table 20.

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Table 20 - IT and Capital Equipment in 5-Year CIP

IT & Equipment Support Projects		FY23	FY24	FY25	FY26	FY27	5 Year CIP
Capital Equipment	Catch Basin Retrofits Phase 2	\$ 212,500	\$ 333,333	\$ 333,333	\$ 333,333	\$ -	\$ 1,212,500
	Vehicles & Equipment	\$16,800,000	\$ 4,000,000	\$ 3,000,000	\$ 3,000,000	\$ 2,100,000	\$ 28,900,000
	Total - Capital Equipment	\$17,012,500	\$ 4,333,333	\$ 3,333,333	\$ 3,333,333	\$ 2,100,000	\$ 30,112,500
IT Hardware and Software	CMF Inventory Management System	\$ 63,750	\$ -	\$ -	\$ -	\$ -	\$ 63,750
	CMF Supplier Diversity CPIS Analysis	\$ 42,500	\$ -	\$ -	\$ -	\$ -	\$ 42,500
	Communications Message Boards	\$ 42,500	\$ -	\$ -	\$ -	\$ -	\$ 42,500
	Community Benefit Support	\$ 42,500	\$ -	\$ -	\$ -	\$ -	\$ 42,500
	Bi-Annual Aerial Imagery & Map Updates	\$ 316,391	\$ 189,034	\$ 310,966	\$ 141,775	\$ 233,225	\$ 1,191,391
	Information Governance Architecture	\$ 255,000	\$ -	\$ -	\$ -	\$ -	\$ 255,000
	IPS Support	\$ 221,000	\$ 260,000	\$ 195,000	\$ 195,000	\$ 182,000	\$ 1,053,000
	IT Improvements	\$ -	\$ 200,000	\$ 150,000	\$ -	\$ -	\$ 350,000
	IT Infrastructure Initiatives	\$ 735,250	\$ 307,500	\$ 230,625	\$ 230,625	\$ 215,250	\$ 1,719,250
	LOJIC Hw Upgrades & Replacements	\$ 85,000	\$ 100,000	\$ 75,000	\$ 112,500	\$ 105,000	\$ 477,500
	LOJIC Survey Control Maintenance	\$ 25,500	\$ 30,000	\$ 30,000	\$ -	\$ -	\$ 85,500
	GIS Equipment Replacement	\$ 51,000	\$ -	\$ -	\$ -	\$ -	\$ 51,000
	HANA Phase 2 Enhancements	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ 500,000
	MF Network Encasement	\$ 51,000	\$ -	\$ -	\$ -	\$ -	\$ 51,000
	MSD Radio Repeaters	\$ 28,438	\$ -	\$ -	\$ -	\$ -	\$ 28,438
	PMIS System Implementation	\$ 318,750	\$ 1,125,000	\$ -	\$ -	\$ -	\$ 1,443,750
	SAP Upgrade To HANA	\$ 552,500	\$ 850,000	\$ -	\$ -	\$ -	\$ 1,402,500
Sharepoint Upgrade	\$ 63,750	\$ -	\$ -	\$ -	\$ -	\$ 63,750	
	Total - IT	\$ 2,894,830	\$ 3,561,534	\$ 991,591	\$ 679,900	\$ 735,475	\$ 8,863,330

2.5 Management Reserve

MSD included a \$5 million reserve in the FY23 CIP to account of unforeseen, unknown circumstances that result with higher project costs. Project Managers may request use of Management Reserve funds from the CIP Management Team.

Louisville MSD FY23 CIP Overview

Appendix A – Detailed Listing of Projects in the 5-Year CIP

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
C22031	2695 Pennacook Road Bank Repair	175,000					175,000
X_0090	27th Street FPS - Capacity and Generator Improvements					1,026,007	1,026,007
X_0088	4th Street FPS - Capacity and Electrical Service Improvements					1,104,664	1,104,664
F15012	5th Street FPS - Generator Improvements	335,155	2,005,700				2,340,855
G18147	Admiral Pump Station Foundation Repairs	209,865					209,865
H20021	Admiral Way/Fishpool Capacity Assurance	635,800	1,257,333	3,620,294	5,082,712	3,291,661	13,887,800
H22016	AI Aquasight Software at CCWQTC	25,000					25,000
23BD-041	AI Aquasight Software at HCWQTC		200,000				200,000
D21059	Asset Management Plan Development	1,325,199	1,325,199				2,650,398
H09165	Bardstown Road PS Improvements			381,779	2,647,558	687,564	3,716,900
23BD-053	Beargrass Creek FPS Electrical Improvements	372,415	561,864				934,280
BD-162	Beargrass Interceptor Relief Rehab	537,759	2,259,038	3,562,255	146,050		6,505,101
D20224	Bells Lane Disinfection System Upgrades	91,746					91,746
D20223	Bells Lane WWTF Polymer Feed System ImprovementS	115,534					115,534
F21083	Bingham Way FPS - Capacity and Generator Improvements		515,614	567,176	2,079,936	2,495,923	5,658,648
23BD-xxx	Bingham Way FPS - Electrical Improvements		256,857	851,075	892,068		2,000,000
SY-045	Brandywyne Ct. PS Elimination			593,519	477,881		1,071,400
E17053	Buechel Trunk Sewer Repair		478,011	1,583,851	1,660,138		3,722,000
Y22146	Bullitt Hills and Hillview #1 WWTP Elimination	750,000					750,000
Y22146 (FY24)	Bullitt Hills and Hillview #1 WWTP Elimination - Constr. '24		1,821,429	2,428,571			4,250,000
F16004 (FY23)	Canal Street Floodwall '23	5,665,248	261,444				5,926,692
G23014	Carpet Replacement	340,000					340,000
H23015	Carslaw Ct. PS Elimination	212,500					212,500
BD-005	Catch Basin Retrofits Phase 2	212,500	333,333	333,333	333,333		1,212,500
H22034 (FY23)	CC FF HC Sodium Aluminate Automation '23	447,919					447,919
H18083	CC Zone F Collection System		389,081	722,361	1,810,975	1,267,683	4,190,100
H18105	CC Zone G Collection System		200,432	372,119	932,911	653,038	2,158,500
D20149	CCWQTC Admin Building Expansion	534,905	3,025,436	1,245,264			4,805,605
23BD-012	CCWQTC Digester Tank Addition			858,867	2,379,033		3,237,900
D18103	CCWQTC Expansion To 11.25 Mgd		1,447,471	1,592,219	5,838,953	7,006,743	15,885,386
H23017	CCWQTC Preliminary Trtmnt Bldg Improvements	558,623	842,797				1,401,419
D22098 (FY23)	CCWQTC Re-rating to 9.0 MGD '23	763,119	3,928,031	972,318			5,663,469
D20009	CCWQTC Service Area - Enhanced Odor Control For Two Pump Stations					427,192	427,192
F18440	CCWQTC Service Area Pump Station Floodproof For 100 Yr Storm					204,000	204,000
BD-007	CCWQTC Sludge Storage Blower Upgrade			850,800			850,800
H22018 (FY23)	CCWQTC Sludge Storage Tank Improvements '23	1,300,822	1,885,103				3,185,925
D18090	CCWQTC Solids Handling (Centrifuge Relocation) Dewatering Improvements		1,002,179	1,860,630	4,664,642	3,265,249	10,792,700
D17032 (FY23)	CCWQTC Tertiary Filtration '23	831,983	4,282,498	1,060,060			6,174,541
23BD-014	CCWQTC UV Improvements		1,325,309	1,067,091			2,392,400
D16275	CCWQTC WAS Cycle Automation			187,200			187,200
BD-008	Cedar Creek Main Interceptor	593,689	2,704,078	3,397,464			6,695,231
H23019	Cedar Creek SSES	139,648	835,708				975,356
H09192	Cinderella Pump Station Elimination	209,472	1,253,563				1,463,034
G22078 (FY23)	CMF Automated Vehicle Wash Facility '23 (Design)	60,139					60,139
G21102	CMF Floor Replacement	46,750					46,750
G23020	CMF Garage Fluid Delivery System	140,250					140,250
G23021	CMF Inventory Management System	63,750					63,750
G23022	CMF Loading Dock Improvements	42,500					42,500
G21139	CMF Roof A, C and D Replacement	2,136,657					2,136,657

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
G18155	CMF Structural Investigation	29,750					29,750
G18154	CMF Structural Repairs					880,000	880,000
G23023	CMF Supplier Diversity CPIS Analysis	42,500					42,500
N23024	Communications Message Boards	42,500					42,500
G23025	Community Benefit Support	42,500					42,500
H18168	Comprehensive Facility Plan - Five Year Update			465,500	465,500		931,000
N23026	Conference Room Upgrades	297,500					297,500
BD-009	CRRP Emergency Access Evaluation				667,000	667,000	1,334,000
23BD-015	Cypress Springs PS Elimination		330,188	914,612			1,244,800
SY-044	Deep Trail PS Elimination		321,200				321,200
H09179	Dell Road & Charlane Pkwy Interceptor Improvements			555,293	4,814,522	4,323,585	9,693,400
H18176 (FY23)	DOWNTOWN CSO INTERCEPTOR RPR & CA SVCS '23	279,785					279,785
D22080	DRGWQTC Clarifier 4-6 Mechanism Update	11,460	14,980				26,440
D21222	DRGWQTC Grit Building Roof Replacement	32,931					32,931
D21230 (FY23)	DRGWQTC RAS Pumps 2&3 Replacement '23	1,205,338	1,418,045	118,170			2,741,553
D21242 (FY23)	DRGWQTC Regional Lab Upgrades '23	626,865					626,865
D21078	DRGWQTC Replace Clarifiers 4, 5, & 6			1,291,100			1,291,100
X_0164	DRGWQTC Service Area Inventory For Critical Pump Stations					628,700	628,700
F18455	DRGWQTC Service Area Pump Station Floodproof For 100 Yr Storm					408,100	408,100
H22032	DRGWQTC Sodium Bisulfite Bldg. Improvements	90,000	17,647				107,647
H22032 (FY23)	DRGWQTC Sodium Bisulfite Bldg. Improvements '23	1,177,082	461,601				1,638,683
D21224 (FY23)	DRGWQTC Sodium Hypochlorite and Process Water Buildings Roof	13,356					13,356
D18132	DRGWQTC WWPS WWSB HVAC & Roof and U3 & U4 Transformer	1,829,243	2,261,341				4,090,584
G18146	Facility Lead Paint Abatement		407,800				407,800
G18150	Facility Mold Abatement		191,000				191,000
G18151	Facility Structural Investigations		33,667	33,667	33,667		101,000
D21079	Fairmont Road Pump Station Force Main Extension - Phase 2 and 3	2,191,261					2,191,261
D21079 (FY24)	Fairmont Road Pump Station Force Main Extension - Phase 2 and 3 '24		4,342,018	1,196,989			5,539,007
BD-010	FFWQTC Influent Pump VFDs		774,300				774,300
D20148	FFWQTC Regional Facilities Plan Update	263,728					263,728
A18068	FFWQTC Service Area Back-Up Power For Critical Pump Stations					669,500	669,500
23BD-045	FFWQTC Sludge Storage Tank Improvements		833,827	2,309,673			3,143,500
23BD-042	FFWQTC Sodium Aluminate System Improvements		516,200				516,200
D22187	FFWQTC Tertiary Trtmt Bldgs Roof Replacement	355,850	11,795				367,645
23BD-043	FFWQTC UV Gates		258,100				258,100
23BD-054	Flood Gate 114 Replacement	327,493	2,614,714				2,942,207
23BD-061	Flood Protection System Outfall Assessment	425,000					425,000
C22002	Floodplain Mapping	102,000					102,000
H22086	Floyds Fork & Ohio River Condition Assessment	597,128					597,128
D20351_FY23	Floyds Fork Interceptor (FY23)	2,550,000					2,550,000
D20351_FY24	Floyds Fork Interceptor (FY24)		25,219,085	32,340,915			57,560,000
H17057	Floydsburg Road I&I Investigation and Rehabilitation			57,400			57,400
23BD-016	Fox Harbor #1 PS Elimination		403,500				403,500
23BD-017	Fox Harbor #2 PS Elimination		462,200				462,200
J17037	FY21/22 Aerial Imagery & Map Updates	316,391					316,391
Y22148	FY23 BC CMOM Infrastructure Rehab	500,000					500,000
Y23005	FY23 BC PS RR	100,000					100,000
Y23006	FY23 BC WQTC RR	500,000					500,000
H20043	FY23 CIP Task Assistance	1,700,000					1,700,000

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
E18470	FY23 CMOM Collection System PS RR	425,000					425,000
H20064	FY23 CMOM Gravity Line Cleaning & Inspection	2,550,000					2,550,000
H20058	FY23 CMOM I&C Implementation	170,000					170,000
E18094	FY23 CMOM Infrastructure Rehabilitation Program	1,700,000					1,700,000
H19018	FY23 CMOM Program Management Assistance	127,500					127,500
H19019	FY23 CMOM SCAP, AAM, FOG	127,500					127,500
Y23008	FY23 Collection System Modeling	63,750					63,750
A19122	FY23 Construction Inspection	1,000,000					1,000,000
H19009	FY23 Development Infrastructure Support	72,250					72,250
BD-011	FY23 DRI	2,380,000					2,380,000
BD23-XXX	FY23 DRI Program Hydraulic Analysis Support	25,500					25,500
H19003	FY23 Env'L Data Collection – MS4 & IOAP	340,000					340,000
F21096	FY23 Flood Structures RR	1,020,000					1,020,000
F19126	FY23 FPS Equipment RR	3,700,000					3,700,000
23BD-062	FY23 Green Infrastructure	134,462					134,462
H19035	FY23 Information Governance Architecture	255,000					255,000
N23028	FY23 IPS Support	221,000					221,000
N20077	FY23 IT Infrastructure Initiatives	735,250					735,250
J20071	FY23 LOJIC Hw Upgrades & Replacements	85,000					85,000
J20025	FY23 LOJIC Survey Control Maintenance	25,500					25,500
Y22143	FY23 LTMN	63,750					63,750
G23029	FY23 Management Reserve	5,000,000					5,000,000
D19130	FY23 MFWQTC Equipment RR	850,000					850,000
G19037	FY23 Miscellaneous Facility Repairs	170,000					170,000
H19023	FY23 Modeling	1,275,000					1,275,000
H19004	FY23 MS4 Program	510,000					510,000
G19062	FY23 MSD Owned Building Roof Replacements	340,000					340,000
H20050	FY23 NMC CSO Inspection Cameras	85,000					85,000
H19132	FY23 NMC RTC	425,000					425,000
H19005	FY23 NMC Support	85,000					85,000
W23003	FY23 OC CMOM Linear Infrastructure Rehab	85,000					85,000
W23004	FY23 OC CMOM Vertical Infrastructure Rehab	255,000					255,000
BD-012	FY23 OC Modeling	85,000					85,000
G19033	FY23 Operations Renewal & Replacement	850,000					850,000
H19002	FY23 Plumbing Modification Program	212,500					212,500
D21097	FY23 Regional WQTC Equipment RR	850,000					850,000
G23001	FY23 Renewal & Replacement	1,700,000					1,700,000
Y23009	FY23 SCADA System and Rain Gauge	297,500					297,500
G23030	FY23 Security Upgrades	212,500					212,500
BD-013	FY23 Stormwater Asset Inventory & Analysis	136,000					136,000
Y23010	FY23 System Flow Monitoring	85,000					85,000
Y23011	FY23 System Planning and Reg. Support	127,500					127,500
H23032	FY23 Urban Reforestation	240,000					240,000
H19007	FY23 USGS Stream Monitoring	690,400					690,400
K19012	FY23 Vehicles & Equipment	16,800,000					16,800,000
BD-336	FY23 WQTC Engineering Support	85,000					85,000
23BDY-033	FY24 BC CMOM Infrastructure Rehab		500,000				500,000
23BDY-029	FY24 BC PS RR		100,000				100,000
H20044	FY24 CIP Task Assistance		2,000,000				2,000,000

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
H20060	FY24 CMOM Collection System PS RR		500,000				500,000
H20065	FY24 CMOM Gravity Line Cleaning & Inspection		1,500,000				1,500,000
H20059	FY24 CMOM I&C Implementation		292,500				292,500
H20053	FY24 CMOM Infrastructure Rehabilitation Program		2,000,000				2,000,000
H20115	FY24 CMOM Program Management Assistance		150,000				150,000
H20113	FY24 CMOM SCAP, AAM, FOG		150,000				150,000
23BDY-013	FY24 Collection System Modeling		25,000				25,000
A20081	FY24 Construction Inspection		500,000				500,000
H20097	FY24 Development Infrastructure Support		85,000				85,000
BD-163	FY24 DRI		2,800,000				2,800,000
H20082	FY24 Env'L Data Collection – MS4 & IOAP		875,000				875,000
F21098	FY24 Flood Structures RR		2,000,000				2,000,000
F20102	FY24 FPS Equipment RR		1,000,000				1,000,000
23BD-009	FY24 IPS Support		260,000				260,000
N20132	FY24 IT Improvements		200,000				200,000
N20074	FY24 IT Infrastructure Initiatives		307,500				307,500
J20072	FY24 LOJIC Hw Upgrades & Replacements		100,000				100,000
J20026	FY24 LOJIC Survey Control Maintenance		30,000				30,000
23BDY-001	FY24 LTMN		75,000				75,000
D21021	FY24 MFWQTC Equipment RR		2,500,000				2,500,000
D20143	FY24 MFWQTC Other Facilities Repairs		500,000				500,000
G20131	FY24 Miscellaneous Facility Repairs		200,000				200,000
H20038	FY24 Modeling		1,200,000				1,200,000
H20121	FY24 MS4 Basin Retrofit		85,000				85,000
H20083	FY24 MS4 Program		600,000				600,000
G20130	FY24 MSD Owned Building Roof Replacements		400,000				400,000
H20051	FY24 NMC CSO Inspection Cameras		100,000				100,000
H20039	FY24 NMC RTC		300,000				300,000
H20027	FY24 NMC Support		100,000				100,000
23BDW-012	FY24 OC CMOM Linear Infrastructure Rehab		100,000				100,000
23BDW-001	FY24 OC CMOM Vertical Infrastructure Rehab		300,000				300,000
BD-014	FY24 OC Modeling		100,000				100,000
E20112	FY24 Operations Renewal & Replacement		2,300,000				2,300,000
H20080	FY24 Plumbing Modification Program		500,000				500,000
E21022	FY24 PS Replacement, Overhaul or Elimination		1,000,000				1,000,000
D21099	FY24 Regional WQTC Equipment RR		1,500,000				1,500,000
G24001	FY24 Renewal & Replacement		2,000,000				2,000,000
23BDY-004	FY24 Sewer System Evaluation Surveys		500,000				500,000
23BDY-025	FY24 System Flow Monitoring		20,000				20,000
23BDY-014	FY24 System Planning and Reg. Support		150,000				150,000
H20084	FY24 USGS Stream Monitoring		410,000				410,000
K20079	FY24 Vehicles & Equipment		4,000,000				4,000,000
BD-337	FY24 WQTC Engineering Support		100,000				100,000
J18107	FY24/25 Aerial Imagery & Map Updates		189,034	310,966			500,000
23BD-032	FY24-FY28 Urban Reforestation		76,101	216,596	357,091	411,278	1,061,067
23BDY-034	FY25 BC CMOM Infrastructure Rehab			500,000			500,000
23BDY-030	FY25 BC PS RR			100,000			100,000
H21025	FY25 CIP Task Assistance			1,500,000			1,500,000
E21026	FY25 CMOM Collection System PS RR			375,000			375,000

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
E21027	FY25 CMOM Gravity Line Cleaning & Inspection			1,125,000			1,125,000
E21028	FY25 CMOM I&C Implementation			219,375			219,375
E21029	FY25 CMOM Infrastructure Rehabilitation Program			1,500,000			1,500,000
E21030	FY25 CMOM Program Management Assistance			112,500			112,500
E21031	FY25 CMOM SCAP, AAM, FOG			112,500			112,500
23BDY-015	FY25 Collection Sys Gravity Sewer Rehab.			500,000			500,000
23BDY-016	FY25 Collection System Modeling			25,000			25,000
A21032	FY25 Construction Inspections			375,000			375,000
H20134	FY25 Development Infrastructure Support			63,750			63,750
C21035	FY25 DRI			2,100,000			2,100,000
H21036	FY25 Env'L Data Collection – MS4 & IOAP			656,250			656,250
F21037	FY25 Flood Structures RR			1,500,000			1,500,000
F21038	FY25 FPS Equipment RR			750,000			750,000
23BD-011	FY25 IPS Support			195,000			195,000
N21023	FY25 IT Improvements			150,000			150,000
N20073	FY25 IT Infrastructure Initiatives			230,625			230,625
J21039	FY25 LOJIC HW Upgrades & Replacements			75,000			75,000
J21040	FY25 LOJIC Survey Control Maintenance			30,000			30,000
23BDY-002	FY25 LTMN			75,000			75,000
D21041	FY25 MFWQTC Equipment RR			1,875,000			1,875,000
D21042	FY25 MFWQTC Other Facilities Repairs			375,000			375,000
G21043	FY25 Miscellaneous Facility Repairs			150,000			150,000
H21044	FY25 Modeling			900,000			900,000
H21045	FY25 MS4 Program			450,000			450,000
G21046	FY25 MSD Owned Building Roof Replacements			300,000			300,000
E21048	FY25 NMC CSO Inspection Cameras			75,000			75,000
E21049	FY25 NMC RTC			225,000			225,000
E21047	FY25 NMC Support			75,000			75,000
23BDW-013	FY25 OC CMOM Linear Infrastructure Rehab			75,000			75,000
23BDW-003	FY25 OC CMOM Vertical Infrastructure Rehab			225,000			225,000
23BDW-004	FY25 OC Modeling			75,000			75,000
E21050	FY25 Operations Renewal & Replacement			1,725,000			1,725,000
H21051	FY25 Plumbing Modification Program			375,000			375,000
E21052	FY25 PS Replacement, Overhaul or Elimination			750,000			750,000
D21109	FY25 Regional WQTC Equipment RR			1,125,000			1,125,000
G25001	FY25 Renewal & Replacement			1,500,000			1,500,000
23BDY-026	FY25 System Flow Monitoring			20,000			20,000
23BDY-017	FY25 System Planning and Reg. Support			100,000			100,000
H21054	FY25 USGS Stream Monitoring			311,250			311,250
K21055	FY25 Vehicles & Equipment			3,000,000			3,000,000
BD-338	FY25 WQTC Engineering Support			75,000			75,000
23BDY-035	FY26 BC CMOM Infrastructure Rehab				500,000		500,000
23BDY-031	FY26 BC PS RR				100,000		100,000
BD-165	FY26 CIP Task Assistance				1,500,000		1,500,000
BD-166	FY26 CMOM Collection System PS RR				450,000		450,000
BD-167	FY26 CMOM Gravity Line Cleaning & Inspection				1,125,000		1,125,000
BD-168	FY26 CMOM I&C Implementation				219,375		219,375
BD-169	FY26 CMOM Infrastructure Rehabilitation Program				1,500,000		1,500,000
BD-170	FY26 CMOM Program Management Assistance				112,500		112,500

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
BD-171	FY26 CMOM SCAP, AAM, FOG				112,500		112,500
23BDY-018	FY26 Collection Sys Gravity Sewer Rehab.				500,000		500,000
23BDY-019	FY26 Collection System Modeling				25,000		25,000
BD-172	FY26 Construction Inspection				375,000		375,000
BD-174	FY26 Development Infrastructure Support				63,750		63,750
BD-175	FY26 DRI				2,100,000		2,100,000
BD-176	FY26 Env'l Data Collection – MS4 & IOAP				656,250		656,250
BD-177	FY26 Facility Security Upgrades				375,000		375,000
BD-178	FY26 Flood Structures RR				1,500,000		1,500,000
BD-179	FY26 FPS Equipment RR				750,000		750,000
23BD-022	FY26 IPS Support				195,000		195,000
BD-180	FY26 IT Infrastructure Initiatives				230,625		230,625
BD-181	FY26 LOJIC Support				112,500		112,500
23BDY-003	FY26 LTMN				75,000		75,000
BD-182	FY26 MFWQTC Equipment RR				1,875,000		1,875,000
BD-183	FY26 MFWQTC Other Facilities Repairs				375,000		375,000
BD-184	FY26 Miscellaneous Facility Repairs				150,000		150,000
BD-185	FY26 Modeling				900,000		900,000
BD-186	FY26 MS4 Program				450,000		450,000
BD-187	FY26 MSD Owned Building Roof Replacements				300,000		300,000
BD-188	FY26 NMC CSO Inspection Cameras				75,000		75,000
BD-189	FY26 NMC RTC				225,000		225,000
BD-190	FY26 NMC Support				75,000		75,000
23BDW-014	FY26 OC CMOM Linear Infrastructure Rehab				75,000		75,000
23BDW-005	FY26 OC CMOM Vertical Infrastructure Rehab				225,000		225,000
23BDW-006	FY26 OC Modeling				75,000		75,000
23BDW-017	FY26 OC WQTC Eliminations				1,800,000		1,800,000
BD-191	FY26 Operations Renewal & Replacement				1,725,000		1,725,000
BD-192	FY26 Plumbing Modification Program				375,000		375,000
BD-193	FY26 PS Replacement, Overhaul or Elimination				750,000		750,000
BD-194	FY26 Regional WQTC Equipment RR				1,125,000		1,125,000
BD-195	FY26 Renewal & Replacement				1,500,000		1,500,000
23BDY-027	FY26 System Flow Monitoring				20,000		20,000
23BDY-020	FY26 System Planning and Reg. Support				100,000		100,000
BD-196	FY26 USGS Stream Monitoring				311,250		311,250
BD-197	FY26 Vehicles & Equipment				3,000,000		3,000,000
BD-339	FY26 WQTC Engineering Support				75,000		75,000
J20070	FY26/27 Aerial Imagery & Map Updates				141,775	233,225	375,000
23BDY-036	FY27 BC CMOM Infrastructure Rehab					350,000	350,000
BD-017	FY27 CIP Task Assistance					1,400,000	1,400,000
BD-018	FY27 CMOM Collection System PS RR					420,000	420,000
BD-019	FY27 CMOM Gravity Line Cleaning & Inspection					1,050,000	1,050,000
BD-020	FY27 CMOM I&C Implementation					204,750	204,750
BD-021	FY27 CMOM Infrastructure Rehabilitation Program					1,400,000	1,400,000
BD-022	FY27 CMOM Program Management Assistance					105,000	105,000
BD-023	FY27 CMOM SCAP, AAM, FOG					105,000	105,000
23BDY-021	FY27 Collection Sys Gravity Sewer Rehab.					70,000	70,000
23BDY-022	FY27 Collection System Modeling					35,000	35,000
BD-024	FY27 Construction Inspection					350,000	350,000

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
BD-026	FY27 Development Infrastructure Support					59,500	59,500
BD-027	FY27 DRI					1,960,000	1,960,000
BD-028	FY27 Env'l Data Collection – MS4 & IOAP					612,500	612,500
BD-029	FY27 Flood Structures RR					1,400,000	1,400,000
BD-030	FY27 FPS Equipment RR					700,000	700,000
23BD-023	FY27 IPS Support					182,000	182,000
BD-031	FY27 IT Infrastructure Initiatives					215,250	215,250
BD-032	FY27 LOJIC Support					105,000	105,000
BD-033	FY27 MFWQTC Equipment RR					1,750,000	1,750,000
BD-034	FY27 MFWQTC Other Facilities Repairs					350,000	350,000
BD-035	FY27 Miscellaneous Facility Repairs					140,000	140,000
BD-036	FY27 Modeling					840,000	840,000
BD-037	FY27 MS4 Program					420,000	420,000
BD-038	FY27 MSD Owned Building Roof Replacements					280,000	280,000
BD-039	FY27 NMC CSO Inspection Cameras					70,000	70,000
BD-040	FY27 NMC RTC					210,000	210,000
BD-041	FY27 NMC Support					70,000	70,000
23BDW-015	FY27 OC CMOM Linear Infrastructure Rehab					49,000	49,000
23BDW-007	FY27 OC CMOM Vertical Infrastructure Rehab					147,000	147,000
23BDW-008	FY27 OC Modeling					49,000	49,000
BD-042	FY27 Operations Renewal & Replacement					1,610,000	1,610,000
BD-043	FY27 Plumbing Modification Program					350,000	350,000
BD-044	FY27 PS Replacement, Overhaul or Elimination					700,000	700,000
BD-045	FY27 Regional WQTC Equipment RR					1,050,000	1,050,000
BD-046	FY27 Renewal & Replacement					1,400,000	1,400,000
BD-047	FY27 USGS Stream Monitoring					290,500	290,500
BD-048	FY27 Vehicles & Equipment					2,100,000	2,100,000
F15010	Gate 102 Replacement	144,196					144,196
N23034	GIS Equipment Replacement	51,000					51,000
H09242	Gunpowder Pump Station	474,271	242,034				716,305
23BD-036	HANA Phase 2 Enhancements		500,000				500,000
A20280	Harrods Creek Force Main Repair	24,058					24,058
H14126	HCWQTC Expansion	834,872					834,872
A18077	HCWQTC Service Area Back-Up Power For Critical Pump Stations					1,785,300	1,785,300
Y22147	Hillview #2 WWTP Elimination					600,000	600,000
Y22155	Hillview PS#2 Elimination (Construction)		100,000				100,000
Y22124 (FY23)	Hunters Hollow PS & FM '23	380,499	3,025,501				3,406,000
H19247 (FY23)	I-64 and Grinstead CSO Interceptor '23	1,230,513					1,230,513
H18503 (FY23)	I-64 and Grinstead Infrastructure Rehabilitation '23	4,300,000					4,300,000
H18503 (FY24)	I-64 and Grinstead Infrastructure Rehabilitation '24		6,143,091				6,143,091
H09164 (FY23)	Idlewood Inline Storage '23	3,651,264					3,651,264
H09171	Kavanaugh Road Pump Station Improvements	600,486	3,593,546				4,194,032
D20008	Kirby Lane Pump Station Elimination	62,677	720,362				783,039
A14135	KTC Greenwood Rd Assmt			212,700			212,700
E15035 (FY23)	Lake Forest Pump Station Eliminations '23	1,458,227	472,939				1,931,166
A20244 (FY23)	Large Diameter Sewer Rehabilitation - Stage 1 and 2 '23	1,234,770					1,234,770
A20006	Lea Ann Way Pump Station Elimination			1,472,316	5,372,878	6,334,106	13,179,300
H09196 (FY23)	Leven Pump Station Elimination '23	846,147	606,533				1,452,680
H09163	Little Cedar Creek Interceptor Improvements	575,110	1,394,798	296,055			2,265,962

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
H23035	Logan St. Basin and Main Office Rain Garden Rehab.	127,500					127,500
C22028	Lower Floyds Fork Facilities Plan	201,019					201,019
23BD-034	Lower Floyds Fork Zone H Collection System - Phase 1					1,518,713	1,518,713
23BD-060	Lower Mill Creek FPS - Electrical Improvements		295,386	978,736	1,025,878		2,300,000
G23036	Main Office HVAC Chillers	170,000					170,000
BD-149	Manning Rd/Cardinal Drive Sewer Rehab					3,280,399	3,280,399
BD-150	Manslick Ave Sewer Rehab					1,223,873	1,223,873
F23037	Maple Street Land Use project	182,143	285,714				467,857
Y22151	Material Handling PS Elimination			500,000	1,000,000		1,500,000
F22127	Melco Basin Improvement	1,314,286					1,314,286
H09188	Mellwood System Improvements and Pump Station Elimination - Winton And Mockingbird Valley Eliminations				229,368	1,236,120	1,465,488
H23038	MF Network Encasement	51,000					51,000
D20007	MF Peabody Gate Structure	42,500					42,500
G21225 (FY23)	MFWQTC & Central Maintenance Facility Guard Building Design - f	5,100,000					5,100,000
D18161	MFWQTC Chlorine Contact Tanks Structural Repairs	238,000					238,000
D22186	MFWQTC Computer Room Upgrades	445,380	614,738				1,060,119
G20028	MFWQTC Elevator Repairs	107,754					107,754
D18130	MFWQTC FEPS Loadcenter and MCC Replacement	136,064					136,064
D18162	MFWQTC Final Effluent Pump Station (FEPS) Structural Repairs	51,000					51,000
H22014 (FY23)	MFWQTC Groundwater Dewatering System Automation '23	1,028,726	302,567				1,331,293
D18159	MFWQTC HPO Tanks (Battery A, B, and C) Structural Repairs		2,494,400				2,494,400
D21247 (FY23)	MFWQTC HVAC Upgrades '23	1,447,185	1,702,571	283,762			3,433,518
D20285	MFWQTC LG Dryer Replacements	7,034,294					7,034,294
D22122 (FY23)	MFWQTC MEB Boiler Replacement '23	847,324	498,426				1,345,749
D21233 (FY23)	MFWQTC MEB Building Roof Replacement '23	972,443					972,443
F14181	MFWQTC Process Water Pump & VFD		96,800				96,800
D18160	MFWQTC Secondary Clarifiers Structural Repairs	212,500					212,500
D18160-FY24	MFWQTC Secondary Clarifiers Structural Repairs '24		1,767,857	1,944,643	7,131,356	8,557,627	19,401,483
D17042-FY23	MFWQTC Sedimentation Basin RR (FY23)	15,000,000					15,000,000
D17042-FY24	MFWQTC Sedimentation Basin RR (FY24)		18,025,081	707,059			18,732,140
23BD-063	MFWQTC Sludge Disposal	4,500,000					4,500,000
D19045 (FY23)	MFWQTC Sodium Hypochlorite Building Relocation '23	688,287					688,287
D22100_F23	MFWQTC Thermal Hydrolysis (23)	8,500,000					8,500,000
D22100_F24	MFWQTC Thermal Hydrolysis (24-27)		17,252,857	32,031,380	80,303,390	56,212,373	185,800,000
H22020 (FY23)	MFWTC Admin. Bldg. Renovation and Computer Room Expansion	8,500					8,500
H11306	Middle Fork Bg Crk SSR Ph 1			768,900			768,900
H23039	Middletown Station PS Elimination	125,683	752,138				877,821
23BDW-009	Mockingbird Valley WWTP Elimination		1,032,500				1,032,500
E21062	Modesto Pump Station Elimination	266,730					266,730
H09182 (FY23)	Monticello Pump Station Elimination '23	351,900					351,900
D19048	MSD Radio Repeaters	28,438					28,438
D20011	Northern Ditch Pump Station Replacement		1,292,352	2,172,349	6,254,937	8,781,619	18,501,256
C23040	Oak Valley Drainage Remedies	85,000					85,000
W21006 (FY23)	OC Ash Avenue Interceptor '23	2,975,000					2,975,000
W21006 (FY24)	OC Ash Avenue Interceptor '24		2,523,561				2,523,561
BD-156	OC Forcemain to HCWQTC		302,097	1,275,503			1,577,600
D21063	Odor Management Plan	241,131	283,683	283,683			808,498
C22029	Ohio River Area Facilities Plan	243,145					243,145
W21126	Ohio River Service Area Lift Station Rehabilitation	790,713	697,688				1,488,400

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
H23041	Olde Copper Ct. PS Elimination	78,203	467,997				546,200
F18515 (FY23)	Paddys Run FPS Capacity Upgrade '23	7,640,811	9,711,857	38,600,029	43,221,453	20,253,531	119,427,682
H23042	Padmount Transformer for Battery C	850,000					850,000
23BD-018	Park Ridge Woods PS Elimination		361,329	1,000,871			1,362,200
H23043	Parkwood PS Elimination	76,806	459,640				536,446
C21065	Pencook Drainage Improvements	680,000					680,000
E21066	Pirogue Pump Station Elimination	510,184	570,996				1,081,180
N21105	PMIS System Implementation	318,750	1,125,000				1,443,750
X_0095/X_0319	Pond Creek FPS - Electrical Service Improvements					3,332,057	3,332,057
H23044	Pond Creek FPS Electrical Improvements or Pond Creek FPS Breaker	279,296	1,671,417				1,950,713
X_0287	Private Property I/I Program		523,900	523,900			1,047,800
H16075	Prospect Phase II Rehab	1,484,511					1,484,511
C22054	PSC Program Support	65,189					65,189
H10043	Raintree & Marian Ct 2 - Pipe Upgrades		245,838	814,564	853,798		1,914,200
BD-160	Realty Trail Interceptor		1,440,589	1,159,911			2,600,500
H22017	Regional Biosolids Management Study	1,076,364					1,076,364
23BD-044	Regional WQTC Controls Upgrades		516,200				516,200
C22052	Rehabilitation Project Management Support	238,781					238,781
23BD-064	Riverport FPS - Electrical Improvements			295,386	978,736	1,025,878	2,300,000
X_0091	Riverport FPS - Generator Improvements					668,070	668,070
E21070 (FY23)	Rosa Terrace PS Elimination '23	3,589,000					3,589,000
H21019 (FY23)	Rudd Ave Sewer Infrastructure Rehabilitation '23	8,183,282					8,183,282
E21091 (FY23)	Sanders Lane PS Rehabilitation '23	433,415					433,415
N20133-FY23	SAP Upgrade To HANA (FY23)	552,500					552,500
N20133-FY24	SAP Upgrade To HANA (FY24)		850,000				850,000
E21068	SCADA Master Plan		774,300				774,300
H22022 (FY23)	SGC Gate Replacements '23	5,911,325					5,911,325
D20012 (FY23)	SGC RTC Enhancements '23	2,175,364	5,879,099				8,054,462
A18485	Shady Villa Pump Station Elimination					369,313	369,313
N23045	Sharepoint Upgrade	63,750					63,750
23BD-059	Shawnee Park FPS - Electrical Improvements	474,803	2,841,409				3,316,211
23BD-058	Sluice Gate Repair Program		928,571	1,723,971	4,322,034	3,025,424	10,000,000
H22038 (FY23)	Sneads Branch Pump Replacement '23	960,399					960,399
E21090 (FY23)	Sonne Avenue PS Elimination '23	2,566,055	345,845				2,911,900
E22116	South Shelby Street Sanitary Sewer Improvements	75,056	187,750	8,321			271,128
Y22154	South System Improvements					1,391,471	1,391,471
H23046	Southfork Dry Bed Access	255,000					255,000
F20107	Starkey FPS Electrical Service Improvements	196,906	983,431	784,915			1,965,252
C22088	Stormwater Data Mgmt & Asset Knowledge Program	272,000					272,000
BD-161	Stormwater Implementation					3,232,891	3,232,891
H17030	Stormwater Master Plan			2,158,650	2,158,650		4,317,300
New	Stormwater Pilot Monitoring	175,000					175,000
G23047	Studio Office Build	34,000					34,000
D19286 (FY23)	SWPS Gas Monitoring and SP1 Odor Control '23	893,917	1,503,418				2,397,335
F21153	SWPS Influent Gate Seal Replacement	83,091					83,091
H23048	SWPS Screen Evaluation (and Replacement)	475,803	1,440,232				1,916,035
G20018 (FY23)	SWPS Site Security '23	975,372					975,372
H09186	Upper Middle Fork #2 PS Replacements		392,092	2,296,000	3,171,561	9,261,829	15,121,481
H18310	Upper Middle Fork Forcemain		312,181	1,828,061	2,525,178	7,374,214	12,039,634

		195,306,148	219,094,943	205,099,568	226,195,131	202,383,150	1,048,078,941
Budget ID	Project Name	FY23	FY24	FY25	FY26	FY27	5 Year CIP
H18311	Upper Middle Fork Relief Interceptor		451,610	2,644,522	3,652,989	10,667,731	17,416,851
F20110	Upper Mill Creek FPS Transformer Replacement	108,640	372,714	249,475			730,828
23BD-056	Water Stop Repair	297,932	449,492				747,424
E21071 (FY23)	Wathen Lane PS Rehabilitation '23	681,085					681,085
H22033 (FY23)	West Louisville Community Odor Control Improvements	125,357	232,736	583,475	408,432		1,350,000
H20147 (FY23)	Western Outfall Infrastructure Rehabilitation '23	425,000					425,000
H20147 (FY24)	Western Outfall Infrastructure Rehabilitation '24		7,065,229	13,530,054			20,595,283
H23049	WQTC Loadcenter Rehab	850,000					850,000
H23050	WQTC Regional Lab Upgrades	595,000					595,000