Boston Water and Sewer Commission

2024 - 2026
CAPITAL IMPROVEMENT PROGRAM

BOSTON WATER AND SEWER COMMISSION CAPITAL IMPROVEMENT PROGRAM 2024-2026

Henry F. Vitale
Executive Director
November 2023

BOARD OF COMMISSIONERS

Michael J. Woodall, Chair
Christopher Cook, Commissioner
Armindo Goncalves, Commissioner

Henry F. Vitale, Executive Director

John P. Sullivan, P.E., Chief Engineer

Irene McSweeney, P.E., Chief of Operations

Paul Canavan, Director of Operations

Nelson W. Piacenza, Chief of Strategic Management and Business Performance

Robert Lamarca, General Counsel

Luciano Petruzziello, Chief Financial Officer

Peter Hunt, Chief Information Officer

Hussein Dayib, Director of Organizational Diversity

Peter Salvatore, P.E., Director of Engineering

Charlie Jewell, Director of Planning & Sustainability

Robert Capogreco, Director of Finance

Prepared by the Finance Division

Table of Contents

SECTION III

SECTION IV

SECTION V

SECTION VI

LIST OF TABLES

EXECUTIVE SUMMARY

The Boston Water and Sewer Commission ("the Commission" or "BWSC") is a body politic and corporate and political subdivision of the Commonwealth created by Chapter 436 of the Acts of 1977 ("Enabling Act"). The Enabling Act abolished the water and sewer divisions within the City of Boston Public Works Department and transferred the ownership, operation and control of the water, sewer and storm drain systems to the Commission. As a public instrumentality, the Commission performs an essential public function in providing water and sewer services to the residents of the City of Boston. The Act authorizes the Commission to construct and make improvements to the water and sewer systems, establish and collect rates and charges for its services and finance its operations and improvements through revenue collections and the sale of bonds and notes payable solely from the Commission's revenues. The Act further provides that any revenue surplus earned by the Commission in any Fiscal Year shall be credited to the next year's rates or returned to the City of Boston. Since its inception, the Commission has generated a surplus in each year of its operations and has credited the surplus to the reduction of the next year's rates.

The Enabling Act and the Commission's General Revenue Bond Resolution adopted December 6, 1984 ("the Resolution") require the Commission, on an annual basis, to develop a three-year Capital Improvement Program ("CIP"). Information generated by the Commission's ongoing monitoring programs for the systems and from various engineering data files, together with information concerning the development needs of the City, is used to compile a list of pipes, conduits, transmission mains and other system components to be either renewed, replaced, relocated or added to the systems each year. The CIP outlines the schedule and implementation of the capital projects necessary to maintain and improve the water and sewer systems for the ensuing three-year period. Due to pace of project implementation, the actual expenditures are currently expected to occur over a longer period of time. While there can be no assurance that projections for the projects included in the 2024-2026 CIP will not be exceeded or that additional projects will not be required, the Commission believes the amounts set forth the 2024-2026 Capital Improvement Program are reasonable for such projects.

The Commission in compliance with the requirements of the Enabling Act and the Resolution, project costs of the Commission's Capital Improvement Program from Fiscal Years 2024 through 2026 total approximately $318.0 million.

Since the Commission's inception in 1977, the Commission has set forth its Capital Improvement Plan to provide for long-term capital improvements to its water distribution and sewer collection systems, governed by a core commitment to prudent fiscal management. Comprehensive and well-planned water distribution system maintenance and planning has sustained superior water service for our customers and resulted in a low incidence of system failures. The Commission has also led the industry in implementing effective water conservation measures, including dedication to deploying the most efficient technologies and practices enabling the Commission to maximize cost savings.

The Commission utilizes effective conservation measures through continued efforts to eliminate leaks across the system through advanced leak detection technology and proactive maintenance of the system's water mains.

DISCUSSION OF MANAGEMENT OBJECTIVES AND ACCOMPLISHMENTS

The Commission was created to maintain and improve the long-term quality and reliability of water and sewer services for all users in the City and to assure adequate funding for operation and maintenance of the systems. For the purposes of this document, "Systems" include the water distribution system (including potable water and fire suppression facilities) and sewer system (including separate sanitary sewers, separate stormwater drains and combined sewers) and the related appurtenances and fixtures. The Commission is committed to four primary goals:

- To maintain and improve the water distribution and wastewater collection systems. The Commission is committed to various improvements to the Water Distribution and Sewer Systems, including following an aggressive renewal and replacement program, reducing unaccounted for water, encouraging conservation and improving the environment. The Commission is also committed to meeting and exceeding the requirements of all federal and state water and wastewater laws, regulations and technical standards.

- To establish and administer a billing and collections system that is fair and efficient. The Commission has worked to establish a rate structure that fully and fairly reflects its costs, properly distributes the financial obligation concerning its customer base and encourages water conservation. The metering, billing, and collection process is a central focus of the Commission's full management team, and the Commission is committed to maintaining its strong record in that area.

- To maintain a strong financial structure. The Commission has consistently employed conservative financial projections and budgeting assumptions, maintained adequate reserves, and struck a reasonable balance between debt funding and rate funding of capital expenses.

- To sustain the effectiveness of investments / compliance of regulations. The Commission is committed to complying with all its regulatory obligations under federal and state laws, including the Safe Drinking Water Act ("SDWA") and Clean Water Act ("CWA") with its National Pollutant Discharge Elimination System ("NPDES") permitting obligations for both its stormwater systems and combined sewer systems. Compliance obligations also extend to meeting and exceeding the goals and requirements of the Boston Harbor Decree and the Consent Decree executed in 2012 with the Environmental Protection Agency ("EPA") related to stormwater discharges.

In planning its CIP, the Commission balances the recognized need for ongoing renewal and replacement and preservation of its Systems with the desirability of specific improvements to accommodate development or redevelopment plans for the city. Wherever feasible, capital improvements are scheduled in cooperation with the street rebuilding and reconstruction activities of the City's Department of Public Works, the Boston Planning and Development Agency and Massachusetts Department of Transportation.

OBJECTIVES

The overall objectives of the Commission's 2024-2026 CIP are to ensure the delivery of high-quality potable water for consumption and fire protection, as well as the efficient collection of sewage for transport and delivery to a treatment facility or for approved discharge. In addition, the CIP includes projects to improve overall efficiency of the Commission and to enhance the Commission's ability to provide services to its customers.

The Stormwater category was created in 2017 that focuses on Stormwater management. The primary purpose of the Stormwater category in the 2024-2026 CIP is to participate in the Boston Harbor pollution abatement projects and implement green infrastructure to improve the water quality of discharges to the local receiving waters. The goal is also to study existing conditions and make recommendations for placement of best management practices designed to promote improved water quality, ensure compliance with state and federal regulations, minimize flooding, and strategically manage Stormwater throughout the City of Boston.

CIP expenditures are divided into four categories: Water Distribution System projects, Sewer System projects, Support projects and Stormwater projects. Water Distribution System projects account for $99.3 million, or 31.3% of the 2024-2026 CIP. Sewer System projects comprise $118.0 million, or 37.1%, Support projects total $39.9 million, or 12.5% of the expenditures outlined in the program, and Stormwater projects account for $60.7 million, or 19.1% of the 2024-2026 CIP.

Total capital expenditures of $124.2 million are outlined for 2024. Water Distribution projects comprise $42.7 million, or 34.4% of the 2024 CIP. Sewer System projects account for $44.5 million, or 35.8%; Support projects account for $16.6 million of the 2024 amount, or 13.4%; Stormwater projects totaling $20.4 million of the 2024 amount, or 16.4%.

Tables 1 and 2 represent the cash flow expenditures and funding sources for the Commission's 2024-2026 CIP.

Table 1 - 2024-2026 CIP Cash Flows

Program	2024	2025	2026	2024-2026
Water	$42,711,536	$25,715,529	$30,898,920	$99,325,985
Sewer	$44,466,171	$42,749,232	$30,809,886	$118,025,288
Support	$16,625,000	$17,295,000	$5,970,000	$39,890,000
Stormwater	$20,380,053	$22,663,623	$17,703,222	$60,746,898
Total	$124,182,760	$108,423,384	$85,382,028	$317,988,172

NOTE: *Although expenditures decrease from periods 2024 to 2026, it is anticipated that funding for 2026 will be equal to or greater than funding presented in 2026. The decrease in 2026 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.*

CIP expenditures are funded by five funding sources: Bonds, Rate Revenue, the MWRA funded Local Water System Assistance Program (LWSAP), the MWRA funded I/I Local Financial Assistance Program (MWII), and the State Revolving Fund (SRF). In 2000 the MWRA instituted a new assistance program for the identification and removal of lead from water pipes. This program is called the Lead Service Line Replacement Loan Program (MWLLP). Costs for this program are associated under the MWRA Water Assistance program and SRF. Bonds funded projects account for $116.4 million of the 2024-2026 CIP, or 36.6%. Rate funded projects comprise of $111.8 million, or 35.2%; MWRA funded Water projects total $21.0 million of the expenditures outlined in the program, or 6.6%; MWRA funded Sewer projects account for $21.0 million of the 2024-2026 CIP, or 6.6%; and SRF funded projects account for $47.8, or 15.0% of the 2024-2026 CIP.

Total capital expenditures of $124.2 million are outlined for 2024. Bond funded projects comprise $58.0 million of the 2024 amount, or 46.6%; Rate funded projects account for $39.7 million of the 2024 amount, or 32.0%; MWRA Water projects account for $5.7 million of the 2024 amount, or 4.6%; I/I projects total $5.2 million of the 2024 amount, or 4.2%; and SRF account for $15.6 million of the 2024 amount, or 12.6%.

Table 2 – 2024-2026 CIP Funding Sources

Program	2024	2025	2026	2024-2026
BWSC Bonds	$57,964,905	$39,209,878	$19,242,865	$116,417,647
Rate Revenue	$39,684,779	$36,926,432	$35,206,351	$111,817,562
MWRA Water Assistance	$5,746,350	$3,456,129	$11,786,404	$20,988,884
MWRA I/I Assistance	$5,161,174	$7,811,347	$7,986,365	$20,958,886
SRF	$15,625,553	$21,019,597	$11,160,043	$47,805,193
Total	**$124,182,760**	**$108,423,384**	**$85,382,028**	**$317,988,172**

NOTE: *Although expenditures decrease from periods 2024 to 2026, it is anticipated that funding for 2026 will be equal to or greater than funding presented in 2024. The decrease in 2026 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.*

PROJECT HIGHLIGHTS

The Commission's CIP includes projects to improve the overall efficiency and to enhance the Commission's ability to provide services to its customers. The projects included in this CIP are intended to accomplish these objectives in the most efficient and cost-effective manner. The Commission intends to enhance Boston's water and sewer infrastructure with several targeted projects included in the 2024-2026 Capital Improvement Program. Some of the major projects are listed below:

- ✓ Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow Control Projects
- ✓ Water Main Valve Replacement
- ✓ Rehabilitation of the New Boston Main Interceptor (NBMI)
- ✓ East Boston Sewer Separation
- ✓ South Boston Sewer Separation
- ✓ Roxbury Sewer Separation
- ✓ Dorchester Interceptor - Relief Sewer
- ✓ West Roxbury SSES
- ✓ City-wide Illegal Connections Investigations
- ✓ Upgrades to Union Park Pumping Station & Satellite Stations
- ✓ Charlestown SSES
- ✓ Charlestown Separation
- ✓ Construction of Daisy Field Green Infrastructure
- ✓ Coastal Stormwater Impact Analysis
- ✓ Projects affiliated with the Consent Decree; includes cleaning and televising 90 miles of sewer and drains
- ✓ Design of Stormwater Detention Facilities
- ✓ Implement Stormwater/Green Infrastructure Program designed to improve water quality, the environment and manage stormwater resources
- ✓ Improvements of Information Technology
- ✓ Citywide Renewal & Rehabilitation of Drains and Sewers
- ✓ Lead Sampling and Education Program for Schools and Childcare Facilities

WATER DISTRIBUTION SYSTEM

Since its creation the Boston Water and Sewer Commission has provided the City of Boston with reliable, quality water. A program, which began as an aggressive 17 miles of water pipe replaced or rehabilitated yearly based on age and the City's construction schedule, has transformed into a successful asset management approach. When combined with an aggressive leak detection and flushing program the results have been undeniable. The Commission has averaged just over 35 water pipe failures per year and has witnessed its unbilled water drop from 48% to 18%. The Commission utilizes effective conservation measures through continued efforts to eliminate leaks across the system through advanced leak detection technology and proactive maintenance of the system's water mains.

In 1991, the EPA issued the Lead and Copper Rule (the "Lead Rule") regulating the concentration of lead and copper in drinking water. Lead enters tap water through corrosion, or wearing away of lead contained in service piping, solder used in plumbing and some brass fixtures. The Commission's drinking water is treated at the MWRA's John J. Carroll facility to make it less corrosive. Under the Lead Rule, water suppliers must conduct treatment lead and copper sampling programs, identify and implement optimal corrosion control treatment and provide information to the public on ways to further reduce their exposure to lead in drinking water. At the time the Lead Rule was passed, the MWRA and MassDEP agreed that, since the MWRA was a consecutive water supplier and provides the same drinking water to all communities it serves, the number of lead and copper samples the MWRA communities were required to collect could be reduced. The Commission collects water samples from the required 33 customer locations and submits them to the MWRA. The MWRA analyzes the samples for lead and copper content and provides the results from all the MWRA local communities to MassDEP.

In March 2004, the Commission's sample results, exceeded the 90th percentile lead action level, triggering a series of required actions under the Lead Rule, including the conducting of a public education program and the implementation of an approved Lead Service Line Replacement Program. The Commission's Lead Service Line Replacement was approved by the MassDEP in November 2004. Over a three-year period from 2004-2007, the Commission removed 1,074 public lead service lines identified in the system, far exceeding MassDEP requirement to remove 107 service lines annually. In February 2008, because of consecutive, favorable water sampling results below the 90th percentile lead action level, both MassDEP and EPA allowed the Commission to suspend its Lead Service Line Replacement Program. The Commission, however, continued to replace lead lines in the public way as they encountered through maintenance.

In accordance with state and federal regulations, the Commission continues its sampling program at 33 private sites that are known to have lead services. Importantly, Boston drinking water is lead free when it leaves the reservoirs, and the MWRA and Boston's water mains do not contain lead. In October 2020, the Commission's sample results from identified private homes exceeded the 90th percentile lead action level for the first time since 2004, triggering a series of required actions under the Lead Rule. In October 2021, the Commission and MassDEP executed an administrative consent order requiring the Commission to remove at least three hundred lead service lines annually as well as perform 700 investigations of water services on the "lead, unknown and other" inventory lists. In the most recent reporting period January 2022 through October 2022, the Commission removed 269 lead service lines in the system, both public and private. The Commission has performed 365 Vacuum excavations in the public way and 621 scratch tests on the private side. The MassDEP has approved the Commission for partial funding of this program, including 100% reimbursement for the investigations and 40% grant for lead water service removals. As part of the plan, the Commission implemented a robust public education program to inform particularly vulnerable members of the public about the dangers of lead in water. The Commission's website provides information for customers to indicate the potential of a lead service on their property. The Commission expanded its Lead Service Line Program, which was approved by MassDEP in March 2021. In October 2023, the Commission's lead sample results from identified private homes exceeded 15 parts per billion at 6 of the 33 tested locations, thus exceeding EPA's action level of 15 parts per billion at the 90th percentile. The Commission is continuing the removal of known lead service lines in the system and investigating service lines of unknown composition.

The Commission agreed to implement the removal of private lead service lines as part of the Administrative Order ahead of the pending EPA changes to the Lead Rule. The change upon implementation at a future date uncertain, will require systems to remove all lead lines in the public way and also those located on private property. Under the Commission's water use regulations, the home property owner is responsible for the private portion of the water service line, which is the portion running from the property line into the home. The cost of private line replacement is therefore the responsibility of the individual home or property owner. In 2004, the Commission created the Lead Replacement Incentive Program. The program was designed to encourage the replacement of private lead lines in the City by providing financial assistance to eligible homeowners to help defray and finance the cost of lead service line replacements. In February 2016, the Board of Commissioners voted to upgrade the Commission's existing Lead Replacement Incentive Program increased the credit from $1,000 to $2,000 and expanded eligibility to all properties with services two-inches (2") and under. In March 2021, the Board of Commissioners voted to further upgrade this credit from $2,000 to $4,000 to incentivize property owners to remove their private lead service line and reduce the financial cost to do so. The Commission mailed letters to all customers with a known private lead service line or a private service line of unknown composition to inform them of the increased credit and public lead service line removal. A second round of letters was sent to all customers with a known private lead service line or a private service line. The Commission does not expect that the SDWA requirements will impose any significant additional burden of lead service line replacement in excess of its current program.

From January 1st to date, the number of private lead service removals is 199 and the number of public lead removals is 61. Lead was removed from 23 Services on both the public side and the private side for a total of 237 addresses where lead has been removed.

On July 26, 2023, the Commissioners voted to amend the financial assistance program removing any cost limits on lead removal on private property whereas DEP has provided a commitment to give a grant for 30% of the lead replacement costs as well as 100% grant on investigations. In October 2023, the Clean Water Trust in conjunction with DEP approved an increase to the grant in the amount of 40% of the contract.

In 2023, 385 Vacuum investigations have occurred, finding 304 copper services, 59 lead services and 22 other material services. In 2023, 422 scratch tests were conducted, finding 232 copper services, 132 lead services and 58 other material services.

The SDWA requires that all community water systems publish an annual drinking water quality report to be distributed to all customers of each community system. The report, called a Consumer Confidence Report, is required to contain monitoring results of all detected contaminants that are regulated by the EPA. The regulations governing this provision of the SDWA were promulgated in August 1998. The report has been published annually since 1998 by the MWRA, in cooperation with the communities it serves.

The Public Health Security and Bioterrorism Response Act, enacted in June 2002, mandated the preparation of a Vulnerability Assessment and Emergency Response Plan (ERP) by each public drinking water supplier. The Commission's Vulnerability Assessment was submitted and received by the EPA in March 2003. The Commission's Emergency Response Plan was completed in September 2003, certification of its completion was submitted to the EPA in September 2003 and it was updated in July 2004, January 2009, November 2011 and December 2014. The Emergency Response Plan addresses the actions to be taken in response to a major catastrophic event and terrorist attacks on the Commission's Water Distribution System. Based in part upon the findings of the Vulnerability Assessment and the Emergency Response Plan, the Commission continues to design and develop Water Distribution System Improvements to mitigate, prevent, detect and respond to disruptive acts and terrorist activities. The Commission also complied with the America's Water Infrastructure Act of 2018 (AWIA) by completing an updated Emergency Response Plan by September 2020.

In 2011, the Commission completed a Water Distribution Study, which provided a thorough understanding of the water system and how to best manage it. The study gave all stakeholders a better sense of the history of Boston's water infrastructure and provided key insights into current conditions. The study has been responsible for the development of best management practices in value maintenance, main flushing and more effective methodology of selecting pipe to be replaced under the Capital Improvement Plan. Not only do these tools assist current Commission employees with an understanding of the system, but they also provide future employees with a roadmap for optimal system maintenance.

The three-year study was divided into two phases. The first phase was to have both Commission staff and a hired contractor collect 93 pipe samples (coupons). The samples were taken from every neighborhood and varied in size and pipe material. The age of the water pipes ranged from 18 years old to 147 years old and included cast iron, ductile iron and a mix of cement lined and unlined. The pipes and soil sample, which were also taken from the locations, were analyzed. The analysis consisted of physical observations and measurements, microscopic examination, mechanical properties test, and chemical composition analysis. The soil sample obtained at each location was also analyzed to determine its corrosiveness. The results of the tests performed were matched with locations on Commission maps, and corrosion rates were correlated with fill areas, electrified rail locations and groundwater levels.

The second phase was to create a sustainable distribution system by developing a risk-based measure for selecting pipe to be included in the annual CIP budget. This phase employed sophisticated models that levered all the data collected in phase one, data the Commission collects in its GIS, Citiworks, and hydraulic model to determine the appropriate level of pipe rehabilitation and replacement needed to achieve the Commission's goals. The pipe selected is based on a risk-based assessment. The framework is derived from asset management principles, which consider the highest risk of pipe to be the probability of a failure, and what the consequences of an event occurring could be (hospital flooding or critical customers without water).

This system is used in the selection of pipes for replacement under the Capital Improvement Program. Pipes with the highest ranking are considered first. Pipes are also selected within proximity to other selected pipe to create geographic based contracts. All street excavations are coordinated with City and State Paving Programs.

The study recommended replacing 11 miles of pipe per year through the year 2030. This ranking system was updated in 2016 resulting in a recommendation to replace and rehabilitate eight miles of pipe per year.

In addition to the samples taken during the three-year study, the Commission obtains eight pipe samples every year. Once the results of the analysis are received the information is uploaded into the Commission's database to continue selecting the most vulnerable pipe.

Using the latest technology solutions, we are identifying new areas where BWSC can make sustainable improvement to the quality of our environment and services.

With aggressive leak detection and repair combined with progressive metering programs, the Commission continues to reduce its unbilled water by approximately 85% from 70 mgd in Fiscal Year 1977 to 10.0 mgd in Fiscal year 2022. Unbilled water is the difference between water purchased from the MWRA and water sold to customers. Of the 10.0 mgd of unbilled water in Fiscal Year 2022, approximately 4.3 mgd was identified as water for unbilled public purposes such as firefighting and street cleaning. Thus, unaccounted-for-water was approximately 5.7 mgd, or about 9.3% of the 61.3 mgd which the Commission purchased from the MWRA. The Commission continues to provide a leakage survey of the entire system each year.

Water distribution system improvements made since 1978 include the replacement of 394.1 miles of older water mains, the cleaning and lining of 282.2 miles of water mains, hydrant replacements and valve upgrades and replacements.

Over the three years of the CIP, the Commission is projected to expend $99.3 million on improvements to the Water Distribution System. Most of these expenditures will occur in the replacement of water mains.

The projects scheduled for initiation in 2024 will result in the replacement of 7.1 miles of water mains.

Table 3 presents a summary of the 2024-2026 capital expenditures for the Water Distribution System.

Table 3 - Water Distribution System Expenditures by Program Category

Program	2024	2025	2026	2024-2026
Water Replacement	$31,781,619	$16,435,657	$23,820,552	$72,037,828
Water Special	$10,929,917	$9,279,872	$7,078,368	$27,288,157
Total	$42,711,536	$25,715,529	$30,898,920	$99,325,985

NOTE: *Although expenditures decrease from periods 2024 to 2026, it is anticipated that funding for 2026 will be equal to or greater than funding presented in 2024. The decrease in 2026 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.*

SEWER SYSTEM

The CIP for the Sewer System includes a total of $118.0 million for various types of system improvements. These include in-kind replacement and rehabilitation of sewer pipes, installation or replacement of sewers and storm drains that increase the overall capacity of the system, separation of combined sewers, identification and reduction of infiltration and inflow and compliance with permit requirements in the areas of combined sewer overflows and stormwater discharges.

Major sewer system improvements have resulted in increased system capacity and the virtual elimination of dry weather overflows from combined sewers into Boston Harbor and the Neponset, Charles and Mystic Rivers. These improvements have also increased water quality and improved accessibility to all waterways.

Projects associated with the Plan in the Sewer System CIP include the rehabilitation or replacement of approximately 12.5 miles of newly identified deteriorated or collapsed sanitary sewers and storm drains and the television inspection of approximately 90 miles of sewer and drain pipe within the next year. Also included are drainage improvements and the replacement of faulty tide-gates.

The CIP continues funding for the separation of combined sewers and for the reduction of infiltration and inflow into the sanitary system. Infiltration and inflow (I/I) are extraneous quantities of water, which enters the sanitary sewers and reduces the capacity of the system to transport sanitary sewage. Reduction of I/I also decreases the quantity of water transported to the Massachusetts Water Resource Authority ("MWRA") wastewater treatment facilities, thereby reducing overall transportation costs, treatment costs and BWSC's sewer assessments.

Combined flows that exceed the capacity of the interceptors during storm events discharged into the Boston Harbor and the Charles River. In the past several years, the Commission has undertaken a number of studies of its combined sewer system and has developed flows to significantly reduce CSO. The issue of infiltration and inflow ("I/I") into the sanitary system in separated areas of the system is also being addressed. Surveys have been performed to identify I/I sources and stormwater into the sanitary sewers.

Table 4 presents a summary of the 2024-2026 capital expenditures for the Sewer System.

Table 4 - Sewer System Expenditures by Program Category

Program	2024	2025	2026	2024-2026
Sewer R & R	$31,193,085	$23,970,004	$17,342,683	$72,505,772
Sewer Special	$13,273,086	$18,779,228	$13,467,203	$45,519,516
Total	$44,466,171	$42,749,232	$30,809,886	$118,025,288

NOTE: *Although expenditures decrease from periods 2024 to 2026, it is anticipated that funding for 2026 will be equal to or greater than funding presented in 2024. The decrease in 2026 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.*

CONSENT DECREE

On August 23, 2012, the Commission entered in a Consent Decree with the Environmental Protection Agency and Conservation Law Foundation. Under the terms of the Consent Decree the Commission implemented a Capacity, Maintenance, Operations and Management ("CMOM") self-assessment study in 2012 that analyzed all aspects of the Commission's sanitary sewer and storm drainage facility operations and maintenance. The Commission finalized a CMOM Corrective Action Plan in July 2013 and developed a CMOM Program Document in May 2014. The CMOM Program synchronizes infrastructure maintenance and operations goals with long-term CIP planning to achieve ("CWA") compliance with the Commission's NPDES permit and ultimately improve water quality.

As part of the CMOM Corrective Action Plan filed with the EPA, the Commission increased its inspection and assessment of its sewer and drainage systems. The program represents progressive increases in the quantity of pipes cleaned and televised with an end goal of completing approximately 10% of the system annually.

The Commission has embraced the Consent Decree requirements from senior management through all divisions and departments. The Commission views the requirements as an opportunity to enhance its current practices and procedures in operating and maintaining the sewer system. Staffing leadership changes have been implemented; for example, a CMOM superintendent and an SSO manager were hired in 2013 to ensure compliance with the requirements enforced by the Consent Decree.

The Consent Decree offers an unprecedented opportunity for the Commission to increase its role as an environmental steward for Boston's waterways. The Commission is committed to meeting and surpassing the benchmarks outlined in the Consent Decree. To fulfill this commitment, the Commission has begun implementing both short-term and long-term measures that are designed to improve water quality, increase public awareness, and protect the environment.

The City of Boston, the Commission and its ratepayers have helped clean up Boston Harbor and Boston's waterways to a level where they are accessible for the public use 90.2% of the time. South Boston's beaches are recognized as the cleanest urban beaches in the U.S. and the Charles River has been recognized by the EPA and internationally as one of the cleanest urban rivers in America. The Commission's illicit discharge detection protocol and sampling program have been cited as an example and standard by EPA. These achievements are a direct result of the Commission's investment in improved sewer and stormwater infrastructure, implementation of best management practices and working with other stakeholders in the City of Boston. The Commission will continue a tenable, sustainable path to improve water quality and maintain outstanding access to the City's waterways.

PROJECTS ASSOCIATED WITH THE CONSENT DECREE & WATER QUALITY IMPROVEMENTS

There are several projects that the Commission is performing and planning to undertake to fulfill and exceed recommendations of the Environmental Protection Agency and Conservation Law Foundation ("EPA" and "CLF") under the Consent Decree. The following projects will support the Commission's goal of compliance with the Consent Decree and improved water quality discharges and the environment:

Consent Decree:

Sewer R & R

- Cleaning and Inspections of Sewers and Storm Drains (CMOM-Capacity Management Operations)

Sewer Special

- Citywide Illegal Connection Investigation
- Customization of SCREAM & CMOM

Storm Water

- Design of Stormwater Detention Facilities
- Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow Control Projects
- Construction of Stormwater Detention Facilities PH I
- CCTV of Sewers and Storm Drains (Contamination Investigation) IDDE
- Constructed Wetland in Stormwater Tributary Area
- Green Infrastructure
- Installation of Stormwater Treatment Vault on Talbot Avenue
- Sampling & Metering for Storm Drain Model Validation

NOTE: *Full description and forecasted budgets of individual projects are available in the Sewer R & R, Sewer Special & Stormwater sections.*

Table 5 presents a summary of the 2024-2026 projected capital expenditures associated with the Consent Decree.

Table 5 – Consent Decree Expenditures by Contract

Contract	Description	Budget
21-309-004	Lateral Testing & CCTV of Sewer & Drains IDDE	$240,000
24-309-004	Engineering CCTV Contract	$414,375
Future Contracts	CCTV of Sewer & Storm Drains/CMOM	$5,800,000
20-206-007	Citywide Illicit Connection Investigation Program	$297,000
	Owner Correction of Illicit Connections	$45,000

DEDICATED INFILTRATION INFLOW 4:1 PROJECTS

In 2004, the Massachusetts Department of Environmental Protection ("DEP"), in conjunction with the MWRA and its member communities implemented a program to help remove stormwater infiltration and inflow: I/I from the sewer system. Private developments may add substantial flows to the sewer collection system, requiring additional MWRA treatment.

To offset the effect of these additions, the Massachusetts DEP previously recommended to the Massachusetts Environmental Policy Act Office and the Executive Office of Environmental Affairs that new developments with a sewerage flow estimated at greater than 15,000 GPD be required to remove I/I at a 4:1 ratio from the sanitary sewer system, as part of the requirements by the Secretary of Environmental Affairs.

The Commission conducts investigations to identify sources of I/I to the Commission's system. These projects identify both public and private sector sources of I/I. Commission staff initially planned on developing a database with locations of I/I sources, which would be provided to a developer. The developer would correct sources from that list to fulfill their I/I removal requirement.

However, the Commission staff believed that this process would be unwieldy and unmanageable. Subsequently, at the July 28, 2005 Commission meeting, the Commission approved the establishment of a Dedicated Infiltration/Inflow ("DEDII") account into which developers assessed a 4:1 I/I reduction requirement by the DEP would contribute funds to fulfill their requirements. These funds will be used by the Commission to fund I/I identification and reduction projects.

During private project design, Engineering Customer Services receives and reviews a Site Plan for conformance with the Commission's Engineering Design and Construction standards. The Commission will confirm if the project is subject to the 4:1 compliance requirement as required by the new regulations.

The Engineering Customer Service Department will coordinate with the Planning Department on the most current estimated wastewater flow that has been submitted by the developer. The developer will coordinate with the Commission how to comply with the proposed assessment. The developer can either remove sources of I/I or make a requisite monetary contribution to the Commission.

In April 2014, the DEP promulgated new regulations. These regulations require the Commission to mitigate the impacts of development of all new sewer connections exceeding 15,000 gpd by removing four gallons of I/I for each new gallon of wastewater flow. For example, if a proposed project's calculated new daily wastewater flow is 100,000 gallons per day (gpd), the developer must remove 400,000 gpd of I/I from the sewer system.

To date, the Commission has implemented 15 contracts, which are funded by the 4:1 I/I Infiltration Inflow Reduction Mitigation Account. All costs identified as "DEDII" and are 100% reimbursable; therefore, are not included in the 2024-2026 cashflow. Only separation costs affiliated with the South Boston Separation and East Boston Separation are funded by DEDII.

Table 6 – Dedicated I/I Expenditures and Status by Contract

Contract	Description	Cost	Status
22-206-009	Engineering Design, 3 year Services	$2,140,000	Active
22-206-008	Engineering Design, 3 year Services	$2,140,000	Active
21-206-003	East Boston Sewer Separation - Phase 4	$2,295,000	Active
20-309-012	South Boston Sewer Separation Contract - I	$132,967	Active
20-206-002	South Boston Sewer Separation - Construction Administration	$1,373,904	Active

WASTEWATER AND STORM DRAINAGE FACILITIES PLAN

The Commission completed its Wastewater and Storm Drainage System Facilities Plan in 2015. A major objective of the plan was to develop facility plans for the operation of the Commission's sewer and storm drains that are aligned with the Commission's primary service goals and supported by effective operations, maintenance, and engineering practices. This plan has reviewed all aspects of the Commission Sewer System, including the Commission's design standards, assets, mapping, maintenance and operational practices and future impacts of climate change on the Commission's facilities.

Critical elements of this Plan include:

- ✓ **Assessment of the Commission's Service Goals and other factors affecting long-term planning including** changing regulatory requirements, climate change and financial conditions.
- ✓ **Systematic use of Risk-based tools** to govern prioritization of investments in condition assessments, repairs and replacements
- ✓ **Integration of Business Processes** needed to sustain effective **C**apacity, **M**anagement, **O**peration and **M**aintenance (CMOM) Programs for sanitary sewer collections systems and engineering programs
- ✓ **Training and Education** to embrace the use of new tools and business processes and to sustain knowledge of the system and its operations

In addition to establishing a sustainable framework for planning and management, the plan includes a broad spectrum of data collection, engineering evaluation and tool development activities.

SUPPORT PROJECT EXPENDITURES

The capital projects included in the Support category contribute to the overall efficient operation of the Commission and improve the Commission's ability to manage/administer projects and collect revenues. The allocated budget for Support projects in the 2024-2026 CIP total $39.9 million.

The allocated budget in this section of the CIP are included expenditures for Advanced Meter Infrastructure, Information Technology, and various Administrative Equipment.

Table 7 presents a summary of the 2024-2026 capital expenditures for the Support projects.

Table 7 - Support Expenditures by Project Category

Program	2024	2025	2026	2024-2026
Metering	$2,200,000	$1,800,000	$1,200,000	$5,200,000
IT	$3,520,000	$3,445,000	$2,695,000	$9,660,000
Admin Equip	$10,905,000	$12,050,000	$2,075,000	$25,030,000
Total	**$16,625,000**	**$17,295,000**	**$5,970,000**	**$39,890,000**

NOTE: *Although expenditures decrease from periods 2024 to 2026, it is anticipated that funding for 2026 will be equal to or greater than funding presented in 2024. The decrease in 2026 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.*

STORMWATER PROJECT EXPENDITURES

The primary purpose of the Stormwater Program is to encourage participation in the Boston Harbor pollution abatement projects and implement green infrastructure to improve the water quality of discharges to the local receiving waters. The goal is also to study existing conditions and make recommendations for placement of best new management practices designed to promote improved water quality, ensure compliance with state and federal regulations, minimize flooding, and manage stormwater throughout the City of Boston. The allocated budget for Stormwater projects in the 2024-2026 CIP total $60.7 million.

Table 8 presents a summary of the 2024-2026 capital expenditures for the Stormwater projects.

Table 8 - Stormwater Expenditures by Project Category

Program	2024	2025	2026	2024-2026
Stormwater	$20,380,053	$22,663,623	$17,703,222	$60,746,898
Total	**$20,380,053**	**$22,663,623**	**$17,703,222**	**$60,746,898**

NOTE: *Although expenditures decrease from periods 2024 to 2026, it is anticipated that funding for 2026 will be equal to or greater than funding presented in 2024. The decrease in 2026 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.*

MASSACHUSETTS WATER RESOURCES AUTHORITY (MWRA)

The Commission obtains its water supply and wastewater treatment services from MWRA. MWRA provides water services to 54 cities, towns and special purpose entities ("Local Bodies") including the Commission and wastewater treatment to nearly half of the State's population in 43 cities, towns and special purpose entities located throughout central and eastern Massachusetts.

MWRA Background

In December 1984, MWRA was created by Chapter 372 of the Acts of 1984 ("the Act"). In accordance with the provisions of the Act effective July 1, 1985 the ownership, possession and control of all property comprising the Metropolitan District Commission ("MDC") water and sewer systems was transferred to MWRA. The Act authorizes MWRA to repair, replace, rehabilitate, modernize and extend the water delivery system and the sewage collection, disposal and treatment systems on a self-sustaining basis. The Act also allows for the issuance of bonds and notes to finance any of its corporate activities.

On January 31, 1985, a suit commonly referred to as the Boston Harbor case, was brought against the MDC, the Commonwealth, MWRA (as successor to the MDC) and the Commission alleging water pollution of and alleged illegal discharges into Boston Harbor in violation of the Clean Water Act. As the successor to the MDC, MWRA assumed responsibility for taking the Court-ordered actions to achieve and maintain compliance with the CWA. Such large-scale projects are financed through the issuance of revenue bonds, proceeds of federal and state grants and operating revenues.

MWRA Rates and Charges

Under the Act, MWRA was empowered to establish charges for its services and commodities. One of the basic goals achieved by the MWRA Act was the substitution of assessments, or user fees, to the member communities for the prior tax-based system of charges.

The Commission is the largest single customer for MWRA. For MWRA fiscal year 2024, the Commission will be assessed 34.5% of the water system charges and 28.4% of the sewer system charges. On a combined basis, the Commission will pay 30.6% of the total MWRA assessments.

Assessments for water services are calculated by MWRA based on the metered water use in the calendar year immediately preceding the MWRA fiscal year. The Commission's water charges for the MWRA fiscal year 2024 total $99.4 million based on the Commission's calendar year 2021 metered water use.

As of fiscal year, 1995, sewer assessments were calculated by a formula using, among other things, population and population equivalents. In accordance with legislation enacted in 1993, the MWRA developed a new sewer rate methodology for calculating assessments beginning in fiscal year 1996. The new methodology allocates operating and maintenance costs based on total metered annual flow and total annual average strength, septage contributions and high strength flow loads. Septage contributions are allocated based on volume, total suspended solids ("TSS") and biochemical oxygen demand ("BOD") loadings. High-strength flow loads are generated by those permitted entities whose flows exceed 25,000 gallons per day and whose TSS and/or BOD concentrations exceed 400 milligrams per liter.

Capital or debt service costs are allocated as follows: two-eighths based on maximum month metered flow and total annual average strength, septage and high strength flow loads; three-eighths based upon contributing (sewer) population; and three-eighths based population. Metered wastewater flow from the immediately preceding calendar year is used in calculating assessments. The Commission's sewer assessment for the MWRA fiscal year 2024 based on calendar year 2022 data, totals $148.3 million. Total assessments for water and sewer charges for MWRA fiscal year 2024 are $249.6 million.

As the largest of MWRA's customers, BWSC represents 33.8 percent of the current demand on the MWRA water supply. BWSC's water comes from the Quabbin Reservoir and the Wachusett Reservoir, located about 65 miles and 35 miles west of Boston. The two reservoirs combined supplied an average of 194.7 mgd (millions of gallon per day) to consumers in 2022. The safe yield of the reservoir system is 300 mgd.

Water distributed to the Boston metropolitan area is conveyed from the reservoirs through the Cosgrove or Wachusett Aqueducts and treated at the MWRA's John J. Carroll Water Treatment Plant at Walnut Hill in Marlborough. Treatment includes ozone disinfection, pH adjustment with sodium bicarbonate and the addition of chloramines and fluoride. Water leaves the plant through the MetroWest Water Supply Tunnel and is stored in covered storage tanks, such as Norumbega Reservoir and the Loring Road Tanks, where it is held for delivery to BWSC's service networks. MWRA mains distribute water to the BWSC system at 29 metered delivery points.

Today, Boston is one of 54 customers that purchases water wholesale from MWRA. BWSC's water distribution system currently provides service to approximately 90,000 active accounts throughout the City. Boston's resident population of nearly 675,000 almost doubles each day by commuting workers and students, shoppers, tourists, conventioneers, hospital patients and visitors.

MWRA has completed construction of major transmission and treatment facilities to service the Greater Boston area including the Metro West Tunnel. These improvements will ensure that Boston receives a reliable source of clean water.

FUNDING SOURCES AND FINANCIAL IMPACT

Funding for the Commission's CIP is provided through five sources: Commission general revenue bonds, rate revenues, state revolving funds and two grant/loan programs provided by MWRA.

The primary funding source for the three-year capital program is the sale of Commission general revenue bonds. Over the three-year plan, general revenue bonds will comprise $116.4 million of the total funding requirement. In 2024, bonds will make up approximately $58.0 million of the funding required for that year.

As in past CIP's, the 2024-2026 program funds renewal and replacement ("R&R") work from current rate revenues. Renewal and replacement projects include water main relining, water main replacement (only replacement with the same size pipe), sewer pipe rehabilitation, and storm drain improvement. The 2024-2026 CIP outlines R&R expenditures of $111.8 million of total expenditures over the three years of the program. In 2024, approximately $39.7 million will be expended out of current rate revenues for CIP projects.

Each year the Commission participates in the MWRA's I/I program for Infiltration/Inflow and Separation projects. Since 1993, the Commission has received $122.3 million in MWRA funding for various Infiltration/Inflow and Separation projects of which $7.4 million is currently outstanding. In addition, the Commission has received grants under the I/I Grant/Loan Program totaling $62.3 million. The Commission plans to continue to take advantage of MWRA funding over the 2024-2026 period.

Table 9 lists projects funded by MWRA's I/I program for Infiltration/Inflow and Separation

Table 9 – Projects Funded by MWRA's I/I Program of Infiltration/Inflow and Separation

Contract	Description
23-309-002	East Boston Separation PH IV - Contract 3
25-309-005	South Boston Sewer Separation - NBMI Phase III
25-309-002	East Boston Sewer Separation Phase IV - Contract 2
24-309-012	South Boston Sewer Separation - Contract 5
24-309-006	Charlestown Separation
24-309-005	South Boston Sewer Separation - NBMI Phase II
21-309-002	East Boston Sewer Separation Phase IV - Contract 1
23-206-001	Charlestown SSES
23-309-012	South Boston Sewer Separation - Contract 4
23-309-008	Sewer Separation/outflow
22-309-012	South Boston Sewer Separation - Contract 3
22-309-003	Upper Roxbury R&R
22-309-002	Replacement of Sewer and Drains Citywide, R&R
20-309-012	South Boston Sewer Separation Contract - 1
	Sewer and Drain Rehabilitation (I&I)
	East Boston Sewer Separation - Phase III
	Tidal Infiltration
	West Roxbury SSES

The MWRA Board of Directors, by their vote on March 16, 2016, authorized the enhancement of the Local Water System Assistance Program to provide up to $100 million in 10-year zero-interest loans to communities under the MWRA Lead Service Line Replacement Loan Program. The program will also be referenced as the "Lead Loan Program" or "LLP" for short. This interest-free loan program is designed to assist member water communities to rehabilitate or replace water service lines so that all lead pipe is fully removed. The program will help upgrade local water systems to reduce the potential for elevated lead levels at customer taps and maintain high water quality conditions throughout the system. As of December 31, 2022, the Commission has received $3.5 million in LLP funding of which there currently is an outstanding balance of $3.2 million.

The MWRA provides support for water systems improvement projects through its Local Water System Assistance Program (LWSAP). The program offers interest-free loans payable over a ten-year period and is designed to improve water quality in local distribution systems. The MWRA has also established the Local Water System Assistance Program ("LWSAP") to assist its Local Bodies in the performance of water systems improvement projects. The program offers interest-free loans payable over a ten year period and is designed to improve water quality in local distribution systems. The amount allocated for BWSC in Phase 3 of the program is $52.8 or approximately $5.3 million per year. The loans will be repaid to the MWRA over a 10-year period. Loans are approved for distribution from fiscal year 2011 through fiscal year 2030. The Commission has applied for loan funding for certain water main replacement projects through the remainder of this program. All project costs incurred on or after January 1, 2010 have been considered for eligibility in application $19.3 million will be funded using the LWSAP Program. As of December 31, 2022, the Commission has received $59.6 million in LWSAP funding of which there currently is an outstanding balance of $27.1 million.

It is anticipated that in the 2024-2026 Capital Improvement Program $21.0 million will be funded using the LWSAP Program.

Table 10 lists water projects funded by the MWRA with LWSAP & MWLLP

Table 10 – Projects Funded by the MWRA with LWSAP & MWLLP

Contract	Description
23-308-001	Water Main Replacement in Lower Roxbury
22-308-001	Water Main Replacement in City Proper
21-308-004	Lead Service Replacement (MWLLP)
20-308-001	Water Main Replacement on Harrison Ave, South End
20-308-002	Water Main Replacement on Shawmut Ave, South End
19-308-001	South End Water Pipe Improvements Phase I
19-308-004	City Proper Water Pipe Improvements

The EPA and Commonwealth provide support for funding and financing through the State Revolving Fund (SRF). The SRF offers affordable loan options to cities and towns to improve water supply infrastructure and drinking water safety; and to help them to comply with federal and state water quality requirements that deal with wastewater treatment plants and collection systems, while addressing issues such as watershed management priorities, stormwater management, and green infrastructure. Additionally, the SRF supplies financial assistance to address communities with septic system problems. These federal-state programs offer below-market rate loans and other authorized assistance with extended loan terms typically over twenty to thirty years.

It is anticipated that in the 2024-2026 Capital Improvement Program $47.8 million will be funded using the SRF Program.

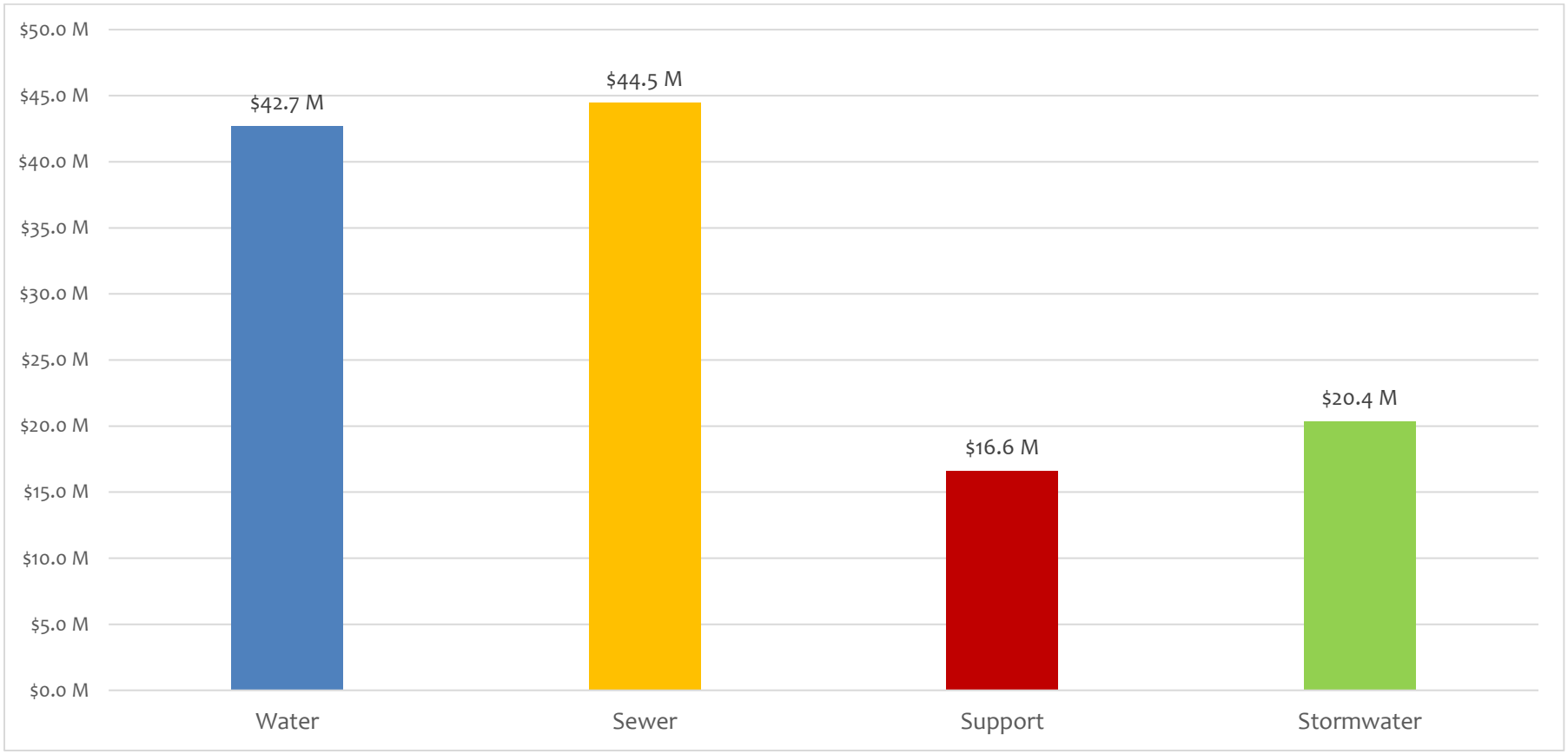
Table 11 on page 19 represents the cash flow expenditures by category and funding source for the Commission's 2024-2026 CIP.

Table 11

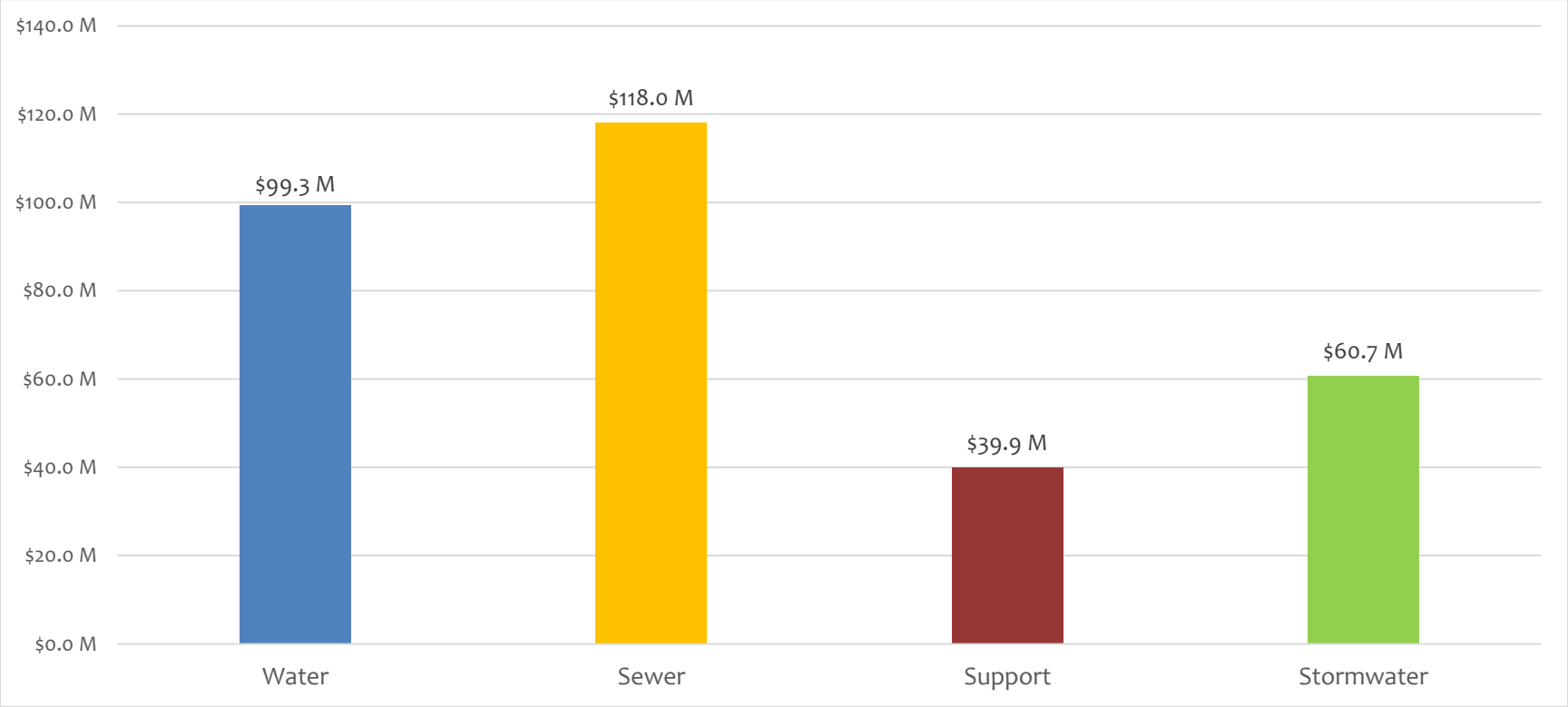
Capital Improvement Program
2024 - 2026
Totals by Category and Funding Source

	2024	2025	2026	Total 2024 - 2026
Water Total	$ 42,711,536	$ 25,715,529	$ 30,898,920	$ 99,325,985
BWSC Bonds	$ 13,232,412	$ 8,896,902	$ 6,982,028	$ 29,111,343
LWSAP	$ 5,746,350	$ 3,456,129	$ 11,786,404	$ 20,988,884
RATE Revenune	$ 15,757,046	$ 6,514,964	$ 7,808,456	$ 30,080,466
SRF	$ 7,975,728	$ 6,847,533	$ 4,322,032	$ 19,145,293
Sewer Total	$ 44,466,171	$ 42,749,232	$ 30,809,886	$ 118,025,288
BWSC Bonds	$ 19,594,734	$ 5,306,909	$ 3,057,573	$ 27,959,217
MWRA II	$ 3,733,695	$ 6,120,673	$ 4,469,699	$ 14,324,068
Rate Revenue	$ 16,954,988	$ 21,701,715	$ 18,642,640	$ 57,299,343
SRF	$ 4,182,753	$ 9,619,935	$ 4,639,973	$ 18,442,661
Support Total	$ 16,625,000	$ 17,295,000	$ 5,970,000	$ 39,890,000
Bonds	$ 16,625,000	$ 17,295,000	$ 5,970,000	$ 39,890,000
Stormwater Total	$ 20,380,053	$ 22,663,623	$ 17,703,222	$ 60,746,898
BWSC Bonds	$ 8,512,759	$ 7,711,066	$ 3,233,263	$ 19,457,088
MWRA II	$ 1,427,479	$ 1,690,673	$ 3,516,667	$ 6,634,819
Rate Revenue	$ 6,972,745	$ 8,709,753	$ 8,755,255	$ 24,437,753
SRF	$ 3,467,071	$ 4,552,130	$ 2,198,038	$ 10,217,238
Total	**$ 124,182,760**	**$ 108,423,384**	**$ 85,382,028**	**$ 317,988,172**
BONDS	$ 57,964,905	$ 39,209,878	$ 19,242,865	$ 116,417,647
LWSAP	$ 5,746,350	$ 3,456,129	$ 11,786,404	$ 20,988,884
MWRA II	$ 5,161,174	$ 7,811,347	$ 7,986,365	$ 20,958,886
RATE	$ 39,684,779	$ 36,926,432	$ 35,206,351	$ 111,817,562
SRF	$ 15,625,553	$ 21,019,597	$ 11,160,043	$ 47,805,193
Total	**$ 124,182,760**	**$ 108,423,384**	**$ 85,382,028**	**$ 317,988,172**

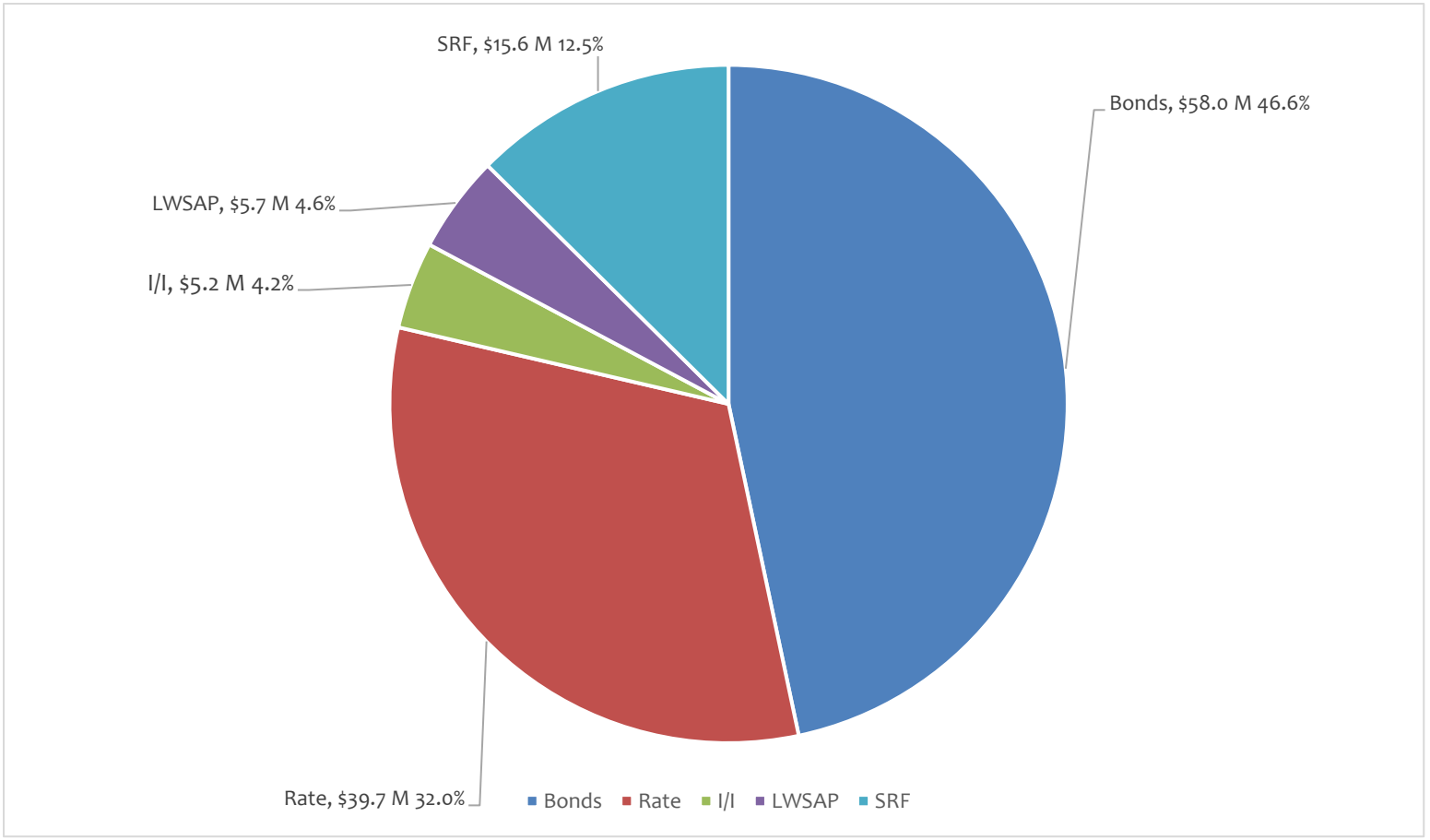
Graph 1 - 2024 CIP Total Expenditures by Category $124.2 Million



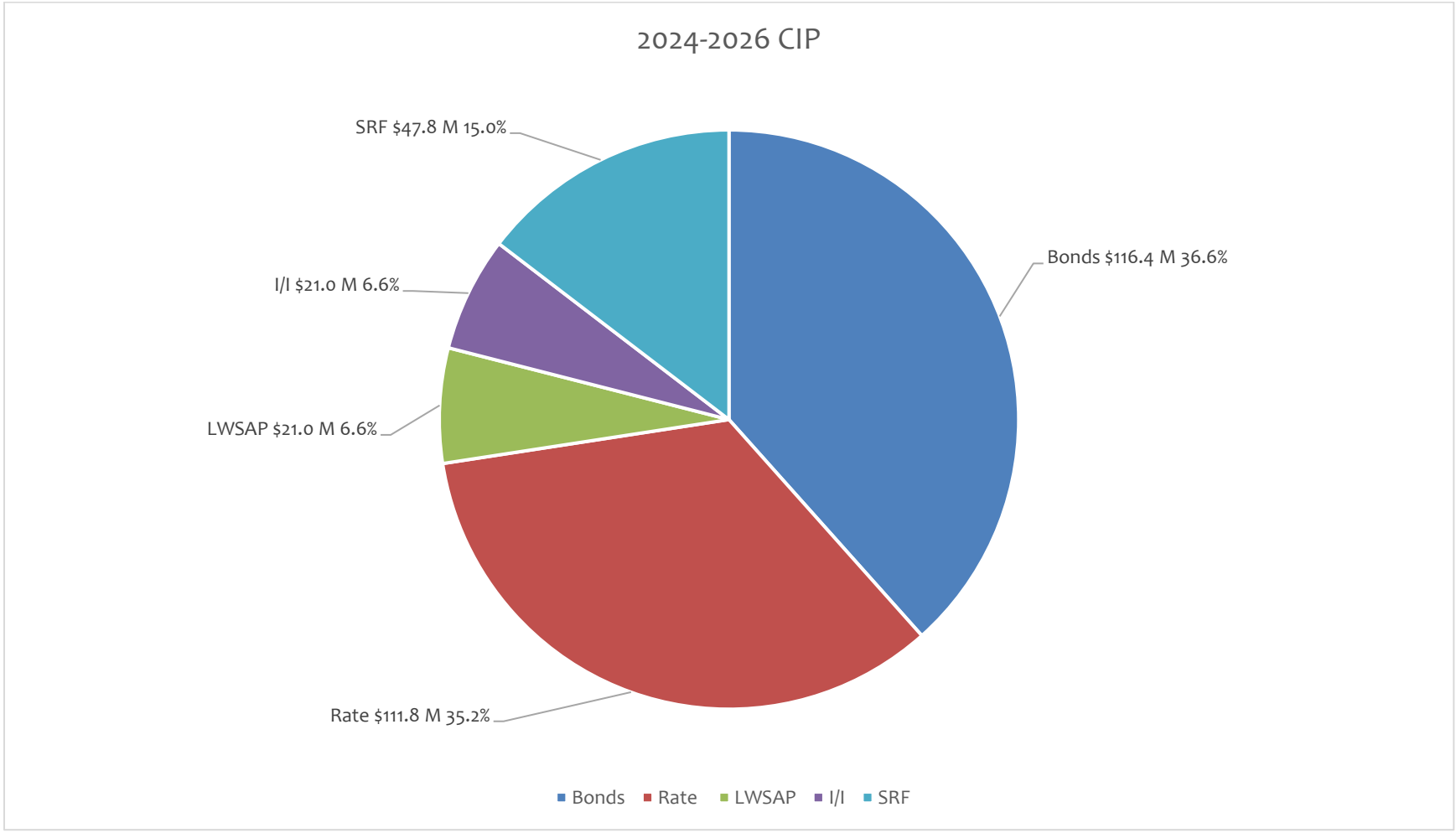
Graph 2 – 2024-2026 CIP Total Expenditures by Category $318.0 Million



Graph 3 – 2024 CIP Total Expenditures by Funding $124.2 Million



Graph 4 – 2024 - 2026 Total Expenditures by Funding Source $318.0 Million



This page has been left blank intentionally.

WATER DISTRIBUTION SYSTEM

The system serves approximately 90,000 accounts through five major service networks: Southern Low Service, which serves City Proper, South Boston and parts of Roxbury; Northern Low Service, which serves Allston/Brighton, Charlestown and East Boston; Southern High Service, which serves City Proper, Allston/Brighton, Dorchester, Hyde Park, Roslindale and parts of Jamaica Plain, Roxbury and West Roxbury; and Southern Extra-High Service, which serves portions of Jamaica Plain, West Roxbury and Hyde Park. In addition, a relatively small area in the Orient Heights section of East Boston is served by a single connection to the MWRA Northern High Service System.

Approximately 90% of the water consumed in the city is delivered through the Southern Low Service and Southern High Service, with most of the remainder delivered through the Northern Low Service. These service networks are supplied with potable water purchased from MWRA at 29 metered delivery points. This water is drawn from the Quabbin and Wachusett Reservoirs located in western and central Massachusetts. Supply is conveyed via aqueducts from these reservoirs to the Loring Road Tanks and Norumbega Reservoirs, where it is held for delivery to the Commission's service networks.

The Commission's current water distribution system consists of the following:

APPURTENANCES		WATER MAIN CITY WIDE		PRESSURE ZONE	
Hydrants	12,793	Total Linear Feet	5,324,695	High Pressure Fire System	15 Miles
		Total Linear Miles	1,008	Northern High	4 Miles
				Northern Low	90 Miles
		Pumping Stations	9		
Gate Valves *	17,765			Southern Extra High	80 Miles
				Southern High	560 Miles
				Southern Low	260 Miles

** Includes only facilities owned by BWSC*

OBJECTIVES

Primary Objectives of the 2024-2026 Water Distribution System Capital Improvement Plan are:

- To ensure a continued adequate supply of high quality, potable water at adequate pressure for consumption by Commission's customers and for fire protection

- To reduce the amount of non-revenue producing water and to reduce the long-term maintenance costs of the system

- To improve the operability of valves and appurtenances to advance the efficient operation of the water system

- To reduce public inconvenience by coordinating the scheduling of system improvements with related projects of other public agencies

To ensure the above stated objectives are attained, the Commission has implemented projects of the rehabilitation and replacement of water mains, the replacement of valves and hydrants, and the installation or replacement of water mains associated with bridge reconstruction projects.

2024-2026 WATER PROJECTS

Water Pipe Replacement Projects	• Replacement of Cast-Iron Water Mains and Pipes That Have Reached the End of Their Useful Life
Water Special	• System Planning as well as Other Studies and Professional Services with the Rehabilitation and Operation of the Water System

The Commission's improvements to the Water Distribution System since 1977 include the replacing or relining of approximately 665.2 miles of water mains, resulting in lower maintenance costs and improved water service. As a result of the Commission's renewal and replacement, leak detection and metering programs, annual unbilled water, which is the difference between water purchased from the Massachusetts Water Resources Authority (the "MWRA") and water sold to customers, has been reduced from 70 mgd in Fiscal Year 1977 to 10.0 mgd in Fiscal in 2022, an 86% reduction. Over the last ten years, the Commission has completed a total of $265.9 million in water distribution system improvements.

2024-2026 WATER DISTRIBUTION SYSTEM CAPITAL PROGRAM

The Commission's 2024-2026 CIP for the Water Distribution System continues the investments necessary to maintain and improve the water distribution infrastructure. Projects are planned in the following areas: the rehabilitation or replacement of water mains, including the replacement of water pipes and the upgrade of valves and hydrants. Also included are water mains that are replaced as part of the Commission's sewer separation work. Together, these planned program activities will result in significant improvements to the water distribution system.

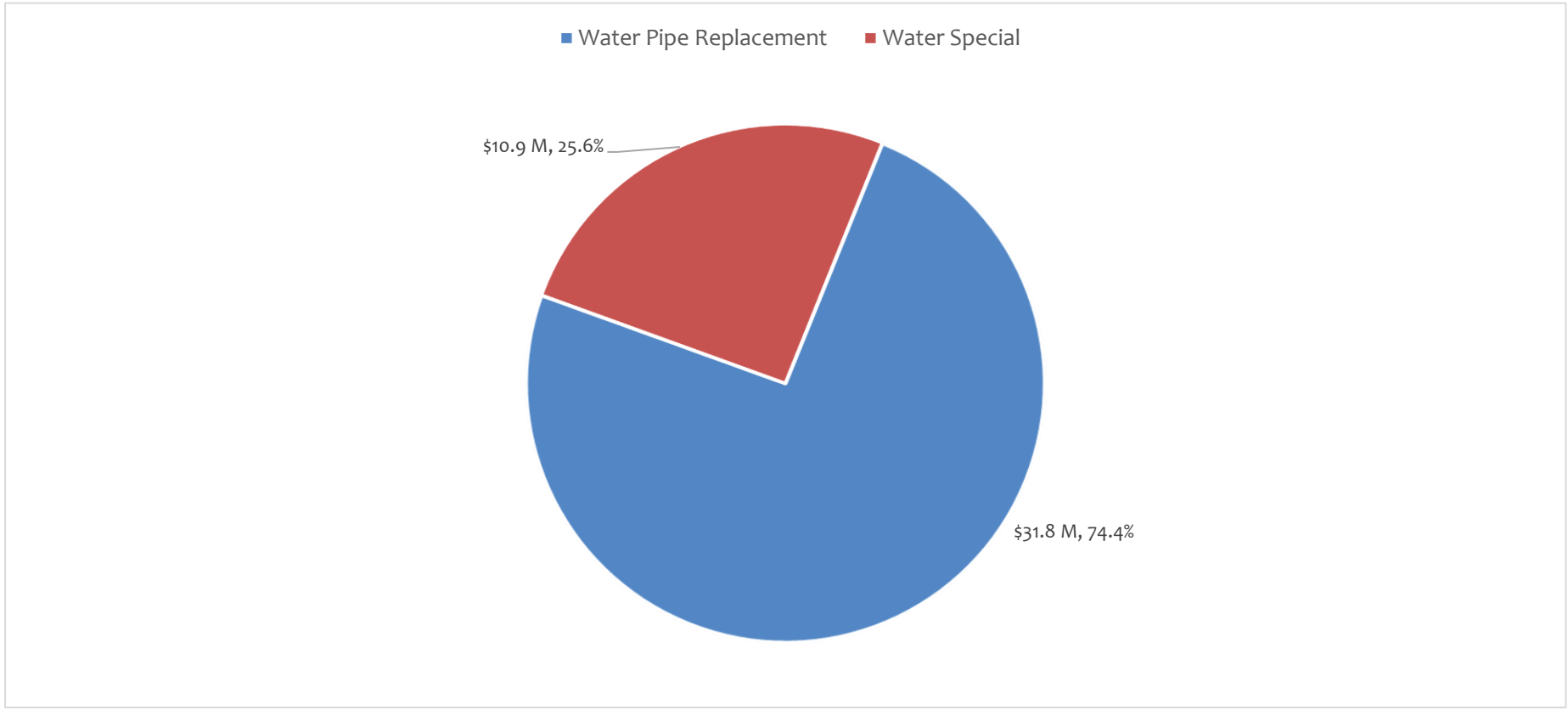
Table 12 and Graph 5 on the following pages present the 2024-2026 capital expenditures for the Water Distribution System. Graph 6 depicts the funding source application of the 2024-2026 capital expenditures. Graph 7 illustrates the spending by the program for 2024. Three-year expenditures are projected to be $99.3 million, of which $42.7 million is allocated in 2024. The three-year amounts are distributed in the Water Program as follows: Replacement $72.0 million and Special $27.3 million.

Table 12 - Water Distribution System by Category

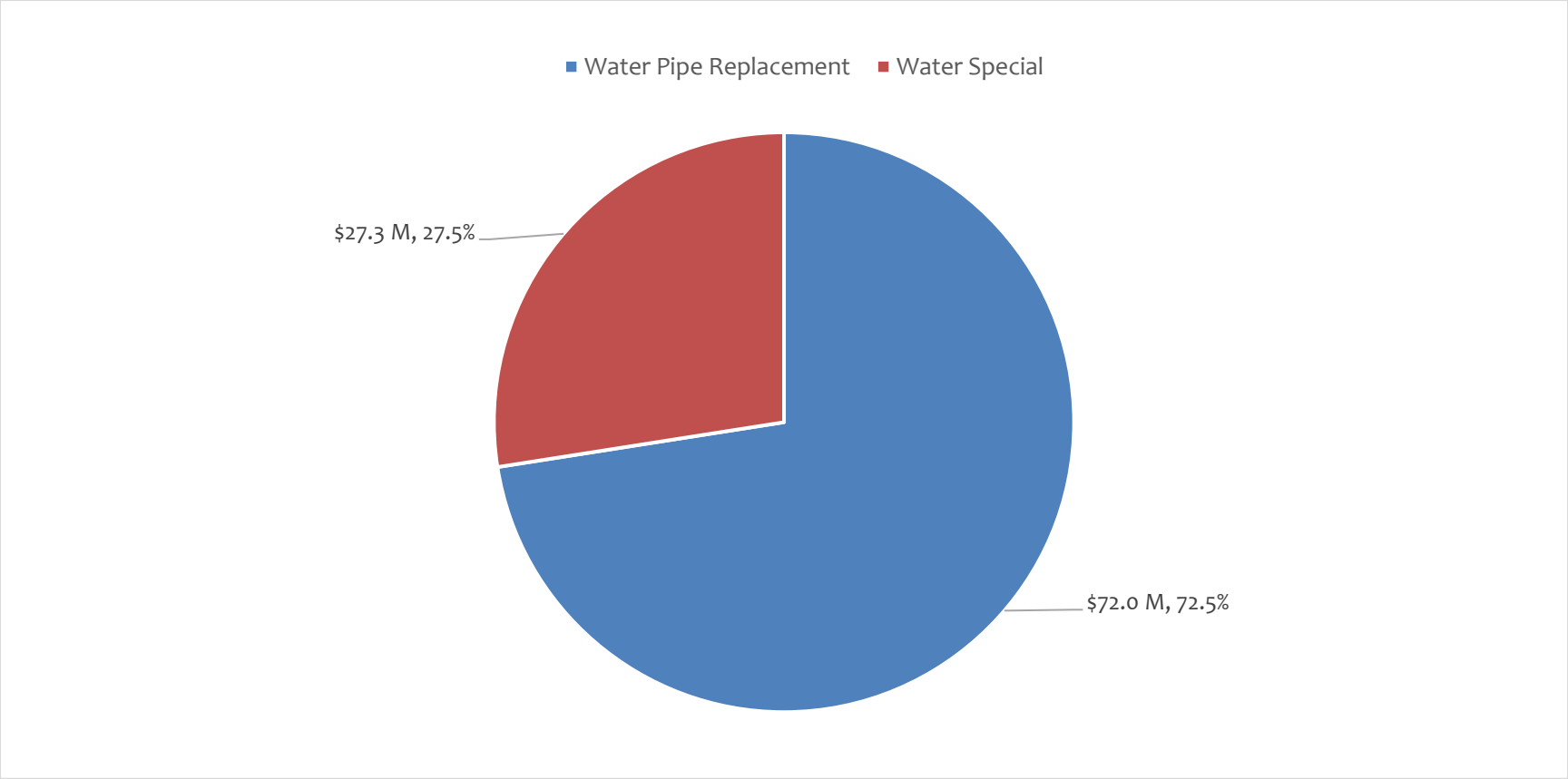
Capital Improvement Program
2024 - 2026
Water Total

	2024	2025	2026	Total 2024 - 2026
Water Replacement	$31,781,619	$16,435,657	$23,820,552	$ 72,037,828
BWSC Bonds	$10,413,662	$ 6,329,402	$ 4,457,028	$ 21,200,093
LWSAP	$ 5,746,350	$ 3,456,129	$11,786,404	$ 20,988,884
RATE Revenune	$11,762,296	$ 4,366,464	$ 5,568,081	$ 21,696,841
SRF	$ 3,859,311	$ 2,283,661	$ 2,009,039	$ 8,152,011
Water Special	$10,929,917	$ 9,279,872	$ 7,078,368	$ 27,288,157
BWSC Bonds	$ 2,818,750	$ 2,567,500	$ 2,525,000	$ 7,911,250
Rate Revenue	$ 3,994,750	$ 2,148,500	$ 3,140,375	$ 8,383,625
SRF	$ 4,116,417	$ 4,563,872	$ 2,312,993	$ 10,993,282
Total	**$42,711,536**	**$25,715,529**	**$30,898,920**	**$ 99,325,985**
BONDS	$13,232,412	$ 8,896,902	$ 6,982,028	$ 29,111,343
LWSAP	$ 5,746,350	$ 3,456,129	$11,786,404	$ 20,988,884
RATE	$15,757,046	$ 6,514,964	$ 7,808,456	$ 30,080,466
SRF	$ 7,975,728	$ 6,847,533	$ 4,322,032	$ 19,145,293

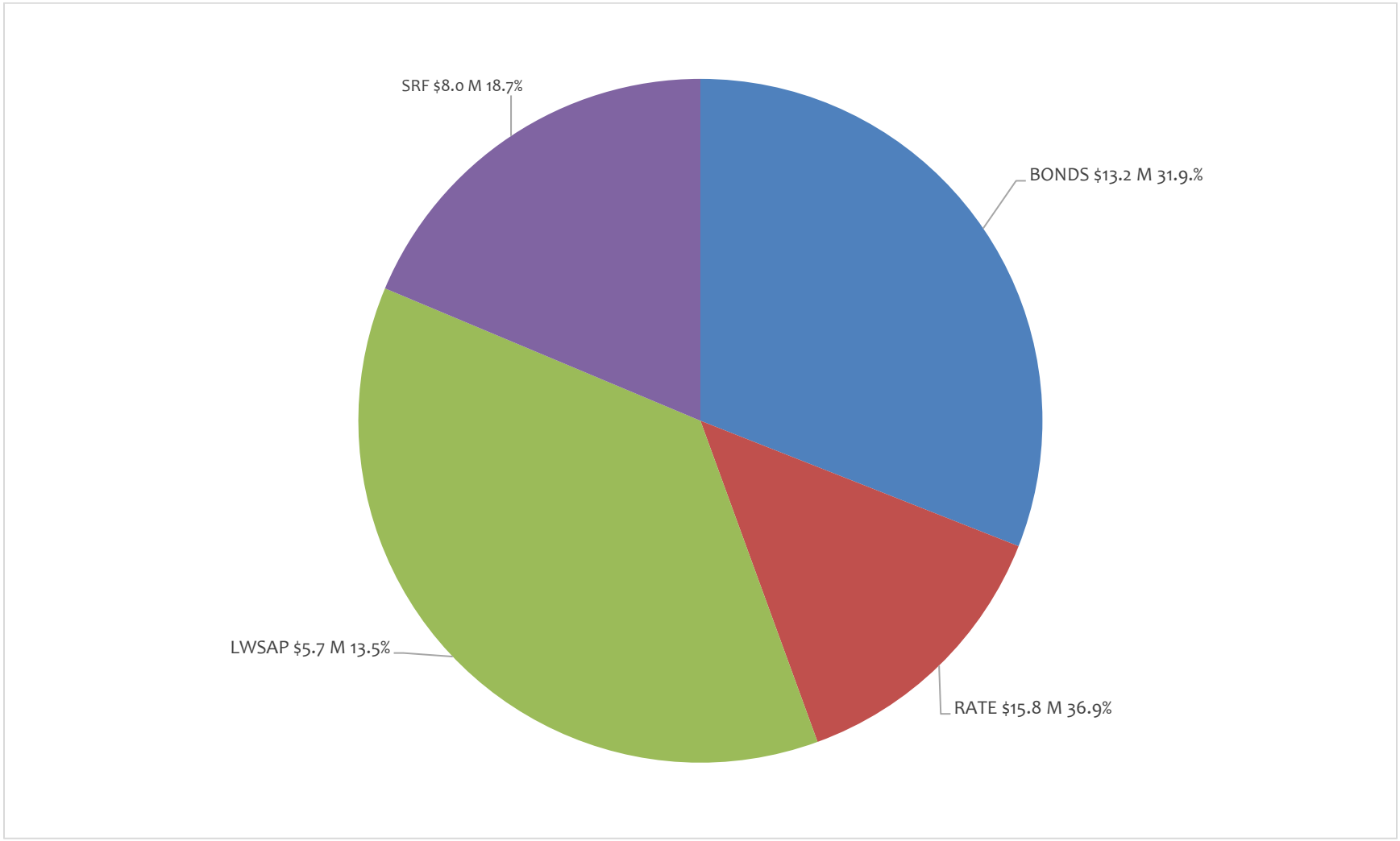
Graph 5 - 2024 Total Water Expenditures by Program $42.7 million



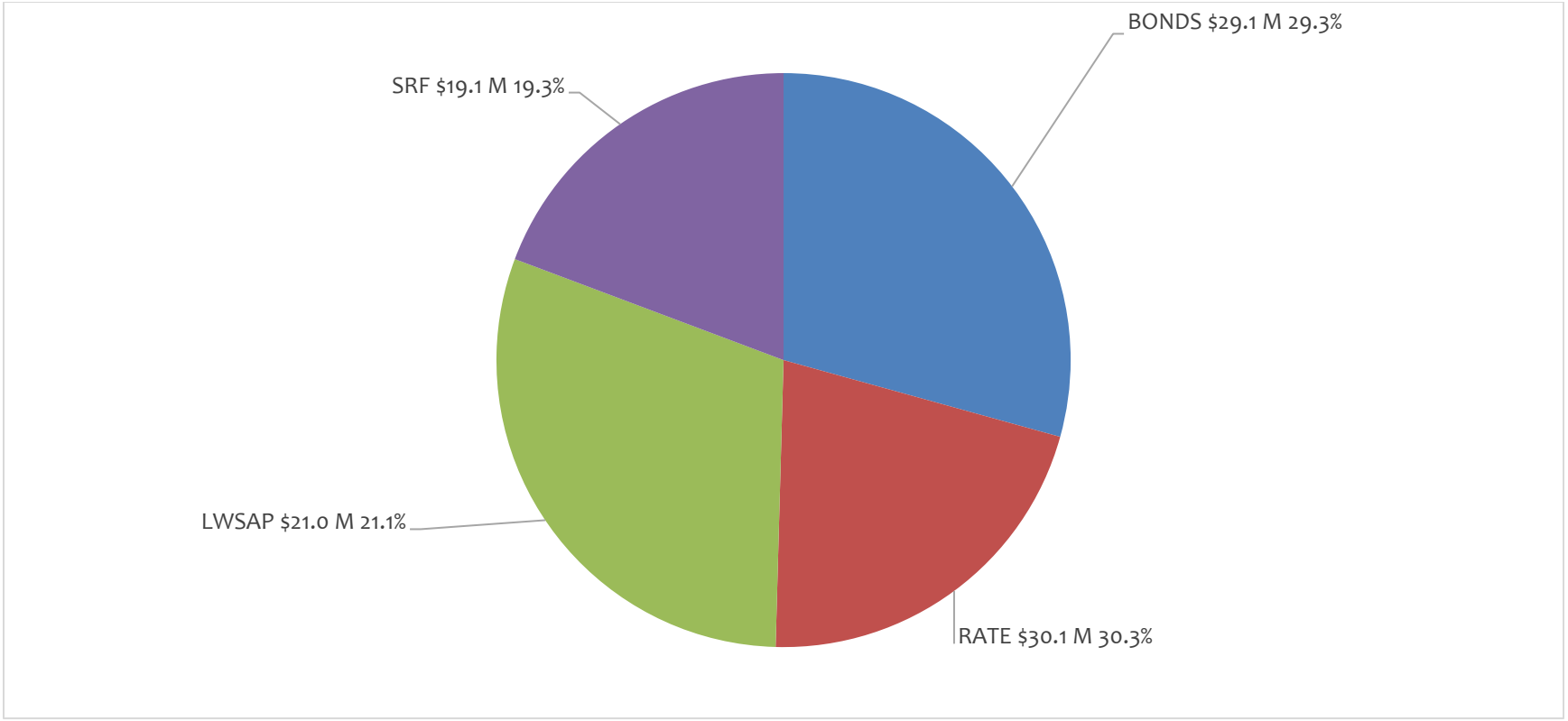
Graph 6 – 2024 - 2026 Total Water Expenditures by Program $99.3 million



Graph 7 – 2024 Total Water Expenditures by Funding Source
$42.7 Million



Graph 8 - 2024-2026 Total Water Expenditures by Funding Source $99.3 million



WATER MAIN REPLACEMENT PROGRAM

DESCRIPTION AND JUSTIFICATION

Funding is provided in the 2024-2026 CIP for the continuation of the Commission's Water Main Replacement Program. The program consists of the replacement of cast-iron water mains and water mains that have reached the end of their useful life.

The primary purpose of the Water Main Replacement Program is to ensure the quality and quantity of water provided by the Commission to its customers. Over long periods of time, the internal and external surfaces of water mains are subject to corrosion and deterioration. Internal corrosion of water mains can affect water quality, particularly taste, odor and color as well as reduce the hydraulic capacity of the pipe. Internal and external corrosion can also reduce the structural integrity of pipe, causing potential leakage and main breaks.

The largest component of the Water Distribution System CIP is the program to replace water mains. The replacement program replaces aged, undersized or structurally deteriorated pipe. The program also includes rehabilitation of pipe by structural lining.

The 2024-2026 CIP for the Water Distribution System continues programs for the replacement of water mains, the replacement of older or defective hydrants as necessary on all replacement projects, the replacement of water mains on new or reconstructed bridges and various design services, permits and paving fees associated with the capital funded projects.

THE WATER MAIN REPLACEMENT PROGRAM ACCOMPLISHES THE FOLLOWING:

- Reduces the occurrence of main breaks, public inconvenience, loss of water and associated costs
- Decreases water leakage
- Increases the capacity of water mains, when replacing unlined mains
- Reduces discolored water conditions associated with water main tuberculation
- Reduces long-term maintenance costs
- Contributes to the control of biofilm in complying with the requirements of the Safe Drinking Water Act

WATER MAIN REPLACEMENT PROGRAM 2024 SUMMARY

The projects scheduled for initiation in 2024 will result in the replacement of approximately 7.1 miles of water mains.

Prior to construction, the Commission inspects sewer and drain pipes in streets where water pipes are scheduled to be replaced. All sewer and drain replacement and rehabilitation work is then performed along with the water pipe replacement. This coordination avoids disruption of the streets and saves project costs. Funding for the sewer and drain work is included in the sewer section of the CIP.

METHODOLOGY FOR SELECTING WATER MAINS FOR REHABILITATION

The Commission conducts an annual evaluation of its water distribution system to determine and prioritize water main replacement and rehabilitation needs. Based on this annual evaluation staff prepares a priority list of pipes to be replaced.

Candidates are based on information and recommendations from the 2016 update of the pipe ranking system as well as water main breaks, customer complaints concerning water quality or pressure deficiency, BWSC maintenance records, pressure and fire-flow tests, machine learning artificial intelligence software and construction work planned by other agencies.

To the highest extent possible, the Commission coordinates the replacement and lining of water mains with roadway and highway construction, urban development, housing development and mass transit work planned by state or local government entities.

For example, if the City of Public Works Department (BWPD) is planning to resurface a roadway within the next few years, the Commission would make every effort to replace the older water main in that street before it is resurfaced.

The coordination of the Commission's capital programs with other infrastructure improvements minimizes temporary construction related impacts to Boston's residential neighborhoods and commercial centers.

Cottage St – 8-inch ductile iron, zinc coated class 56 pipe with 8-inch gate valve. Poly wrapped with V-Bio Polyethylene Encasement to inhibit corrosion.

WATER REPLACEMENT

The following pages contain brief summaries of each on-going and new water replacement projects included in the 2024-2026 CIP.

PROJECTS

East Boston Sewer Separation Phase IV - Contract 3 - 26-309-002: Construction Contract No. 3 is one of five (5) planned contracts to construct new storm drains to separate approximately 230 acres in East Boston to further mitigate CSOs and improve water quality. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community. Construction is projected to commence in August 2025 and be completed in July 2029. The total three-year budget is $100,000.

East Boston Sewer Separation Phase IV - Contract 2 - 25-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community. Construction is projected to commence in August 2025 and be completed in July 2029. The total three-year budget is $100,000.

South Boston Sewer Separation - Contract 5 - 24-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction is projected to commence in February 2026 and be completed in July 2029. The total three-year budget is $100,000.

Charlestown Separation - 24-309-006: Sewer Separation in Charlestown Lost Village area to reduce CSO overflow. Construction is projected to commence in April 2025 and be completed in October 2027. The total three-year budget is $1,000,000.

Citywide R&R - 24-309-003: Water, Sewer and Drain Replacement and Rehabilitation Citywide on an as needed basis. The intent of this project will be to rehab and replace water/sewers/drains where SSOs and other issues have occurred in order to mitigate future issues. This will be on an as needed basis due to receiving emergency design requests from the Chief Engineer and OPS during year after CIP is developed. Construction is projected to commence in April 2025 and be completed in November 2027. The total three-year budget is $50,000.

East Boston Sewer Separation Phase IV - Contract 1 - 24-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community. The total three-year budget is $3,283,333.

Water Relay Heath Street - 24-308-002: Relay of old water mains and associated sewers. Construction is projected to commence in April 2026 and be completed in November 2029. The total three-year budget is $100,000.

Water Relay Tremont Street - 24-308-001: Relay of old water mains and HPFS replacement. Construction is projected to commence in April 2026 and be completed in November 2026. The total three-year budget is $4,500,000.

Evaluation of Water Transmission Mains - 24-206-004: Transmission main study and Design Contract. Planning is projected to commence in January 2025 and be completed in November 2026. The total three-year budget is $2,000,000.

South Boston Sewer Separation - Contract 4 - 23-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction Contract No. 4 is one of five (5) planned contracts to construct new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Construction is projected to commence in February 2025 and be completed in July 2028. The total three-year budget is $100,000.

Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore - 23-309-011: Replacement and rehabilitation of sanitary sewer and drain pipes. The pipes in this contract have been inspected and reviewed and are found to be in poor condition. Associated water work. Pipes in this contract have been found defective and in need of repair or replacement as determined by cleaning and CCTV inspection under various programs including SSO investigations, CMOM contracts, and illegal connections inspection. Construction is projected to commence in April 2025 and be completed in November 2027. The total three-year budget is $1,125,000.

Water Relay City Proper - 23-308-003: Relay of old water mains. Water main breaks and age criterion. Construction is projected to commence in June 2025 and be completed in November 2028. The total three-year budget is $900,000.

Water Relay South End Phase IV - 23-308-002: Relay of old water mains. Water main breaks and age criterion. Construction is projected to commence in June 2025 and be completed in November 2028. The total three-year budget is $50,000.

Water Relay Lower Roxbury - 23-308-001: Relay of old water mains and associated sewerage works. Construction is projected to commence in June 2024 and be completed in November 2025. The three-year total budget is $5,400,000.

South Boston Sewer Separation - Contract 3 - 22-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction Contract No. 3 is one of five (5) planned contracts to construct new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue

providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Construction is projected to commence in February 2024 and be completed in July 2026. The total three-year budget is $7,566,333.

Upper Roxbury R&R - 22-309-003: Replacement of failing 1800s combined sewers, installation of new storm drains, and replacement of aging water mains that have reached the end of their useful life. The intent of this project will be to rehab and replace sewers/drains where SSOs have occurred in order to mitigate future overflows. Construction is projected to commence in January 2024 and be completed in December 2027. The total three-year budget is $1,183,034.

Replacement of Sewer and Drains Citywide, R&R - 22-309-002: Citywide R&R of Sewers and Storm Drains. The intent of this project will be to rehab and replace sewers/drains where SSOs have occurred in order to mitigate future overflows. Construction is projected to commence in December 2023 and be completed in December 2025. The total three-year budget is $954,323.

Excavation for Identification of Water Services 1 - 22-308-005: Work under this contract includes excavating, locating, identifying and possible relaying the water services of approximately 700 existing water services currently listed in the Commission's GIS system as being lead or unknown. Construction commenced in November 2022 and is projected to be completed in May 2024. The total three-year budget is $208,489.

Replacement of Lead Services on Public and Private Property - 22-308-004: Work under this contract includes replacement of lead water services in the Public way and on Private property, Citywide. Construction commenced in September 2022 and is projected to be completed in January 2024. The total three-year budget is $184,800.

Georgetowne Neighborhood Water Main Replacement - 22-308-003: Replacement of water mains and associated sewers and drains in West Roxbury. Replacement of old CI water mains that have reached the end of their useful life citywide. Replacement of CICL or DI mains that have break history. Repair sewer and storm drain mains in the area with major structural damage. Construction is projected to commence in May 2024 and be completed in December 2026. The total three-year budget is $1,614,600.

Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Storm Drains in the City of Boston - 22-308-001: Belvidere, Bowker, Boylston, Exeter, Harrison Streets. Final and Semi Final Payment in 2024. Construction is projected to commence in August 2023 and be completed in July 2025. The total three-year budget is $5,784,037.

South Boston Sewer Separation - Phase II - 21-309-012: Water and sewer improvements in South Boston. Construction is projected to commence in August 2023 and be completed in June 2026. The total three-year budget is $6,910,758.

East Boston Sewer Separation Phase IV - Contract 1 - 21-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community. Construction Contract No. 1 is one of five (5) planned contracts to construct new storm drains to separate approximately 230 acres in East Boston to further

mitigate CSOs and improve water quality. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community. Construction is projected to commence in August 2024 and be completed in July 2026. The total three-year budget is $ $3,283,333.

Associated Water Relay in Hyde Park - 21-309-001: Sewer and Storm Drain Improvements in Hyde Park based on the findings of the CMOM group which identified sewer and drain defects in this area. The contract also includes associated water relay for pipes within project limits that have reached the end of their lifespan. Construction is projected to commence in April 2024 and be completed in October 2026. The total three-year budget is $355,390.

Replacement of Water Mains in Dorchester and South Boston - 21-308-001: East Boston Sumner Tunnel work closure causing additional crew availability and aggressive schedule in 2023. Retainage Release in 2025. Construction commenced in May 2023 and is projected to be completed in June 2025. The total three-year budget is $5,848,562.

South Boston Sewer Separation Contract - I - 20-309-012: Installation of New Storm Drain, Sanitary Sewers and Water Mains in South Boston. Final and Semi Final Payments in 2024. Construction commenced in August 2021. The total three-year budget is $177,290.

Sewer and Drain Rehabilitation (R&R) - 20-309-006: Sewer Replacement/Rehabilitation based on findings of the CMOM group, some Water Main Replacement. Construction is projected to commence in July 2024 and be completed in December 2025. The total three-year budget is $986,150.

Replacement and Rehabilitation of Water Pipes in Charlestown - 20-309-002: Final and Semifinal Payments in 2025. Construction commenced in June 2023 and is projected to be completed in October 2024. The total three-year budget is $2,079,886.

Water Main Valve Replacement - 20-308-006: Replacement of water main valves in critical condition, citywide. These improvements are based on the findings of the Special Structures group which identified faulty valves when surveyed and exercised. Schedule of work is subject to BPWD approval during winter moratorium, which may delay work. Construction commenced in September 2023 and is projected to be completed in September 2025. The total three-year budget is $3,491,329.

Replacement of Water Mains in City Proper, Hyde Park, and Jamaica Plain - 20-308-005: Substantial completion in 2023. Final and semifinal payments in 2024. Construction commenced in April 2022 and completed in September 2023. The total three-year budget is $182,931.

South End Water Improvements Phase III - 20-308-002: Water Relay for 6,330 feet of 12- and 16-inch water mains on Shawmut Avenue, Waltham, Hanson and Bond Street in the South End. As part of the design work, associated sewers and drains found in disrepair will be structurally rehabilitated or replaced if found damaged beyond rehabilitation. At this time, the project also includes the lining of 1,600 linear feet of 10" thru 24" sewer pipe and the rehabilitation of 590 linear feet of 15" and 18" drain pipe. Construction is projected to commence in April 2025 and be completed in December 2026. The total three-year budget is $152,469.

Water Main Replacement in Harrison Ave, South End - 20-308-001: Replacement of older cast iron water mains that have reached the end of their useful life. Also, associated sewers and drains that are in disrepair. Construction commenced in October 2023 and is projected to be completed in May 2025. The total three-year budget is $565,398.

South Boston Sewer Separation - Construction Administration for Multiple Construction Contracts - 20-206-002: Construction administration and resident engineering services during installation of new water mains, sanitary sewers and storm drains in the South Boston neighborhood abutting the Fort Point Channel. Infrastructure is being constructed to improve water quality in Fort Point Channel, reduce the volume of stormwater delivered to MWRA's Deer Island Wastewater Treatment Plan and to support future economic expansion along the Dorchester Avenue Corridor. Construction is projected to commence in February 2024 and be completed in July 2025. The total three-year budget is $1,400,072.

Replacement of Water Mains in Allston/Brighton - 19-309-004: Final and Semi Final payments in 2025. Construction commenced in April 2023 and will be completed in May 2025. The total three-year budget is $1,412,533.

East Boston Sewer Separation - Phase III - 19-309-002: Installation of New Storm Drains, Sanitary Sewers, and Water Mains in East Boston. Construction to be completed in 2023, pending schedule implications from the East Boston Sumner Tunnel work stoppage. Closeout payments to be completed in 2024. Construction commenced in August 2021 and will be completed in August 2024. The total three-year budget is $234,411.

Rehabilitation and Replacement of Water Pipes in The City of Boston - 19-308-003: Rehabilitation and Replacement of Water Pipes in South Boston, Dorchester, Fenway/Kenmore, South End. Final and Semi Final Payments in 2025. Projecting $195,155.41 underbudget. Construction commenced in October 2022 and will be completed in June 2024. The total three-year budget is $1,427,748.

Water Improvements in Charlestown - 19-308-002: This project will replace 8,800 feet of 8- and 12-inch water mains on Bunker Hill Street, Chelsea Street, School Street, Vine Street, and Bartlett Street in Charlestown. This contract is being programmed as a response to a request by the Operations Division for Water Relay on Chelsea Street, in conjunction with break history (School Street), and pipe age/risk scoring on 1880's cast iron mains in Bunker Hill and Vine Streets. Construction is projected to commence in April 2024 and be completed in November 2026. The total three-year budget is $4,997,124.

Replacement of Water Mains in the South End - 19-308-001: Retainage Release and Water work in 2024. Construction commenced in April 2023 and will be completed in July 2024. The total three-year budget is $1,518,442

Replacement of Water Mains Replacement in Fenway/Kenmore - 18-309-001: Replacement of Water Mains on Jersey Street, Peterborough Street, and Public Alley 931. Construction commenced in October 2023. The total three-year budget is $1,734,377.

Installation of New Water Mains in Upper Roxbury - 17-309-011: Installation of New Storm Drains, Sanitary Sewers and Water Mains in Upper Roxbury in conjunction with Phase III of Upper Roxbury Area Sewer Separation. 2023 accelerated work schedule due to East Boston work stoppage, resulting in RJV manpower availability. 2024 includes remaining work and retainage. Construction commenced in June 2022 and is projected to be completed in April 2024. The total three-year budget is $318,390.

Replacement of Water Mains in Central, Dorchester, Hyde Park, South Boston & West Roxbury - 17-309-001: Pending work and claims in 2023. Final and semifinal payment in 2024. Construction commenced in September 2021 and completed in August 2023. The total three-year budget is $85,751.

Replacement of Water Mains in City Proper and Roxbury - 17-308-007: Pending Claims in 2023 estimated to $100,000. Final Retainage Payout in 2024. Projecting $78,500 under budget at close. Construction commenced in April 2021 and completed in January 2023. The total three-year budget is $26,393.

Replacement of Water Pipes in Back Bay, Roxbury, and South End - 15-308-004: Pending Change Orders and semifinal payment in 2023. Final Payment in 2024. Construction commenced in July 2017 and completed in August 2019. The total three-year budget is $48,861.

PROJECT CASH FLOW

Table 13 on page 42 presents cash flow expenditures for Water Replacement Projects for the period from 2024-2026. The total expenditures for the three-year period are $72.0 million, of which $31.8 million is allocated in 2024.

Hancock St. - 30-inch Pitted Cast Iron to 30-inch Ductile Iron Transition with dresser couplings. 30-inch Ductile has a 30-inch butterfly valve and 30-inch x 6-inch tee fitting megalugs for a 6-inch hydrant lateral connected with megalugs.

Table 13 - Water Replacement

Capital Improvement Program
2024 - 2026
Water Replacement

Description	Contract	Class	2024	2025	2026	2024-2026
East Boston Sewer Separation Phase IV - Contract 3	26-309-002	RATE			$ 100,000	$ 100,000
East Boston Sewer Separation Phase IV - Contract 2	25-309-002	BONDS			$ 50,000	$ 50,000
East Boston Sewer Separation Phase IV - Contract 2	25-309-002	RATE			$ 50,000	$ 50,000
South Boston Sewer Separation - Contract 5	24-309-012	SRF			$ 100,000	$ 100,000
Charlestown Separation	24-309-006	BONDS			$ 1,000,000	$ 1,000,000
Citywide R&R	24-309-003	RATE			$ 50,000	$ 50,000
Citywide R&R	24-309-002	RATE			$ 100,000	$ 100,000
Water Relay Heath Street	24-308-002	BONDS			$ 50,000	$ 50,000
Water Relay Heath Street	24-308-002	LWSAP			$ 50,000	$ 50,000
Water Relay Tremont Street	24-308-001	LWSAP			$ 4,500,000	$ 4,500,000
Evaluation of Water Transmission Mains	24-206-004	RATE		$ 1,000,000	$ 1,000,000	$ 2,000,000
South Boston Sewer Separation - Contract 4	23-309-012	BONDS			$ 50,000	$ 50,000
Replacement and Rehabilitation of Drain Pipes in Allston/Brighton	19-309-004	RATE	$ 601,028			$ 601,028
Replacement and Rehabilitation of Sewers in Allston/Brighton	19-309-004	RATE	$ 367,017			$ 367,017
Owner's Project Management (OPM)	20-201-005A	BONDS	$ 250,000	$ 300,000	$ 300,000	$ 850,000
South Boston Sewer Separion - Construction Administration for Multiple Construction Contracts	20-206-002	BONDS	$ 300,948	$ 300,948	$ 300,948	$ 902,845
South Boston Sewer Separation - Contract 4	23-309-012	SRF		$ -	$ 50,000	$ 50,000
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore, R&R	23-309-011	BONDS		$ 270,000	$ 405,000	$ 675,000
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore, R&R	23-309-011	RATE		$ 180,000	$ 270,000	$ 450,000
Water Relay City proper	23-308-003	LWSAP			$ 900,000	$ 900,000
Water Relay South End Phase IV	23-308-002	LWSAP			$ 50,000	$ 50,000
Water Relay Lower Roxbury	23-308-001	LWSAP		$ 1,400,000	$ 4,000,000	$ 5,400,000
South Boston Sewer Separation - Contract 3	22-309-012	BONDS	$ 1,887,213	$ 3,947,111	$ 849,246	$ 6,683,569
South Boston Sewer Separation - Contract 3	22-309-012	SRF	$ 249,263	$ 521,333	$ 112,168	$ 882,764
Upper Roxbury R&R	22-309-003	RATE	$ 317,081	$ 723,266	$ 142,687	$ 1,183,034
Replacement of Sewer and Drains Citywide, R&R	22-309-002	LWSAP		$ 500,000	$ 454,323	$ 954,323
Excavation for Identification of Water Services 1	22-308-005	SRF	$ 208,489			$ 208,489
Replacement of Lead Services on Public and Private Property	22-308-004	BONDS	$ 184,800			$ 184,800
Georgetowne Neighborhood Water Main Replacement	22-308-003	RATE	$ 1,373,600	$ 241,000		$ 1,614,600
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Storm Drains in the City of Boston	22-308-001	LWSAP	$ 4,227,908	$ 1,556,129		$ 5,784,037
South Boston Sewer Separation - Phase II	21-309-012	SRF	$ 3,401,559	$ 1,762,328	$ 1,746,871	$ 6,910,758
East Boston Sewer Separation Phase IV - Contract 1	21-309-002	RATE		$ 1,000,000	$ 2,283,333	$ 3,283,333
Associated Water Relay in Hyde Park	21-309-001	RATE			$ 355,390	$ 355,390
Replacement of Water Mains in Dorchester and South Boston	21-308-001	BONDS	$ 5,848,562			$ 5,848,562
South Boston Sewer Separation Contract - I	20-309-012	RATE	$ 177,290			$ 177,290
Sewer and Drain Rehabilitation (R&R)	20-309-006	RATE		$ 349,095	$ 637,055	$ 986,150
Replacement and Rehabilitation of Water Pipes in Charlestown	20-309-002	RATE	$ 2,079,887			$ 2,079,887
Water Main Valve Replacement	20-308-006	RATE	$ 3,250,000	$ 241,329		$ 3,491,329
Replacement of Water Mains in City Proper, Hyde Park, and Jamaica Plain	20-308-005	RATE	$ 182,931			$ 182,931
South End Water Improvements Phase III	20-308-002	LWSAP			$ 1,832,081	$ 1,832,081
Water Main replacement in Harrison Ave, South End	20-308-001	RATE	$ 565,398			$ 565,398
South Boston Sewer Separion - Construction Administration for Multiple Construction Contracts	20-206-002	BONDS	$ 466,691	$ 466,691	$ 466,691	$ 1,400,072
Replacement of Water Mains in Allston/Brighton	19-309-004	RATE	$ 1,412,533			$ 1,412,533
East Boston Sewer Seperation - Phase III	19-309-002	BONDS	$ 234,411			$ 234,411
Rehabilitation and Replacement of Water Pipes in The City of Boston	19-308-003	RATE	$ 1,427,748			$ 1,427,748
Water Improvements in Charlestown	19-308-002	BONDS	$ 1,319,625	$ 1,319,625	$ 1,319,625	$ 3,958,876
Water Improvements in Charlestown	19-308-002	RATE	$ 346,083	$ 346,083	$ 346,083	$ 1,038,249
Replacement of Water Mains in the South End	19-308-001	LWSAP	$ 1,518,442			$ 1,518,442
Replacement of Water Mains on Jersey Street, Peterborough Street, and Public Alley 931, R&R	18-309-001	BONDS	$ 311,355	$ 325,975	$ 266,467	$ 903,797
Replacement of Water Mains on Jersey Street, Peterborough Street, and Public Alley 931, R&R	18-309-001	RATE	$ 311,355	$ 285,692	$ 233,533	$ 830,580
Installation of New Water Mains in Upper Roxbury	17-309-011	RATE	$ 318,390			$ 318,390
Replacement of Water Mains in Central, Dorchester, Hyde Park, South Boston & West Roxbury	17-309-001	BONDS	$ 85,751			$ 85,751
Replacement of Water Mains in City Proper and Roxbury	17-308-007	BONDS	$ 26,393			$ 26,393
Replacement of Water Pipes in Back Bay, Roxbury, and South End	15-308-004	BONDS	$ 48,861			$ 48,861
			2024	2025	2026	Total 2024 - 2026
Water Replacement			$31,781,619	$16,435,657	$23,820,552	$ 72,037,828
BWSC Bonds			$10,413,662	$ 6,329,402	$ 4,457,028	$ 21,200,093
LWSAP			$ 5,746,350	$ 3,456,129	$11,786,404	$ 20,988,884
RATE Revenune			$11,762,296	$ 4,366,464	$ 5,568,081	$ 21,696,841
SRF			$ 3,859,311	$ 2,283,661	$ 2,009,039	$ 8,152,011

WATER DISTRIBUTION SYSTEM SPECIAL PROJECTS

DESCRIPTION AND JUSTIFICATION

Special Projects include funding for a variety of system planning and other studies, professional services associated with the rehabilitation and operation of the water system, and for the engineering design and construction of the installation or replacement of water mains associated with bridge improvement projects undertaken by other agencies. Also included are the associated design and engineering services required for the implementation of capital projects and the permanent paving fees for ongoing and future capital improvements.

Overall, the objectives of the Water Distribution System Special Projects are to extend the useful life of water mains, reduce long-term maintenance and repair costs, reduce the occurrence of main breaks and the resulting impacts, conserve drinking water and coordinate improvements with other agencies to minimize disruptions.

PROJECTS

Roadway Restoration of BWSC Excavations - 24-309-007: Permanent paving restoration of streets and sidewalks excavated during construction activities. Construction is projected to commence in April 2024 and be completed in November 2024. The total three-year budget is $1,933,750.

Future Excavation for Identification of Water Services - 24-308-005, 25-308-005: Work under this contract includes excavating, locating, identifying and possible relaying the water services of approximately 700 existing water services currently listed in the Commission's GIS system as being lead or unknown. Construction is projected to commence in July 2024 and be completed in June 2026. The total three-year budget is $4,124,795.

Replacement of Lead Services on Public and Private Property - 24-308-004, 25-308-004, 26-308-004: Work under this contract includes replacement of lead water services in the public way and on Private property, Citywide. Construction is projected to commence in April 2024 and be completed in December 2026. The total three-year budget is $5,958,000.

Paving and Restoration -24-303-008, 24-303-009, 24-303-012, 25-303-008, 25-303-009, 25-303-012 26-303-008, 26-303-009 & 26-303-012: This project involves the permanent restoration of streets and sidewalks excavated as a result of Commission activities. Operations will be adding a second Restoration of Sidewalk Excavations in 2024, due to the increased number of lead service pipe investigations and replacements. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $5,516,875.

Roadway Restorations of Boston Water and Sewer Commission Excavations - 23-309-007: Water, Sewer, & Drainage Works Improvements. Construction commenced in April 2023 and will be completed in January 2026. The total three-year budget is $63,750.

Excavation for Identification of Water Services 2 - 22-308-006: Work under this contract includes excavating, locating, identifying and possible relaying the water services of approximately 700 existing water services currently listed in the Commission's GIS system as being lead or unknown. Construction commenced in July 2023 and is projected to be completed in July 2024. The total three-year budget is $910,487.

Traffic Management Services - 22-206-006: Professional services contract for traffic management design. In support of the capital plan, on occasion it is necessary to develop traffic management plans for construction phasing of water, sewer, and drain replacement projects. This project allows the Commission to utilize transportation engineers to develop these plans in accordance with BTD regulations. If the construction will occur on state agency roadways, the traffic plans can be produced to meet state agency requirements. The contract was signed in October 2022 and is scheduled to end October 2025. The total three-year budget is $85,000.

Water Main Flushing: This project involves the implementation and maintenance of a water main flushing program for the Commission's water distribution system by a qualified professional engineering consulting firm. Construction is projected to commence in April 2024 and be completed in December 2026. The total three-year budget is $933,000.

Lead Sampling and Education Program for Schools and Childcare Facilities: This funding will be used to develop and implement a long-term program for lead sampling of the tap water of public and private schools and licensed childcare facilities within the Commission's service area. Planning commenced in April 2023 and is projected to be completed in December 2026. The total three-year budget is $3,000,000.

City of Boston-Permit Fees: This project involves obtaining street opening permits from the City of Boston for excavation activities performed by the Commission's crews and contractors in the public way. The City of Boston Public Works Department issues the street opening permits for which the Commission reimburses the City. This service is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $4,500,000.

Engineering Design, 3-year Services: Design commenced in April 2023 and will be completed in June 2026. The total three-year budget is $1,070,000.

Engineering Design, 3-year Services: Design commenced in November 2022 and is projected to be completed in December 2025. The total three-year budget is $1,070,000.

Engineering Design Services: Planning commenced in August 2022 and is projected to be completed in December 2025. The total three-year budget is $262,500.

Streets	2024	2025	2026	2024-2026 Total
Permits	$1,500,000	$1,500,000	$1,500,000	$4,500,000
Paving	$1,750,000	$1,837,500	$1,929,375	$5,516,875
Total	**$3,250,000**	**$3,337,500**	**$3,429,375**	**$9,016,875**

PROJECT CASH FLOW

Table 14 on page 46 illustrates the cash flow information for the Water Special Program for 2024-2026. Three-year expenditure for this program total $27.3 million, of which $10.9 million is allocated in 2024.

Table 14 - Water Special

Capital Improvement Program
2024 - 2026
Water Sp;ecial

Description	Contract	Class	2024	2025	2026	2024-2026
Roadway Restoration of BWSC Excavations	24-309-007	RATE	$ 1,933,750			$ 1,933,750
Future Excavation for Identification of Water Services	24-308-005, 2	SRF	$ 1,424,930	$ 2,564,872	$ 134,993	$ 4,124,795
Replacement of Lead Services on Public and Private Property	24-308-004, 2	SRF	$ 1,800,000	$ 1,980,000	$ 2,178,000	$ 5,958,000
Paving and Restoration	24-303-008, 2	RATE	$ 1,750,000	$ 1,837,500	$ 1,929,375	$ 5,516,875
Roadway Restorations of Boston Water and Sewer Commission Excavations	23-309-007	BONDS	$ 63,750			$ 63,750
Excavation for Identification of Water Services 2	22-308-006	SRF	$ 891,487	$ 19,000		$ 910,487
Engineering Design, 3 year Services	22-206-009	DEDII	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Engineering Design, 3 year Services	22-206-008	DEDII	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Traffic Management Services	22-206-006	BONDS	$ 42,500	$ 42,500		$ 85,000
Engineering Design Services	21-206-004	BONDS	$ 212,500	$ 25,000	$ 25,000	$ 262,500
Lead Sampling and Education Program for Schools and Childcare Facilities		BONDS	$ 1,000,000	$ 1,000,000	$ 1,000,000	$ 3,000,000
City of Boston-Permit Fees		BONDS	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ 4,500,000
Water Main Flushing		RATE	$ 311,000	$ 311,000	$ 311,000	$ 933,000
			2024	2025	2026	Total 2024 - 2026
Water Special			$10,929,917	$ 9,279,872	$ 7,078,368	$ 27,288,157
BWSC Bonds			$ 2,818,750	$ 2,567,500	$ 2,525,000	$ 7,911,250
Rate Revenue			$ 3,994,750	$ 2,148,500	$ 3,140,375	$ 8,383,625
SRF			$ 4,116,417	$ 4,563,872	$ 2,312,993	$ 10,993,282

This page has been left blank intentionally.

THE SEWER SYSTEM

The Commission owns and operates a system for the collection and transport of wastewater in the City of Boston.

The original backbone of the sewer system was the Boston Main Drainage System ("BMDS"). The BMDS was constructed from 1877 to 1884 under the direction of a special committee established by the City of Boston for that specific purpose. The original system consisted of five combined interceptors, the Calf Pasture pumping station and the Dorchester Bay Tunnel. Neither the pumping station, nor the tunnel is in use today. The BMDS interceptors were initially designed to carry a peak dry weather sanitary flow together with an allowance for stormwater.

In 1988, construction of the New Boston Main Interceptor and the New East Side Interceptor were completed, replacing portions of the original system. The interceptors serve the sewer needs of downtown Boston, the South End, Roxbury, Dorchester, and South Boston. These improvements have increased capacity, eliminated dry weather overflows, and decreased the occurrences and volume of wet weather overflows.

Other collection facilities provide sewer services to different parts of the City. Charlestown is served by a separated system, except for one small area. East Boston, City Proper, South Boston and Roxbury are served by combined systems; however, major portions of each area have been or are in the process of being separated. The South End has been separated under a program initiated by the City's urban renewal program and continued by the Commission where feasible and cost effective. Allston/Brighton, Roslindale, West Roxbury, Hyde Park, Mattapan and portions of Dorchester and Jamaica Plain, all of which are in the southern part of the City, are served by separate systems.

Contract 20-309-012 SOUTH BOSTON SEPARATION: West 7th St
Manhole 48-Inch RCP

The backbone of the Commission's sewer system is several major interceptors, which convey flows from the Commission's system to the MWRA's interceptors. The New East Side Interceptor, the Boston Main Interceptor completed in 1988 and the New Albany St. Interceptor completed in 1990, serve Downtown, South Boston, the South End and Dorchester. The other interceptors and the neighborhoods they serve are:

Interceptor	Neighborhood Served
Boston Main Interceptor	South End, Roxbury and North Dorchester
Dorchester Interceptor	Dorchester and Neponset
East Side Interceptor	Downtown and North End
Faneuil Street Trunk Sewer	Allston/Brighton
Roslindale Interceptor	Roslindale and West Roxbury
South Boston Interceptors	South Boston
Southwest Corridor Interceptor	Roxbury and Jamaica Plain
Stony Brook Interceptor	Roxbury
Stony Brook Valley Sewer	Roxbury and Jamaica Plain
West Side Interceptor	Back Bay, Beacon Hill and West End
Talbot Avenue High Level Sewer	Dorchester, Mattapan and Roslindale
Hyde Park Trunk Sewer	Hyde Park
East Boston Low Level Sewer	East Boston
Dorchester High Level Sewer	Mattapan and Hyde Park

The sewer system is comprised of the following:

APPURTENANCES		SEWER PIPES CITY WIDE		TYPE OR DESIGNATION	
Catch Basins	30,300	Total Linear Feet	8,104,270	Combined Sewer	140 Miles
Manholes	50,096	Total Linear Miles	1,535	Combined Sewer Overflow	12 Miles
Outfalls	267	Pumping Stations	9	Sanitary Sewer	713 Miles
Regulators	147			Storm Drain	668 Miles
Tide gates	200				

OBJECTIVES

Primary Objectives of the 2024-2026 Sewer Collection System are:

- Implement and manage contracts affiliated with the Consent Decree
- Implement Green Infrastructure Projects
- Comply with the requirements of the Commission's National Pollutant Discharge Elimination System ("NPDES") and Municipal permits
- Minimize infiltration and inflow into the sanitary system, which will increase system capacity and decrease treatment costs
- Reduce combined sewer overflows by reducing wet weather inflows and minimizing sea water intrusions
- Provide sufficient hydraulic capacity for current and projected flows
- Protect the structural integrity of the wastewater collection and storm drainage systems
- Coordinate sewer system improvements with the related projects of other public agencies

OBJECTIVES

The objectives of the Sewer System Capital Improvement Program for 2024-2026 are to provide uninterrupted wastewater transport and storm drainage services to the residents, businesses, and visitors of Boston and to improve water quality in Boston Harbor and its tributary waters. The 2024-2026 CIP has five major programs for the Sewer System: the sewer renewal and replacement program, the increased capacity program, the sewer separation program, the infiltration/inflow program, and sewer special program.

The Commission's CMOM Program utilizes closed circuit TV camera inspection equipment and software to assess the structural and maintenance condition of pipes and identify areas of excessive infiltration and inflow. The System Condition Risk Enhanced Assessment Model "SCREAM" software system is utilized to prioritize these inspection results for repair and replacement by Commission crews and under its Capital Improvement Program. The CMOM Program includes the cleaning and inspection of approximately 20 miles of sewer pipe in 2024. This along with TV inspection under other programs will result in the inspection of 90 miles of pipe in 2024 with a goal of completing the entire system over a ten-year period.

Projects included in the Sewer System CIP include repair or replacement of approximately 12.5 miles of deteriorated or failing sanitary sewers and storm drains each year. Work is included under contracts 22-309-009, 22-309-010, 22-309-004, 21-309-009, 21-309-010, 21-309-001, 21-309-002, and 20-309-014. Also included in the Sewer System CIP are South Boston Separation contracts, 20-309-012, 21-309-012, 22-309-012 and 23-309-012, the East Boston Separation contracts 19-309-002 and 21-309-002 as well as the Roxbury Sewer Separation Contract III, 17-309-011.

The sewer system objectives will be carried out through the continuation of the following program activities renewal and replacement of sewer pipes, rehabilitation of sewers and drains, separation of combined sewers, improvements that will result in an increase in system capacity, an infiltration/inflow reduction program including the disconnection of downspouts and several special projects necessary to improve the efficiency and effectiveness of the sewer system.

In addition, all sewers and drains on streets where water mains are to be replaced will be inspected prior to replacement. All defective pipes will then be replaced or rehabilitated in the water main replacement contract under the 2024-2026 Sewer System Capital Program.

WASTEWATER PROJECT HIGHLIGHTS

- New Boston Main Interceptor
- South Boston Separation Contracts 3
- Dorchester Interceptor - Relief Sewer Construction Monitoring
- West Roxbury SSES
- Sewer Improvements in Charlestown
- Sewer R&R in Fenway
- Replacement and Rehabilitation of Sewer in Dorchester and South Boston
- Replacement and Rehabilitation of Sewers and Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury
- Charlestown SSES
- Dorchester, Mattapan and Roxbury R&R

PROJECT CASH FLOW

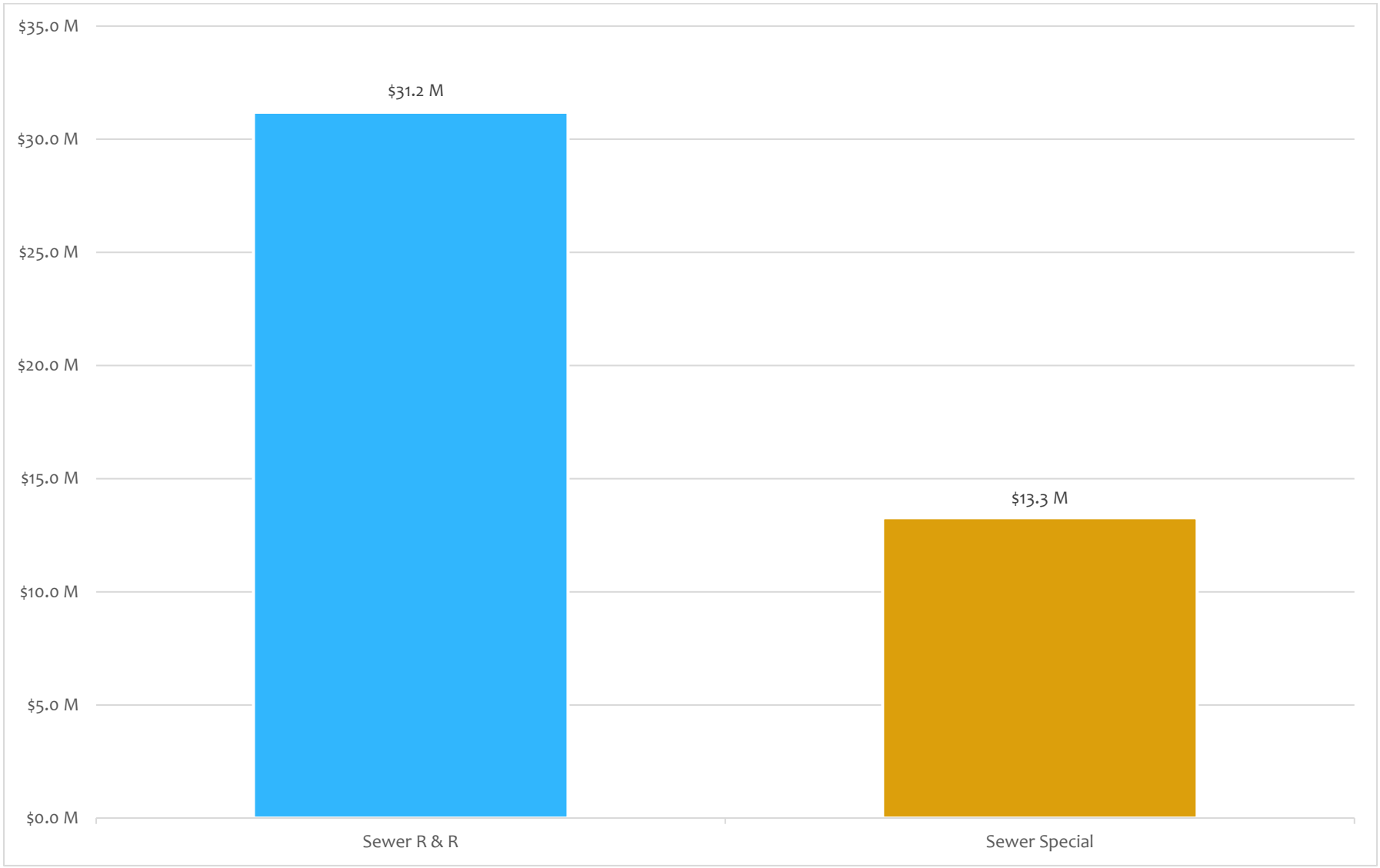
Table 15 on page 51 illustrates Sewer Distribution System by Category. Graph 9 on page 52 illustrates the capital expenditures by program of the Total Sewer Program for 2024-2026. Three-year total expenditures are $118.0 million, of which $44.5 million is allocated in 2024. Graph 12 on page 55 illustrates Sewer Expenditure by Funding Source for 2024-2026.

TABLE 15 - SEWER DISTRIBUTION SYSTEM BY CATEGORY

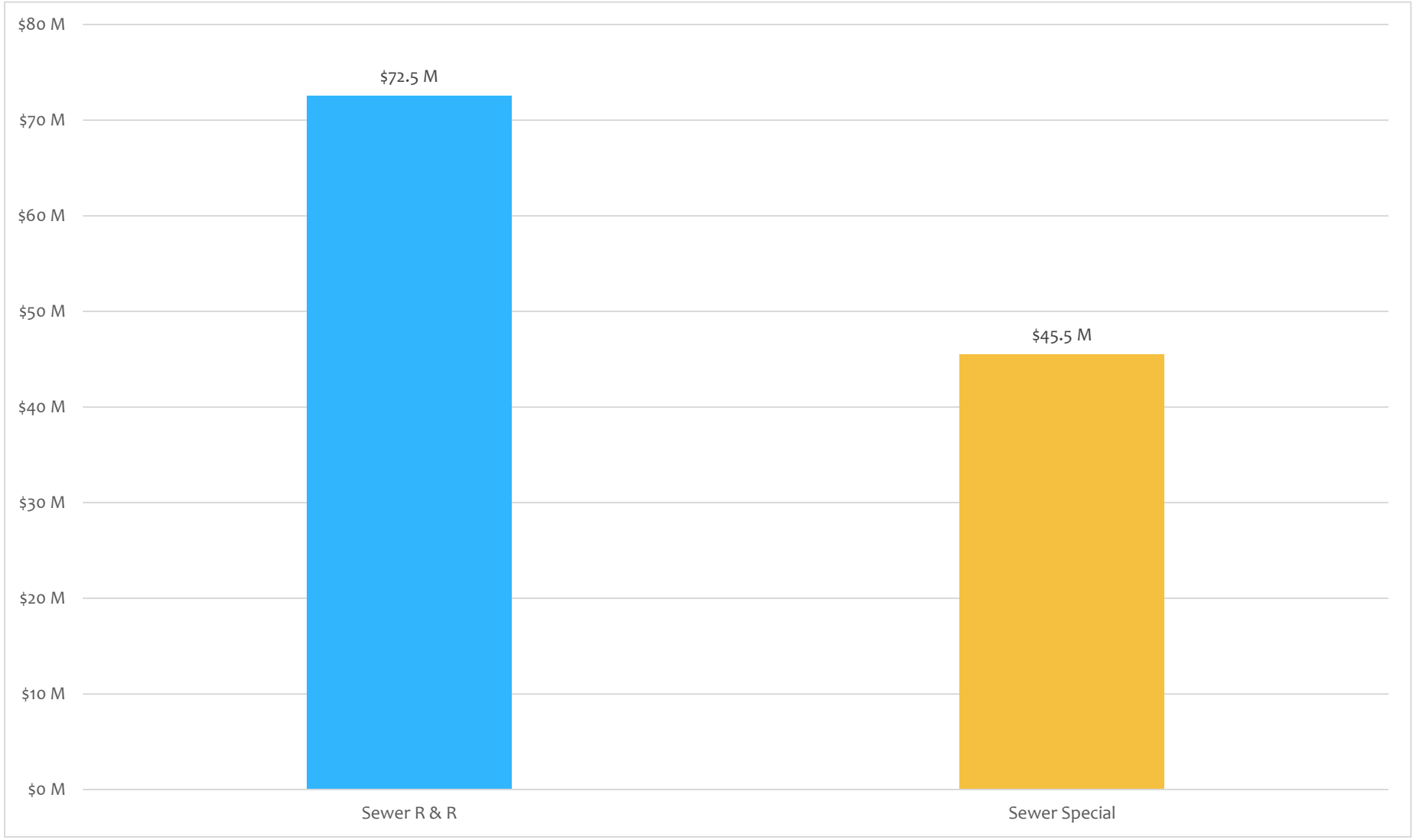
Capital Improvement Program
2024 - 2026
Sewer Total

	2024	2025	2026	Total 2024 - 2026
Sewer Replacement	$31,193,085	$23,970,004	$17,342,683	$ 72,505,772
BWSC Bonds	$16,398,133	$ 2,747,367	$ 2,395,211	21,540,710
MWRA II	$ 843,695	$ 2,690,673	$ 4,019,699	7,554,068
Rate Revenue	$10,197,388	$12,351,715	$ 9,292,640	31,841,743
SRF	$ 3,753,868	$ 6,180,250	$ 1,635,133	11,569,251
Sewer Special	$13,273,086	$18,779,228	$13,467,203	$ 45,519,516
BWSC Bonds	$ 3,196,601	$ 2,559,543	$ 662,363	6,418,506
MWRA II	$ 2,890,000	$ 3,430,000	$ 450,000	6,770,000
Rate Revenue	$ 6,757,600	$ 9,350,000	$ 9,350,000	25,457,600
SRF	$ 428,885	$ 3,439,685	$ 3,004,840	6,873,410
Total	**$44,466,171**	**$42,749,232**	**$30,809,886**	**$ 118,025,288**
BWSC Bonds	$19,594,734	$ 5,306,909	$ 3,057,573	$ 27,959,217
MWRA II	$ 3,733,695	$ 6,120,673	$ 4,469,699	$ 14,324,068
Rate Revenue	$16,954,988	$21,701,715	$18,642,640	$ 57,299,343
SRF	$ 4,182,753	$ 9,619,935	$ 4,639,973	$ 18,442,661

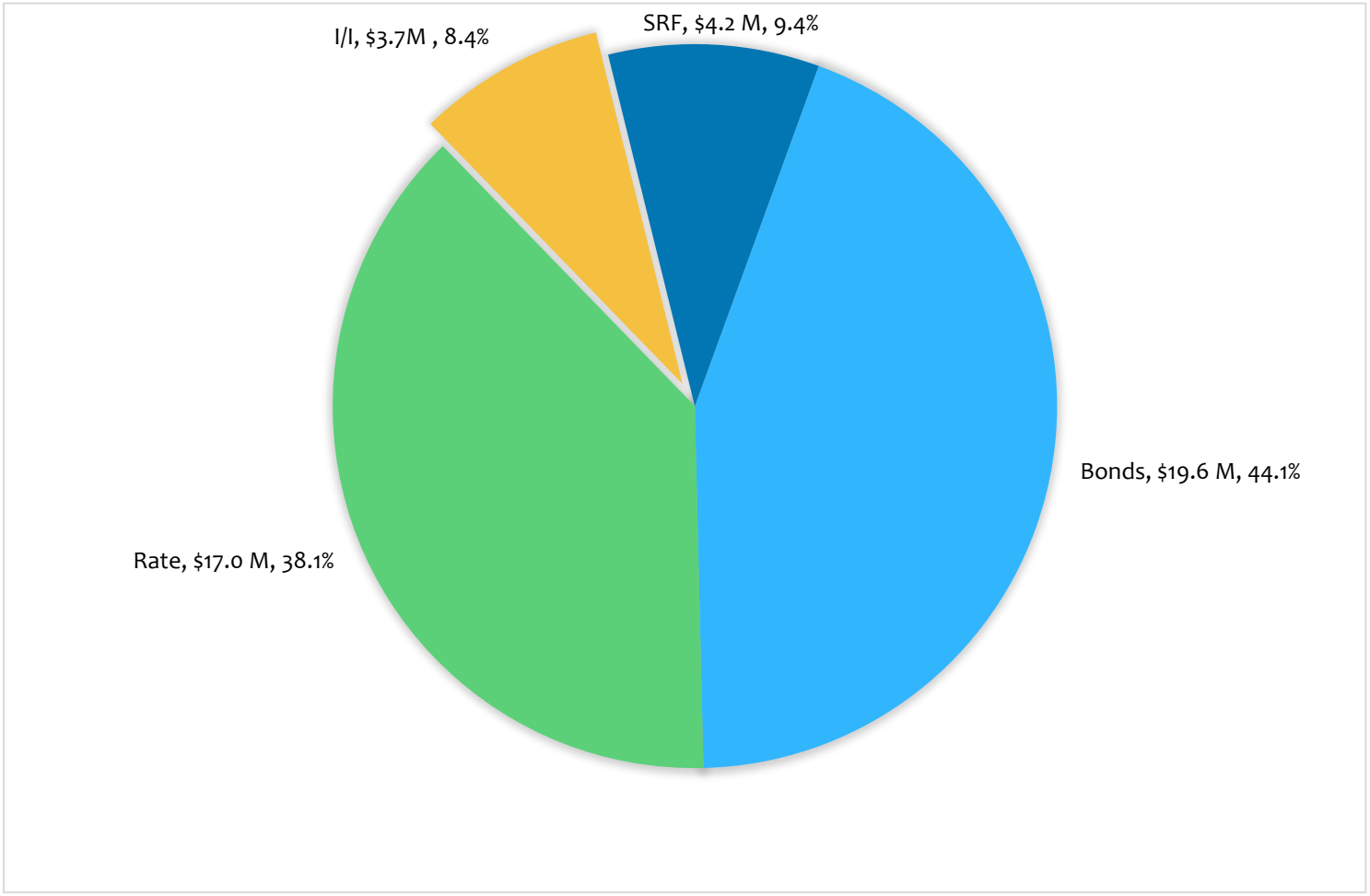
Graph 9 – 2024 Total Sewer Expenditures by Program $44.5 Million



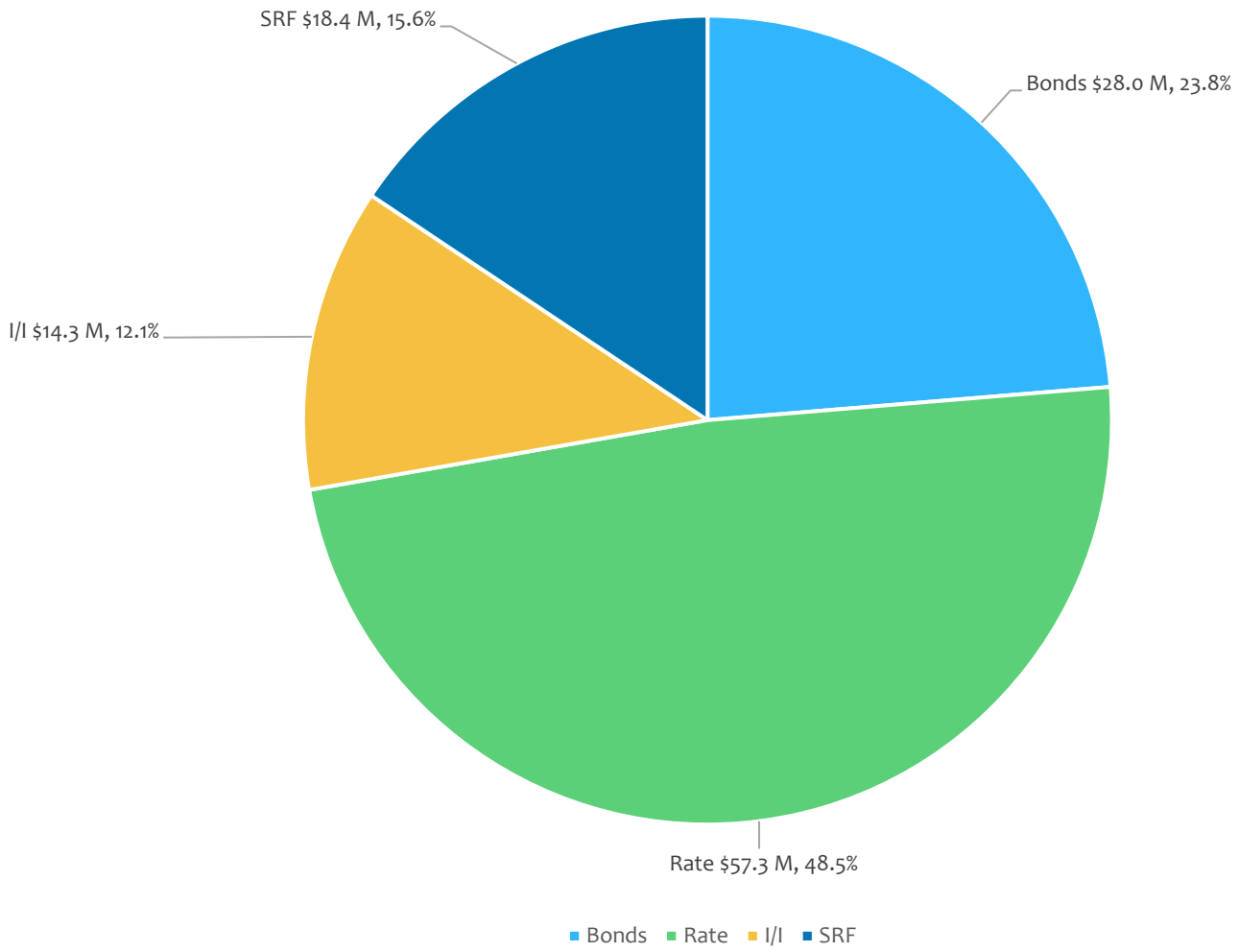
Graph 10 – 2024 - 2026 Total Sewer Expenditures by Program $118.0 Million



Graph 11 - 2024 Total Sewer Expenditures by Funding Source $44.5 Million



Graph 12 - 2024 - 2026 Sewer Expenditures by Funding Source $118.0 Million



SEWER RENEWAL AND REPLACEMENT

DESCRIPTION AND JUSTIFICATION

Renewal and replacement projects involve the trenchless rehabilitation or replacement of sewers and storm drains in response to persistent malfunction, structural deterioration, excessive emergency repairs and other operation and maintenance problems.

The Commission identifies sewer and drain lines that require renewal or replacement through television inspections, sewer system evaluation surveys and routine maintenance activities. Renewal and replacement projects are coordinated with the Boston DPWD's Roadway Resurfacing and Reconstruction Programs to ensure that the Commission avoids excavating newly resurfaced street, unless under emergency circumstances.

The objectives of the renewal and replacement program are to: ensure the operability of sewers and storm drains, protect the structural integrity of the sewer system, reduce long-term capital and maintenance costs and minimize disruptions of service caused by sewerage back-ups or other related problems.

PROJECTS

East Boston Sewer Separation Phase IV - Contract 3 - 26-309-002: Construction Contract No. 3 is one of five (5) planned contracts to construct new storm drains to separate approximately 230 acres in East Boston to further mitigate CSOs and improve water quality. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community. Construction is projected to commence in August 2025 and be completed in July 2029. The total three-year budget is $100,000.

East Boston Sewer Separation Phase IV - Contract 2 - 25-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community. Construction is projected to commence in August 2025 and be completed in July 2029. The total three-year budget is $100,000.

South Boston Sewer Separation - Contract 5 - 24-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction is projected to commence in February 2026 and be completed in July 2029. The total three-year budget is $100,000.

Charlestown Separation - 24-309-006: Sewer Separation in Charlestown Lost Village area to reduce CSO overflow. Construction is projected to commence in April 2025 and be completed in October 2027. The total three-year budget is $1,000,000.

South Boston Sewer Separation - NBMI Phase II - 24-309-005: Rehabilitation of a portion of the 102" New Boston Main Interceptor (NBMI) from Columbus Park Headworks to Preble Street at Wendeller Street, including rehabilitation of all manhole risers and 2 special structures. Construction is projected to commence in January 2024 and be completed in June 2025. The total three-year budget is $11,903,026.

Engineering CCTV Contract - 24-309-004: Television inspection and cleaning of sewer and drain pipes in the City of Boston for streets where water main replacement or separation work is planned, and large conduits. Construction is projected to commence in April 2024 and be completed in December 2024. The total three-year budget is $414,375.

Citywide R&R - 24-309-003: Water, Sewer and Drain Replacement and Rehabilitation Citywide on an as needed basis. The intent of this project will be to rehab and replace water/sewers/drains where SSOs and other issues have occurred in order to mitigate future issues. This will be on an as needed basis due to receiving emergency design requests from the the Chief Engineer and OPS during year after CIP is developed. Construction is projected to commence in April 2025 and be completed in November 2027. The total three-year budget is $50,000.

Citywide R&R - 24-309-002: Water, Sewer and Drain Replacement and Rehabilitation Citywide. Construction is projected to commence in April 2025 and be completed in November 2027. The total three-year budget is $1,200,000.

Citywide R&R - 24-309-001: Sewer and Drain Replacement and Rehabilitation Citywide. The intent of this project will be to rehab and replace sewers/drains where SSOs and other issues have occurred in order to mitigate future overflows. Construction is projected to commence in August 2024 and be completed in August 2028. The total three-year budget is $50,000.

Sewer Relay Heath Street - 24-308-002: Relay of old water mains and associated sewers. Construction is projected to commence in April 2026 and be completed in November 2029. The total three-year budget is $50,000.

Sewer Relay Tremont Street - 24-308-001: Relay of old water mains and HPFS abandonment. Construction is projected to commence in April 2026 and be completed in November 2027. The total three-year budget is $200,000.

Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow: Construction is projected to commence in March 2024 and be completed in November 2026. The total three-year budget is $425,003.

South Boston Sewer Separation - Contract 4 - 23-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction Contract No. 4 is one of five (5) planned contracts to construct new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. Construction is projected to commence in February 2025 and be completed in July 2028. The total three-year budget is $100,000.

Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore - 23-309-011: Replacement and rehabilitation of sanitary sewer and drain pipes. The pipes in this contract have been inspected and reviewed and are found to be in poor condition. Associated water work. Pipes in this contract have been found defective and in need of repair or replacement as determined by cleaning and CCTV inspection under various programs including SSO investigations, CMOM contracts, and illegal connections inspection. Construction is projected to commence in April 2025 and be completed in November 2027. The total three-year budget is $625,000.

Sewer and Drain Condition Monitoring Citywide 2 - 23-309-010: This project entails the inspection of sewers and drains through the use of closed circuit TV cameras utilizing the SCREAM coding system in order to assess the structural condition of the pipes. Approximately thirty (30) miles of various sized pipes will be cleaned and inspected. Construction commenced in July 2023 and is projected to be completed in April 2024. The total three-year budget is $371,090.

Sewer and Drain Condition Monitoring Citywide 1 - 23-309-009: This project entails the inspection of sewers and drains through the use of closed-circuit TV cameras utilizing the SCREAM coding system in order to assess the structural condition of the pipes. Approximately thirty (30) miles of various sized pipes will be cleaned and inspected. Construction commenced in July 2023 and is projected to be completed in April 2024. The total three-year budget is $239,063.

Sewer Separation/Outflow - 23-309-008: Correction of sanitary building connections that are found connected to storm drains. The Commission conducts investigation to locate building connections that are incorrectly connected to storm drains. This contract will involve reconnection of these laterals to sanitary sewers. The Consent Decree requires that the Commission eliminate direct raw sewage discharges to bodies of water. This contract will continue the work done on previous contracts that removed raw sewage connections from storm drains from past investigations, which will further reduce the amount of untreated sewage currently flowing to brooks, rivers, ponds, and the harbor. Construction commenced in October 2023 and will be completed in September 2026. The total three-year budget is $427,500.

Dorchester, Mattapan and Roxbury R&R - 23-309-005: Sewer and Drain Replacement and Rehabilitation in Dorchester, Mattapan and Roxbury. The intent of this project will be to rehab and replace sewers/drains where SSOs and other issues have occurred in order to mitigate future overflows. Construction is projected to commence in July 2024 and be completed in June 2025. The total three-year budget is $1,500,000.

Citywide R&R - 23-309-003: Sewer and Drain Replacement and Rehabilitation Citywide. Construction is projected to commence in July 2024 and be completed in June 2027. The total three-year budget is $100,000.

Sewer Relay City Proper - 23-308-003: Relay of old water mains. Water main breaks and age criterion. Construction is projected to commence in June 2025 and be completed in November 2027. The total three-year budget is $1,000,000.

Sewer Relay South End Phase IV - 23-308-002: Relay of old water mains. Water main breaks and age criterion Construction is projected to commence in June 2025 and be completed in November 2029. The total three-year budget is $50,000.

Sewer Relay Lower Roxbury - 23-308-001: Relay of old water mains and associated sewerage works. Construction is projected to commence in June 2024 and be completed in November 2025. The total three-year budget is $2,100,000.

South Boston Sewer Separation - Contract 3 - 22-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest-level service to the community and support future development along Dorchester Avenue. Construction Contract No. 3 is one of five (5) planned contracts to construct new storm drains. Construction is projected to commence in February 2024 and be completed in July 2025. The total three-year budget is $5,653,302.

Upper Roxbury R&R - 22-309-003: Replacement of failing 1800s combined sewers, installation of new storm drains, and replacement of aging water mains that have reached the end of their useful life. The intent of this project will be to rehab and replace sewers/drains where SSOs have occurred in order to mitigate future overflows. Construction is projected to commence in January 2024 and be completed in December 2025. The total three-year budget is $2,851,735.

Replacement of Sewer and Drains Citywide - 22-309-002: Citywide R&R of Sewers and Storm Drains. The intent of this project will be to rehab and replace sewers/drains where SSOs have occurred in order to mitigate future overflows. Construction is projected to commence in December 2023 and be completed in December 2025. The total three-year budget is $3,100,563.

Georgetowne Neighborhood Sewer Replacement - 22-308-003: Replacement of water mains and associated sewers and drains in West Roxbury. Replacement of old CI water mains that have reached the end of their useful life citywide. Replacement of CICL or DI mains that have break history. Repair sewer and storm drain mains in the area with major structural damage. Construction is projected to commence in May 2024 and be completed in December 2025. The total three-year budget is $708,000.

Replacement and Rehabilitation of Sewers in the City of Boston - 22-308-001: Belvidere, Bowker, Boylston, Exeter, Harrison Ave. Final and Semi Final Payment in 2024. Construction commenced in August 2023 and will be completed in July 2025. The total three-year budget is $443,596.

South Boston Sewer Separation - Phase II - 21-309-012: water and sewer improvements in South Boston. Construction commenced in August 2023 and will be completed in June 2026. The total three-year budget is $5,765,950.

South Boston Sewer Separation – NBMI - 21-309-005A: Rehabilitation of a portion of the 102" New Boston Main Interceptor (NBMI) in Preble Street, both siphon chambers at Andrew Square, and other associated manhole/chambers. Construction commenced in September 2022 and is projected to be completed in December 2023. The total three-year budget is $1,009,384.

East Boston Sewer Separation Phase IV - Contract 1 - 21-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest-level service to the community. Construction Contract No. 1 is one of five (5) planned contracts. Construction is projected to commence in August 2024 and be completed in July 2027. The total three-year budget is $2,566,667.

Sewer Improvements in Hyde Park - 21-309-001: Sewer and Storm Drain Improvements in Hyde Park based on the findings of the CMOM group which identified sewer and drain defects in this area. The contract also includes associated water relay for pipes within project limits that have reached the end of their lifespan. Construction is projected to commence in April 2025 and be completed in October 2027. The total three-year budget is $1,208,378.

Replacement and Rehabilitation of Sewer in Dorchester and South Boston - 21-308-001: Work closure causing additional crew availability and aggressive schedule in 2023. Retainage Release in 2025. Construction commenced in May 2023 and will be completed in June 2025. The total three-year budget is $2,777,956.

South Boston Sewer Separation Contract - I - 20-309-012: Installation of New Storm Drain, Sanitary Sewers and Water Mains in South Boston. Final and Semi Final Payments in 2024. Construction commenced in August 2021. The total three-year budget is $265,934.

Replacement and Rehabilitation of Sewers and Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury - 20-309-007: Includes sanitary sewer & drain replacement and rehabilitation in Allston/Brighton, Fenway/Kenmore, Jamaica Plain, and Roxbury. Construction is projected to commence in April 2024 and be completed in September 2025. The total three-year budget is $2,852,084.

Sewer and Drain Rehabilitation (R&R) - 20-309-006: Sewer Replacement/Rehabilitation based on findings of the CMOM group, some Water Main Replacement. Construction is projected to commence in July 2024 and be completed in December 2025. The total three-year budget is $956,521.

Replacement and Rehabilitation of Sewer Pipes in Charlestown - 20-309-002: Final and Semifinal Payments expected in 2025. Construction commenced in June 2023 and will be completed in October 2024. The total three-year budget is $542,728.

Replacement of Sewerage in City Proper, Hyde Park, and Jamaica Plain - 20-308-005: Substantial completion in 2023. Final and semifinal payments in 2024. Construction commenced in April 2022 and completed in September 2023. The total three-year budget is $20,954.

Installation and Replacement of Sewers in Back Bay/Beacon Hill, Charlestown and Fenway/Kenmore - 20-308-004: Punchlist and pending claims in 2023. Final and semifinal payments in 2024. Construction commenced in August 2022 and completed in June 2023. The total three-year budget is $99,748.

South End Sewer Improvements Phase III - 20-308-002: Water Relay for 6,330 feet of 12- and 16-inch water mains on Shawmut Avenue, Waltham, Hanson and Bond Street in the South End. As part of the design work, associated sewers and drains found in disrepair will be structurally rehabilitated or replaced if found damaged beyond rehabilitation. At this time, the project also includes the lining of 1,600 linear feet of 10" thru 24" sewer pipe and the rehabilitation of 590 linear feet of 15" and 18" drain pipe. Construction is projected to commence in April 2025 and be completed in December 2027. The total three-year budget is $152,469.

Sewer Replacement in Harrison Ave, South End - 20-308-001: Replacement of older cast iron water mains that have reached the end of their useful life. Also, associated sewers and drains that are in disrepair. Construction is projected to commence in April 2024 and be completed in May 2026. The total three-year budget is $11,442,179.

South Boston Sewer Separation - Construction Administration for Multiple Construction Contracts - 20-206-002: Construction administration and resident engineering services during installation of new water mains, sanitary sewers and storm drains in the South Boston neighborhood abutting the Fort Point Channel. Infrastructure is being constructed to improve water quality in Fort Point Channel, reduce the volume of stormwater delivered to MWRA's Deer Island Wastewater Treatment Plan and to support future economic expansion along the Dorchester Avenue Corridor. Construction is projected to commence in February 2024 and be completed in July 2025. The total three-year budget is $902,845.

Replacement and Rehabilitation of Sewers in Allston/Brighton - 19-309-004: Final and Semi Final payments in 2025. Construction commenced in April 2023 and will be completed in May 2025. The total three-year budget is $367,017.

East Boston Sewer Separation - Phase III – 19-309-002: The total three-year budget is $98,974.

Rehabilitation and Replacement of Sewer Pipes in The City of Boston - 19-308-003: Rehabilitation and Replacement of Water Pipes in South Boston, Dorchester, Fenway/Kenmore, South End. Final and Semi Final Payments in 2025. Construction commenced in October 2022 and will be completed in June 2024. The total three-year budget is $326,819.

Sewer Improvements in Charlestown - 19-308-002: This project will replace 8,800 feet of 8- and 12-inch water mains on Bunker Hill Street, Chelsea Street, School Street, Vine Street, and Bartlett Street in Charlestown. This contract is being programmed as a response to a request by the Operations Division for Water Relay on Chelsea Street, in conjunction with break history (School Street), and pipe age/risk scoring on 1880's cast iron mains in Bunker Hill and Vine Streets. Construction is projected to commence in April 2024 and be completed in November 2026. The total three-year budget is $3,894,906.

Replacement and Rehabilitation of Sewer in Fenway/Kenmore - 18-309-001: Replacement of Water Mains on Jersey Street, Peterborough Street, and Public Alley 931. Construction commenced in October 2023. The total three-year budget is $1,677,767.

Rehabilitation of Large Diameter Sewer Mains in City Proper and South Boston - 17-309-015: Closeout/retainage paid in 2024. Construction commenced in April 2022 and completed in November 2023. The total three-year budget is $135,476.

Upper Roxbury Area Sewer Seperation - Phase III - 17-309-011: Installation of New Storm Drains, Sanitary Sewers and Water Mains in Upper Roxbury in conjunction with Phase III of Upper Roxbury Area Sewer Separation. 2023 accelerated work schedule due to East Boston work stoppage, resulting in RJV manpower availability. 2024 includes remaining work and retainage. Construction commenced in June 2022 and is projected to be completed in November 2025. The total three-year budget is $915,301.

Replacement and Rehabilitation of Sewer Pipes in Central, Dorchester, Hyde Park, South Boston & West Roxbury - 17-309-001: Construction commenced in September 2021 and completed in August 2023. The total three-year budget is $8,575.

Replacement of Sewer and Sewer Rehabilitation in Back Bay, Roxbury, and South End - 15-308-004: Pending Change Orders and semifinal payment in 2023. Construction commenced in July 2017 and completed in August 2019. Final Payment in 2024. The total three-year budget is $2,714.

PROJECT CASH FLOW

Table 16 on page 62 presents the cash flow expenditures for the Sewer Renewal and Replacement Program. Total 2024-2026 expenditures are $59.5 million, of which $18.7 million is allocated in 2024.

Table 16 - Sewer Renewal & Replacement

Capital Improvement Program
2024 - 2026
Sewer Replacement

Description	Contract	Class	2024	2025	2026	2024-2026
East Boston Sewer Separation Phase IV - Contract 3	26-309-002	MWRA II			$ 100,000	$ 100,000
East Boston Sewer Separation Phase IV - Contract 2	25-309-002	MWRA II			$ 100,000	$ 100,000
South Boston Sewer Separation - Contract 5	24-309-012	SRF			$ 100,000	$ 100,000
Charlestown Separation	24-309-006	BONDS			$ 1,000,000	$ 1,000,000
South Boston Sewer Separation - NBMI Phase II	24-309-005	BONDS	$11,403,863	$ 499,162		$ 11,903,026
Engineering CCTV Contract (I)	24-309-004	RATE	$ 414,375			$ 414,375
Citywide R&R	24-309-003	RATE			$ 50,000	$ 50,000
Citywide R&R	24-309-002	RATE			$ 1,200,000	$ 1,200,000
Citywide R&R	24-309-001	RATE			$ 50,000	$ 50,000
Water Relay Heath Street	24-308-002	BONDS			$ 50,000	$ 50,000
Water Relay Tremont Street	24-308-001	BONDS			$ 200,000	$ 200,000
Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow Control Projects	23-309-013	MWRA LAP	$ 425,003			$ 425,003
South Boston Sewer Separation - Contract 4	23-309-012	BONDS			$ 50,000	$ 50,000
South Boston Sewer Separation - Contract 4	23-309-012	SRF			$ 50,000	$ 50,000
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore, R&R	23-309-011	BONDS		$ 150,000	$ 225,000	$ 375,000
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore, R&R	23-309-011	RATE		$ 100,000	$ 150,000	$ 250,000
Sewer and Drain Condition Monitoring Citywide 2	23-309-010	RATE	$ 371,090			$ 371,090
Sewer and Drain Condition Monitoring Citywide 1	23-309-009	RATE	$ 239,063			$ 239,063
Sewer Separation/outflow	23-309-008	RATE	$ 127,500	$ 150,000	$ 150,000	$ 427,500
Dorchester, Mattapan and Roxbury R&R	23-309-005	RATE		$ 500,000	$ 1,000,000	$ 1,500,000
Citywide R&R	23-309-003	RATE			$ 100,000	$ 100,000
Water Relay City proper	23-308-003	RATE			$ 1,000,000	$ 1,000,000
Water Relay South End Phase IV	23-308-002	RATE			$ 50,000	$ 50,000
Water Relay Lower Roxbury	23-308-001	RATE		$ 700,000	$ 1,400,000	$ 2,100,000
South Boston Sewer Separation - Contract 3	22-309-012	SRF	$ 1,216,988	$ 2,545,333	$ 547,644	$ 4,309,965
South Boston Sewer Separation - Contract 3	22-309-012	SRF	$ 379,313	$ 793,333	$ 170,691	$ 1,343,336
Upper Roxbury R&R	22-309-003	RATE	$ 832,464	$ 745,200	$ 104,609	$ 1,682,273
Upper Roxbury R&R	22-309-003	MWRA II	$ 478,788	$ 690,673		$ 1,169,462
Replacement of Sewer and Drains Citywide, R&R	22-309-002	MWRA II		$ 1,000,000	$ 2,100,563	$ 3,100,563
Georgetowne Neighborhood Water Main Replacement	22-308-003	RATE	$ 238,000	$ 470,000		$ 708,000
Replacement and Rehabilitation of Sewers in the City of Boston	22-308-001	RATE	$ 443,596			$ 443,596
Engineering Design, 3 year Services	22-206-009	DEDII	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
South Boston Sewer Separation - Phase II	21-309-012	SRF	$ 2,157,568	$ 2,841,583	$ 766,798	$ 5,765,950
South Boston Sewer Separation - NBMI	21-309-005A	BONDS	$ 1,009,384			$ 1,009,384
East Boston Sewer Separation Phase IV - Contract 1	21-309-002	MWRA II		$ 1,000,000	$ 1,566,667	$ 2,566,667
Sewer Improvements in Hyde Park	21-309-001	RATE			$ 1,208,378	$ 1,208,378
Replacement and Rehabilitation of Sewer in Dorchester and South Boston	21-308-001	BONDS	$ 1,871,554	$ 906,402		$ 2,777,956
South Boston Sewer Separation Contract - I	20-309-012	MWRA II	$ 265,934			$ 265,934
Replacement and Rehabilitation of Sewers and Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury	20-309-007	BONDS	$ 222,771	$ 262,083		$ 484,854
Replacement and Rehabilitation of Sewers and Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury	20-309-007	RATE		$ 1,087,646	$ 1,279,583	$ 2,367,229
Sewer and Drain Rehabilitation (R&R)	20-309-006	RATE		$ 635,491	$ 321,030	$ 956,521
Replacement and Rehabilitation of Sewer Pipes in Charlestown	20-309-002	RATE	$ 542,728			$ 542,728
Replacement of Sewerage in City Proper, Hyde Park, and Jamaica Plain	20-308-005	RATE	$ 20,954			$ 20,954
Installation and Replacement of Water Mains in Back Bay/Beacon Hill, Charlestown and Fenway/Kenmore	20-308-004	RATE	$ 99,748			$ 99,748
South End Water Improvements Phase III	20-308-002	MWRA II			$ 152,469	$ 152,469
Water Main replacement in Harrison Ave, South End	20-308-001	RATE	$ 4,760,000	$ 6,682,179		$ 11,442,179
South Boston Sewer Separion - Construction Administration for Multiple Construction Contracts	20-206-002	BONDS	$ 300,948	$ 300,948	$ 300,948	$ 902,845
Replacement and Rehabilitation of Sewers in Allston/Brighton	19-309-004	RATE	$ 367,017			$ 367,017
East Boston Sewer Separation - Phase III	19-309-002	MWRA II	$ 98,974			$ 98,974
Rehabilitation and Replacement of Sewer Pipes in The City of Boston	19-308-003	RATE	$ 326,819			$ 326,819
Water Improvements in Charlestown	19-308-002	BONDS	$ 302,796	$ 302,796	$ 302,796	$ 908,387
Water Improvements in Charlestown	19-308-002	RATE	$ 995,507	$ 995,507	$ 995,507	$ 2,986,521
Replacement and Rehabilitation of Sewer Pipes on Jersey Street, Peterborough Street, and Public Alley 931, R&R	18-309-001	BONDS	$ 283,050	$ 325,975	$ 266,467	$ 875,492
Replacement and Rehabilitation of Sewer Pipes on Jersey Street, Peterborough Street, and Public Alley 931, R&R	18-309-001	RATE	$ 283,050	$ 285,692	$ 233,533	$ 802,275
Rehabilitation of Large Diameter Sewer Mains in City Proper and South Boston	17-309-015	RATE	$ 135,476			$ 135,476
Upper Roxbury Area Sewer Seperation - Phase III	17-309-011	BONDS	$ 915,301			$ 915,301
Replacement and Rehabilitation of Sewer Pipes in Central, Dorchester, Hyde Park, South Boston & West Roxbury	17-309-001	BONDS	$ 85,751			$ 85,751
Replacement of Sewer and Sewer Rehabilitation in Back Bay, Roxbury, and South End	15-308-004	BONDS	$ 2,714			$ 2,714
			2024	2025	2026	Total 2024 - 2026
Sewer Replacement			$ 31,193,085	$ 23,970,004	$ 17,342,683	$ 72,505,772
BWSC Bonds			$ 16,398,133	$ 2,747,367	$ 2,395,211	21,540,710
MWRA II			$ 843,695	$ 2,690,673	$ 4,019,699	7,554,068
Rate Revenue			$ 10,197,388	$ 12,351,715	$ 9,292,640	31,841,743
SRF			$ 3,753,868	$ 6,180,250	$ 1,635,133	11,569,251

INCREASED CAPACITY PROJECTS

DESCRIPTION AND JUSTIFICATION

During the 1980s, the Commission completed the construction of several new major interceptors including the New Boston Main and New East Side Interceptors. They provided increased system capacity, which reduced wet weather combined sewer overflow discharges and virtually eliminated dry weather discharges to Boston Harbor and its tributary waters. In 1994, the EPA issued a policy nationwide on CSOs that requires communities with CSOs to implement nine minimum controls to reduce the frequency and volume of CSO discharges. Maximizing the use of in-system storage, or system capacity, is one of the nine controls. The Commission continues its efforts to increase system capacity. The projects presented in the CIP Increased Capacity Program seek to fulfill that objective.

Since their completion, the Commission has continued to make capital investments to increase system capacity in some areas and maximize the existing capacity of the system in other areas. The Commission's efforts to increase system capacity are designed to ensure sufficient hydraulic flow in all areas of the city, reduce long-term maintenance costs, minimize the frequency and volume of CSO discharges and ensure the continued structural integrity of the wastewater collection system.

SEWER SYSTEM SPECIAL

DESCRIPTION AND JUSTIFICATION

The Sewer System Special Projects category provides funding for a variety of system planning and other studies and for professional services associated with the rehabilitation and operation of the sewer system.

Overall, the objectives of the Sewer System Special Projects are to extend the useful life of the Commission's wastewater facilities, comply with the requirements of the NPDES Permit regulations and plan for future sewer system projects.

PROJECTS

South Boston Sewer Separation - NBMI Phase III - 25-309-005: Rehabilitation of a portion of the 102" New Boston Main Interceptor (NBMI) on Frontage Road between Andrew Square and 15 Widett Circle, including rehabilitation of all manhole risers and 2 special structures. Construction is projected to commence in September 2024 and be completed in April 2026. The total three-year budget is $20,907,600.

CCTV of Sewers and Storm Drains/CMOM - Future Contracts - 24-309-009, 24-309-010, 25-309-009, 25-309-010, 26-309-009, 26-309-010: These projects entail the inspection of sewers and drains through the use of closed circuit TV cameras utilizing the SCREAM coding system in order to assess the structural condition of the pipes. Approximately ninety (90) miles annually of various sized pipes will be cleaned and inspected with a goal of completing the entire system over a 10 year period. These contracts complete 60 miles annually. Construction is projected to commence in 2024 and be completed in 2026. The total three-year budget is $2,900,000.

Charlestown SSES - 23-206-001: This project will entail an Infiltration and Inflow Sewer System Evaluation Survey (SSES) to identify sources of extraneous flow in the Commission's wastewater collection system. The SSES will include flow monitoring, manhole inspection, smoke testing, dye testing and television inspection of sewer pipes. Findings will be provided to the Commission in a report with recommendations for capital improvements to eliminate sources of extraneous flows. After the Commission approves the recommendations, Contract Documents for Bid will be produced. Design is projected to commence in November 2024 and be completed in November 2025. The total three-year budget is $1,650,000.

Construction Supervision Services - NBMI Rehabilitation Phase II and Phase III - 23-103-006:

Phase II - Rehabilitation of a portion of the 102" New Boston Main Interceptor (NBMI) from Columbus Park Headworks to Preble Street at Wendeller Street, including rehabilitation of all manhole risers and 2 special structures.

Phase III - Rehabilitation of a portion of the 102" New Boston Main Interceptor (NBMI) on Frontage Road between Andrew Square and 15 Widett Circle, including rehabilitation of all manhole risers and 2 special structures.

Construction is projected to commence in January 2024 and be completed in June 2026. The total three-year budget is $2,400,000.

Replacement of Lead Services on Public and Private Property - 22-308-004: Work under this contract includes replacement of lead water services in the Public way and on Private property, Citywide.

Construction commenced in September 2022 and will be completed in January 2024. The total three-year budget is $79,200.

Dorchester Interceptor - Relief Sewer Design - 22-206-005: This project involves engineering services, for design services in connection with the preparation construction document suitable for public bidding. The engineering firm will be responsible for the preparation of bid documents, include plans, specification and cost estimates for construction of the Dorchester Interceptor relief sewer and all appurtenances. Design commenced in April 2023 and will be completed in September 2024. The total three-year budget is $2,000,000.

Water Pipe Testing Services - 22-206-004: Professional services contract for lab and analysis on water pipes. This professional services contract provides metallurgical testing of pipes. The information provided by the testing is to be used in conjunction with water main breaks to forecast future CIP work. The services commenced in November 2022 and will be completed by November 2025. The total three-year budget is $136,007.

Survey Services for CIP Projects - 22-206-003: Professional services contract for total station surveys used to design CIP project plans. This professional services contract provides survey information utilized to produce design plans. These services augment the Commission staff surveys. The services began in June 2022 and must be completed June 2025. The total three-year budget is $85,000.

Regulator Modifications - 22-206-002: Engineering Services for Design of regulator modifications to reduce frequency and volume of CSO activity. Professional Services to perform Preliminary, Final Design and Construction Supervision for projects which include CSO reduction at various regulators in Boston. Construction is projected to commence in April 2024 and be completed in December 2024. The total three-year budget is $765,000.

Depictions of Sewer Special Structures - Phase II - 22-206-001: Produce animated three-dimensional (3D) interactive renderings for up to 50 sewer regulators and other sewer structures. Planning commenced in January 2023 and will be completed in April 2025. The total three-year budget is $232,500.

CCTV IDDE - 21-309-004: This funding will be used to video inspect sewers and drains to identify illicit connections and structural deficiencies in pipes to determine whether they leak sewage into drains. This was awarded in February 2020 and is projected to be completed in May 2024. The total three-year budget is $120,000.

Engineering Design Services - 21-206-004: Design commenced in November 2022 and is projected to be completed in December 2025. The total three-year budget is

Sewer - Drain Sensor Deployment - 21-206-002: The purpose of this project is to install sensors through the Commission's major sewer and drains and develop an application for real-time monitoring of the systems. The application will have a graphic component showing profiles of pipes and graphical representation of depth of flow. Planning commenced in December 2021 and will be completed in December 2024. The total three-year budget is $150,000 .

Dorchester Interceptor Storage Tank Design: This project entails engineering services for design and preparation construction document suitable for public bidding. The engineering firm will prepared bid documents include plans, specification and cost estimates for construction of a tank and appurtenances for the temporary storage excess wastewater flows that occur in Dorchester Interceptor during extreme

storm events. This is projected to be awarded in February 2027 and be completed in April 2027. The total three-year budget is $500,000.

Inundation Model Update and Maintenance: Planning is projected to commence in August 2024 and be completed in July 2027. The total three-year budget is $570,000.

Tidal Infiltration: This project involves CCTV inspections of sanitary sewer and combined sewer in sections of the City with high groundwater level resulting from tide water levels. This modified SSES project will identify sources of extraneous flow in the wastewater system by closed circuit television inspection of sewers and combined sewer. Defects may include cracked or broken pipe that allow groundwater to enter the sewer system. The defects found will be evaluated and included in a capital improvements design project to rehabilitate or replace the cracked and broken pipe. Planning is projected to commence in September 2024 and be completed in April 2026. The total three-year budget is $1,000,000.

West Roxbury SSES: This project involves engineering services to conduct a sewer system evaluation survey (SSES) in West Roxbury and Hyde Park. The SSES project will identify sources of extraneous flow in the wastewater system and may include flow monitoring, manhole inspections, smoke testing, dyed water testing, and television inspection of sewer pipes to identify defects. Defects may include cracked or broken pipe that allow groundwater to enter the sewer system and drainage structures such as catch basins, yard drains and building roof drains that are connected to the sanitary sewer system. The defects found will be provided to the Commission in a report with recommendation for capital improvements to eliminate the sources of extraneous flows. Planning is projected to commence in November 2023 and be completed in December 2026. The total three-year budget is $4,120,000.

Dorchester Interceptor - Relief Sewer Construction Monitoring: This project involves engineering services in connection with monitoring construction of the Dorchester Interceptor Relief Sewer. Construction is projected to commence in January 2025 and be completed in October 2027. The total three-year budget is $5,000,000.

Inundation Model Update and Maintenance: The purpose of this program is to utilize the updated Commission's Sewer and Drain Models to update the inundation model, add new LIDAR data and coastal sea level and storm surge data and rerun the updated inundation model to determine what areas of the city may experience inundation with the implementation of the City's flood barriers, implementation of the Coastal Stormwater discharge recommendations and stormwater detention recommendations. Planning is projected to commence in August 2024 and be completed in July 2027. The total three-year budget is $570,000.

Sewer Drain Model Update: The purpose of this project is to update and recalibrate the Commission’s Sewer and Drain model. The model has not been updated and calibrated since 2016. Utilizing models that are up to date and are representative of the Commissions infrastructure is critical to long term planning goals and to meet regulatory milestones. Planning commenced in June 2023 and will be completed in June 2026. The total three-year budget is $724,210.

Trilling Way Pump Station: Pump/Equipment Up-Grades; Building/Roof Upgrades; Flood Protection. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $770,000.

City Of Boston Casting Fees: This project involves the payment to the City of Boston's roadway and sidewalk reconstruction contractors for the repair or replacement of the Commission's iron castings

during the paving of the City of Boston streets or pouring of sidewalks by the Boston Public Works Department. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $750,000.

Summer Street Pump Station: Pump/Equipment Up-Grades; Building Upgrades; Flood Protection. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $225,000.

Union Park Pump Station: Pump/Equipment Up-Grades; Building Upgrades; Flood Protection. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $300,000.

PROJECT CASH FLOW

Table 18 on page 68 illustrates the cash flow expenditures for Sewer Special Projects for the period 2024-2026. The total expenditures for the Sewer Special program are $45.5 million, of which $13.3 million is allocated in 2024.

TABLE 18 - SEWER SPECIAL

Capital Improvement Program
2024 - 2026
Sewer Special

Description	Contract	Class	2024	2025	2026	2024-2026
West Roxbury SSES	-	MWRA II	$ 1,820,000	$ 2,000,000	$ 300,000	$ 4,120,000
Tidal Infilitration	-	MWRA II	$ 70,000	$ 780,000	$ 150,000	$ 1,000,000
Dorchester Interceptor - Relief Sewer Construction Monitoring	-	SRF		$ 2,500,000	$ 2,500,000	$ 5,000,000
Inundation Model Update and Maintenance	-	SRF	$ 60,000	$ 150,000	$ 360,000	$ 570,000
Dorchester Interceptor Storage Tank Design	-	SRF		$ 500,000		$ 500,000
Sewer - Drain Sensor Deployment	21-206-002	BONDS	$ 75,000	$ 75,000		$ 150,000
CCTV IDDE	21-309-004	BONDS	$ 120,000			$ 120,000
Depictions of Sewer Special Structures - Phase II	22-206-001	BONDS	$ 200,000	$ 32,500		$ 232,500
Regulator Modifications	22-206-002	MWSCO	$ 765,000			$ 765,000
Survey Services for CIP Projects	22-206-003	BONDS	$ 42,500	$ 42,500		$ 85,000
Water Pipe Testing Services	22-206-004	BONDS	$ 68,003	$ 68,003		$ 136,006
Dorchester Interceptor - Relief Sewer Design	22-206-005	BONDS	$ 1,000,000	$ 1,000,000		$ 2,000,000
Engineering Design, 3 year Services	22-206-008	DEDII				$ -
Replacement of Lead Services on Public and Private Property	22-308-004	SRF	$ 79,200			$ 79,200
Construction Supervision Services - NBMI Rehabilitation Phase II and Phase III	23-103-006	BONDS	$ 896,098	$ 1,091,539	$ 412,363	$ 2,400,000
Charlestown SSES	23-206-001	MWRA II	$ 1,000,000	$ 650,000	$ -	$ 1,650,000
CCTV of Sewers and Storm Drains/CMOM - Future Contracts	24-309-009, 2	RATE	$ 1,800,000	$ 1,000,000	$ 1,000,000	$ 3,800,000
South Boston Sewer Separation - NBMI Phase III	25-309-005	RATE	$ 4,707,600	$ 8,100,000	$ 8,100,000	$ 20,907,600
Trilling Way Pump Station		BONDS	$ 520,000	$ 125,000	$ 125,000	$ 770,000
Union Park Pump Station		BONDS	$ 150,000	$ 75,000	$ 75,000	$ 300,000
Summer Street Pump Station		BONDS	$ 125,000	$ 50,000	$ 50,000	$ 225,000
City Of Boston Casting Fees		RATE	$ 250,000	$ 250,000	$ 250,000	$ 750,000
Sewer Drain Model Update		SRF	$ 289,685	$ 289,685	$ 144,840	$ 724,210
			2024	**2025**	**2026**	**Total 2024 - 2026**
Sewer Special			$ 13,273,086	$ 18,779,228	$ 13,467,203	$ 45,519,516
BWSC Bonds			$ 3,196,601	$ 2,559,543	$ 662,363	6,418,506
MWRA II			$ 2,890,000	$ 3,430,000	$ 450,000	6,770,000
Rate Revenue			$ 6,757,600	$ 9,350,000	$ 9,350,000	25,457,600
SRF			$ 428,885	$ 3,439,685	$ 3,004,840	6,873,410

DEDICATED INFILTRATION INFLOW 4:1 PROJECTS

Infiltration and inflow (I/I) are extraneous quantities of water, which enter the sanitary sewer system and reduce the capacity of the system to transport sanitary sewage to a treatment plant. Infiltration is groundwater that leaks into the sanitary sewerage system through pipe joints and defects. Inflow refers to storm water that enters sewers through catch basins, sump pumps, downspouts, basement drains and defected manholes. Saltwater inflow can also enter the Sewer System through defective CSO tide gates that are subject to tidal inflow.

In 2004, the Massachusetts Department of Environmental Protection ("DEP"), in conjunction with the MWRA and its member communities implemented a program to help remove stormwater infiltration and inflow: I/I from the sewer system. Private developments may add substantial flows to the sewer collection system, requiring additional MWRA treatment.

Subsequently, at the July 28, 2005, Commission meeting, the Commission approved the establishment of a Dedicated Infiltration/Inflow ("DEDII") account into which developers assessed a 4:1 I/I reduction requirement by the DEP would contribute funds to fulfill their requirements. These funds will be used by the Commission to fund I/I identification and reduction projects.

To date, the Commission has implemented thirteen contracts, which are funded by the 4:1 I/I Infiltration Inflow Reduction Mitigation Account. All costs are funded by the ("DEDII") account and are 100% reimbursable; therefore, are not included in the 2024-2026 cashflow.

In 2004, the Massachusetts Department of Environmental Protection (DEP), in conjunction with the MWRA and its member communities, implemented a program to help remove stormwater infiltration and inflow (I/I) from the sewer system. Large projects that are constructed can contribute substantial additional flows to the sewer collection system and subsequently require additional MWRA treatment. In the 2004 program, the Massachusetts DEP recommended to the Massachusetts Environmental Policy Act Office, through the Executive Office of Energy and Environmental Affairs, that new developments be required to remove I/I from the sanitary sewer system, as part of the requirements by the Secretary of Energy and Environmental Affairs. A ratio of 4:1 is used for I/I removed to new wastewater added. For example, if a proposed project's calculated new daily wastewater flow is 100,000 gallons per day (gpd), the developer must remove 400,000 gpd of I/I from the sewer system.

The Commission conducts investigations to identify sources of I/I to the Commission's system. These projects identify both public and private sector sources of I/I. Commission staff initially planned on developing a database with locations of I/I sources which would be provided to a developer. The developer would correct sources from that list to fulfill their I/I removal requirement. However, Commission staff believed that this process would be unwieldy and unmanageable. Subsequently, at the July 28, 2005 Commission meeting, the Commission approved the establishment of a dedicated account into which developers assessed a 4:1 Infiltration/Inflow reduction requirement by the DEP could pay money to fulfill their requirements. The funds would then be used by the Commission to fund I/I identification and reduction projects.

In April 2014, the DEP promulgated new regulations. The Commission has a National Pollutant Discharge Elimination System (NPDES) Permit for its combined sewer overflows and is subject to these new regulations [314 CMR 12.00, section 12.04(2)(d)]. This section requires all new sewer connections with design flows exceeding 15,000 gpd to mitigate the impacts of the development by removing four gallons of I/I for each new gallon of wastewater flow. In this regard, any new connection or expansion of an

existing connection that exceeds 15,000 gallons per day of wastewater shall assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Projects constructed in multiple phases may contribute 4:1 reduction 90 days before each phase comes on-line. Phased construction may include flows under 15,000 gpd. Currently, a minimum ratio of 4:1 is used for I/I removal to new wastewater flow added.

Process of 4:1 Infiltration Inflow Payments

During private project design, Engineering Customer Service receives and reviews the Site Plan for conformance with the Commission's Engineering Design and Construction Standards. Engineering Customer Service will confirm if the project has been assessed a 4:1 compliance requirement by the MEPA.

Engineering Customer Service will notify the Planning Department of the most current estimated wastewater flow that has been submitted by the project developer. The developer shall coordinate with the Commission how to comply with the proposed assessment, either removing sources of I/I or making a requisite monetary contribution. The removal or contribution must be completed at least ninety days prior to the issuance of the Occupancy Permit by the Boston Inspectional Services Department. If the developer chooses to contribute monetarily to the Commission's I/I reduction program, the check is payable to the Commission. The check is submitted to the Finance Department for deposit into the Commission's dedicated I/I Reduction Account.

A. Commission Contributions Generated to Date

Most projects fulfilled their contribution requirement by monetary means. Overall, the Commission has collected $57,326,606.12, through April 2022. From January 2021 to April 2022, the Commission collected $8,513,276.05.

B. Allocations, Expenditures and Money Remaining in Bank from Dedicated 4:1 I/I Reduction Mitigation Account

The allocations, expenditures to date and the money remaining for each contract are as follows:

Fifteen contracts to date are funded by the dedicated account:

1. Roxbury Separation Design, Contract 10-206-005,
2. East Boston Separation, Contract 10-309-004,
3. Dorchester Brook Regulator Relocation, Contract 09-309-008,
4. Upper Roxbury Separation Design, Contract 14-206-002,
5. Inflow and Infiltration Analysis of Wastewater Collection System, Contract 15-206-001,
6. Dorchester Avenue Area Separation Planning & Design, Contract 16-206-003,
7. SSES Dorchester, Contract 17-206-004,
8. SSES Roslindale, Contract 18-206-004,
9. SSES Allston/Brighton, Contract 19-206-009,
10. SSES Mattapan, Contract 20-206-008,
11. South Boston Separation Construction Services, Contract 20-206-002,
12. South Boston Separation 1, Contract 20-309-012,
13. SSES Jamaica Plain, Contract 21-206-001,
14. Professional Engineering Services, Contract 21-206-003,
15. Professional Engineering Services, Contract 22-206-008.

The allocations, expenditures to date and the money remaining for each contract are as follows:

Contract No.	Allocations	Expenditures	Funds Remaining
10-206-005	$ 1,773,000.00	$1,752,541.96	$ 20,458.04
10-309-004	$ 498,494.59	$ 498,494.59	$ 0.00
09-309-008	$ 2,548,118.17	$2,548,118.17	$ 0.00
14-206-002	$ 1,212,378.25	$1,102,168.33	$ 110,209.92
15-206-001	$ 1,998,970.00	$1,718,424.95	$ 280,545.05
16-206-003	$ 5,240,000.00	$4,791,107.99	$ 448,892.01
17-206-004	$ 994,470.00	$ 906,729.31	$ 87,740.69
18-206-004	$ 1,126,793.00	$1,126,004.02	$ 788.98
19-206-009	$ 1,415,720.00	$1,247,316.72	$ 168,403.28
20-206-008	$ 1,298,700.00	$1,000,812.89	$ 297,887.11
20-206-002	$ 3,255,209.00	$ 118,286.78	$3,136,922.22
20-309-012	$ 5,405,372.65	$1,612,300.03	$3,793,072.62
21-206-001	$ 747,793.00	$ 68,499.17	$ 679,293.83
Contracts Subtotal	$27,515,018.66	$18,490,804.91	$9,024,213.75

Unallocated Subtotal	$24,395,395.22		
Collected Total	$51,910,413.88		

C. Projected Expenditures from Dedicated 4:1 I/I Reduction Mitigation Account

- The following proposed contracts are projected to draw from the $24,395,395.22 unallocated portion of the dedicated account:
- East Boston Separation 3 (Contract No. 19-309-002), approximately $4,505,500,
- East Boston Separation Design (Contract No. 21-206-003), approximately $8,500,000,
- SSES Charlestown (Contract No. TBD), approximately $1,500,000,
- East Boston Separation Phase 4 (Contract Nos. 21-206-003), approximately $30,000,000.

E. Deposits Versus Expenditures by Area

The deposits to the dedicated account and the expenditures by area are as follows:

Area	Deposits	Expenditures
Allston-Brighton	$ 4,830,849.74	$ 1,521,843.65
Boston Proper	$19,864,716.22	$ 355,891.06
Charlestown	$ 1,001,836.60	$ 49,726.44
Dorchester	$17,770,229.82	$13,080,103.44
East Boston	$ 2,101,375.60	$ 1,261,829.07
Roxbury/South End	$ 7,457,950.11	$ 3,643,208.11
West Roxbury	$ 4,138,400.59	$ 3,074,553.24

Contracts

Engineering Design, 3 year Services -22-206-009: Engineering Services for Design citywide on as needed basis. Design Services to perform Preliminary and Final design for sewer separation, CSO reduction, SSO improvements and replace aging water mains. The total three-year budget is $2,500,000.

Engineering Design, 3 year Services - 22-206-008: Engineering Services for Design citywide on as needed basis. Design Services to perform Preliminary and Final design for sewer separation, CSO reduction, SSO improvements and replace aging water mains. The total three-year budget is $2,500,000.

East Boston Sewer Separation - Phase 4 - 21-206-003: Engineering Services for Design of sewer separation in a 230 acre area of East Boston. Design Services to perform Preliminary and Final design for sewer separation in East Boston. Project will include CSO reduction, SSO improvements and replace aging water mains. The total three-year budget is $2,900,000.

South Boston Sewer Separation Contract - I - 20-309-012: The total three-year budget is $312,863.

South Boston Sewer Separation - Construction Administration for Multiple Construction Contracts -20-206-002: The total three-year budget is $1,969,875.

PROJECT CASH FLOW

Table 18 on page 73 illustrates the cash flow expenditures for DEDII Projects for the period 2024-2026. The total expenditures for the DEDII program are $8.1 million, of which $3.4 million is allocated in 2024.

Table 18 - DEDII

Capital Improvement Program
2024 - 2026
DEDII

Description	Contract	2024	2025	2026	2024-2026
Engineering Design, 3 year Services	22-206-009	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Engineering Design, 3 year Services	22-206-009	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Engineering Design, 3 year Services	22-206-008	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Engineering Design, 3 year Services	22-206-008	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Engineering Design, 3 year Services	22-206-008				
East Boston Sewer Separation - Phase 4	21-206-003	$ 765,000	$ 765,000	$ 765,000	$ 2,295,000
South Boston Sewer Separation Contract - I	20-309-012				
South Boston Sewer Separation Contract - I	20-309-012	$ 132,967			$ 132,967
South Boston Sewer Separation - Construction Administration for Multiple Construction Contracts	20-206-002	$ 457,968	$ 457,968	$ 457,968	$ 1,373,904

	2024	2025	2026	Total 2024 - 2026
DEDICATED INFILTRATION INFLOW	$ 3,395,935	$ 3,262,968	$ 1,422,968	$8,081,871
DEDII	3,395,935	3,262,968	1,422,968	8,081,871

This page has been left blank intentionally.

SUPPORT PROJECTS

Various Support Projects are included in the 2024-2026 CIP, which the Commission firmly believes will improve the overall efficiency of Commission's functions and enhance its ability to collect revenues and track information. Funds are also allocated for software licenses and upgrades, hardware and peripheral equipment, metering, and vehicles.

Primary Objectives of the 2024-2026 Support Category are as follows:

- Upgrade of Automatic Meter Reading System Data Base
- Replace HVAC System of Commission Headquarters
- Rooftop Upgrade Replacement
- Replacement of Commission Vehicles

Support Projects are divided into three sections. These sections are:

- Metering
- Information Technology
- Administrative Equipment

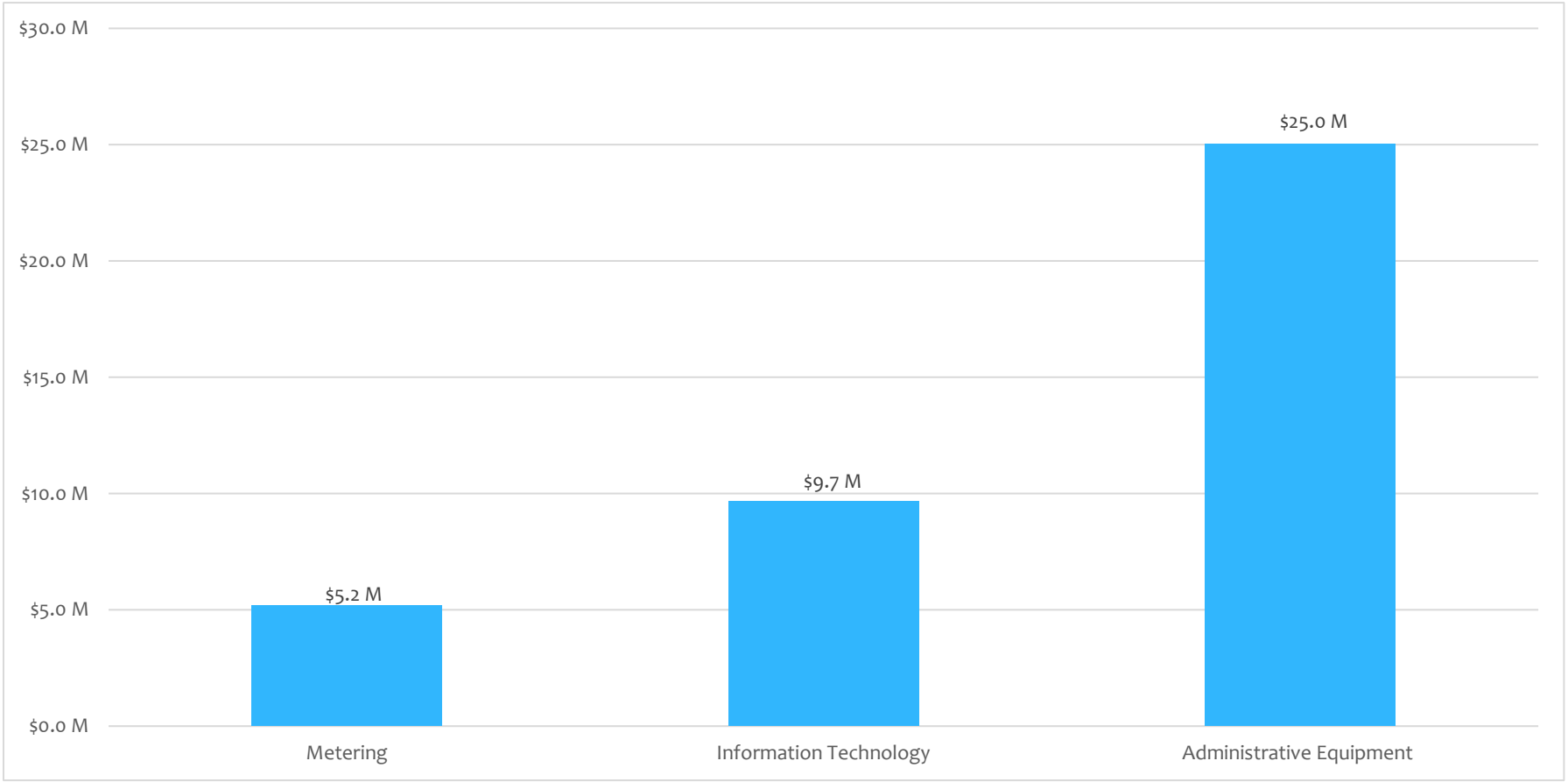
Table 19 on page 76 illustrates the Support Projects in the 2024-2026 Capital Improvement Program total $39.9 million, of which $16.6 million is allocated for 2024. Graph 13 on page 78 illustrates the Total Support expenditures for 2024-2026. Graph 14 on page 79 illustrates Support Distributions Spending by category for 2024.

Table 19 - Support Category

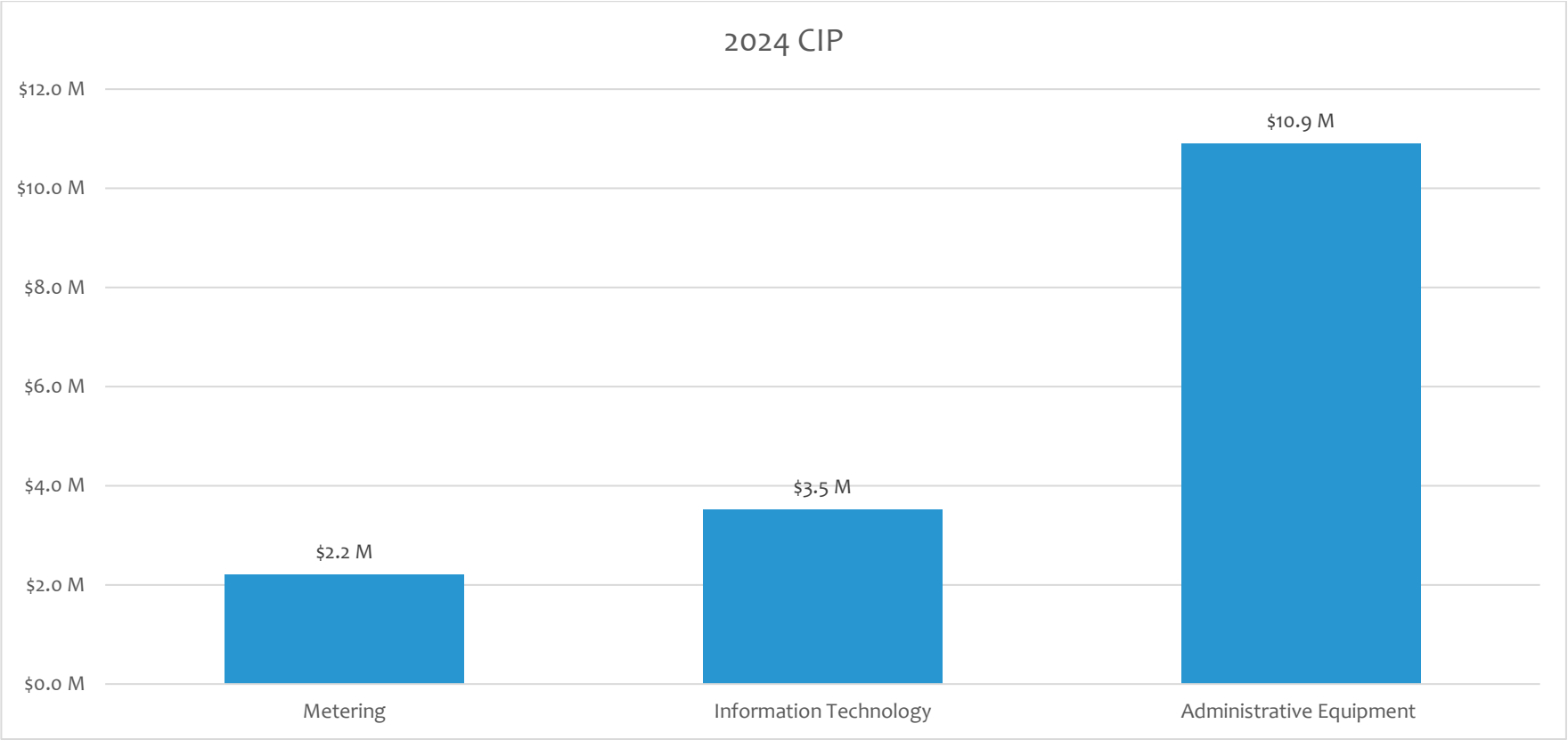
Capital Improvement Program
2024 - 2026
Support Total

	2024	2025	2026	Total 2024 - 2026
Metering	$ 2,200,000	$ 1,800,000	$ 1,200,000	$ 5,200,000
BWSC Bonds	2,200,000	1,800,000	1,200,000	5,200,000
Information Technology	$ 3,520,000	$ 3,445,000	$ 2,695,000	$ 9,660,000
BWSC Bonds	3,520,000	3,445,000	2,695,000	9,660,000
Administrative Equipment	$ 10,905,000	$ 12,050,000	$ 2,075,000	$ 25,030,000
BWSC Bonds	10,905,000	12,050,000	2,075,000	25,030,000
Total	**$ 16,625,000**	**$ 17,295,000**	**$ 5,970,000**	**$ 39,890,000**
BWSC Bonds	16,625,000	17,295,000	5,970,000	39,890,000
Total	**$ 16,625,000**	**$ 17,295,000**	**$ 5,970,000**	**$ 39,890,000**

GRAPH 13 -2024-2026 TOTAL SUPPORT EXPENDITURES
$39.9 MILLION



GRAPH 14 -2024 SUPPORT DISTRIBUTION SPENDING
$16.6 MILLION



METERING

DESCRIPTION AND JUSTIFICATION

The Meter Services Department maintains the efficient operation of approximately 91,000 water meters and associated automatic meter reading devices in the system thus insuring accurate registration of consumption. Metering programs include meter downsizing, which involves the replacement of large meters with smaller meters, where hydraulically feasible. On an annual basis, the Meter Services Department repairs, replaces, tests and installs water meters and automatic reading devices and maintains all field components of the Commission's Automatic Meter Reading system. All meters that are removed are tested on a fully equipped test bench, which was purchased in 2009. Meters 3" and larger are field tested, based on size, at intervals of: every year (6" to 10", every other year (4") and every three years (3"), in accordance with American Water Works Association standards. In addition, usage is evaluated utilizing the AMR system and recommendations are made to downsize identified meters to more accurately account for low flow.

PROJECTS

MARS Test Bench Software Upgrade: The software on the Mars Test Benches , both large and small, was installed in 2008 and is no longer being supported. The Commission has to upgrade the software to the most up to date version. Construction is projected to commence in May 2024 and be completed in October 2024. The three-year budget is $400,000.

MTU and DCU Maintenance/Repair/Replacements and Upgrades: Having completed the upgrade of its AMR infrastructure in 2018, efforts will focus on quickly addressing any system issues with the intent of preserving the elimination of estimated bills which the system has achieved. In conjunction with Aclara, the Commission will update the current star programmer which will no longer be supported after May 1, 2024, to mobile wireless programmer. At the end of 2024 and into 2025 the commission will explore the feasibility of adding another analytics module to AcalarOne that automatically adjusts bad reads and estimates read based on historical trends. In addition, the Commission will explore a pilot for a different automated meter reading system. This is projected to be awarded January 2024 and be completed in April 2024. The three-year budget is $2,400,000.

Large Meter Work (Water): The Commission closely follows AWWA recommendations and tests all large meters in accordance with AWWA parameters. In the course of its large meters work, the Commission prioritizes the repair/replacement of any malfunctioning parts and/or replaces large meters, as necessary. Wherever feasible, the Commission downsizes large meters to improve accuracy of registration. This is projected to be awarded June 2024 and be completed in December 2024. The three- year budget for this project is $1,200,000.

Residential Metering (Water): The residential metering program is an ongoing project to replace approximately 4,000 residential meters sizes 5/8" through 2" annually**.** This is projected to be awarded June 2024 and be completed in December 2024. The three- year budget for this project is $1,200,000.

Table 20 on page 80 illustrates cash flow for Metering projects for 2024-2026 CIP totals $5.2 million, of which $2.2 million is allocated for 2024.

PROJECT CASH FLOW

Table 20 - Metering Category

Capital Improvement Program
2024 - 2026
Metering

Description	Class	2024	2025	2026	2024-2026
MARS Test Bench sofware upgrade	BONDS	$ 400,000			$ 400,000
Large Meters	BONDS	$ 400,000	$ 400,000	$ 400,000	$1,200,000
Residential Metering	BONDS	$ 400,000	$ 400,000	$ 400,000	$1,200,000
Meter Transmission Units / AMR SYSTEM	BONDS	$1,000,000	$1,000,000	$ 400,000	$2,400,000

	2024	2025	2026	Total 2024 - 2026
Metering	$2,200,000	$1,800,000	$1,200,000	$5,200,000
BWSC Bonds	2,200,000	1,800,000	1,200,000	5,200,000

INFORMATION TECHNOLOGY

Effective use of the right technologies enables BWSC to provide more efficient and high-quality water and sewer services to the City of Boston. Strategic planning, careful selection of technological tools, and effective use of such tools has enabled BWSC to continue to improve the level of service associated with emergency responses, preventative maintenance, infrastructure improvements, and most importantly, quality customer service. Providing staff with appropriate training and utilizing the right mix of hardware and software is something BWSC continues to assess and act upon as new technologies continue to evolve.

A number of mission critical software applications are utilized to support BWSC's daily operations and provide for emergency response services 24 hours a day, 7 days a week. BWSC is actively upgrading and replacing various systems. The following are projects that have been completed to date and projects projected to be completed during the next several years.

- Implement new Project Management Information System
- Move Customer Information System to the Cloud
- Implement new Geographic Information System Viewing Application
- Upgrade Virtualization Hardware

Cybersecurity: BWSC adheres to the NIST (National Institute of Standards and Technology) Cybersecurity Framework (the "NIST Framework"). As the Cybersecurity landscape evolves so does the NIST Framework. The only way to accelerate detection and response to sophisticated threats is to understand the behavior of all individual components of an attack across your organization. BWSC has selected security products from different vendors which integrate to offer an overlapping layered approach to security with multiple levels of protection. In the event of a breach BWSC has multiple levels of backups in place to mitigate data loss. Most of the deployed security products are now cloud based and rely on analysis of datasets to identify threats based on patterns. These products also include remote monitoring and response. BWSC has deployed security products to cover each functional level of the NIST Framework: Identify, Protect, Detect, Respond and Recover. BWSC has recently completed a cybersecurity assessment, which is compliant with the AWIA Cybersecurity and Resilience assessment requirement.

PROJECTS

Server / Network Hardware & Peripheral Equipment: New Server/Network Hardware is used to upgrade and add to the Commission's Computing Infrastructure, which provides sufficient capacity and performance to support computing activities including: billing, HRIS, payroll, financials, work order system and GIS. The total three-year budget for this project is $1,450,000. Hardware and upgrades consist of the following:

- Backup disk/tape
- Communications/Networking
- Server Upgrades
- Disaster Recovery Hardware
- Replace/Upgrade PC's
- Tablets/Ipads/Phones
- Laptops
- Peripherals (cables, adapters, cases etc.)

Server/Network Software Licenses and Upgrades: Funding is included for software upgrades and additions to the Commission's Computer Infrastructure. Software and related upgrades to support Commission computing activities include: Billing, HRIS, Payroll, Financials, Work Order system, GIS, Document Management and Construction Management System. The total three-year budget for this project is $ $8,210,000. Software and upgrades consist of the following:

- Workorder Mgt. System (Cityworks)
- CIS
- Database Software
- Application Development Tools
- Construction Management Software
- Website
- GIS Software/Upgrade
- Management Dashboard
- Information Security
- Disaster Recovery Software & Services
- AutoCAD & Design Software/upgrades
- Peoplesoft Upgrade

PROJECT CASH FLOW

Table 21 on page 83 illustrates cash flow expenditures for IT projects for 2024-2026. Total three-year expenditure is $25.0 million, of which $10.9 million is allocated for 2024.

Table 21 - Information Technology Category

Capital Improvement Program
2024 - 2026
Information Technology

Description	Class	2024	2025	2026	2024-2026
Hardware	BONDS	$ 550,000	$ 400,000	$ 500,000	$ 1,450,000
Software	BONDS	$2,970,000	$3,045,000	$2,195,000	$ 8,210,000

	2024	2025	2026	Total 2024 - 2026
Information Technology	$3,520,000	$3,445,000	$2,695,000	$ 9,660,000
BWSC Bonds	3,520,000	3,445,000	2,695,000	9,660,000

ADMINISTRATIVE EQUIPMENT

DESCRIPTION AND JUSTIFICATION

The projects contained in the administrative equipment category provide funding for improvements to administrative facilities and equipment. The Fleet department manages and coordinates all activities required for the efficient operation and maintenance of the Commission's fleet of vehicles including heavy equipment. To minimize fleet total cost of ownership (operating and capital cost) and ensure the ability to provide required customer services using reliable transportation and equipment, vehicles should be replaced at regular intervals, derived from optimal replacement cycle analyses. Vehicle replacement cycles provide the basis for long-term replacement plans for year-to-year replacement earmarking and budgeting. A recent study of the Commission's fleet by a professional management consulting firm has determined that optimum replacement cycles for all classes of vehicles range from 7 to 12 years with a weighted average replacement cycle of 8.8 years for all vehicles.

PROJECTS

Owner's Project Management (OPM) 20-201-005A: For the funding of Owner's Project Management (OPM) professional services, Contract No. 20-201-005A, for public building projects exceeding $1,500,000.00 and complex smaller projects. Owner's Project Management (OPM) is required for public building projects exceeding a contract value of $1,500,000 such as the Roof Replacement and HVAC project. It can also be utilized for smaller projects complex in nature. Planning is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $850,000.

House Doctor Services - 19-207-002: For the funding of House Doctor Services under Contract No. 19-207-002 in 2024 in addition to 2025 and 2026 contract. House Doctors are architects or engineers which are engaged by public entities, such as the Commission, to assist in the evaluation design and improvements to public facilities. Planning is projected to commence in January 2024 and be completed in December 2026. The Commission will utilize these professional services for ongoing and future projects. The total three-year budget is $1,000,000.

First Floor Garage Repairs For the funding of repairs to defective areas of first floor garage. This project will repair compromised areas of the 980 Harrison Avenue first floor garage, protecting Commission vehicles and reducing injury risk to employees. Construction is projected to commence in September 2024 and be completed in November 2024. The total three-year budget is $180,000.

Purchase of Office Furniture For the funding of replacement office furniture and installation of modular office space. Planning is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $300,000.

HVAC & Roof Replacement The replacement of 980 Harrison Avenue roof and HVAC rooftop equipment. Construction is projected to commence in March 2024 and be completed in October 2024. The total three-year budget is $18,000,000.

Stairwell Tread Replacement: For the funding of defective stairwell tread flooring at 980 Harrison Avenue. Construction is projected to commence in October 2024 and be completed in December 2024. The total three-year budget is $200,000.

Fleet Vehicle Maintenance and Replacement: Replacement of Commission Vehicles; Vehicle Repairs; Equipment Purchases; Bulk Fluid Transfer Dispensing System Upgrade. The total three-year budget is $4,500,000.

PROJECT CASH FLOW

The 2024-2026 cash flow is presented in Table 22 on page 86. Total three-year expenditure for administrative equipment is $9.7 million, of which $3.5 million is allocated for 2024.

Table 22 - Administrative Equipment Category

Capital Improvement Program
2024 - 2026
Adminstrative Equipment

Description	Contract	Class	2024	2025	2026	2024-2026
Owner's Project Management (OPM)	20-201-005A	BONDS	$ 250,000	$ 300,000	$ 300,000	$ 850,000
House Doctor Services	19-207-002	BONDS	$ 700,000	$ 150,000	$ 150,000	$ 1,000,000
Fleet Vehicle Maintenance and Replacement		BONDS	$ 1,500,000	$ 1,500,000	$1,500,000	$ 4,500,000
First Floor Garage Repairs		BONDS	$ 180,000			$ 180,000
Purchase of Office Furniture		BONDS	$ 75,000	$ 100,000	$ 125,000	$ 300,000
HVAC & Roof Replacement		BONDS	$ 8,000,000	$10,000,000		$18,000,000
Stairwell Tread Replacement		BONDS	$ 200,000			$ 200,000

	2024	2025	2026	Total 2024 - 2026
Administrative Equipment	$10,905,000	$ 12,050,000	$2,075,000	$25,030,000
BWSC Bonds	10,905,000	12,050,000	2,075,000	25,030,000

This page left blank intentionally.

STORMWATER/GREEN INFRASTRUCTURE/LOW IMPACT DEVELOPMENT PROJECTS

DESCRIPTION AND JUSTIFICATION

Funding is provided in the 2024-2026 CIP for the implementation of the Commission's Stormwater Program. This program consists of studies of existing and new drainage infrastructure, best management practices and implementation of programs designed to improve water quality, the environment and manage stormwater resources.

The primary purpose of the Stormwater Program is to participate in the Boston Harbor pollution abatement projects, implement green infrastructure/low impact development to improve the water quality of discharges to the local receiving waters and promote public awareness of stormwater quality issues. The goal is also to study existing conditions and make recommendations for placement of new best management practices designed to promote improved water quality, ensure compliance with state and federal regulations, minimize flooding and manage stormwater throughout the City of Boston.

The Green Infrastructure/Low Impact Development ("GI/LID") category provides funding for ("GI/LID") projects as needed in collaboration with public improvements in the City of Boston.

The Commission was required by its Consent Decree with the U.S. EPA to develop a stormwater model to identify pollutant loadings (including phosphorus) from land areas that contribute stormwater runoff to the Commission's storm drain system. The Commission is under an obligation to meet the Phosphorus Total Maximum Daily Load ("TMDL") for the Lower Charles River Basin by reducing elevated levels of phosphorus discharged from its stormwater outfalls. In addition, the Commission prepared a Best Management Practice ("BMP") Recommendations Report in compliance with the terms of the Consent Decree, which was approved by EPA October 23, 2018. The BMP Recommendations Report provides a scheduled plan for implementation of structural BMPs, Green Infrastructure and Low Impact Development ("LID") to reduce pollutant loadings discharged to the twenty-seven sub-watersheds of the City of Boston.

The BMP Recommendations Report provides a plan for the Commission's whole stormwater collection system. According to the interim findings, the cost to implement this plan could be substantial. The purpose of this program is to make available funding to implement GI/LID projects (in collaboration with other city departments and/or private landowners) in the City of Boston as they become available. This program will further the Commission's goal of compliance with the Consent Decree.

The Commission's separation projects involve the replacement of combined sanitary and storm sewers with two separate systems, one for sanitary sewage and one for stormwater. The purpose of the separation program is to reduce the frequency and volume of wet weather CSO discharges and ensure the continued compliance with state and federal permits. Combined systems will be separated where it is appropriate and cost effective to do so. Sewer separation work most often involves converting the combined sewer to a separate sanitary sewer and constructing a new storm drain.

Since 1996, the Commission has spent approximately $300 million on sewer separation projects. Projects were designed with the intent of eliminating combined sewer overflow ("CSO") discharge, improving water quality in Boston Harbor and its tributaries and diverting stormwater from environmentally sensitive areas. The Commission's ability to remove extraneous flow from its sewers will result in a reduction in its metered wastewater flow and wholesale sewer charges. Thus far, these projects have reduced annual discharge of CSO by 124.3 million gallons.

In addition to addressing CSO concerns, the Commission is identifying sanitary sewage that is being discharge into the storm drain system. Between 1986 and December 31, 2022, the Commission removed more than 1,932 illegal connections, eliminating the discharge of an estimated 872,872 gallons of wastewater per day to the storm drainage system and receiving waters. In 2022 alone, the Commission eliminated 42 illicit sanitary sewer connections to storm drains, removing an estimated 4,142 gallons per day of sewage from the drainage system and receiving waters.

The Commission regularly inspects, cleans and maintains its catch basins citywide. Cleaning restores the effective capacity of catch basins, thereby allowing for greater solids removal from stormwater flows. Hoods and traps are replaced on catch basins as needed. The Commission's site plan review process has been upgraded and enhanced in recent years. The Commission now exercises greater control over non-stormwater discharges and ensures that construction sites and new development projects conform to its requirements, as well as state and federal requirements for stormwater management.

Table 23 on page 89 illustrates Stormwater by category. Three-year total expenditures are $60.7 million, of which $20.4 million is anticipated to be spent in 2024.

Table 23 - Stormwater

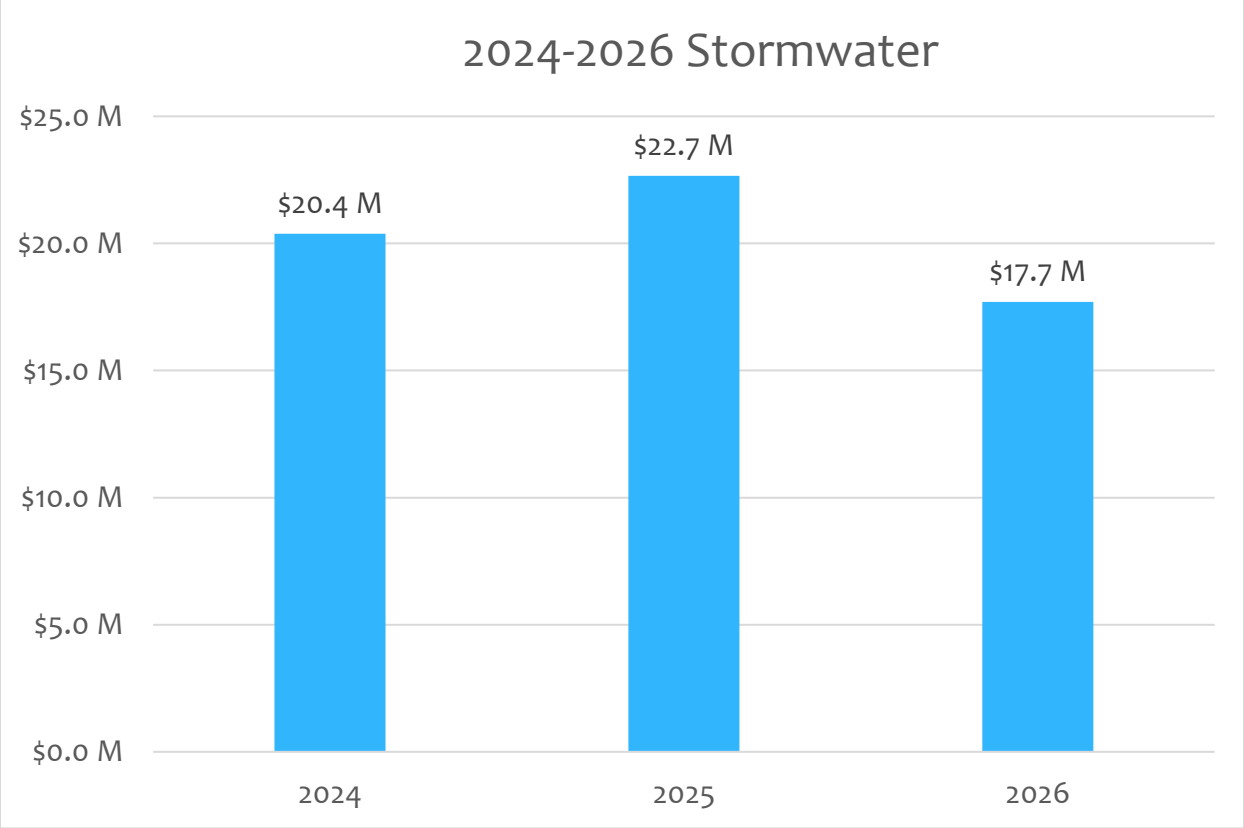
Capital Improvement Program
2024 - 2026

Stormwater Total

	2024	2025	2026	Total 2024 - 2026
Stormwater	$ 20,380,053	$ 22,663,623	$ 17,703,222	$ 60,746,898
BWSC Bonds	$ 8,512,759	$ 7,711,066	$ 3,233,263	$ 19,457,088
MWRA II	$ 1,427,479	$ 1,690,673	$ 3,516,667	$ 6,634,819
Rate Revenue	$ 6,972,745	$ 8,709,753	$ 8,755,255	$ 24,437,753
SRF	$ 3,467,071	$ 4,552,130	$ 2,198,038	$ 10,217,238
Total	**$ 20,380,053**	**$ 22,663,623**	**$ 17,703,222**	**$ 60,746,898**
BONDS	$ 8,512,759	$ 7,711,066	$ 3,233,263	$ 19,457,088
MWRA II	$ 1,427,479	$ 1,690,673	$ 3,516,667	$ 6,634,819
RATE	$ 6,972,745	$ 8,709,753	$ 8,755,255	$ 24,437,753
SRF	$ 3,467,071	$ 4,552,130	$ 2,198,038	$ 10,217,238

Graph 15 - 2024-2026 Total Stormwater Expenditures

$60.7 Million



CLIMATE CHANGE PREPARATIONS

As the frequency and intensity of wet weather events continue to increase due to climate change, the potential for flooding during large storm events will also increase. Sea level rise will further exacerbate flooding issues as it will impede the ability of storm drains to discharge to the ocean during higher tides and storm surge. BWSC is coordinating and sharing data with various City of Boston departments, state agencies such as Mass DOT, MWRA and the MBTA, local communities such as Cambridge and Somerville, and organizations such as Boston Harbor Now and the Mystic River Collaborative to develop resilient solutions to prepare for impacts caused by climate change. BWSC is also collaborating with institutions such as the Woods Hole Research Center and UMASS Boston to incorporate their work on rising sea levels and coastal impacts into plans and projections for mitigating the impacts of climate change.

To address the issues associated with climate change BWSC has undertaken several projects:

Stormwater Detention Facilities: BWSC has completed a study to identify sites where stormwater runoff can be temporarily stored during large storm events. Storing stormwater at these locations will free up conveyance capacity in the storm drainage system and reduce the potential for flooding. The detained stormwater will be slowly released back to the storm drain system after storms have ended and capacity in the storm drain system is back to normal. The study included the preliminary design of the detention facilities that could be installed at these locations.

Coastal Stormwater Impact Analysis: Due to the expected higher sea levels and tides it is predicted that storm drain outfalls located along Boston's coast will be impeded in their ability to discharge. The Coastal Stormwater Discharge Analysis will identify where BWSC's coastal outfalls will be impacted, develop plans and strategies, evaluate the feasibility and costs of alternatives, and prepare conceptual plans for structural solutions to mitigate the impacts. Plans and strategies developed pursuant to the BWSC's Coastal Analysis will be consistent with the Mayor's Resilient Harbor Vision, which builds on the City's Climate Ready Boston analysis.

Stormwater Retention-Arnold Arboretum / Boston Nature Center: BWSC prepared conceptual designs for a large constructed wetland that could be installed at the Arnold Arboretum and a stormwater detention design for an area near the Boston Nature Center. The wetland will retain and treat stormwater, thereby maintaining the conveyance capacity of BWSC's storm drain system and reducing the potential for upstream and downstream flooding. An additional benefit of the wetland is that it will be designed to improve stormwater quality by reducing the City's stormwater phosphorus load to the Charles River. The Commission is working with agencies to determine what process could be taken to move these concepts to design.

Fort Point Channel Storage Feasibility: BWSC is evaluating the feasibility of having a flood control gate structure installed at the harbor end of the Fort Point Channel to mitigate the impacts of tidal surge and increased wet weather discharges from outfalls located within the channel. When a large storm event is anticipated the gate would be closed, and waters in the channel pumped out, thus providing storage capacity for the stormwater discharges from outfalls located within the Channel. After storms have passed stormwater detained in the storage basin would be pumped out and the gates reopened to allow for normal discharges and tidal flow. Preliminary analysis indicates that installation of a gate structure will prevent flooding in almost 10 percent of the City of Boston, including significant portions of the critical downtown, South End and seaport districts during a 10 year design event. To handle storms larger than this design storm, pumps within the dam4structure would maintain levels within the channel until the higher tides recede.

Installation and Inspection of Tide Gates on Outfall Pipes: BWSC continues to install new tide gates on coastal storm drain outfall pipes where they will be needed in the future, but don't currently exist. The tide gates will prevent back-water flow resulting from higher tides and storm surge from entering BWSC's storm drain system and causing inundation of inland low-lying areas. New tide gates will be installed in storm drains outfalls located in the City Proper, East Boston, South Boston, Charlestown, and Dorchester.

PROJECTS

East Boston Sewer Separation Phase IV - Contract 3 - 26-309-002: Construction Contract No. 3 is one of five (5) planned contracts to construct new storm drains to separate approximately 230 acres in East Boston to further mitigate CSOs and improve water quality. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community. Construction is projected to commence in August 2025 and be completed in July 2029. The total three-year budget is $100,000.

East Boston Sewer Separation Phase IV - Contract 2 - 25-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community. Construction is projected to commence in August 2025 and be completed in July 2029. The total three-year budget is $100,000.

South Boston Sewer Separation - Contract 5 - 24-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction is projected to commence in February 2026 and be completed in July 2029. The total three-year budget is $100,000.

CCTV of Sewers and Storm Drains/CMOM - Future Contracts - 24-309-009, 24-309-010, 25-309-009, 25-309-010, 26-309-009, 26-309-010: These projects entail the inspection of sewers and drains through the use of closed circuit TV cameras utilizing the SCREAM coding system in order to assess the structural condition of the pipes. Approximately ninety (90) miles annually of various sized pipes will be cleaned and inspected with a goal of completing the entire system over a 10 year period. These contracts complete 60 miles annually. Construction is projected to commence in 2024 and be completed in 2026. The total three-year budget is $2,000,000.

Charlestown Separation - 24-309-006: Sewer Separation in Charlestown Lost Village area to reduce CSO overflow. Construction is projected to commence in April 2025 and be completed in October 2025. The total three-year budget is $1,500,000.

Citywide R&R - 24-309-003: Water, Sewer and Drain Replacement and Rehabilitation Citywide on an as needed basis. The intent of this project will be to rehab and replace water/sewers/drains where SSOs and other issues have occurred in order to mitigate future issues. This will be on an as needed basis due to receiving emergency design requests from the Chief Engineer and OPS during year after CIP is developed. Construction is projected to commence in April 2025 and be completed in November 2027. The total three-year budget is $50,000.

Citywide R&R - 24-309-002 Sewer and Drain Replacement and Rehabilitation Citywide. The total three-year budget is $1,200,000.

Citywide R&R - 24-309-001: Sewer and Drain Replacement and Rehabilitation Citywide. The intent of this project will be to rehab and replace sewers/drains where SSOs and other issues have occurred in order to mitigate future overflows. Construction is projected to commence in August 2024 and be completed in August 2028. The total three-year budget is $50,000.

Water Relay Heath Street - 24-308-002: Construction is projected to commence in April 2026 and be completed in November 2029. The total three-year budget is $50,000.

Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow Control Projects - 23-309-013: Implementation of six (6) CSO control improvements to enhance water quality and protect receiving water designated uses. The Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow Control Project is a continuation of the efforts

by Boston Water and Sewer Commission (BWSC) and the Massachusetts Water Resources Authority (MWRA) to mitigate combined sewer overflows (CSOs) to Boston Harbor and surrounding waterbodies. BWSC and MWRA have executed a Memorandum of Understanding (MOU) that requires BWSC to implement the identified CSO control improvements in cooperation with the MWRA. Construction is projected to commence in March 2024 and be completed in November 2024. The total three-year budget is $5,524,998.

South Boston Sewer Separation - Contract 4 - 23-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction Contract No. 4 is one of five (5) planned contracts to construct new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Construction is projected to commence in February 2025 and be completed in July 2028. The total three-year budget is $50,000.

Replacement and Rehabilitation of Drain Pipes in Fenway/Kenmore - 23-309-011: Replacement and rehabilitation of sanitary sewer and drain pipes. The pipes in this contract have been inspected and reviewed and are found to be in poor condition. Associated water work. Pipes in this contract have been found defective and in need of repair or replacement as determined by cleaning and CCTV inspection under various programs including SSO investigations, CMOM contracts, and illegal connections inspection. Construction is projected to commence in April 2025 and be completed in November 2026. The total three-year budget is $750,000.

Sewer and Drain Condition Monitoring Citywide 2 - 23-309-010: This project entails the inspection of sewers and drains through the use of closed circuit TV cameras utilizing the SCREAM coding system in order to assess the structural condition of the pipes. Approximately thirty (30) miles of various sized pipes will be cleaned and inspected. Construction commenced in July 2023 and is projected to be completed in April 2024. The total three-year budget is $130,931.

Sewer and Drain Condition Monitoring Citywide 1 - 23-309-009: This project entails the inspection of sewers and drains through the use of closed circuit TV cameras utilizing the SCREAM coding system in order to assess the structural condition of the pipes. Approximately thirty (30) miles of various sized pipes will be cleaned and inspected. Construction commenced in July 2023 and is projected to be completed in April 2024. The total three-year budget is $159,379.

Citywide R&R: 23-309-003: Sewer and Drain Replacement and Rehabilitation Citywide. Construction is projected to commence in July 2024 and be completed in June 2027. The total three-year budget is $100,000.

South Boston Sewer Separation - Contract 3 - 22-309-012: Construction of new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community and support future development along Dorchester Avenue. Construction Contract No. 3 is one of five (5) planned contracts to construct new storm drains to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Construction is projected to commence in February 2024 and be completed in July 2025. The total three-year budget is $7,927,567.

Upper Roxbury R&R - 22-309-003: Replacement of failing 1800s combined sewers, installation of new storm drains, and replacement of aging water mains that have reached the end of their useful life. The intent of this project will be to rehab and replace sewers/drains where SSOs have occurred in order to mitigate future overflows. Construction is projected to commence in January 2024 and be completed in December 2025. The total three-year budget is $3,030,810.

Replacement of Drains Citywide, R&R - 22-309-002: Citywide R&R of Sewers and Storm Drains. The intent of this project will be to rehab and replace sewers/drains where SSOs have occurred in order to mitigate future overflows. Construction is projected to commence in December 2023 and be completed in December 2025. The total three-year budget is $3,960,761.

Georgetowne Neighborhood Water Main Replacement - 22-308-003: Replacement of water mains and associated sewers and drains in West Roxbury. Replacement of old CI water mains that have reached the end of their useful life citywide. Replacement of CICL or DI mains that have break history. Repair sewer and storm drain mains in the area with major structural damage. Construction is projected to commence in May 2024 and be completed in December 2027. The total three-year budget is $100,000.

Rehabilitation of Storm Drains in the City of Boston - 22-308-001: Belvidere, Bowker, Boylston, Exeter, Harrison Streets. Final and Semi Final Payment in 2024. Construction is projected to commence in August 2023 and be completed in July 2025. The total three-year budget is $238,930.

South Boston Sewer Separation - Phase II - 21-309-012: Water and sewer improvements in South Boston, Construction is projected to commence in August 2023 and be completed in June 2026. The total three-year budget is $6,282,005.

CCTV IDDE - 21-309-004: This was awarded in February 2020 and is projected to be completed in May 2024. $120,000.

East Boston Sewer Separation Phase IV - Contract 1 - 21-309-002: Construction of new storm drains to separate approximately 230 acres in East Boston and is a continuation of sewer separation work that has been implemented in the neighborhood over the last 20 years. The project also includes upgrades of the sanitary sewer and water main systems to continue to provide the highest level service to the community. Construction Contract No. 1 is one of five (5) planned contracts to construct new storm drains to separate approximately 230 acres in East Boston to further mitigate CSOs and improve water quality. The project also includes upgrades of the sanitary sewer and water main systems to continue providing the highest level of service to the community. Construction is projected to commence in August 2024 and be completed in July 2026. The total three-year budget is $2,816,667.

Storm Drain Improvements in Hyde Park - 21-309-001: Sewer and Storm Drain Improvements in Hyde Park based on the findings of the CMOM group which identified sewer and drain defects in this area. The contract also includes associated water relay for pipes within project limits that have reached the end of their lifespan. Construction is projected to commence in April 2024 and be completed in October 2026. The total three-year budget is $213,235.

East Boston Sewer Separation - Phase 4 - 21-206-003: Design commenced in and is projected to be completed in December 2028. The total three-year budget is $2,295,000.

Sewer - Drain Sensor Deployment - 21-206-002: Planning is projected to commence in December 2021 and be completed in December 2024. The total three-year budget is $150,000.

Replacement and Rehabilitation Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury - 20-309-007: Includes sanitary sewer & drain replacement and rehabilitation in Allston/Brighton, Fenway/Kenmore, Jamaica Plain, and Roxbury. Construction commenced in October 2023 and is projected to be completed in September 2024. The total three-year budget is $2,158,333.

Sewer and Drain Rehabilitation (R&R) - 20-309-006: Sewer Replacement/Rehabilitation based on findings of the CMOM group, some Water Main Replacement. Construction is projected to commence in July 2024 and be completed in December 2025. The total three-year budget is $3,105,212.

Sewer and Drain Rehabilitation (I&I) - 20-309-004: Sewer and Storm Drain Improvements City wide. These improvements are based on the findings of the CMOM group which identified sewer and drain defects in this area. Construction commenced in September 2023 and is projected to be completed in October 2024. The total three-year budget is $2,180,801.

Replacement and Rehabilitation of Drain Pipes in Charlestown - 20-309-002: Final and Semifinal Payments in 2025. Construction commenced in June 2023 and is projected to be completed in October 2024. The total three-year budget is $91,516.

Replacement of Drain Pipes in City Proper, Hyde Park, and Jamaica Plain - 20-308-005: Substantial completion in 2023. Final and semifinal payments in 2024. Construction commenced in April 2022 and completed in September 2023. The total three-year budget is $5,658.

Citywide Illicit Connection Investigation Program - 20-206-007: Funds will be used to continue the fifth phase of the Citywide Illicit Connection Investigation Program. In this Program illicit sanitary sewer connections and other sources of sewage contamination to storm drains are identified using manhole inspections and sandbagging, water quality sampling, and dye testing of buildings and pipes. The Program includes wet and dry weather outfall screening to prioritize drainage sub-catchments for investigation. Construction commenced in August 2020 and is projected to be completed in December 2024. The total three-year budget is $945,000.

Coastal Stormwater Impact Analysis - 20-206-004: The purpose of this project to conduct an analysis of areas along the coast in Boston that will be unable to discharge stormwater due to potential higher tides and develop a strategy for addressing the impact. Planning commenced in November 2020 and is projected to be completed in December 2024. The total three-year budget is $200,000.

Coastal Stormwater Impact Analysis - Phase 2: The purpose of this project to complete an analysis of areas along the coast in Boston that will be unable to discharge stormwater due to potential higher tides and develop a strategy for addressing the impact that were not completed as part of Phase 1. The total three-year budget is $1,250,000.

Sampling and Metering for Storm Drain Model Validation - 20-206-003: This project entails collection of flow metering and stormwater quality data to update the Commission's Stormwater Model, evaluate phosphorus reductions and calculate pollutant loadings under current conditions. Planning commenced in May 2020 and is projected to be completed in June 2024. The total three-year budget is $60,000.

Replacement and Rehabilitation of Drain Pipes in Allston/Brighton - 19-309-004: Final and Semi Final payments in 2025. Construction commenced in April 2023 and will be completed in May 2025. The total three-year budget is $601,028.

East Boston Sewer Separation - Phase III - 19-309-002: Installation of New Storm Drains, Sanitary Sewers, and Water Mains in East Boston. Construction to be completed in 2023, pending schedule implications from the East

Boston Sumner Tunnel work stoppage. Closeout payments to be completed in 2024. Construction commenced in August 2021 and will be completed in August 2024. The total three-year budget is $187,529.

Tide Gates, City-Wide - 19-309-001: Tide gate installations and repair at 5 locations along coastal drainage systems to resist tidal inundation of drain conduits. It is anticipated that access and permitted work schedule near the coastal and marine resource areas may delay construction and project cash flow. Construction is projected to commence in March 2024 and be completed in December 2024. The total three-year budget is $4,587,625.

Rehabilitation and Replacement of Drain Pipes in The City of Boston - 19-308-003: Rehabilitation and Replacement of Water Pipes in South Boston, Dorchester, Fenway/Kenmore, South End. Final and Semi Final Payments in 2025. Projecting $195,155.41 underbudget. Construction commenced in October 2022 and will be completed in June 2024. The total three-year budget is $326,819.

Drain Improvements in Charlestown - 19-308-002: This project will replace 8,800 feet of 8- and 12-inch water mains on Bunker Hill Street, Chelsea Street, School Street, Vine Street, and Bartlett Street in Charlestown. This contract is being programmed as a response to a request by the Operations Division for Water Relay on Chelsea Street, in conjunction with break history (School Street), and pipe age/risk scoring on 1880's cast iron mains in Bunker Hill and Vine Streets. Construction is projected to commence in April 2024 and be completed in November 2026. The total three-year budget is $2,061,558.

Replacement and Rehabilitation of Sewer in Fenway/Kenmore - 18-309-001: Replacement of Water Mains on Jersey Street, Peterborough Street, and Public Alley 931. Construction commenced in October 2023. The total three-year budget is $1,338,107.

Rehabilitation of Large Diameter Sewer Mains in City Proper and South Boston 17-309-015: Construction commenced in April 2022 and completed in November 2022. The total three-year budget is $135,476.

Upper Roxbury Area Sewer Separation - Phase III - 17-309-011: Installation of New Storm Drains, Sanitary Sewers and Water Mains in Upper Roxbury in conjunction with Phase III of Upper Roxbury Area Sewer Separation. 2023 accelerated work schedule due to East Boston work stoppage, resulting in RJV manpower availability. 2024 includes remaining work and retainage. Construction commenced in June 2022 and is projected to be completed in April 2024. The total three-year budget is $1,182,178.

Replacement and Rehabilitation of Drain in Central, Dorchester, Hyde Park, South Boston & West Roxbury - 17-309-001: Construction commenced in September 2021 and completed in August 2023. The total three-year budget is $85,751.

Replacement of Drain Pipes in Back Bay, Roxbury, and South End - 15-308-004: Construction commenced in July 2017 and completed in August 2019. The total three-year budget is $2,714.

Inundation Model Update and Maintenance: The purpose of this program is to utilize the updated Commission's Sewer and Drain Models to update the inundation model, add new LIDAR data and coastal sea level and storm surge data and rerun the updated inundation model to determine what areas of the city may experience inundation with the implementation of the City's flood barriers, implementation of the Coastal Stormwater discharge recommendations and stormwater detention recommendations. Planning is projected to commence in August 2024 and be completed in July 2027. The total three-year budget is $1,330,000.

Construction of Stormwater Detention Facilities: Construction of stormwater detention facilities at various locations in the City. The detention facilities will be constructed at locations that have the potential to store sufficient quantities of stormwater to relieve flooding in downstream areas during severe rainfall events. The work may include earthworks, construction of outlet and inlet control structures, and site amenities. Construction is projected to commence in July 2026 and be completed in May 2027. The total three-year budget is $750,000.

Design of Stormwater Detention Facilities Phase I: Engineering services for Design of Stormwater Detention Facilities Phase I. The locations that will be determined base on future needs .The design project will include records research, site investigations, field survey, permitting and preparation of bid documents for the final design of facilities designed to detain stormwater and slowly release it into the storm drain system. Construction cost estimates for the new facilities will be develped as part of the design. Design is projected to commence in August 2024 and be completed in August 2025. The total three-year budget is $1,000,000.

Storeroom-Hydrants: Construction is projected to commence in January 2024 and be completed in December 2026. Purchase of Hydrants and parts. The total three-year budget is $950,000.

Austin Street Pump Station: Pump/Equipment Up-Grades. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $125,000.

Commonwealth Ave Pump Station: Pump/Equipment Up-Grades and Building Upgrades. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $210,000.

Sullivan Square Pump Station: Pump/Equipment Up-Grades. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $90,000.

Union Park Pump Station: Pump/Equipment Up-Grades; Building Upgrades; Flood Protection. Construction is projected to commence in January 2024 and be completed in December 2026. The total three-year budget is $1,100,000.

Owner Correction of Illicit Connections: Funds will be used to reimburse owners who must pay to install ejector pumps or redirect internal building sewers in order to correct illicit connections. This is projected to be awarded in January 2024 and be completed in December 2024. The total three-year budget is $45,000.

Construction of Daisy Field GI: Construction of a subsurface gravel filter and a bioretention area along the parking lot at Daisy Field. The proposed work is to coincide with renovation of the field by the Boston Parks and Rec. Dept. This project is to construct a vegetated subsurface gravel filter and bioretention feature to treat stormwater runoff. Construction of the gravel filter and bioretention feature will improve the stormwater quality entering the Charles and Muddy Rivers. Construction is projected to commence in March 2024 and be completed in December 2025. The total three-year budget is $1,425,000.

Green Infrastructure: The total three-year budget is $1,500,000.

PROJECT CASH FLOW

Table 24 on page 99 illustrates Stormwater by Category. Three-year total expenditures are $60.7 million, of which $20.4 million is anticipated to be spent in 2024.

Talbot Ave/ Harambee Park - De-Nitrification Vault/Chamber. Green Infrastructure Pilot Project

Table 24 – Stormwater/GI/LID PROJECTS

Capital Improvement Program
2024 - 2026

Stormwater Total

			2024	2025	2026	Total 2024 - 2026
Inundation Model Update and Maintenance	-	SRF	$ 140,000	$ 350,000	$ 840,000	$ 1,330,000
Replacement of Drain Pipes in Back Bay, Roxbury, and South End	15-308-004	BONDS	$ 2,714			$ 2,714
Replacement and Rehabilitation of Drain in Central, Dorchester, Hyde Park, South Boston & West Roxbury	17-309-001	BONDS	$ 85,751			$ 85,751
Upper Roxbury Area Sewer Seperation - Phase III	17-309-011	BONDS	$ 1,182,178			$ 1,182,178
Rehabilitation of Large Diameter Sewer Mains in City Proper and South Boston	17-309-015	RATE	$ 135,476			$ 135,476
Replacement and Rehabilitation of Drain Pipes on Jersey Street, Peterborough Street, and Public Alley 931, R&R	18-309-001	BONDS	$ 113,220	$ 325,975	$ 266,467	$ 705,662
Replacement and Rehabilitation of Drain Pipes on Jersey Street, Peterborough Street, and Public Alley 931, R&R	18-309-001	RATE	$ 113,220	$ 285,692	$ 233,533	$ 632,445
Water Improvements in Charlestown	19-308-002	BONDS	$ 228,425	$ 228,425	$ 228,425	$ 685,274
Water Improvements in Charlestown	19-308-002	RATE	$ 458,761	$ 458,761	$ 458,761	$ 1,376,283
Rehabilitation and Replacement of Drain Pipes in The City of Boston	19-308-003	BONDS	$ 326,819			$ 326,819
Tide Gates, City-wide	19-309-001	RATE	$ 4,320,125	$ 267,500		$ 4,587,625
East Boston Sewer Seperation - Phase III	19-309-002	BONDS	$ 187,529			$ 187,529
Replacement and Rehabilitation of Drain Pipes in Allston/Brighton	19-309-004	RATE	$ 601,028			$ 601,028
South Boston Sewer Separation - Construction Administration for Multiple Construction Contracts	20-206-002	DEDII	$ 457,968	$ 457,968	$ 457,968	$ 1,373,904
Sampling and Metering for Storm Drain Model Validation	20-206-003	BONDS	$ 60,000			$ 60,000
Coastal Stormwater Impact Analysis	20-206-004	BONDS	$ 150,000	$ 50,000		$ 200,000
Coastal Stormwater Impact Analysis - Phase 2	20-206-004	RATE	$ -	$ 650,000	$ 600,000	$ 1,250,000
Citywide Illicit Connection Investigation Program	20-206-007	BONDS	$ 720,000	$ 225,000		$ 945,000
Replacement of Drain Pipes in City Proper, Hyde Park, and Jamaica Plain	20-308-005	RATE	$ 5,658			$ 5,658
Replacement and Rehabilitation of Drain Pipes in Charlestown	20-309-002	RATE	$ 91,516			$ 91,516
Sewer and Drain Rehabilitation (I&I)	20-309-004	BONDS	$ 1,635,601			$ 1,635,601
Sewer and Drain Rehabilitation (I&I)	20-309-004	MWRA II	$ 545,200			$ 545,200
Sewer and Drain Rehabilitation (R&R)	20-309-006	RATE	$ -	$ 1,392,581	$ 1,712,631	$ 3,105,212
Replacement and Rehabilitation Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury	20-309-007	BONDS	$ 168,583	$ 198,333		$ 366,917
Replacement and Rehabilitation Drains in Allston/Brighton, Fenway/Kenmore, Jamaica Plain and Roxbury	20-309-007	RATE	$ -	$ 823,083	$ 968,333	$ 1,791,417
South Boston Sewer Separation Contract - I	20-309-012	DEDII	$ 132,967			$ 132,967
Sewer - Drain Sensor Deployment	21-206-002	BONDS	$ 75,000	$ 75,000		$ 150,000
East Boston Sewer Separation - Phase 4	21-206-003	DEDII	$ 765,000	$ 765,000	$ 765,000	$ 2,295,000
Storm Drain Improvements in Hyde Park	21-309-001	RATE			$ 213,235	$ 213,235
East Boston Sewer Separation Phase IV - Contract 1	21-309-002	MWRA II		$ 1,000,000	$ 1,816,667	$ 2,816,667
CCTV IDDE	21-309-004	BONDS	$ 120,000			$ 120,000
South Boston Sewer Separation - Phase II	21-309-012	SRF	$ 2,506,009	$ 2,959,160	$ 816,836	$ 6,282,005
Engineering Design, 3 year Services	22-206-008	DEDII	$ 510,000	$ 510,000	$ 50,000	$ 1,070,000
Rehabilitation of Storm Drains in the City of Boston	22-308-001	RATE	$ 238,930			$ 238,930
Georgetowne Neighborhood Water Main Replacement	22-308-003	RATE		$ 100,000		$ 100,000
Replacement of Sewer and Drains Citywide, R&R	22-309-002	RATE		$ 2,472,000	$ 1,488,761	$ 3,960,761
Upper Roxbury R&R	22-309-003	RATE	$ 217,722	$ 640,136		$ 857,858
Upper Roxbury R&R	22-309-003	MWRA II	$ 882,278	$ 690,673		$ 1,572,952
South Boston Sewer Separation - Contract 3	22-309-012	BONDS	$ 1,851,938	$ 3,873,333	$ 833,372	$ 6,558,643
South Boston Sewer Separation - Contract 3	22-309-012	SRF	$ 386,538	$ 808,444	$ 173,942	$ 1,368,924
Citywide R&R	23-309-003	RATE			$ 100,000	$ 100,000
Sewer and Drain Condition Monitoring Citywide 1	23-309-009	RATE	$ 159,379			$ 159,379
Sewer and Drain Condition Monitoring Citywide 2	23-309-010	RATE	$ 130,931			$ 130,931
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore, R&R	23-309-011	BONDS		$ 180,000	$ 270,000	$ 450,000
Replacement of Water Mains and Replacement and Rehabilitation of Sewer and Drain Pipes in Fenway/Kenmore, R&R	23-309-011	RATE		$ 120,000	$ 180,000	$ 300,000
South Boston Sewer Separation - Contract 4	23-309-012	BONDS			$ 50,000	$ 50,000
South Boston Sewer Separation - Contract 4	23-309-012	SRF			$ 50,000	$ 50,000
Fort Point Channel and Mystic/Chelsea Combined Sewer Overflow Control Projects	23-309-013	MWRA LAP	$ 5,524,998			$ 5,524,998
Water Relay Heath Street	24-308-002	BONDS			$ 50,000	$ 50,000
Citywide R&R	24-309-001	RATE			$ 50,000	$ 50,000
Citywide R&R	24-309-002	RATE			$ 1,200,000	$ 1,200,000
Citywide R&R	24-309-003	RATE			$ 50,000	$ 50,000
Charlestown Separation	24-309-006	MWRA II			$ 1,500,000	$ 1,500,000
CCTV of Sewers and Storm Drains/CMOM - Future Contracts	24-309-009, 24-	RATE		$ 1,000,000	$ 1,000,000	$ 2,000,000
South Boston Sewer Separation - Contract 5	24-309-012	SRF			$ 100,000	$ 100,000
East Boston Sewer Separation Phase IV - Contract 2	25-309-002	MWRA II			$ 100,000	$ 100,000
East Boston Sewer Separation Phase IV - Contract 3	26-309-002	MWRA II			$ 100,000	$ 100,000
Construction of Stormwater Detention Facilities		BONDS			$ 750,000	$ 750,000
Design of Stormwater Detention Facilities Phase I		BONDS	$ 230,000	$ 770,000		$ 1,000,000
Storeroom-Hydrants		BONDS	$ 150,000	$ 400,000	$ 400,000	$ 950,000
Austin Street Pump Station		BONDS	$ 75,000	$ 25,000	$ 25,000	$ 125,000
Commonwealth Ave Pump Station		BONDS	$ 110,000	$ 50,000	$ 50,000	$ 210,000
Sullivan Square Pump Station		BONDS	$ 50,000	$ 20,000	$ 20,000	$ 90,000
Union Park Pump Station		BONDS	$ 550,000	$ 275,000	$ 275,000	$ 1,100,000
Owner Correction of Illicit Connections		BONDS	$ 15,000	$ 15,000	$ 15,000	$ 45,000
Construction of Daisy Field GI		BONDS	$ 425,000	$ 1,000,000		$ 1,425,000
Sewer Drain Model Update		SRF	$ 434,525	$ 434,525	$ 217,260	$ 1,086,310
Green Infrastructure		RATE	$ 500,000	$ 500,000	$ 500,000	$ 1,500,000
Total			**$ 20,380,053**	**$ 22,663,623**	**$ 17,703,222**	**$ 60,746,898**

Stormwater	$ 20,380,053	$ 22,663,623	$ 17,703,222	$ 60,746,898
BWSC Bonds	$ 8,512,759	$ 7,711,066	$ 3,233,263	$ 19,457,088
MWRA II	$ 1,427,479	$ 1,690,673	$ 3,516,667	$ 6,634,819
Rate Revenue	$ 6,972,745	$ 8,709,753	$ 8,755,255	$ 24,437,753
SRF	$ 3,467,071	$ 4,552,130	$ 2,198,038	$ 10,217,238

This page has been left blank intentionally.

APPENDIX A - GLOSSARY

ARB: A trademark for Schlumberger remote meter reader interfaces. See also R.M.I.

Board of Commissioners: The three-member governing board of the Commission.

Bond: A written promise to pay a specific sum of money (called the face value or principal amount) at a specific date or dates in the future (called the maturity dates), together with periodic interest at a specific or variable rate.

Bond Resolution: A document that contains terms and conditions relating to the issuance and sale of bonds and sets forth the obligations to bondholders.

BWSC: The Boston Water and Sewer Commission.

Capital Improvement Program (CIP): A plan which identifies and estimates the nature, schedule, cost, priority, and financing of long-term assets that the Commission intends to build or acquire during a specific period.

Cleaning and Lining: A process to improve unlined but structurally sound, older cast iron mains. The mains are cleaned and lined with cement (while still in place) to improve hydraulic capacity and extend useful life.

Collection System: The pipes, conduits, pumping stations and appurtenances involved in the collection and transport of wastewater and storm-water.

Combined Sewer: A sewer designed to receive both sanitary sewage and storm-water runoff.

CSO (Combined Sewer Overflow): The discharge from combined sewers which collect both sanitary sewage and storm-water runoff for wastewater treatment under normal (dry) weather conditions. During rainstorms, the system becomes overloaded and the excess is discharged directly into neighboring waterways from CSO outlets. In the City of Boston area there are 37 permitted combined sewer overflow outlets.

Current Expense Budget (CEB): A financial plan which estimates the revenues and expenses associated with the Commission's operations for a fiscal year.

Debt Service: In a given fiscal year, the amount of money necessary to pay interest and principal on outstanding debt instruments.

DEP (Department of Environment Protection): The Massachusetts agency that regulates water pollution control, water supplies, drinking water quality and waterways and certifies projects for eligibility under the Water Pollution Abatement Trust Loan programs.

Department: A sub-unit of a division.

Division: A major organizational unit within the Commission, encompassing the activities and resources for providing a major service or function.

Drain: A pipe or conduit which conveys storm-water.

Enabling Act: Chapter 436 of the Acts of the Commonwealth of Massachusetts of 1977, the legislation which established the BWSC and defined its purpose and responsibilities as of August 5, 1977.

EPA (Environmental Protection Agency): The federal government agency responsible for environmental enforcement and investigation. The EPA enforces the provisions of the Safe Drinking Water Act and the Clean Water Act.

Expenditures: Actual payment within a specified period for goods and services received.

Fiscal Year: The 12-month financial period used by the Commission which begins January 1 and ends December 31 of the same calendar year.

General Revenue Bonds: Bonds which are general obligations of the issuer where the full faith and credit of the issuer is pledged to the payment of the principal and interest thereon utilizing the revenue to be generated through the sale of a particular commodity, service or toll.

Hydrant: A device connected to a public water main for the purpose of providing water for firefighting or other authorized purposes.

Illegal Connection: A sanitary sewer service which is connected to a storm drain system, thus contributing sewerage.

Infiltration/Inflow: Extraneous sources of water that enter the sanitary system and are transported unnecessarily to the treatment facility. Infiltration is groundwater that leaks into the sanitary sewerage system through pipe joints and defects. Inflow refers to water that enters sewers from improperly connected catch basins, sump pumps, downspouts, basement drains and defective manholes. Inflow also enters through defective harbor CSO tide-gates when the tide is high.

Interceptors: The large pipes or culverts that convey wastewater from the localized collection system to the treatment plant.

Meter: An instrument for measuring the flow of water.

Meter Pit: An underground vault enclosing a meter.

MWRA (Massachusetts Water Resources Authority): An agency created by the Massachusetts Legislature through the passage of Chapter 372 of the Acts of 1984, responsible for providing wholesale potable water and wastewater collection, transport, delivery and treatment services to user Communities in Eastern Massachusetts. The Communities provide retail services directly to their customers or end users.

NPDES (National Pollutant Discharge Elimination System): A permit issued by EPA in conjunction with DEP to govern discharges into waterways.

Potable Water: Water fit for human consumption in conformance with the regulations of the Environmental Protection Agency and the Massachusetts Department of Environmental Protection.

Program: An organized group of activities and the resources to carry them out, aimed at achieving related goals.

Public Water Main: The piping and associated valves, hydrants and appurtenances installed in a public way, Commission-owned easement, or private way open to public travel, for the purpose of supplying water to one or more customers or for public fire protection.

R.M.I: Remote Meter Interface. A device for reading water meters using a hand held computer which is plugged into an outside box wired to the meter.

Rate Revenue: Income received in a specified period from user charges for providing water and sewer services.

Rehabilitation: Any process which serves to extend the useful life of a pipe or structure which is in need of repair.

Residential Meter: A meter two inches in size or smaller used to measure the flow of water to predominantly residential properties.

Sanitary Sewage: Liquid and water-carried human and domestic wastes from buildings, exclusive of ground, storm and surface water.

Sanitary Sewers: In a separated system, pipes that carry only domestic or commercial sanitary sewage as opposed to rainwater runoff.

Sewer: A pipe or conduit that carries wastewater

Sewer System: The combined Wastewater System and Storm Drainage System.

Storm Drain: A pipe or conduit designed to carry storm-water or surface water runoff.

Storm Drainage System: Storm drains, tidegates, flow regulators, catch basins, storm-water pumping stations and appurtenant facilities.

Storm Sewers: Storm drains or storm drainage system.

Stormwater: Any water resulting from rainfall or other precipitation that runs off surfaces during or after a storm.

Unaccounted-for Water: The difference between the volume of water withdrawn from the source of supply and the volume of water billed to customers. Unaccounted for water is caused by system losses, fire protection and construction activities.

Valve: A device used in water systems to control the flow of water.

Wastewater: The spent water of a community, which may be a combination of the liquid and water-carried domestic or industrial wastes from buildings, together with any groundwater and stormwater that may be present

Wastewater System: The totality of the devices, equipment or works used in transportation, pumping, storage, treatment, recycling, or reclamation of wastewater or in the disposal of the effluent.

Water Service Pipe: The connection, piping and associated valves and appurtenances that extend from a public water main to a building or property for the purpose of supplying water.

APPENDIX B - KEY ABBREVIATIONS

SIZE	DESCRIPTION
4 W/ 8	4" PIPE IS REPLACED WITH 8" PIPE
6 W/ 8	6" PIPE IS REPLACED WITH 8" PIPE
8 W/ 12	8" PIPE IS REPLACED WITH 12" PIPE

TYPE	TYPE OF SEWER PIPE
D	STORM DRAIN
S	SEWER
W	WATER

APPENDIX C – STREET LISTING

26-309-002

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE
Bennington St	Putnam St To Bremen St			
Bremen St	Prescott St To Bennington St			
Chelsea St	Putnam St To Day Sq			
Lexington St	Putnam St To Prescott St			
Prescott St	Lexington St To Bremen St			
Princeton Pl	Princeton St To #1			
Princeton St	#147 To #288			
Putnam St	#67 To Bennington St			
Saratoga St	#214 To #458			
Trenton St	#155 To Putnam St			

24-309-012

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Alger St	Dorcester Ave to end	South Boston			
Boston St	#7 to Dorchester Ave	South Boston			
Carpenter St	Devine Way to Preble St	South Boston			
Devine Way	Carpenter St to Rogers St	South Boston			
Dexter St	Ellery St to Dorchester Ave	South Boston			
Dorchester Ave	Greenbaum St to Kemp St	South Boston			
Dorchester St	Dorchester Ave to Jenkins St	South Boston			
Ellery St	Boston St to Humboldt Pl	South Boston			
Father Songin Way	#46 to Dorchester Ave	South Boston			
Foundry St	Gillette Park to West Fourth St	South Boston			
Gifford Pl	Ward St to end	South Boston			
Gillette Park	Foundry St to Dorchester Ave	South Boston			
Goodwin Ct		South Boston			
Greenbaum St	Foundry St to Dorchester Ave	South Boston			
Humboldt Pl		South Boston			
Jenkins St	Dorchester St to Old Colony Way	South Boston			
Kemp St	Dorchester Ave to O'Conner Way	South Boston			
Leeds St	Dorchester Ave to Woodward St	South Boston			
Liberty Pl	Preble St to Devine Way	South Boston			
Mohawk St	Devine Way to #19, #5 to Preble St	South Boston			
O'Conner Way	#5 to #248	South Boston			
Old Colony Way	Preble St to Dorchester St	South Boston			
Preble St	Dorcester Ave to Old Colony Ave	South Boston			
Rogers St	Devine Way to Preble St	South Boston			
Southampton St	#440 to Preble St	South Boston			
Transit Way		South Boston			
Traveler St	on Foundry St	South Boston			
Vinton St	Dorchester St to Preble St	South Boston			
Wadleigh Pl		South Boston			
Ward Ct		South Boston			
Ward St	Dorchester St to end	South Boston			
Wendell Pl		South Boston			
Wendeller St	Devine Way to Preble St	South Boston			
Widett Cir		South Boston			

24-309-006

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Cambridge					
Parker					
Caldwell					
Brighton					
Perkins					
Crescent					
Hadley					

24-308-002

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Heath	South Huntington Avenue to Columbus Avenue	Jamaica Plain	3600	12	W
New Heath Street	Parker to Terrace	Jamaica Plain	500	12	W

23-309-013

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Seaport Boulevard	At Atlantic Avenue	Boston Proper			
East Street	At South Street	Boston Proper			
Kneeland Street	At Atlantic Avenue	Boston Proper			
Rutherford Avenue	At Sullivan Square	Charlestown			
Massachusetts Avenue	Clapp Street to Allstate Road	Dorchester			
Condor Street	At Meridian Street	East Boston			

23-309-012

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Altantic St	East Forth St to Thomas Park	South Boston			
Cottage St	D Street to Dorchester Street	South Boston			
Dorchester St	Jenkins St to East Broadway	South Boston			
E St	Old Colony Ave to West Seventh St	South Boston			
East Broadway	Dorchester St to G St	South Boston			
East Fourth St	Dorchester St to G St	South Boston			
F St	West Eighth St to West Seventh St	South Boston			
Frederick St	Old Colony Ave to West Ninth St	South Boston			
Gates St	Dorchester St to Telegraph St	South Boston			
Grimes St	West Eighth St to End	South Boston			
Gustin St	Old Colony Ave to End	South Boston			
Lark St	West Ninth St to West Eighth St	South Boston			
Linden St	East Fourth St to Thomas Park	South Boston			
Loring St	West Eighth St to West Seventh St	South Boston			
Mercer St	Dorchester St to East Eigth Street	South Boston			
Mitchell St	Old Colony Ave to West Ninth St	South Boston			
National St	Dorchester St to Thomas Park	South Boston			
Old Harbor St	Dorchester St to Telegraph St	South Boston			
Pacific St	East Fourth St to Thomas Park	South Boston			
Private Rd		South Boston			
Silver St	Dorchester St to G St	South Boston			
Telegraph St	Dorchester St to Thomas Park	South Boston			
Thomas Park	National St to #69, 96 G St to Atlantic St	South Boston			
West Eighth St	E St to Dorchester St	South Boston			
West Ninth St	E St to Dorchester St	South Boston			

23-309-011

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Kilmarnock St	Boylston St to Park Drive	Fenway	750	10,8	WREL
Queensberry	Park Drive to Park Drive	Fenway	1800	8	WREL
Kilmarnock St	Boylston St to Park Drive	Fenway	656	15x22	SREL
Queensberry	Park Drive to Park Drive	Fenway	255	15x18,30x36	SREL
Private Alley 914	Jersey St to Queensberry St	Fenway	232	12	SREL
Private Alley 925	Kilmarnock St to Jersey St	Fenway	252	15x18, 18	SREL
Private Alley 926	Kilmarnock St to Jersey St	Fenway	297	15	SREL
Private Alley 930	Peterborough St to Queensberry St	Fenway	343	15x18	SREL
Boylston Street	Jersey St to Kilmarnock	Fenway	1389	12,15,18,24	DREL
Queensberry	Park Drive to Park Drive	Fenway	1745	15, 18, 30x30	DREL
Private Alley 914	Jersey St to Queensberry St	Fenway	232	18	DREL
Private Alley 925	Kilmarnock St to Jersey St	Fenway	221	18x24	DREL
Private Alley 930	Peterborough St to Queensberry St	Fenway	304	36x36	DREL

23-309-005

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Banfield Avenue	Woodale Ave cross country	Mattapan	210	12"	Sewer
Banfield Avenue	Woodale Ave cross country	Mattapan	240	27"	Drain
Blue Hill Avenue	Esmond Street to Vesta Road	Roxbury	940	12"	Sewer
Blue Hill Avenue	Hosmer Street to Morton Street	Mattapan	910	12"	Sewer
Blue Hill Avenue	Morton Street to Woodrow Avenue	Mattapan	545	12"	Sewer
Clarkwood Street	Blue Hill Ave to Norfolk St	Mattapan	995	12"	Sewer
Columbia Road	East Cottage St to Eastman St	Dorchester	510	12"	Sewer
Gallivan Boulvard	Arbella Road to Milton St	Mattapan	60	10"	Sewer
Gallivan Boulvard	Vera Street	Mattapan	100	10"	Sewer
Lena Terrace	Lorna Road to West Selden Street	Mattapan	295	10"	Sewer
Lorna Road	Lena Terrace to End	Mattapan	495	10"	Sewer
Meadowbank Avenue	Cross-country	Mattapan	230	8"	Sewer
Southmere Road	River Street	Mattapan	135	8"	Sewer
Vera Street	at Gallivan Boulevard	Mattapan	282	10"	Sewer
Woodhaven Street	Messinger Street to Culbert Street	Mattapan	260	10"	Sewer
Wilmore St	Blue Hill Ave to Norfolk St	Mattapan	425	12"	Sewer
Willowwood St	Dumas St to Woodrow	Mattapan	350	30	Drain
Freeland Street	Manachester St. to end	Mattapan	320	10"	Sewer
Ledgebrook Road	Southmere Road to Meadowbank Avenue	Mattapan	80	8"	Sewer

23-309-003

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Ave Louis Pasteur	Longwood Ave to Blackfan Circle	FEKE	555	10	SS
Beacon St	Charlesgate West to Raleigh St	FEKE	115	15	SS
Cedarcrest Cir	Cedarcrest Rd	WROX	350	10	SS
Clarendon St	Stanhope St to Stuart St	BBBH	245	18	SS
Clarendon St	Stanhope St to Stuart St	BBBH	10	18	SS
Clarendon St	Stanhope St to Stuart St	BBBH	375	18x18, 12	SS
Colchester St	Stanbro St to Millstone Rd	HYDE	650	12	SS
George St	Danbury Rd to River St	HYDE	630	8 x 12	SS
Millstone Rd	Prescott St to Hyde Park Ave	HYDE	330	15	SS
Northdale Rd	Gould St to Northdale Ter	WROX	160	15	SS
Roseberry Rd	Ruskindale Rd to Greenfield Rd	HYDE	360	8	SS
Rowe St	Seymour St to Cummins Highway	ROSL	1335	12	SS
Sprague St	Horne St to Lakeside Ave	HYDE	395	15	SS
Tremont St	Berkeley St to Appleton St	SEND	240	12	SS
VFW Parkway	Centre St to Vincent St	WROX	555	24	SS
Walter St	Centre St to Private Rd	ROSL	445	10	SS
Whipple Ave	Washington St	ROSL	250	10	SS

23-308-003

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Milk Street	Broad St to India St	CENT	230	12	SH
India Street	India Pl to State Street	CENT	650	12	SL
India Street		CENT	330	12	SH
Congress Street	State Street to Merrimac St	CENT	2210	12	SH
Congress Street	Hanover St to Merrimac St	CENT	1390	12	SL
Commercial Street	State Street to Clinton Street	CENT	240	12	SH
Commercial Street	State Street to Clinton Street	CENT	400	16"	SL
244 Hanover(Alley)	Hanover to End	CENT	100	4	SL
Powers Court	North to End	CENT	150	6	SL
Hanover street	Congress to Blackstone	CENT	150	12	SL

23-308-002

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Tremont St	Benton Street to Northampton St	SEND	1060	20	SH
Tremont St	West Newton to Camden	SEND	1820	12	SL
Tremont St	West Newton to Northampton	SEND	1510	8	SL
W. Concord	Tremont to Washington St	SEND	1200	10	SL

23-308-001

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
MLK Blvd	Washington St to Warren St	ROXB	6200	8	SH
Warren St	Townsend St to Woodbine St	ROXB	725	8	SH
Mayfair St	Elmore St to End	ROXB	330	8	SH
Harold Park/Street	Townsend St to End	ROXB	850	8	SH
Humbolt Ave	MLK Blvd to Laurel St	ROXB	225	12	SH
Laurel St	Humbolt Ave to Dale St	ROXB	550	8	SH
Catawba St	Laurel St to Charlame St	ROXB	570	8	SH
Charlame St	Laurel St to Catawba St	ROXB	1100	8	SH
Fenno St	Walnut Ave to End	ROXB	200	8	SH
Leslie Park	Walnut Ave to End	ROXB	330	8	SH
Homes Ave	Geneva Ave to Draper	Dorchester	1550	12	SH

22-309-012

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Bowen Street	D Street to Dorchester Street	South Boston			
Crowley Rogers Way	D Street to #163-189	South Boston			
D Street	West Seventh Street to West Fourth Street	South Boston			
E Street	West Seventh Street to West Broadway	South Boston			
F Street	West Seventh Street to Silver Street	South Boston			
Flaherty Way	D Street to 50 feet west of D Street	South Boston			
Gold Street	D Street to Dorchester Street	South Boston			
Orton Marotta Way	D Street to 50 feet west of D Street	South Boston			
Silver Street	D Street to Dorchester Street	South Boston			
Tudor Street	D Street to Dorchester Street	South Boston			
West Fifth Street	D Street to Dorchester Street	South Boston			
West Fourth Street	D Street to Dorchester Street	South Boston			
West Seventh Street	D Street to Dorchester Street	South Boston			
West Sixth Street	D Street to Dorchester Street	South Boston			

22-309-003

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Thornton St	Cedar St to Guild St	Roxbury	800	8	W
Thornton St	Cedar Sq to Guild St	Roxbury	520	8	CS
Thornton St	Cedar Sq to Guild St	Roxbury	400	12, 15, 18	SD
Lambert Av	Cedar St to Bartlett St	Roxbury	1255	12	W
Lambert Av	Logan St to Norfolk St	Roxbury	745	12 to 15	CS
Lambert Av	Logan St to Norfolk St	Roxbury	750	TBD	SD
Logan St	9 Logan st to 23 Logan St	Roxbury	110	10	CS
Logan St	23 Logan St to Thornton St	Roxbury	210	8	CS
Juniper St	Cedar Sq tp Cedar St	Roxbury	180	12	CS
Juniper St	Juniper Ter to Cedar St	Roxbury	475	TBD	SD
Cedar St	Juniper St to Washington St	Roxbury	150	TBD	SD
Rockledge St	4 Rockledge St to Thornton St	Roxbury	330	10	CS
Rockledge St	25 Rockledge to Thornton St	Roxbury	75	TBD	SD
Guild St	Thornton St to Washington St	Roxbury	330	12	CS
Guild St	Thornton St to Washington St	Roxbury	260	TBD	SD
Highland St	Cedar St Intersection	Roxbury	45	12	CS
Highland St	Millmont St to Cedar St	Roxbury	440	12	CS
Highland Av	Highland St to Centre St	Roxbury	440	12	CS
Centre St	Highland Av to Highland St	Roxbury	595	15	CS
Centre St	Highland Av to Highland St	Roxbury	460	TBD	SD
Eliot Ter	Entire St	Roxbury	90	6	W
Morley St	Entire St	Roxbury	230	8	W
Morley St	Entire St	Roxbury	210	12	CS
Highland St	Morley St to Norfolk St	Roxbury	150	12	CS
Highland St	Norfolk St to 18 Highland St	Roxbury	40	12	CS
Highland St	Norfolk St to Centre St	Roxbury	355	TBD	SD
Bartlett St	Dudley St to Blanchard St	Roxbury	115	9 to 10	CS
Bartlett St	Blanchard St to Bartlett Station Dr	Roxbury	455	TBD	SD
Kenilworth St	13 Kenilworth St to Dudley St	Roxbury	255	12	CS
Kenilworth St	13 Kenilworth St to Dudley St	Roxbury	255	TBD	SD
Dudley St	Lambert Av to Shawmut Av	Roxbury	735	TBD	SD

22-309-002

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Cliffmont Street	#22 Cliffmont to #53 Cliffmont Street	Roslindale	455	10	SLIN
Easement	#237 Hyde Park Ave to Brookway Terrace	Roslindale	245	15	SLIN
Easement	#237 Hyde Park Ave to Brookway Terrace	Roslindale	5	15	SREL
Geneva Avenue	Vaughn Avenue to Beechwood	Roxbury	140	10	SREL
Columbia Road	Ceylon Street to Stanwood Street	Dorchester	1300	18	DREL
Columbia Road	Intervale Street at Columbia Road (new drain to remove from SS)	Dorchester	60	18	DREL
Centre Street	Remove catchbasin 18G35 from 12" sewer on Forbes Street	Jamaica Plain	60	8	DREL
John Andrew Street	Sedgewick to Carolina Avenue	Jamaica Plain	140	12	SREL
John Andrew Street	Sedgewick to Carolina Avenue	Jamaica Plain	160	12	DREL
Sedgewick Street	Elm Street to John Andrew Street	Jamaica Plain	30	12	SREL
Sedgewick Street	Elm Street to John Andrew Street	Jamaica Plain	15	12	DREL
Easement	#14 Wenlock Rd. to #31 Hallet Street	Dorchester	425	15	SLIN
Wenlock Road	Gallivan Blvd. to Minot Street	Dorchester	165	10	SLIN
Wenlock Road	Gallivan Blvd. to Minot Street	Dorchester	230	8	WREL
Converse Street	Parsons Street to end	Allston/Brighton	310	10	SREL
Converse Street (Easement)	Easement (thru #17-35 Welch Constuction Corp.) to Electric Ave.	Allston/Brighton	225	12	DREL
Electric Avenue	Parsons Street to Goodenough Street	Allston/Brighton	955	8	WREL
Electric Avenue	Parsons Street to Goodenough Street	Allston/Brighton	345	8	SREL
Electric Avenue (Easement)	Easement (National Grid Substation #315) to Goodenough Street	Allston/Brighton	560	12	SREL
Gannett Street	Holburn Street to Gaston Street	Dorchester	515	8	WREL
Gannett Street	Holburn Street to Gaston Street	Dorchester	515	18	DREL
Gannett Street	Holburn Street to Gaston Street	Dorchester	290	15	SREL
Carlisle Street	Warren Street to end	Dorchester	400	12	SLIN
Carlisle Street (Easement)	#11 Carlisle to Gannett Street	Dorchester	135	12	SLIN
Carlisle Street	Point repairs at #7 and #11 Carlisle Street	Dorchester	30	12	SREL
Gaston Street	#17 Gaston to Gannett Street	Dorchester	200	12	DREL
Gaston Street	Otisfield Street to Bluehill Avenue	Dorchester	90	24	DLIN
Gaston Street	Otisfield Street to Bluehill Avenue	Dorchester	315	12	SLIN
Gaston Street	Gannett Street to Otisfield Street	Dorchester	140	12	SREL
Gaston Street	Otisfield Street to Bluehill Avenue (set new MH structure)	Dorchester	10	24	DREL
Teleford Street	Western Avenue to Charles River (Large drain to Outfall 037)	Allston/Brighton	650	66	DREL
Western Avenue	Everett Street to Teleford Street (Large drain)	Allston/Brighton	550	66	DREL
Clarkwood Street	Blue Hill Avenue to Norfolk	Mattapan	1015	12	WREL
Clarkwood Street	Blue Hill Avenue to Norfolk	Mattapan	995	12	SREL
Clarkwood Street	Blue Hill Avenue to Norfolk	Mattapan	930	12	DREL

22-308-003

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Willers St	Edgemere Rd to Fensmere Rd	WROX	735	8	W
Georgetowne Dr	Willers St to Dedham Blvd	WROX	3120	12	W
Margaretta Dr	Georgetowne Dr to End	WROX	1120	8	W
Georgetowne Pl	Georgetowne Dr to End	WROX	875	8	W
Crown Point Dr	Margaretta Dr to Margaretta Dr	WROX	1490	8	W
Misc.		WROX	50	10-12	SS
Misc.		WROX	50	10-12	SD

22-308-001

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Belvidere	Belvidere @Huntington	BOSTON			
Bowker	New Chardon St@ Bowker TO Hawkins St@ Bowker St	BOSTON			
Boylston	Dalton St @ Boylston St TO Hereford St @ Boylston St	BOSTON			
Exeter	Commonwealth Ave W@ Exeter TO Commonwealth Ave E	BOSTON			
Harrison	Essex St @ Harrison Ave TO Hayward Pl @Harrison Ave	BOSTON			
Hawkins	New Chardon St@ Hawkins TO Bowker St@ Hawkins St	BOSTON			
Hudson	Kneeland St @ Hudson St TO Beach St @ Hudson St	BOSTON			
Huntington	Mass Ave @ Huntington TO West Newton St/Belvidere @Huntington	BOSTON			
Kneeland	Kneeland St @ Tyler St	BOSTON			
Somerset	Somerset st @ Pemberton	BOSTON			
Tyler	Kneeland St @ Tyler St TO Beach St @ Tyler St	BOSTON			
Pemberton	Somerset st @ Pemberton	BOSTON			
General Project		BOSTON			

21-309-012

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
EIGHTH		SOUTH BOSTON			
NINTH		SOUTH BOSTON			
BAXTER		SOUTH BOSTON			
BELL		SOUTH BOSTON			
C		SOUTH BOSTON			
D		SOUTH BOSTON			
DARMRELL		SOUTH BOSTON			
EIGHTH	`	SOUTH BOSTON			
EARL		SOUTH BOSTON			
EWER		SOUTH BOSTON			
GLOVER		SOUTH BOSTON			
GUSTIN		SOUTH BOSTON			
MIDDLE		SOUTH BOSTON			
OLD COLONY		SOUTH BOSTON			
SAYWARD		SOUTH BOSTON			
TRUCKERMAN		SOUTH BOSTON			
WOODWARD		SOUTH BOSTON			
GENERAL PROJECT		BOSTON			

21-309-005A

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
PREBLE STREET	Rogers Street to Andrew Square	South Boston	500	102"	CS

24-309-005

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
PREBLE STREET	Wendeller Street to Columbia Road (Columbus Park Headworks)	South Boston	2,080	102"	CS

25-309-005

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
WIDETTE CIRCLE	S. Boston Bypass (I-93) to 15 Widette Circle	South Boston	460	102"	CS
SOUTHAMPTON STREET	Andrew Square to Frontage Road	South Boston	2,540	102"	CS

21-309-001

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Coniston Rd. (easement)	#104 Walther Street to Roslindale wetlands	Roslindale	785	12, 15	SS
Waumbeck Street	#101 to Wabeno Street	Roxbury	360	10, 12	SS
Waumbeck Street	#101 to Wabeno Street	Roxbury	340	12	SD
Humboldt Ave.	Waumbeck Street to Townsend Street	Roxbury	440	10,12	SS
Humboldt Ave.	Waumbeck Street to Townsend Street	Roxbury	205	12	SD
Hollander Street	Harold Street to Crawford Street	Roxbury	345	18	SS
Walnut Avenue	Harrisof Street to Holworthy Street	Roxbury	245	12	SS
Walnut Avenue	Harrisof Street to Holworthy Street	Roxbury	230	18	SD
Thwing St (easement)	#55 (rear) to 43 Beech Glen (rear) Thwing (easement)	Roxbury	270	8, 10	SS
Thwing St (easement)	#55 (rear) to 43 Beech Glen (rear) Thwing (easement)	Roxbury	195	10	SD
Sanford Street	#15 Sanford to Vallaro Rd.	Hyde Park	20	18	SD
Manilla Ave. (Easement)	Norton Street to Neponset Valley Pkwy	Hyde Park	475	18	SS
Westinghouse Plaza	Readville Ave. to parking lot #1 Westinghouse Pz.	Hyde Park	275	20	SS
Readville St	Como Rd. to Albemarle Street	Hyde Park	870	10	SS
Chesterfield Street	Epson Rd. to Manilla Ave.	Hyde Park	300	10	SS
Danny Rd.	#52 Danny Rd to #32 Danny Road.	Hyde Park	205	8	SS
Como Rd.	#40 Como Rd. to Readville St..	Hyde Park	400	10	SS
Ernest Avenue	Marion Street to Como Rd.	Hyde Park	90	8	SS
Denison St	Hailey Street to END	Roxbury	680	12	SS
Denison St	Hailey Street to END	Roxbury	400	12	W

20-309-012

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
A Street	Dorchester Ave to West Broadway	South Boston			
W 5th Street	Dorchester Ave to B Street	South Boston			
Gold Street	Dorchester Ave to B Street	South Boston			
W 4th Street	Dorchester Ave to B Street	South Boston			
Silver Street	Dorchester Ave to B Street	South Boston			
B Street	Dorchester Ave to W 2nd Street	South Boston			
W 7th Street	B Street to D Street	South Boston			
W 4th Street	Dorchester Ave to B Street	South Boston			
W 6th Street	Haul Road to B Street	South Boston			
Joyce Hayes Way	W 7th St to Orton Marotta Way	South Boston			
Orton Marotta Way	B Street to Joyce Hays	South Boston			
Flaherty Way	B Street to D Street	South Boston			
St. Casimir St	Flaherty Way to Crowley Rodgers Way	South Boston			
Crowley Rodger Way	B Street to D Street	South Boston			
West Broadway	Haul Road to D Street	South Boston			
C Street	West Broadway to W 2nd Street	South Boston			
W 3rd Street	B Street to C Street	South Boston			
Athens Street	Haul Road to C Street	South Boston			

20-309-007

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Blenford Road	Easement to Colborne Road	Allston/Brighton			
Burton Street	Bellamy Street to #63	Allston/Brighton			
Chestnut Hill Avenue	#55 to William Jackson Avenue	Allston/Brighton			
Easement	Union Street to Blenford Road	Allston/Brighton			
Easement	Nonantum Road to Newton Street	Allston/Brighton			
Easement	Shepard Street to Shannon Street	Allston/Brighton			
Hunnewell Avenue	Burton Street to Presentation Road	Allston/Brighton			
Priscilla Road	#15 to #28	Allston/Brighton			
Private Road	Shannon Street to Snow Street	Allston/Brighton			
Shannon Street	#40-42 to Union Street	Allston/Brighton			
Wallingford Road	Chestnut Hill Avenue to #88	Allston/Brighton			
Annunciation Road	Ruggles Street to Prentiss Street & #60 to Parker Street	Fenway/Kenmore			
Ruggles Street	Ruggles Upper Busway to Annunciation Road	Fenway/Kenmore			
Parker Street	#540 to Prentiss Street	Jamaica Plain			
Batchelder Street	Marshfield Street to Longmeadow Street	Roxbury			
Marshfield Street	#56 to #9-11	Roxbury			

20-309-006

STREETS	LIMITS	PIPE LENGTH	SIZE	TYPE
Gordon Avenue (HYDE PARK)	#61 Gordon Avenue to Child Street	185	10	SS
Windham Road (ROSLINDALE)	Sherrin Avenue to #85 Windham Avenue	460	12	SS
Belgrade Avenue	Walworth Street to #142 Belgrade Avenue	175	10	SS
Woodhaven Street	Messinger Street to #51 Woodhaven Street	155	12	SD
Easement (Tyndale Street	#104 Tyndale Street to #261 Belgrade Avenue	360	12	SS
Tyndale Street (ROSLINDALE)	#11 Tyndale Street to Walworth Street	235	12	SS
Easement (Ruskindale Road	#24 Ruskindale Road to #80 Mariposa Street	60	12	SS
Rockingham Road	#22 Rockingham Road to Cummins Highway	245	12	SS
Rockingham Road	#22 Rockingham Road to Cummins Highway	170	12	SD
River Street	River Street at Cummins Highway	20	12	SS
Easement (Livermore Street	Livermore Street to Kennebec Street	225	10	SS
Neponsent Avenue	Wyvern Street to Byrd Avenue	230	12	SS
Neponsent Avenue	Wyvern Street to Byrd Avenue	250	12	W
Wyvern Street (ROSLINDALE)	Hyde Park Avenue to Florian Street	170	12	SD
Canterbury Street	Paine Street to American Legion Highway	120	12	SS
Balfour Street	Wayland Street to Dalkeith Street	100	10	SS
Dove Street	Blue Hill Avenue to Dacia Street	230	12	SD
Whitby Terrace (DORCHESTER)	Pleasant Street to End (#23 Whitby Street)	270	8	SS
Hartford Street	#43 Hartford Street to Sargent Street	210	8	SS
Hartford Street	#43 Hartford Street to Chamblet Street	190	12	CS
VFW Parkway (WEST ROXBURY)	#623 VFW Parkway to Brucewood Street	460	12	SS
George Street (HYDE PARK)	Danbury Road to River Street	625	12	SS
Tileston Street (HYDE PARK)	Radcliffe Road to Winborough Street	480	12	SS
Tileston Street (HYDE PARK)	Mercer Street to Winborough Street	245	24	SD
Peacevale Road	Norfolk Street to #11 Peacevale Road	155	10	SS
Easement (Jones Avenue	#49 Jones Avenue to #134 Woodrow Street	335	12	SS
Mountain Avenue	Dumas Street to #72 Mountain Avenue	115	12	SD
Theodore Street	Middleton Street to #21 Theodore Street	175	12	SD
Middleton Street	Theodore Street to Wildwood Street	220	15	SD
Hildreth Street	Wildwood Street to #15 Hildreth Street	125	18	SD
Sargent Street	Hartford Street to Howard Avenue	465	12	SD
Sargent Street	Hartford Street to Howard Avenue	400	12	SS
G Street (SOUTH BOSTON)	Thomas Park to Columbia Road	760	8	CS
G Street (SOUTH BOSTON)	East Eighth Street to Columbia Road	300	12	W

20-308-006

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Condor @ Brooks, EBOS	29MBV16, 29MBV20, 29MBV22, 29MBV24	EBOS		20"	NL
Border St @ Eutaw St	New Valve	EBOS		20"	NL
Border St @ Maverick St	27LBV40	EBOS		16"	NL
Border St @ Saratoga St	27MV715	EBOS		16"	NL
Border St @ Decatur St	New Valve	EBOS		20"	NL
Forest Hills St @ Wiliams St	New Valve	ROXB		36"	SH
Walnut Park @ Washington St	16HBV220, 16HBV224	ROXB		36"	SH
Walnut Park @ Walnut Ave	16HBV240	ROXB		36"	SH
Columbus Av @ St. Cyprians Pl	20IV84	SEND		24"	SH

20-308-004

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Corey Street		Charlestown			
Moulton Street		Charlestown			
Tufts Street		Charlestown			
Granby Street		Fenway/Kenmore			
Silber Way		Fenway/Kenmore			
Raleigh Street		Fenway/Kenmore			
Charlesgate West		Fenway/Kenmore			
Charlesgate East		Fenway/Kenmore			
Back Street		Back Bay			
Dartmouth Street		Back Bay			
Clarendon Street		Back Bay			
Berkeley Street		Back Bay			
David G. Mugar Street		Back Bay			

20-308-002

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Shawmut Avenue	Milford Street to West Brookline (SL)	South End/City Proper	1,700	12	WREL
Walthum Street	Tremont Street to Washington Street (SL)	South End/City Proper	1,130	12	WREL
Hanson Street	Tremont Street to Shawmut Avenue (SL)	South End/City Proper	650	8	WREL
Shawmut Street	Melnea Cass to Massachusetts Avenue (SL)	South End/City Proper	1,650	16	WREL
Shawmut Street	Massachusetts Turnpike to E.Berkeley Street (SL)	South End/City Proper	1,000	12	WREL
Bond Street	Milford Street to Hanson Street (SL)	South End/City Proper	200	8	WREL
Shawmut Avenue	Pelham Street to Upton Street	South End/City Proper	65	24	SLIN
Shawmut Avenue	West Dedham to Drapers Lane	South End/City Proper	135	15	DLIN
Shawmut Avenue	Massachusetts Turnpike to E.Berkely Street	South End/City Proper	155	15	SLIN
Shawmut Avenue	Kendall Street to Lenox Street	South End/City Proper	220	10	SLIN
Shawmut Avenue	Upton Street to Union Park Street	South End/City Proper	145	18	DLIN
Shawmut Avenue	Paul Place to Emerald Court	South End/City Proper	100	10	SLIN
Shawmut Avenue	West Brookline Street to San Juan Street	South End/City Proper	235	10	SLIN
Hanson Street	Tremont Street to Ringold Street	South End/City Proper	310	18	DLIN
Hanson Street	Tremont Street to Ringold Street	South End/City Proper	315	12	SLIN
Waltham Street	Shawmut Avenue Washington Street	South End/City Proper	205	10	SLIN
Waltham Street	Rear 275-291 Shawmut Avenue	South End/City Proper	115	12	SLIN
Waltham Street	Bradford Street at Waltham Street	South End/City Proper	190	12	SLIN

20-308-001

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Harrison Avenue	Melnea Cass Blvd to East Berkley	South End	5,335.00	16", 12", 30"	W
Harrison Avenue	Melnea Cass Blvd to East Berkley	South End	1,250.00	12", 18"	SS
Traveler Street	Washington Street to Harrison Avenue	South End	330	12"	W
Union Park Street	Washington Street to Harrison Avenue	South End	460	8"	W
Washington Street	Talbot Street to Park Street	Dorchester	1,935.00	12"	W
Washington Street	Richmond Street to Morton Street	Dorchester	230	12"	SS
Washington Street	Rugdale Road to 1014 Washington Street	Dorchester	180	12"	SS
Washington Street	1058 Washington Street to Saint Gregory Street	Dorchester	120	12"	SS

19-309-001

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Lovejoy Wharf, City Proper	Beverly Street - adjacent drain manhole 26K451	City Proper		60"	
Seaport	Seaport Boulevard at B Street - adjacent drain manhole 23L217	South Boston		36"	
Warren Street	Warren Street at Co	Charlestown		84"	
Lewis Street	45 Lewis Street at West Pier Lane	East Boston		24"	
Piers Park Lane	Piers Park Lane - repair at manhole 25MTG4	East Boston		42"	

19-308-003

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Edgerly Road	Haviland Street to Westland Avenue	Fenway/Kenmore	3925	8", 12"	WM, SS, SD
Savin Hill Avenue	South Sydney Street to Caspian Way	Dorchester	2346	8", 12", 15", 18"	WM, SS, SD
Playstead Road	Springdale Street to Savin Hill Avenue	Dorchester	378	12"	WM
Dry Dock Ave	Summer Street to Tide Street	South Boston	1259	10", 12", 16"	WM, SW
Design Center Place	Dry Dock Ave to Black Falcon Ave	South Boston	292	16"	WM
Channel Street	Harbor Street to End	South Boston	355	8"	WM
Pierre Lellement Bike Path	Camden Street to Northampton Street	South End	10	8", 10"	WM
Terminal Street	Dry Dock Ave to Black Falcon Ave	South Boston	326	8", 12"	WM
Tide Street	Northern Avenue to FID Kennedy Avenue	South Boston	338	8", 12"	SD, SS
Edgerly Place	Winchester Street to End	Bay Village	286	6", 12"	WM, SS

19-308-002

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Vine St	Chelsea Street to Bunker Hill	Charlestown	790	8	W
Bunker Hill St	Lowney Way to Allston	Charlestown	3,130	8, 8w12	W
Chelsea St	Constitution to Medford	Charlestown	2,300	12	W
School St	Main Street to Bunker Hill Street	Charlestown	1,350	16w8, 8	W
Bartlett Street	Monument Sq. to Pearl Street	Charlestown	2,860	10w12 SH/NL	W
Bartlett Street	School Street to Pearl Street	Charlestown	400	10	W
Vine St	at Moulton Street	Charlestown	25	12	SS
Bunker Hill St	Sackville Street to Lowney way	Charlestown	480	20w21, 24	SS
Chelsea St	Constitution to Medford	Charlestown	940	12,15,18,30x39	SS
School St	Bunker Hill Street to Main Street	Charlestown	475	8,12w10	SS
Bunker Hill St	Lowney Way to Allston	Charlestown	670	12, 18, 20	SS
Vine Street	Chelsea Street to Bunker Hill	Charlestown	975	15, 39x41	SS
School St	Bunker Hill Street to Main Street	Charlestown	200	12	SS
Bunker Hill St	Lowney Way to Allston	Charlestown	310	18, 21	SD
Chelsea St	Constitution to Medford	Charlestown	700	12	SD
School St	Main to Bunker Hill	Charlestown	170	12	SD
Bunker Hill St	Lowney Way to Allston	Charlestown	395	15, 18	SD
Bartlett Street	Monument Sq. to Pearl Street	Charlestown	585	10,12,15	SD
School St	Bunker Hill Street to Main Street	Charlestown	325	24	SD

18-309-001

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Jersey Street	Boylston Street to Park Drive	Fenway Kenmore	925	12	WREL
Peteborough Street	Park Drive to Park Drive	Fenway Kenmore	1830	12	WREL
Jersey Street	Peterborough Street to Queensberry Street	Fenway Kenmore	320	18	SREL
Jersey Street	Boylston Street to Park Drive	Fenway Kenmore	515	18	SLIN
Jersey Street	Peterborough Street to Queensberry Street	Fenway Kenmore	290	34,36	DLIN
Peteborough Street	Public Alley 931 to Jersey Street	Fenway Kenmore	1075	30	SREL
Public Alley 931	Boylston Street to Peteborough Street	Fenway Kenmore	355	30	SREL
Peterborough Street	Park Drive to Jersey Street		1130	12,15	DREL

17-308-007

STREETS	LIMITS	Neighborhood	PIPE LENGTH	SIZE	TYPE
Lincoln Street	Kneeland Street to Essex Street	City Proper			
South Street	Kneeland Street to Beach Street	City Proper			
Harvard Street	Hudson Street to Monsignor Shea Road	City Proper			
Harold Street	Hollander Street to Holworthy Street	Roxbury			
Monsignor Shea Road	Harvard Street to Kneeland Street	City Proper			

Boston Water and Sewer Commission
980 Harrison Avenue
Boston, MA 02119
www.bwsc.org