



BOSTON WATER AND SEWER COMMISSION



2022-2024
CAPITAL IMPROVEMENT PROGRAM

BOSTON WATER AND SEWER COMMISSION CAPITAL IMPROVEMENT PROGRAM 2022-2024

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Executive Director
November 2021*

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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 2022-2024 CIP will not be exceeded or that additional projects will not be required, the Commission believes the amounts set forth the 2022-2024 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 2022 through 2024 total approximately \$236.8 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 the Commonwealth of Massachusetts Highway Department.

OBJECTIVES

The overall objectives of the Commission's 2022-2024 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 2022-2024 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 \$92.9 million, or 39.3% of the 2022-2024 CIP. Sewer System projects comprise \$110.9 million, or 46.8%, Support projects total \$24.4 million, or 10.3% of the expenditures outlined in the program, and Stormwater projects account for \$8.6 million, or 3.6% of the 2022-2024 CIP.

Total capital expenditures of \$107.4 million are outlined for 2022. Water Distribution projects comprise \$38.6 million or 35.9%, Sewer System projects account for \$50.8 million or 47.4%, Support projects account for \$13.4 million, or 12.4% of the 2022 amount. Stormwater projects totaling \$4.6 million consist of the remaining 4.3% of the 2022 amount.

Tables 1 and 2 represent the cash flow expenditures and funding sources for the Commission's 2022-2024 CIP.

Table 1 - 2022-2024 CIP Cash Flows

Program	2022	2023	2024	2022-2024
Water	38,565,000	30,469,000	23,905,000	92,939,000
Sewer	50,847,000	36,346,000	23,700,000	110,893,000
Support	13,350,000	6,697,000	4,364,000	24,411,000
Stormwater	4,635,000	2,480,000	1,450,000	8,565,000
Total	107,397,000	75,992,000	53,419,000	236,808,000

NOTE: Although expenditures decrease from periods 2023 to 2024, it is anticipated that funding for 2024 will be equal to or greater than funding presented in 2024. The decrease in 2024 is primarily due to the CIP being a one-year cash flow, over a three-year budget period.

CIP expenditures are funded by four funding sources: Bonds, Rate Revenue, the MWRA funded Local Water System Assistance Program (LWSAP) and the MWRA funded I/I Local Financial Assistance Program (MWII). In 2021, 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. Bonds funded projects account for \$130.3 million, or 55.0% of the 2022-2024 CIP. Rate funded projects comprise of \$62.7 million, or 26.5%, MWRA funded Water projects total \$19.9 million, or 8.4% of the expenditures outlined in the program, and MWRA funded Sewer projects account for \$23.8 million, or 10.1% of the 2022-2024 CIP.

Total capital expenditures of \$107.4 million are outlined for 2022. Bond funded projects comprise \$64.9 million or 60.5%, Rate funded projects account for \$24.4 million or 22.8%, MWRA Water projects account for \$9.5 million or 8.9% of the 2022 amount and I/I projects total \$8.5 million consist of the remaining 7.9% of the 2022 amount.

Table 2 – 2022-2024 CIP Funding Sources

Program	2022	2023	2024	2022-2024
BWSC Bonds	64,935,000	40,495,000	24,874,000	130,304,000
Rate Revenue	24,435,000	22,163,000	16,136,000	62,734,000
MWRA Water Assistance	9,514,000	5,161,000	5,197,000	\$19,872,000
MWRA I/I Assistance	8,513,000	8,173,000	7,212,000	\$23,898,000
Total	107,397,000	75,992,000	53,419,000	\$236,808,000

NOTE: Although expenditures decrease from periods 2023 to 2024, it is anticipated that funding for 2024 will be equal to or greater than funding presented in 2023. The decrease in 2024 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 2022-2024 Capital Improvement Program. Some of the major projects are listed below:

- ✓ Water Main Rehabilitation in Dorchester & South Boston
- ✓ Water Main Replacement in City Proper
- ✓ Water Main Valve Replacement
- ✓ Rehabilitation of the New Boston Main Interceptor (NBMI)
- ✓ Sewer Renewal & Replacement in Fenway
- ✓ Sewer Renewal & Replacement in Roslindale, Hyde Park & Mattapan
- ✓ Installation of Tide-gates Citywide
- ✓ Sewer Separation and System Improvements in South Boston
- ✓ Sewer Separation in Roxbury
- ✓ Sewer Separation in East Boston
- ✓ City-wide Illegal Connections Investigations
- ✓ Dorchester Interceptor – Relief Sewer
- ✓ Upgrades to Union Park Pumping Station & Satellite Stations
- ✓ Projects affiliated with the Consent Decree; includes cleaning and televising 90 miles of sewer and drains
- ✓ Implement Stormwater/Green Infrastructure Program designed to improve water quality, the environment and manage stormwater resources
- ✓ Improvements of Information Technology

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 15%. 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 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 lead and copper samples from the required 25 customer locations and submits them to the MWRA. The MWRA analyzes the samples and provides the results from all the MWRA Local Bodies 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 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 25 private sites that are known to have lead services. Importantly, Boston drinking 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 in over a decade, triggering a series of required actions under the Lead Rule. In compliance with regulatory requirements, 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 has updated its Lead Service Line Program, which was approved by MassDEP in March 2021. The Commission is actively removing known lead service lines in the system and investigating service lines of an unknown composition. The EPA has published changes to the Lead Rule, which 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. Consistent with this pending EPA rule change and MassDEP requirements, the Commission is actively pursuing removal of all lead service lines in the system, regardless of their status as public or privately owned. 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. In the most recent reporting period November 2020 through October 2021, the Commission removed over four hundred lead service lines in the system.

Under the Commission's water use regulations, the home property owner is responsible for the private portion of the water service line, which the portion running from the property line into the basement or to the meter. 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 increasing the credit from \$1,000 to \$2,000, while expanding eligibility to all properties with services 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.

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 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 or catastrophic events and terrorists attack 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 "ERP" 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 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 9.1 mgd in Fiscal year 2020. Unbilled water is the difference between water purchased from the MWRA and water sold to customers. Of the 9.1 mgd of unbilled water in Fiscal Year 2020, approximately 4.3 mgd was identified as water for unbilled public purposes such as firefighting and street cleaning. Thus, unaccounted-for-water was approximately 4.8 mgd, or about 8.2% of the 58.5 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 377.8 miles of older water mains, the cleaning and lining of 274.8 miles of water mains, hydrant replacements and valve upgrades and replacements.

Over the three years of the CIP, the Commission is projected to expend \$92.9 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 2022 will result in the replacement of 8.6 miles of water mains.

Table 3 presents a summary of the 2022-2024 capital expenditures for the Water Distribution System.

Table 3 - Water Distribution System Expenditures by Program Category

Program	2022	2023	2024	2022-2024
Water Replacement	30,803,000	24,597,000	18,435,000	73,835,000
Water Special	7,762,000	5,872,000	5,470,000	19,104,000
Total	38,565,000	30,469,000	23,905,000	92,939,000

NOTE: Although expenditures decrease from periods 2023 to 2024, it is anticipated that funding for 2024 will be equal to or greater than funding presented in 2023. The decrease in 2024 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 \$110.9 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 21.0 miles of deteriorated or collapsed sanitary sewers and storm drains and the television inspection of approximately 90 miles of sewer pipe within the next three years. 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, stormwater into the sanitary sewers

Table 4 presents a summary of the 2022-2024 capital expenditures for the Sewer System.

Table 4 - Sewer System Expenditures by Program Category

Program	2022	2023	2024	2022-2024
Sewer R & R	39,098,000	23,520,000	13,975,000	76,593,000
Increased Capacity	480,000	420,000	1,300,000	2,200,000
Separation	7,163,000	7,331,000	5,625,000	20,119,000
Sewer Special	4,106,000	5,075,000	2,800,000	11,981,000
Total	50,847,000	36,346,000	23,700,000	110,893,000

NOTE: Although expenditures decrease from periods 2023 to 2024, it is anticipated that funding for 2024 will be equal to or greater than funding presented in 2023. The decrease in 2024 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 director 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 90.22% 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)

Separation

- Citywide Illegal Connection Investigation Program Phase V

Sewer Special

- Customization of SCREAM & CMOM

Stormwater

- Construct BMPs & Green Infrastructure at City Hall Plaza

Water Quality Improvements:

Separation

- Separation of Sewer House Laterals (Contract 20-309-015)
- Owner Correction of Illegal Connections

Storm Water

- Design of Stormwater Detention Facilities PH I
- Design of Stormwater Detention Facilities PH II
- Construction of Stormwater Detention Facilities PH I
- CCTV of Sewers and Storm Drains (Contamination Investigation) IDDE
- Constructed Wetland in Stormwater Tributary Area
- Sampling & Metering for Storm Drain Model Validation

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

Table 5 presents a summary of the 2022-2024 projected capital expenditures associated with the Consent Decree.

Table 5 – Consent Decree Expenditures by Contract

Contract	Description	Budget
22-309-009	CCTV of Sewer & Storm Drains/CMOM	\$750,000
22-309-010	CCTV of Sewer & Storm Drains/CMOM	\$750,000
21-309-009	CCTV of Sewer & Storm Drains/CMOM	\$330,000
21-309-010	CCTV of Sewers & Storm Drains/CMOM	\$330,000
Future Contracts	CCTV of Sewer & Storm Drains/CMOM	\$3,300,000
20-206-007	Citywide Illegal Connections PH V	\$1,946,000
21-309-004	Lateral Testing & CCTV of Sewer & Drains IDDE	\$355,000
N/A	Construct BMPs & GI at City Hall Plaza	\$1,500,000

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 20 contracts, which are funded by the 4:1 I/I Infiltration Inflow Reduction Mitigation Account. Contracts 09-309-008, 10-206-005, 10-309-004, 15-206-001, 17-206-004, 18-206-004 and 19-206-009 are complete. Contracts 14-206-002, 20-206-008, 21-206-001 and as well as the South Boston Sewer Separation and East Boston Separation are ongoing. The South Boston Separation includes both design costs under contract 16-206-003 and construction costs under contracts 20-309-012, 21-309-012, 22-309-012, and 20-206-002. The East Boston Separation includes both design costs under contract 21-206-003 and construction costs under contracts 19-309-002, & 21-309-002. All costs identified as "DEDII" and are 100% reimbursable; therefore, are not included in the 2022-2024 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
09-309-008	Dorchester Brook Regulator Relocation	\$6,924,672.92	Complete
10-206-005	Roxbury Separation Design Contract	\$1,732,975.60	Complete
10-309-004	East Boston Separation	\$504,381.30	Complete
15-206-001	Infiltration and Inflow Analysis	\$1,998,970.00	Complete
17-206-004	Infiltration and Inflow Analysis	\$994,470.00	Complete
18-206-004	I/I SSES (Roslindale & West Rox)	\$1,301,793.00	Complete
19-206-009	I/I SSES (Allston/Brighton)	\$1,415,720.00	Complete
20-206-008	I/I SSES (Mattapan)	\$1,500,000.00	Active
21-206-001	I/I SSES (Jamaica Plain)	\$720,000	Active
14-206-002	Roxbury Separation Design Contract 1	\$1,049,954.00	Active
16-206-003	South Boston Separation Design Contract 1	\$5,380,000.00	Active
20-309-012	South Boston Separation Contract 1	\$5,820,000.00	Active
20-309-12P	South Boston Separation Contract 1	\$1,723,000.00	Active
21-309-012	South Boston Separation Contract 2	\$2,868,000.00	Active
20-206-002	South Boston Separation Design Contract 2	\$3,250,000.00	Active
22-309-012	South Boston Separation Contract 3	\$5,445,000.00	Active
23-309-012	South Boston Separation Contract 4	\$1,609,000.00	Active
19-309-002	East Boston Separation PH III	\$7,645,000.00	Active
21-309-002	East Boston Separation PH IV	\$7,645,000.00	Active
21-206-003	East Boston Separation Design Services	\$4,000,000.00	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 **Capacity, Management, Operation and Maintenance (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. Monies allocated for Support projects in the 2022-2024 CIP total \$24.4 million.

Monies budgeted 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 2022-2024 capital expenditures for the Support projects.

Table 7 - Support Expenditures by Project Category

Program	2022	2023	2024	2022-2024
Metering	1,015,000	1,615,000	815,000	3,445,000
IT	3,370,000	2,550,000	1,700,000	7,620,000
Admin Equip	8,965,000	2,532,000	1,849,000	13,346,000
Total	13,350,000	6,697,000	4,364,000	24,411,000

NOTE: Although expenditures decrease from periods 2023 to 2024, it is anticipated that funding for 2024 will be equal to or greater than funding presented in 2023. The decrease in 2024 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. Monies allocated for Stormwater projects in the 2022-2024 CIP total \$8.6 million.

Table 8 presents a summary of the 2022-2024 capital expenditures for the Stormwater projects.

Table 8 - Stormwater Expenditures by Project Category

Program	2022	2023	2024	2022-2024
Stormwater	4,635,000	2,480,000	1,450,000	8,565,000
Total	4,635,000	2,480,000	1,450,000	8,565,000

NOTE: Although expenditures decrease from periods 2023 to 2024, it is anticipated that funding for 2024 will be equal to or greater than funding presented in 2023. The decrease in 2024 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 52 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 2022, the Commission will be assessed 33.9% of the water system charges and 28.9% of the sewer system charges. On a combined basis, the Commission will pay 30.7% 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 2022 total \$93.9 million based on the Commission’s calendar year 2020 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 2022 based on calendar year 2020 data, totals \$148.9 million. Total assessments for water and sewer charges for MWRA fiscal year 2022 are \$242.8 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 183.5 mgd (millions of gallon per day) to consumers in 2020. 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 52 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 646,000 almost doubles each day by commuting workers and students, shoppers, tourists, conventioners, 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 four sources: Commission general revenue bonds, rate revenues 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 \$130.3 million, or 55.0% of the total funding requirement. In 2022, bonds will make up approximately \$64.9 million, or 60.5% of the funding required for that year.

As in past CIP's, the 2022-2024 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. The 2022-2024 CIP outlines R&R expenditures of \$62.7 million, or 26.5% of total expenditures over the three years of the program. In 2022, approximately \$24.4 million, or 22.7% 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 \$97.1 million in MWRA funding for various Infiltration/Inflow and Separation projects of which \$2,072,460 is currently outstanding. In addition, the Commission has received grants under the I/I Grant/Loan Program totaling \$43,350,904. The Commission plans to continue to take advantage of MWRA funding over the 2022-2024 period. \$23.9 million in funding is anticipated to be used for projects that are ongoing along with new projects for the three years 2022-2024.

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
23-309-012	South Boston Separation Contract 4
22-309-001	Sewer R & R in Roslindale & West Roxbury
22-309-003	Sewer R & R in Upper Roxbury
22-309-012	South Boston Separation Contract 3
21-309-012	South Boston Separation Contract 2
20-309-012	South Boston Separation Contract 1
20-309-011P	South Boston Separation Contract 1 Paving
17-309-005	Sewer Separation in East Boston Phase II
17-309-011	Sewer Separation Roxbury Contract 3

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 amount of funds available in the program is \$34.3 million dollars per year with Boston receiving a share of approximately \$5.3 million dollars per year. The loans are approved for distribution from MWRA Fiscal Years 2011 through 2023. The Commission has applied for loan funding for certain water main replacement projects awarded through the remainder of this program. Project costs incurred since January 1, 2010 have been considered for eligibility in applications under the LWSAP. As of December 31, 2020, the Commission has received \$52.6 million in LWSAP funding of which there currently is an outstanding balance of \$30.9 million.

It is anticipated in the 2022-2024 Capital Improvement Program \$19.9 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
23-309-002	East Boston Separation Phase IV
23-309-012	South Boston Separation Contract 4
22-309-012	South Boston Separation Contract 3
21-309-012	South Boston Separation Contract 2
20-309-012	South Boston Separation Contract 1
20-309-11P	South Boston Separation Contract 1 Paving
22-308-001	Water Main Replacement in City Proper
21-308-002	Lead Service ID (MWLLP)
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
18-308-001	Water Main Replacement in City Proper
17-308-002	Water Main Replacement in Dorchester and Roxbury

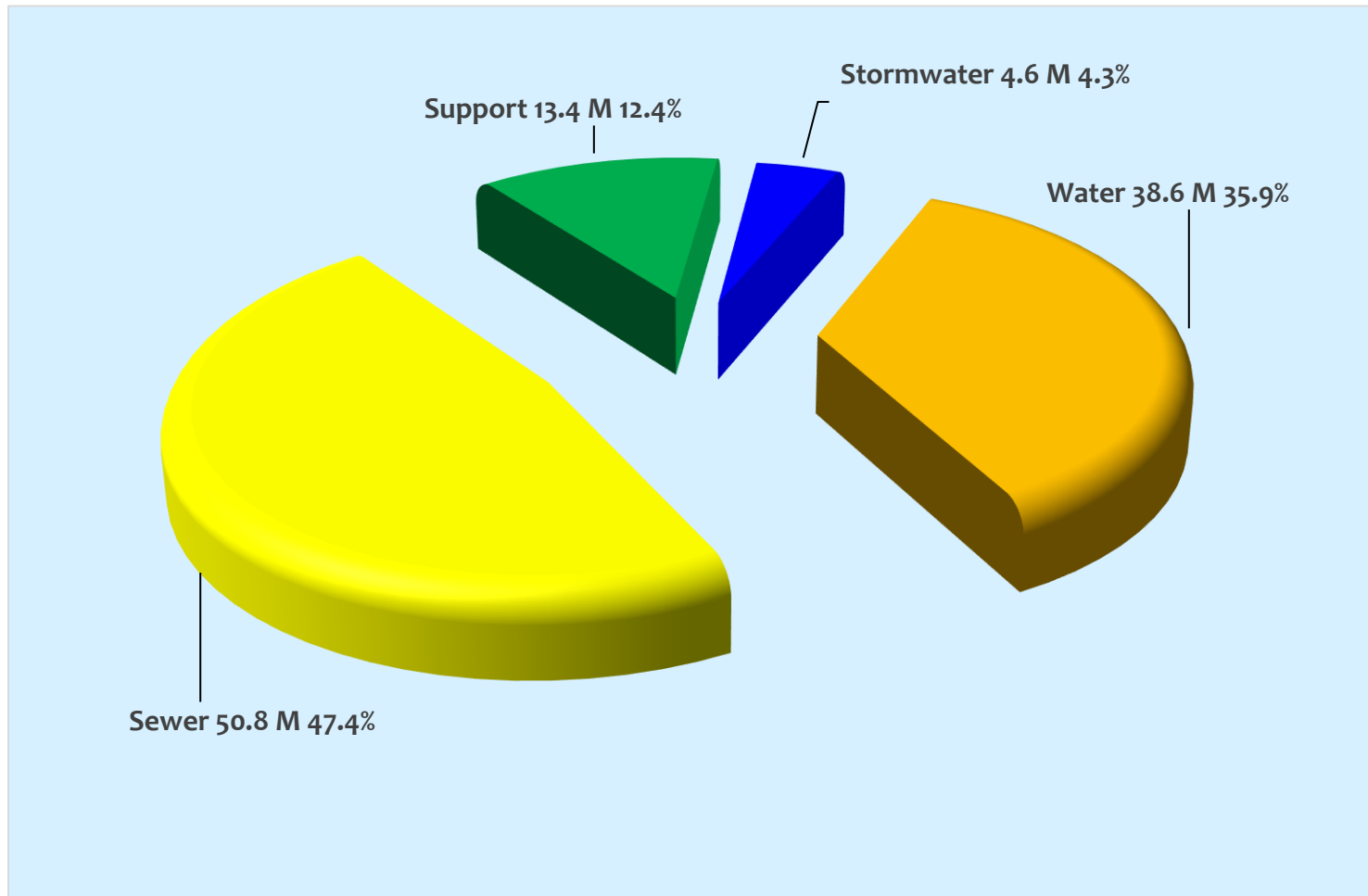
Table 11 on page 20 represents the cash flow expenditures by category and funding source for the Commission's 2022-2024 CIP.

Table 11

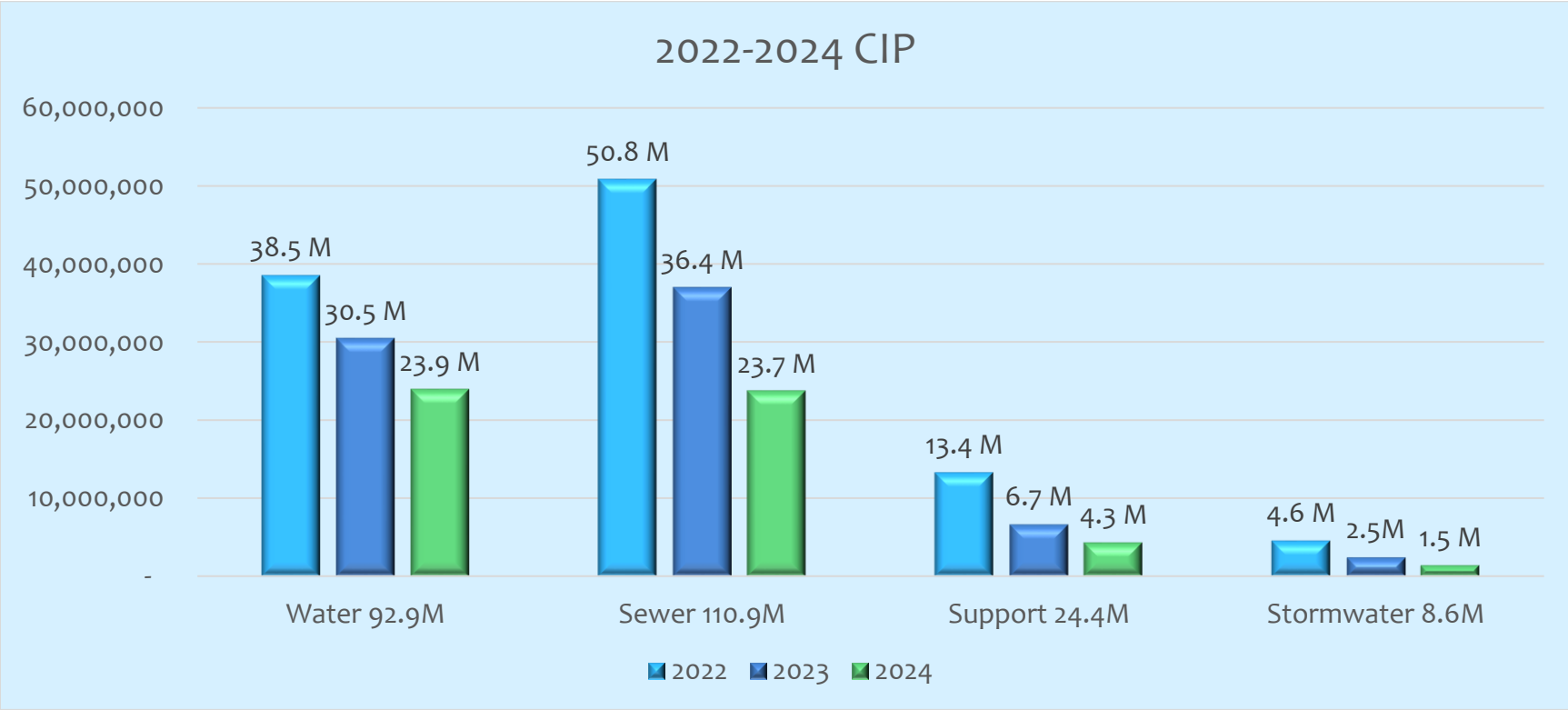
Capital Improvement Program
2022 - 2024
Totals by Category and Funding Source

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
Water Total	\$ 1,799,000	\$ 1,465,000	\$ 1,395,000	\$ 1,731,000	\$ 2,798,000	\$ 3,554,000	\$ 3,699,000	\$ 4,144,000	\$ 4,717,000	\$ 4,684,000	\$ 4,330,000	\$ 4,249,000	\$ 38,565,000	\$ 30,469,000	\$ 23,905,000	\$ 92,939,000
Bonds	1,139,000	815,000	554,000	651,000	1,271,000	2,219,000	2,222,000	2,216,000	2,890,000	2,661,000	2,634,000	2,738,000	22,010,000	20,564,000	12,305,000	54,879,000
Rate	300,000	290,000	291,000	500,000	775,000	780,000	812,000	871,000	732,000	742,000	564,000	384,000	7,041,000	4,744,000	6,403,000	18,188,000
LWSAP	360,000	360,000	550,000	580,000	752,000	555,000	665,000	1,057,000	1,095,000	1,281,000	1,132,000	1,127,000	9,514,000	5,161,000	5,197,000	19,872,000
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sewer Total	\$ 4,996,000	\$ 3,902,000	\$ 3,841,000	\$ 3,327,000	\$ 3,891,000	\$ 5,074,000	\$ 5,622,000	\$ 4,697,000	\$ 4,138,000	\$ 3,557,000	\$ 3,649,000	\$ 4,153,000	\$ 50,847,000	\$ 36,346,000	\$ 23,700,000	\$ 110,893,000
Bonds	3,288,000	2,450,000	2,210,000	1,814,000	2,060,000	2,543,000	2,790,000	2,632,000	1,983,000	1,192,000	924,000	1,554,000	25,440,000	10,754,000	6,755,000	42,949,000
Rate	1,222,000	1,222,000	1,401,000	1,248,000	1,566,000	1,651,000	1,796,000	1,030,000	1,125,000	1,335,000	1,705,000	1,593,000	16,894,000	17,419,000	9,733,000	44,046,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	486,000	230,000	230,000	265,000	265,000	880,000	1,036,000	1,035,000	1,030,000	1,030,000	1,020,000	1,006,000	8,513,000	8,173,000	7,212,000	23,898,000
Support Total	\$ 335,000	\$ 220,000	\$ 1,000,000	\$ 350,000	\$ 280,000	\$ 1,182,000	\$ 1,800,000	\$ 700,000	\$ 1,827,000	\$ 3,260,000	\$ 650,000	\$ 1,746,000	\$ 13,350,000	\$ 6,697,000	\$ 4,364,000	\$ 24,411,000
Bonds	335,000	220,000	1,000,000	350,000	280,000	1,182,000	1,800,000	700,000	1,827,000	3,260,000	650,000	1,746,000	13,350,000	6,697,000	4,364,000	24,411,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stormwater Total	\$ 143,000	\$ 143,000	\$ 142,000	\$ 143,000	\$ 495,000	\$ 514,000	\$ 525,000	\$ 534,000	\$ 544,000	\$ 544,000	\$ 490,000	\$ 418,000	\$ 4,635,000	\$ 2,480,000	\$ 1,450,000	\$ 8,565,000
Bonds	143,000	143,000	142,000	143,000	423,000	443,000	453,000	463,000	472,000	473,000	419,000	418,000	4,135,000	2,480,000	1,450,000	8,065,000
Rate	-	-	-	-	72,000	71,000	72,000	71,000	72,000	71,000	71,000	-	500,000	-	-	500,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	\$ 7,273,000	\$ 5,730,000	\$ 6,378,000	\$ 5,551,000	\$ 7,464,000	\$ 10,324,000	\$ 11,646,000	\$ 10,075,000	\$ 11,226,000	\$ 12,045,000	\$ 9,119,000	\$ 10,566,000	\$ 107,397,000	\$ 75,992,000	\$ 53,419,000	\$ 236,808,000
Bonds	4,905,000	3,628,000	3,906,000	2,958,000	4,034,000	6,387,000	7,265,000	6,011,000	7,172,000	7,586,000	4,627,000	6,456,000	64,935,000	40,495,000	24,874,000	130,304,000
Rate	1,522,000	1,512,000	1,692,000	1,748,000	2,413,000	2,502,000	2,680,000	1,972,000	1,929,000	2,148,000	2,340,000	1,977,000	24,435,000	22,163,000	16,136,000	62,734,000
LWSAP	360,000	360,000	550,000	580,000	752,000	555,000	665,000	1,057,000	1,095,000	1,281,000	1,132,000	1,127,000	9,514,000	5,161,000	5,197,000	19,872,000
I/I	486,000	230,000	230,000	265,000	265,000	880,000	1,036,000	1,035,000	1,030,000	1,030,000	1,020,000	1,006,000	8,513,000	8,173,000	7,212,000	23,898,000
Total	\$ 7,273,000	\$ 5,730,000	\$ 6,378,000	\$ 5,551,000	\$ 7,464,000	\$ 10,324,000	\$ 11,646,000	\$ 10,075,000	\$ 11,226,000	\$ 12,045,000	\$ 9,119,000	\$ 10,566,000	\$ 107,397,000	\$ 75,992,000	\$ 53,419,000	\$ 236,808,000

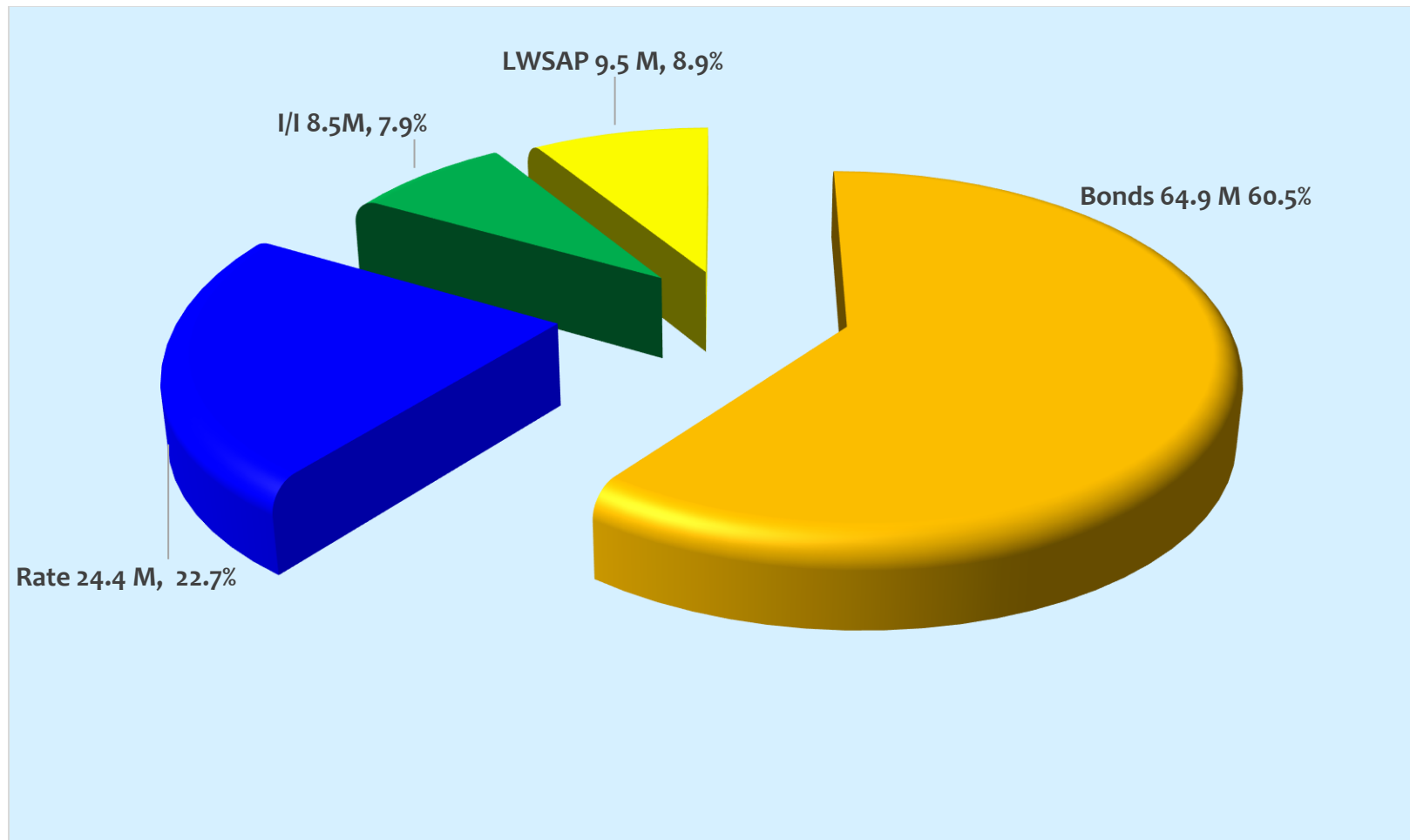
Graph 1 - 2022 CIP Total Expenditures by Category \$107.4 Million



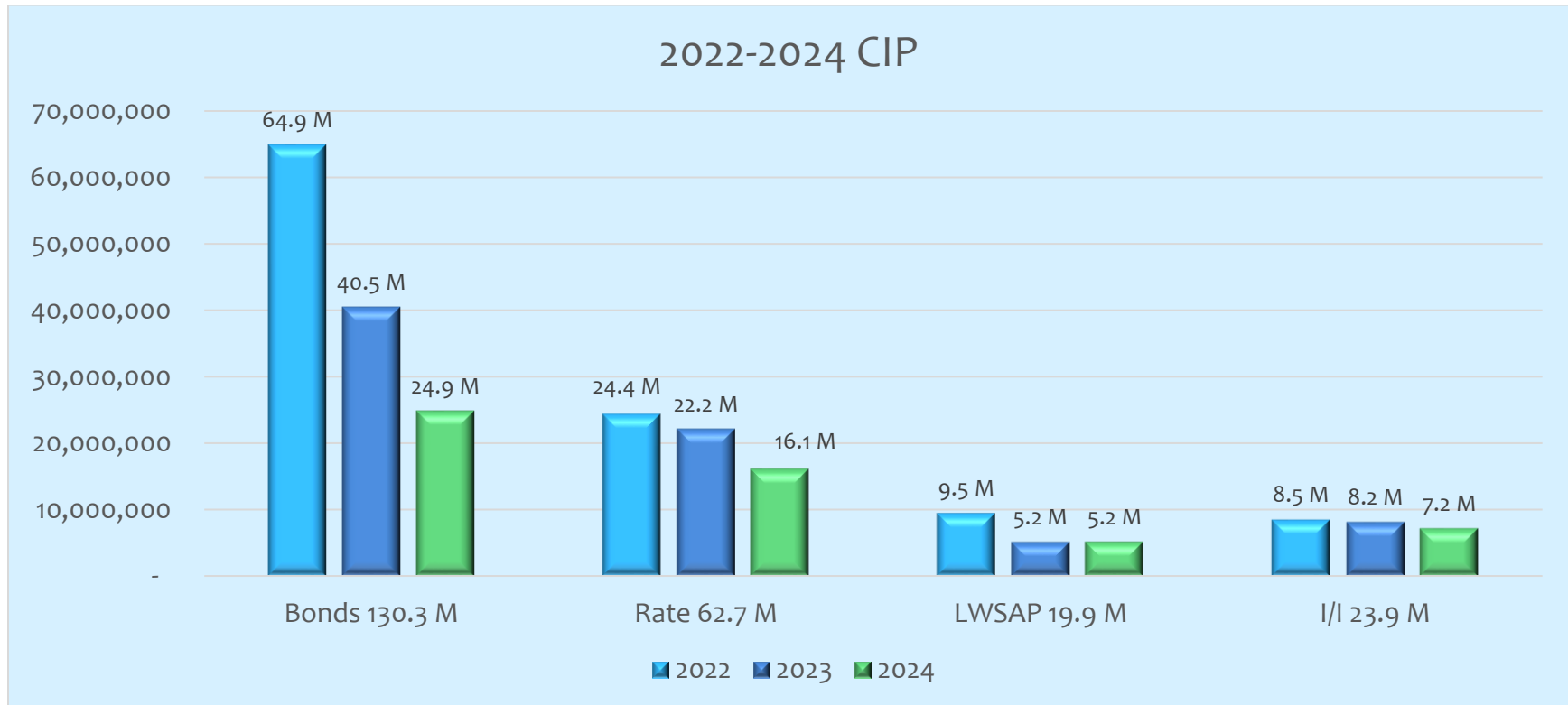
Graph 2 – 2022-2024 CIP Total Expenditures by Category \$236.8 Million



Graph 3 – 2022 CIP Total Expenditures by Funding \$107.4 Million



Graph 4 – 2022 - 2024 Total Expenditures by Funding Source \$236.8 Million



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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	12,750	Total Linear Feet	5,355,890	High Pressure Fire System	15 Miles
		Total Linear Miles	1,014	Northern High	4 Miles
Gate Valves *	17,699	Pumping Stations	1	Northern Low	89 Miles
				Southern Extra High	80 Miles
				Southern High	561 Miles
				Southern Low	265 Miles

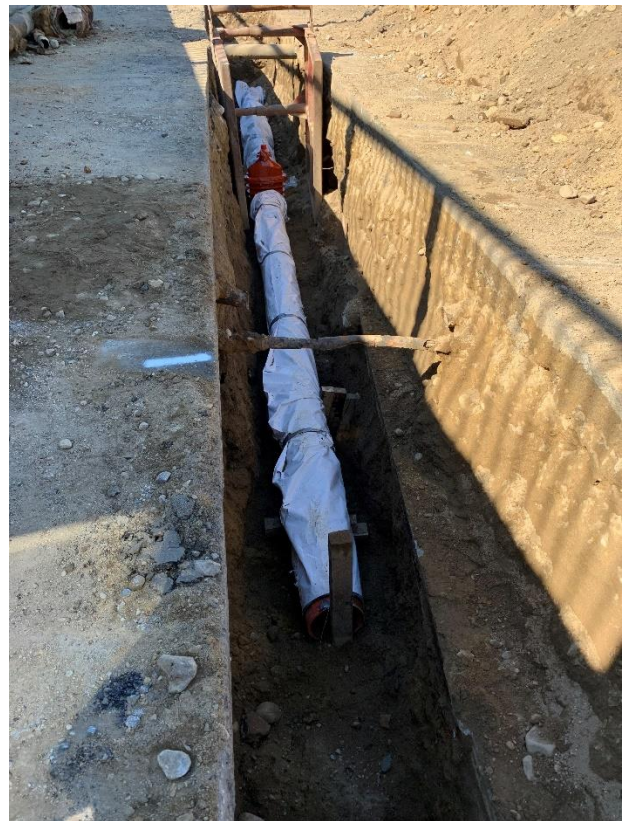
* Includes only facilities owned by BWSC

OBJECTIVES

Primary Objectives of the 2022-2024 Water Distribution System Capital Improvement Plan are:

Contract 18-308-003; Neponset Ave 8-inch
Reducer 12-inch Pipe

- 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.

2022-2024 WATER PROJECTS

Water Pipe Replacement Projects

- Replacement of Unlined 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 641 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 10.2 mgd in Fiscal in 2020, an 85% reduction.

Over the last ten years, the Commission has completed a total of \$260.2 million in water distribution system improvements. These improvements have resulted in the replacement of 102.6 miles of water mains, and cement lining of 4.3 miles of water mains.

2022-2024 WATER DISTRIBUTION SYSTEM CAPITAL PROGRAM

The Commission's 2022-2024 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.

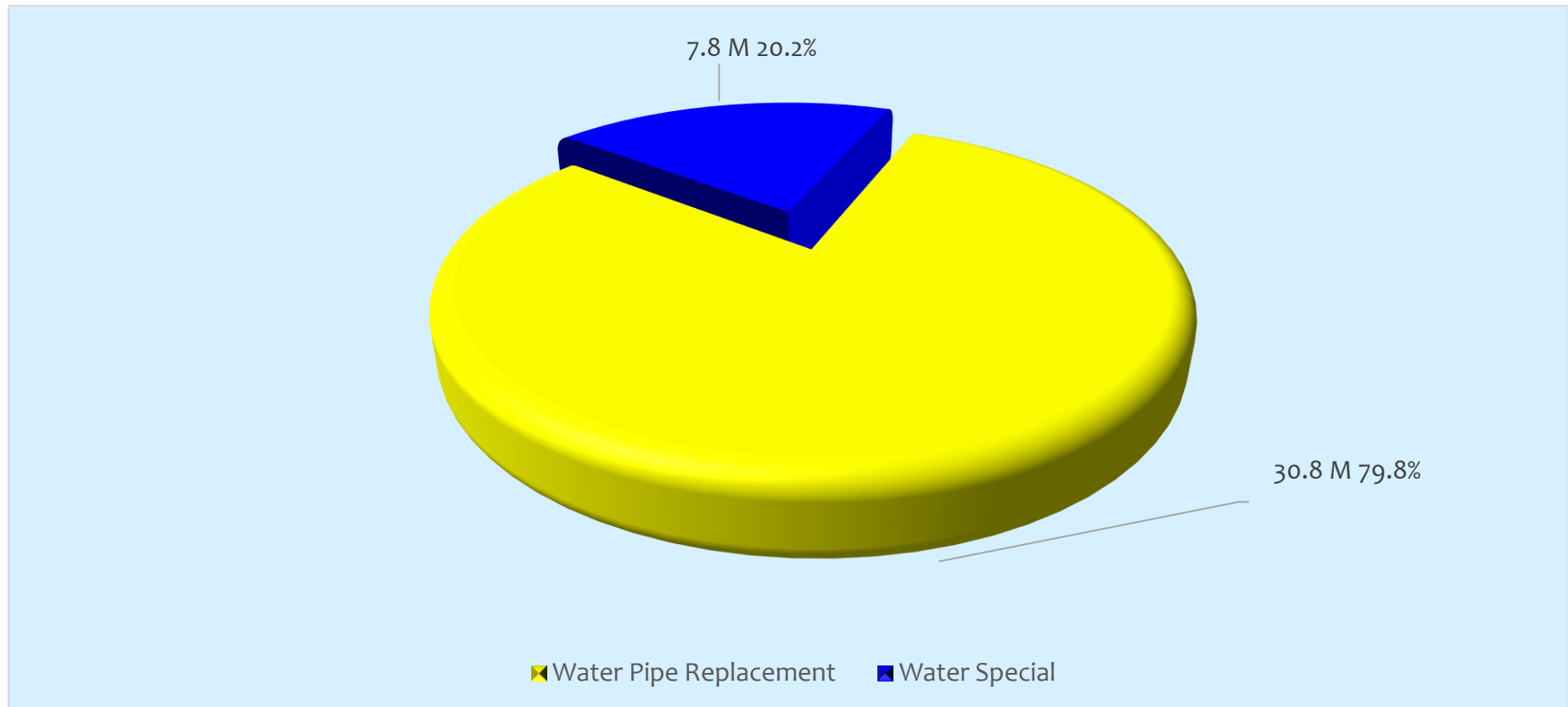
Table 12 and Graph 5 on the following pages present the 2022 capital expenditures for the Water Distribution System. Graph 6 depicts the total expenditures by program of the 2022-2024 water expenditures. Graph 7 illustrates the spending by program for 2022. Three-year expenditures are projected to be \$92.9 million, of which \$38.6 million is anticipated to occur in 2022. The three-year amounts are distributed in the Water Program as follows: Replacement \$73.8 million or 79.4% and Special \$19.1 million or 20.6%.

Table 12 - Water Distribution System by Category

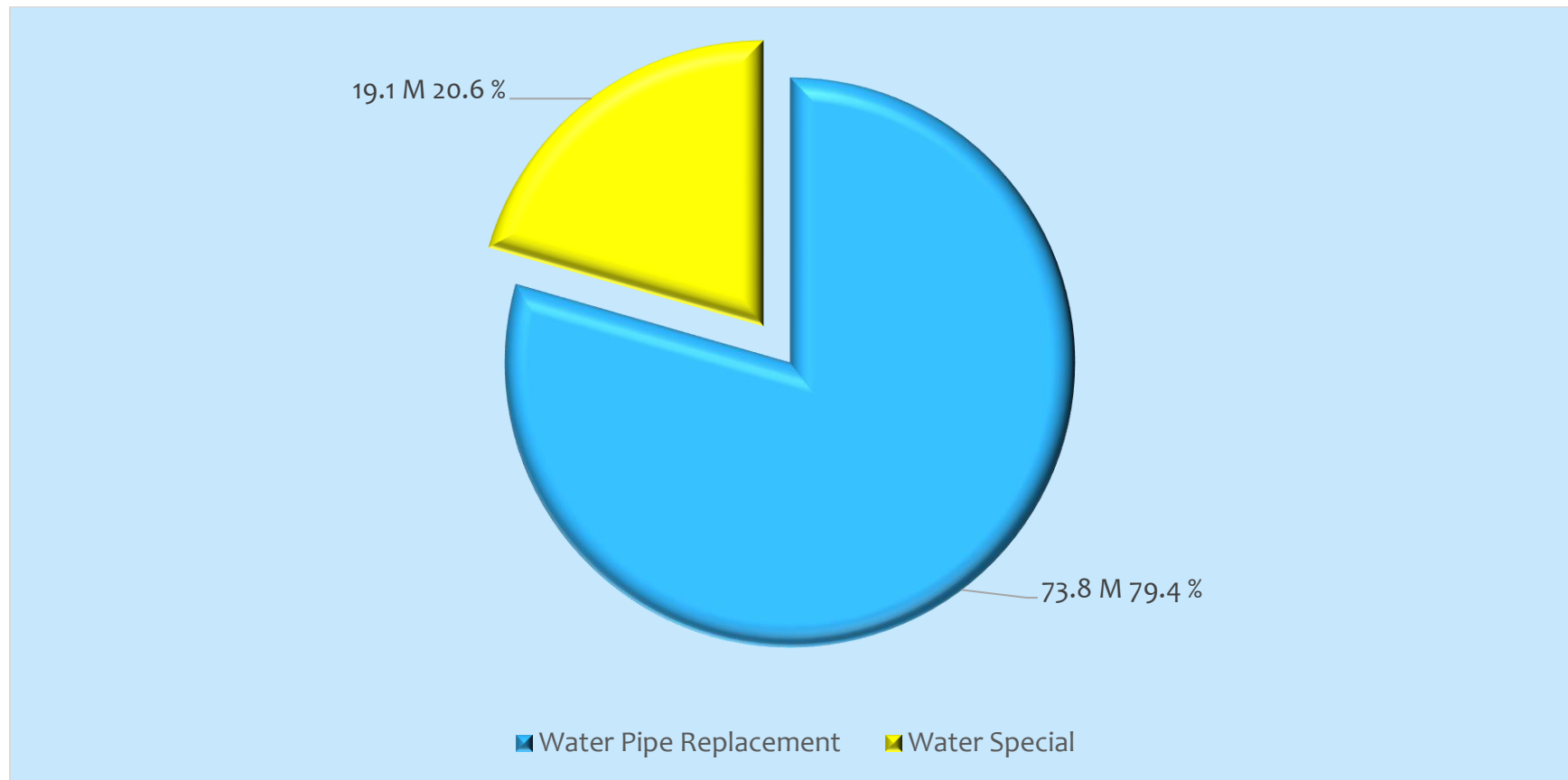
Capital Improvement Program
2022 - 2024
Water Total

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
Water Replacement																
Bonds	800,000	500,000	325,000	409,000	757,000	1,612,000	1,613,000	1,609,000	2,282,000	2,148,000	2,119,000	2,123,000	16,297,000	15,002,000	7,145,000	38,444,000
Rate	-	-	-	209,000	455,000	459,000	773,000	831,000	693,000	704,000	524,000	344,000	4,992,000	4,434,000	6,093,000	15,519,000
LWSAP	360,000	360,000	550,000	580,000	752,000	555,000	665,000	1,057,000	1,095,000	1,281,000	1,132,000	1,127,000	9,514,000	5,161,000	5,197,000	19,872,000
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Relay Total	\$ 1,160,000	\$ 860,000	\$ 875,000	\$ 1,198,000	\$ 1,964,000	\$ 2,626,000	\$ 3,051,000	\$ 3,497,000	\$ 4,070,000	\$ 4,133,000	\$ 3,775,000	\$ 3,594,000	\$ 30,803,000	\$ 24,597,000	\$ 18,435,000	\$ 73,835,000
Water Special																
Bonds	339,000	315,000	229,000	242,000	514,000	607,000	609,000	607,000	608,000	513,000	515,000	615,000	5,713,000	5,562,000	5,160,000	16,435,000
Rate	300,000	290,000	291,000	291,000	320,000	321,000	39,000	40,000	39,000	38,000	40,000	40,000	2,049,000	310,000	310,000	2,669,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special Total	\$ 639,000	\$ 605,000	\$ 520,000	\$ 533,000	\$ 834,000	\$ 928,000	\$ 648,000	\$ 647,000	\$ 647,000	\$ 551,000	\$ 555,000	\$ 655,000	\$ 7,762,000	\$ 5,872,000	\$ 5,470,000	\$ 19,104,000
Water Total	\$ 1,799,000	\$ 1,465,000	\$ 1,395,000	\$ 1,731,000	\$ 2,798,000	\$ 3,554,000	\$ 3,699,000	\$ 4,144,000	\$ 4,717,000	\$ 4,684,000	\$ 4,330,000	\$ 4,249,000	\$ 38,565,000	\$ 30,469,000	\$ 23,905,000	\$ 92,939,000
Bonds	1,139,000	815,000	554,000	651,000	1,271,000	2,219,000	2,222,000	2,216,000	2,890,000	2,661,000	2,634,000	2,738,000	22,010,000	20,564,000	12,305,000	54,879,000
Rate	300,000	290,000	291,000	500,000	775,000	780,000	812,000	871,000	732,000	742,000	564,000	384,000	7,041,000	4,744,000	6,403,000	18,188,000
LWSAP	360,000	360,000	550,000	580,000	752,000	555,000	665,000	1,057,000	1,095,000	1,281,000	1,132,000	1,127,000	9,514,000	5,161,000	5,197,000	19,872,000
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$ 1,799,000	\$ 1,465,000	\$ 1,395,000	\$ 1,731,000	\$ 2,798,000	\$ 3,554,000	\$ 3,699,000	\$ 4,144,000	\$ 4,717,000	\$ 4,684,000	\$ 4,330,000	\$ 4,249,000	\$ 38,565,000	\$ 30,469,000	\$ 23,905,000	\$ 92,939,000

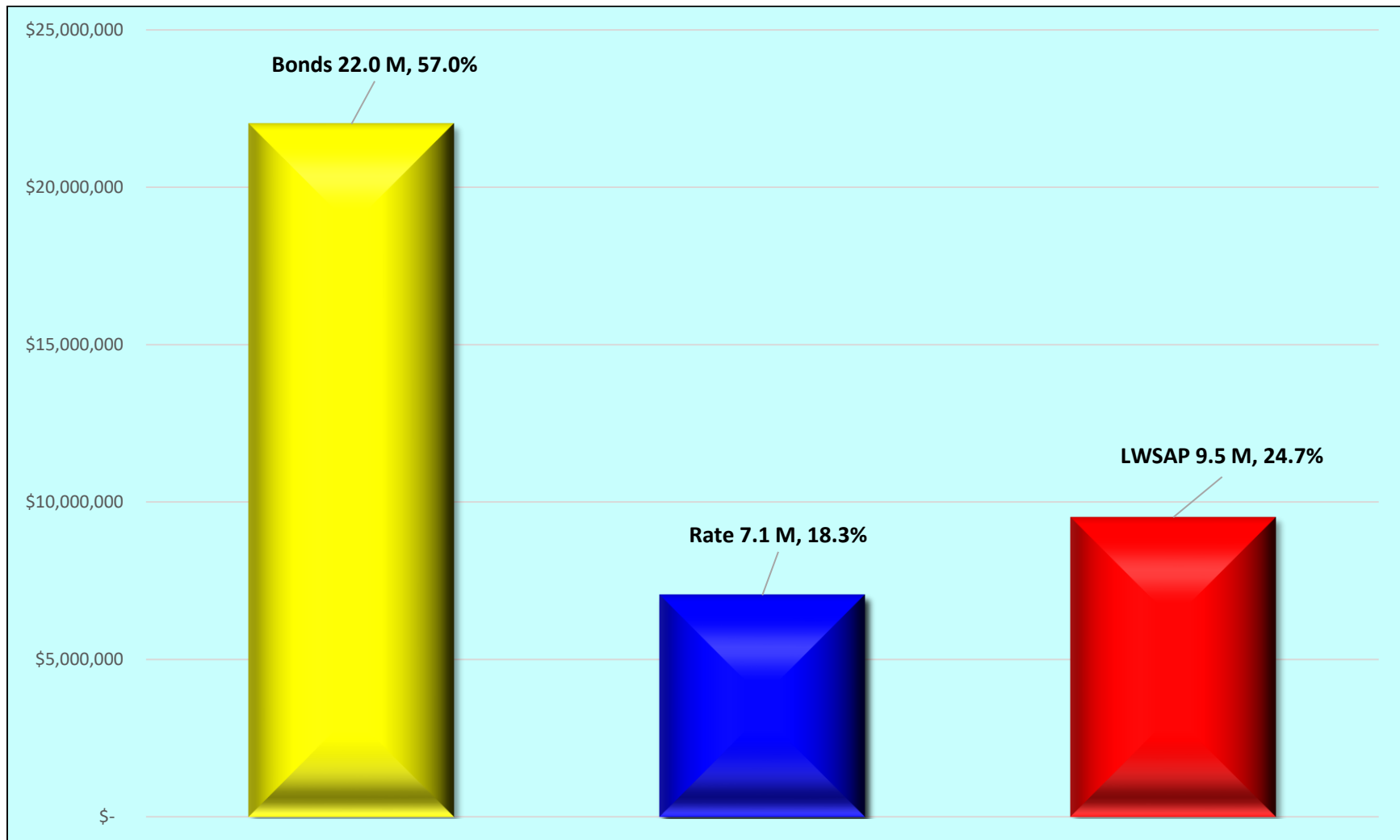
Graph 5 - 2022 Total Water Expenditures by Program 38.6 million



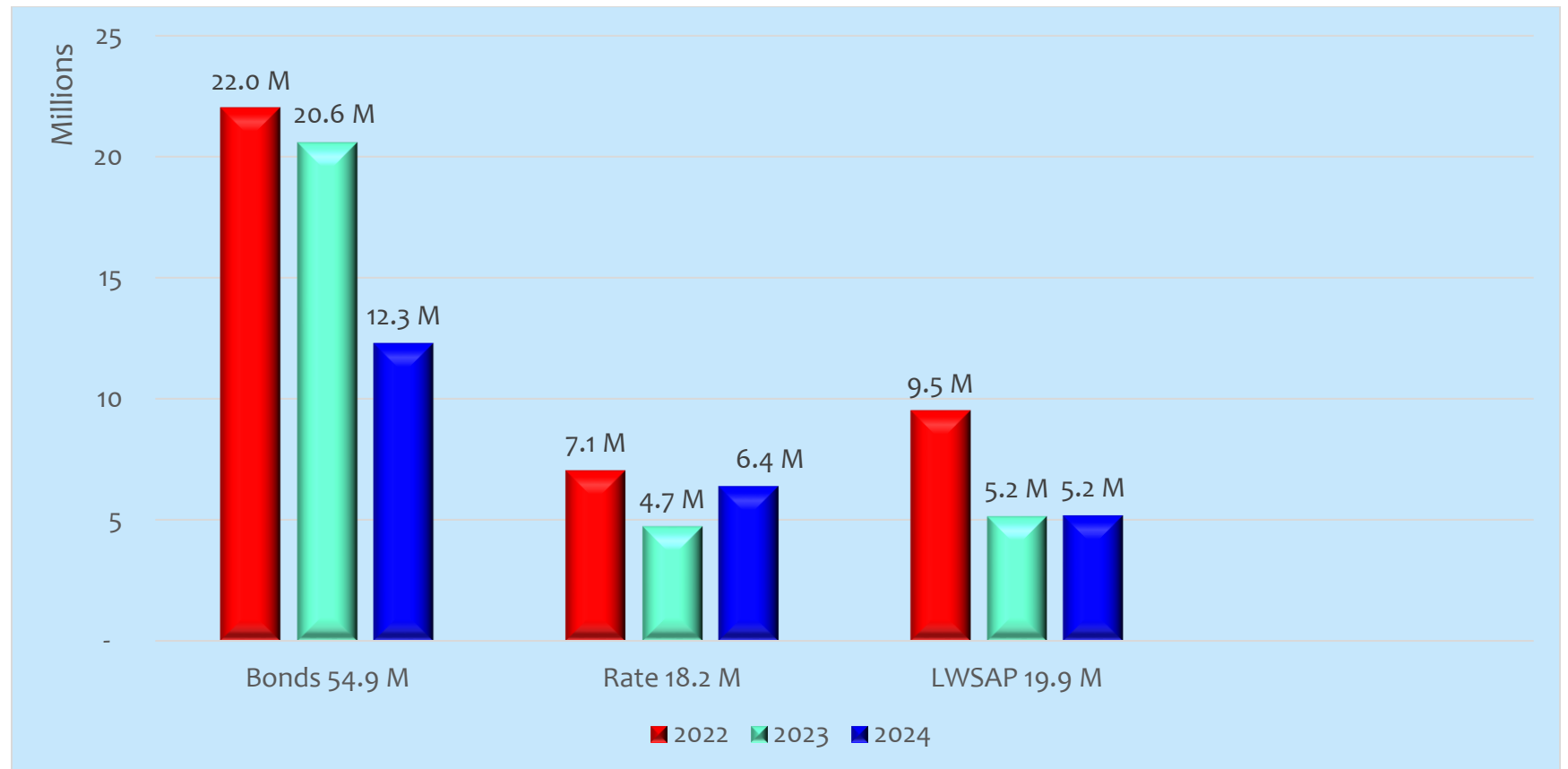
Graph 6 – 2022 - 2024 Total Water Expenditures by Program 92.9 million



Graph 7 – 2022 Total Water Expenditures by Funding Source
38.6 Million



Graph 8 - 2022-2024 Total Water Expenditures by Funding
Source 92.9 million



WATER MAIN REPLACEMENT PROGRAM

DESCRIPTION AND JUSTIFICATION

Funding is provided in the 2022-2024 CIP for the continuation of the Commission's Water Main Replacement Program. The program consists of the replacement of unlined 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 2022-2024 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 2022 SUMMARY

The projects scheduled for initiation in 2022 will result in the replacement of approximately 8.7 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.

WATER REPLACEMENT

The following pages contain brief summaries of each on-going and new water replacement projects included in the 2022-2024 CIP.

NEW PROJECTS

Water Main Replacement associated with East Boston Separation Phase 4 – Contract No. 23-309-002: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or leaks in East Boston. Construction is projected to commence in April 2024 and be completed by April 2026. The total three-year budget for this project is \$250,000.

Water Pipe Replacement associated with South Boston Separation – Contract No. 23-309-012 (Contract 4): Construction Contract No. 4 is one of five planned contracts which include the upgrade of water main systems within the project limits 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 April 2024 and be completed in April 2026. The three-year budget is \$100,000.

Water Main Replacement in City Proper – Contract No. 22-308-001: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or

leaks in City Proper. Construction is projected to commence in January 2024 and be completed by December 2025. The total three-year budget for this project is \$50,000.

Water Main Replacement Citywide – Contract No. 22-308-002: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or leaks Citywide. Construction is projected to commence in January 2024 and be completed by December 2025. The total three-year budget for this project is \$50,000.

Water Main Replacement in Georgetowne Neighborhood – Contract No. 22-308-003: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or leaks in the Georgetowne Neighborhood. Construction is projected to commence in January 2024 and be completed by December 2025. The total three-year budget for this project is \$50,000.

Water Main Replacement in Roslindale & West Roxbury – Contract No. 22-309-001: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or leaks in Roslindale and West Roxbury. Construction is projected to commence in January 2024 and be completed by June 2025. The total three-year budget for this project is \$50,000.

Water Main Replacement Citywide – Contract No. 22-309-002: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or leaks Citywide. Construction is projected to commence in January 2024 and be completed by December 2024. The total three-year budget for this project is \$50,000.

Water Main Replacement in Upper Roxbury – Contract No. 22-309-003: This project includes the replacement of old water mains that have reached the end of their useful life and water mains with a history of water main breaks and/or leaks in Upper Roxbury. Construction is projected to commence in January 2024 and be completed by December 2025. The total three-year budget for this project is \$50,000.

Water Main Replacement associated with South Boston Separation – Contract No. 22-309-012 (Contract 3): Construction Contract No. 3 is one of five planned contracts which include the upgrade of water main systems within the project limits 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 April 2023 and completed in April 2025. The three-year budget is \$1,500,000.

ONGOING PROJECTS

Water Main Replacement in Readville – Contract No. 21-309-001: The project includes the replacement of pipes within project limits that have reached the end of their lifespan. Construction is projected to commence April 2023 and be completed by October 2025. The total three-year budget for this project is \$533,000.

Water Main Replacement associated with East Boston Separation Phase 4 – Contract No. 21-309-002: The project includes the replacement of pipes within project limits that have reached the end of their lifespan in East Boston.

Construction is projected to commence September 2023 and be completed by September 2025. The total three-year budget for this project is \$500,000.

Water Main Replacement associated with South Boston Separation – Contract No. 21-309-012 (Contract 2):

Construction Contract No. 2 is one of five planned contracts which include the upgrade of water main systems within the project limits 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 April 2022 and completed in April 2024. The three-year budget is \$5,129,000

Water Main Replacement in Dorchester and South Boston – Contract No. 21-308-001: The project includes the replacement of 17,065 Feet of water mains in South Boston and Dorchester. Construction is projected to commence May 2022 and be completed by December 2024. The total three-year budget for this project is \$4,361,000.

Excavation for Identification of Water Services – Contract No. 21-308-002: The project includes excavating, locating, identifying and possible relaying the water services of approximately 600 existing water services currently listed in the Commission's GIS system as being lead or unknown. Construction commenced in June 2021 and is projected to be completed by May 2022. The total three-year budget for this project is \$500,000.

Water Main Replacement in City Proper – Contract No. 21-308-003: This project includes the replacement of older cast iron water mains that have reached the end of their useful lives and the rehabilitation and replacement of sewer and drain pipes that are in disrepair in City Proper. Construction is projected to commence April 2022 and be completed by August 2023. The total three-year budget for this project is \$7,237,000.

Replacement of Lead Services on Public and Private Property – Contract No. 21-308-004: The project includes the replacement of replacement of lead water services in the Public and on Private property, Citywide. Construction commenced in June 2021 and is projected to be completed by May 2022. The total three-year budget for this project is \$750,000.

Water Main Replacement associated with South Boston Separation – Contract No. 20-309-012 (Contract 1):

Contract No. 1 is one of five planned contracts which includes upgrades to the water main systems within the project limits. Construction commenced in July 2021 and is projected to be completed by November 2023. The three-year budget is \$3,128,000.

Final Paving - South Boston Sewer Separation Contract No. 20-309-011P Contract 1: This project is one of two (2) planned contracts to install final pavement where new storm drains have been constructed in Phase 1 and 2 to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. New paving will also be installed where upgrades of the water main systems impact the roadway surface. Construction is scheduled to commence in March 2022 and is projected to be completed by January 2025. The three-year budget is \$1,225,000

Water Main Replacement in Harrison Ave, South End Phase II – Contract No. 20-308-001: This project includes the replacement of older cast iron water mains that have reached their useful life in Harrison Ave, South End. Construction is projected to commence April 2023 and be completed by December 2024. The total three-year budget for this project is \$2,000,000.

Water Main Replacement in Shawmut Ave, South End Phase III– Contract No. 20-308-002: This project includes the replacement of older cast iron water mains that have reached their useful life in Shawmut Ave, South End. Construction is projected to commence April 2023 and be completed by December 2024. The total three-year budget for this project is \$1,000,000.

Water Main Replacement in Charlestown – Contract No. 20-308-003: This project includes the replacement of older cast iron water mains that have reached the end of their useful life and have a history of main breaks in the Charlestown neighborhood. Construction is projected to commence November 2022 and be completed by May 2024. The total three-year budget for this project is \$4,700,000.

Water Main Replacement in Charlestown and Back Bay – Contract No. 20-308-004: This project includes the replacement of older cast iron water mains that have reached their useful life in Charlestown and Back Bay. Construction is projected to commence July 2022 and be completed by July 2024. The total three-year budget for this project is \$1,777,000.

Water Main Replacement in City Proper and Mission Hill – Contract No. 20-308-005: This project includes the replacement of older cast iron water mains that have reached their useful life in City Proper and Mission Hill. Construction is projected to commence April 2022 and be completed by November 2024. The total three-year budget for this project is \$3,254,000.

Water Main Replacement in South End Phase I – Contract No. 19-308-001: This project includes the replacement of 6,650 feet of 12-inch and 16-inch water mains on East Berkeley Street and Washington Street in the South End. Construction is projected to commence in April 2022 and be completed by November 2022. The total three-year budget for this project is \$2,600,000.

Water Main Replacement in Charlestown – Contract No. 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 2023 and completed by November 2025. The three-year budget is \$2,000,000.

Water Main Replacement in South Boston, Back Bay, South End and Dorchester – Contract No. 19-308-003: This project includes water relay for 5,520 feet of 8, 12 and 16-inch water mains on Tide Street, Dry Dock Avenue, Edgerly Rd, Playstead Rd, and Savin Hill Ave. Construction is projected to commence in April 2022 and completed December 2024. The three-year budget is \$4,250,000.

Water Main Replacement in City Proper – Contract No. 19-308-004: This project includes water relay on various streets in Beacon Hill, including Boston Common and Cambridge Street adjoining Massachusetts General Hospital. Water mains in this Contract are old and have a history of breaks and leaks. Construction is projected to commence in April 2023 and completed November 2025. The three-year budget is \$2,500,000.

Water Main Replacement associated with East Boston Sewer Separation Phase III – Contract No. 19-309-002: This is the third phase in a multi-year plan which includes water main upgrades within the project limits. Construction commenced in September 2021 and is projected to be completed by September 2023. The total three-year budget is \$3,400,000.

Water Main Replacement and Rehabilitation in Allston/Brighton – Contract No. 19-309-004: This project includes the replacement of water mains that have reached the end of their useful life. Construction is projected to commence in May 2022 and to be completed in December 2023. The total three-year budget is \$2,429,000

Water Main Replacement in Back Bay/Fenway – Contract No. 18-308-001: This project includes the replacement of older cast iron water mains that have reached their useful life in City Proper. Construction is projected to commence October 2021 and completed by November 2022. The total three-year budget for this project is \$5,116,000.

Water Main Replacement in Dorchester – Contract No. 18-308-003: This project includes the rehabilitation and replacement of older cast iron water mains that have reached their useful life in Dorchester. Construction commenced in July 2021 and is projected to be completed by completed by April 2022. The total three-year budget for this project is \$165,000.

Water Main Replacement in Fenway – Contract No. 18-309-001: This project includes the replacement and rehabilitation of water mains in the Fenway area. Construction is projected to commence May 2022 and completed by November 2023. The total three-year budget for this project is \$5,519,000.

Water Main Replacement in Roslindale, Hyde Park and Mattapan – Contract No. 18-309-003: This project includes replacement of water mains associated with sewerage works in Roslindale, Hyde Park & Mattapan. Construction is projected to commence in September 2022 and completed by June 2024. The total three-year budget for this project is \$2,800,000.

Water Main Replacement in Dorchester, Fenway/Kenmore, Mattapan & Roxbury – Contract No. 17-308-002: This project includes the replacement of older cast iron water mains that have reached the end of their useful life in Dorchester, Fenway/Kenmore (Longwood Medical Area), Mattapan & Roxbury. This contract also includes increasing capacity of some water mains serving the hospitals and energy plant in the Longwood Medical Area. Construction commenced July 2020 and will be completed by March 2022. The total three-year budget for this project is \$300,000.

Water Main Replacement in Back Bay/Beacon Hill and City Proper – Contract No. 17-308-006: This project includes the rehabilitation and replacement of water mains within the project limits. Construction commenced in July 2019 and is projected to be completed by September 2022. The total three-year budget for this project is \$836,000.

Water Main Replacement in City Proper – Contract No. 17-308-007: This project includes the replacement of older cast iron water mains that have reached their useful life in City proper. Construction commenced in March 2021 and is projected to be completed by March 2022. The total three-year budget for this project is \$1,600,000.

Water Main Replacement in Dorchester, Hyde Park, South Boston & West Roxbury – Contract No. 17-309-001: This project includes the replacement of water mains associated with sewerage works. Construction commenced in August 2021 and is expected to be completed by February 2023. The total three-year budget for this project is \$1,576,000.

Water Main Replacement Associated with Sewer Separation in Upper Roxbury Phase III – Contract No. 17-309-011:

Phase 3 in this project includes the replacement of older cast iron water mains that have reached their useful life in Upper Roxbury associated with sewer separation work. Construction is projected to commence April 2022 and is expected to be completed by November 2024. The total three-year budget for this project is \$500,000.

PROJECT CASH FLOW

Table 13 on page 40 presents cash flow expenditures for Water Replacement Projects for the period from 2022-2024. The total expenditures for the three-year period are \$73,835,000. The expenditures for 2022 are anticipated to be \$30,803,000.

Contract 17-308-002 Binney St Water Main Installation

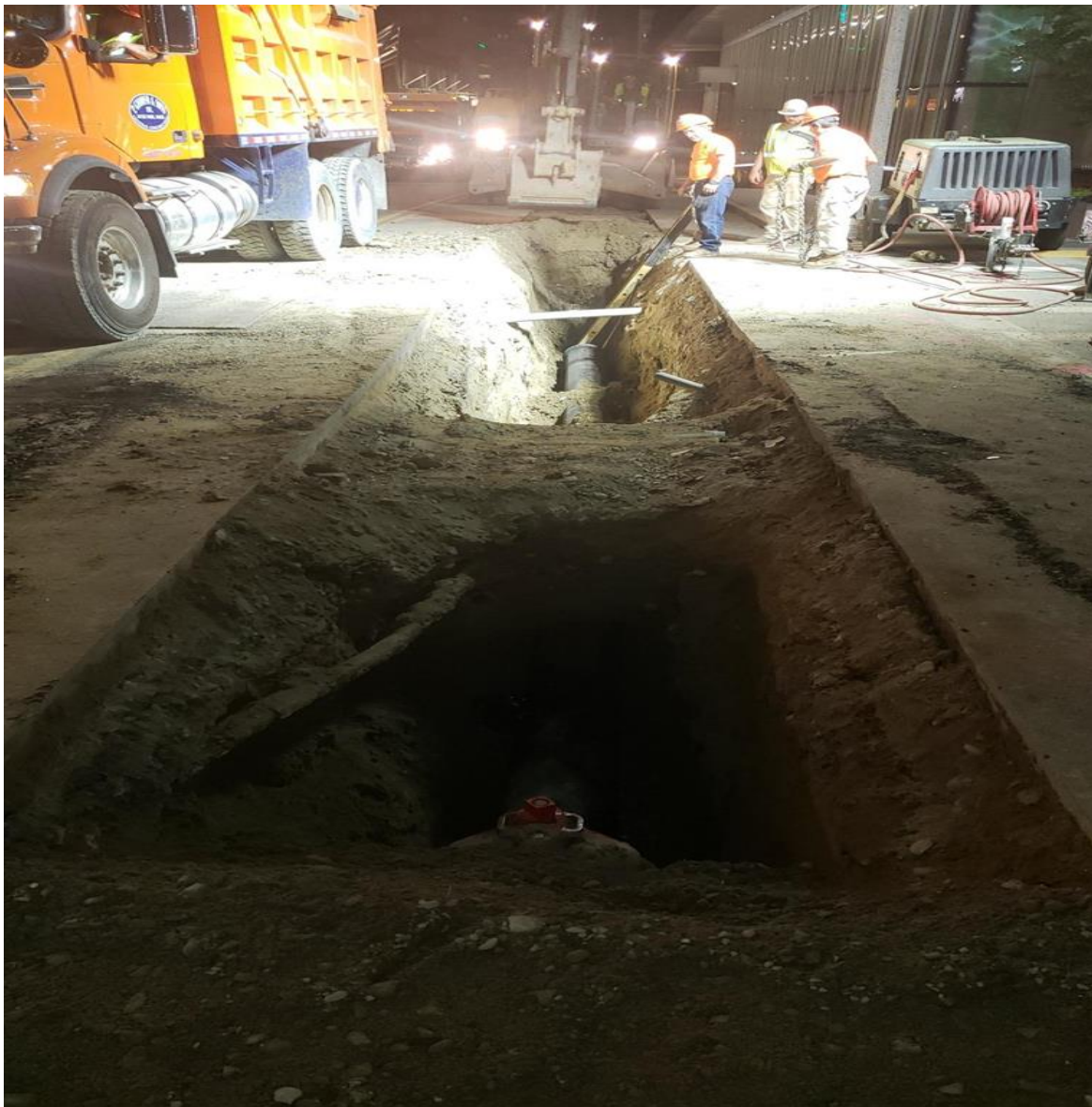


Table 13 - Water Replacement

Capital Improvement Program
2022 - 2024
Water Pipe Replacement

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
Water Main Replacement ass w/ East Boston Separation PH IV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250,000	250,000
Water Pipe Replacement Ass w/South Boston Separation Contract 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000	100,000
Water Main Replacement in City Proper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Water Main Replacement Citywide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Water Main Replacement in Georgetowne Neighborhood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Water Main Replacement in Roslindale & West Roxbury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Water Main Replacement Citywide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Water Main Replacement in Upper Roxbury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
South Boston Separation Contract 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,500,000	1,500,000
Ongoing Projects																
Water Pipe Replacement in Readville	-	-	-	-	-	-	-	-	-	22,000	22,000	22,000	66,000	400,000	67,000	533,000
Water Pipe Replacement ass w/ East Boston Separation PHIV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500,000	500,000
South Boston Separation Contract 2	-	-	-	-	-	-	-	376,000	376,000	375,000	376,000	376,000	1,879,000	2,500,000	750,000	5,129,000
South Boston Separation Contract 1	-	-	-	-	233,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	1,843,000	815,000	470,000	3,128,000
Final Paving South Boston Separation Phase 1	-	-	-	60,000	70,000	80,000	100,000	75,000	50,000	25,000	25,000	15,000	500,000	400,000	325,000	1,225,000
Water Main Rehabilitation in Dorchester & South Boston	-	-	-	-	-	-	-	-	227,000	227,000	227,000	227,000	908,000	1,750,000	1,703,000	4,361,000
Lead Service ID	100,000	100,000	100,000	100,000	100,000	-	-	-	-	-	-	-	500,000	-	-	500,000
Lead Service Replacement	150,000	150,000	150,000	150,000	150,000	-	-	-	-	-	-	-	750,000	-	-	750,000
Water Main Replacement in City Proper	-	-	-	-	-	750,000	750,000	750,000	750,000	750,000	750,000	750,000	5,250,000	1,987,000	-	7,237,000
Water Main Replacement on Harrison Ave, South End	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000	2,000,000
Water Main Replacement on Shawmut Ave, South End	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000
Water Main Replacement in Charlestown & Brighton	-	-	-	-	-	-	-	-	-	-	-	-	-	4,000,000	700,000	4,700,000
Water Main Replacement in Charlestown & Back Bay	-	-	-	-	-	-	176,000	175,000	175,000	176,000	175,000	-	877,000	500,000	400,000	1,777,000
Water Main Replacement in City Proper & Mission Hill	-	-	-	179,000	179,000	179,000	179,000	179,000	179,000	180,000	-	-	1,254,000	1,000,000	1,000,000	3,254,000
South End Water Pipe Improvements Phase I	-	-	-	-	-	-	-	-	-	200,000	200,000	200,000	600,000	1,000,000	1,000,000	2,600,000
Water Pipe Improvements in Charlestown	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000	2,000,000
Water Pipe Improvements Citywide	-	-	-	236,000	236,000	236,000	236,000	236,000	236,000	236,000	236,000	237,000	2,125,000	2,125,000	-	4,250,000
City Proper Water Pipe Improvements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,500,000	2,500,000
Water Pipe Improvements in East Boston	-	-	25,000	100,000	250,000	300,000	300,000	300,000	325,000	330,000	300,000	270,000	2,500,000	900,000	-	3,400,000
Water Pipe Improvements in Brighton	-	-	-	-	-	-	128,000	128,000	128,000	127,000	128,000	128,000	767,000	1,534,000	128,000	2,429,000
Water Main Replacement in City Proper	10,000	10,000	200,000	300,000	350,000	400,000	500,000	600,000	650,000	650,000	500,000	500,000	4,670,000	446,000	-	5,116,000
Water Main Replacement in Dorchester	-	-	-	-	-	56,000	56,000	53,000	-	-	-	-	165,000	-	-	165,000
Water Main Replacement in Fenway	-	-	-	-	-	-	-	-	334,000	334,000	335,000	334,000	1,337,000	2,340,000	1,842,000	5,519,000
Water Main Replacement in Hyde Park, Mattapan & Roslindale	-	-	-	-	-	-	-	-	-	-	-	-	-	900,000	1,900,000	2,800,000
Water Main Replacement in Dorchester and Roxbury	100,000	100,000	100,000	-	-	-	-	-	-	-	-	-	300,000	-	-	300,000
Water Main Replacement in Bowdoin St. & Lincoln St.	-	-	-	73,000	74,000	73,000	74,000	73,000	213,000	74,000	74,000	108,000	836,000	-	-	836,000
Water Main Replacement in City Proper	800,000	500,000	300,000	-	-	-	-	-	-	-	-	-	1,600,000	-	-	1,600,000
Water Main Replacement Citywide	-	-	-	-	197,000	197,000	197,000	197,000	197,000	197,000	197,000	197,000	1,576,000	-	-	1,576,000
Water Main Replacement in Upper Roxbury Phase III	-	-	-	-	125,000	125,000	125,000	125,000	-	-	-	-	500,000	-	-	500,000
Totals	\$1,160,000	\$860,000	\$875,000	\$1,198,000	\$1,964,000	\$2,626,000	\$3,051,000	\$3,497,000	\$4,070,000	\$4,133,000	\$3,775,000	\$3,594,000	\$30,803,000	\$24,597,000	\$18,435,000	\$73,835,000
Bonds	800,000	500,000	325,000	409,000	757,000	862,000	863,000	859,000	1,532,000	1,398,000	1,369,000	1,373,000	11,047,000	13,015,000	7,145,000	31,207,000
Rate	-	-	-	209,000	455,000	1,209,000	1,523,000	1,581,000	1,443,000	1,454,000	1,274,000	1,094,000	10,242,000	6,421,000	6,093,000	22,756,000
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	360,000	360,000	550,000	580,000	752,000	555,000	665,000	1,057,000	1,095,000	1,281,000	1,132,000	1,127,000	9,514,000	5,161,000	5,197,000	19,872,000
VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$1,160,000	\$860,000	\$875,000	\$1,198,000	\$1,964,000	\$2,626,000	\$3,051,000	\$3,497,000	\$4,070,000	\$4,133,000	\$3,775,000	\$3,594,000	\$30,803,000	\$24,597,000	\$18,435,000	\$73,835,000

WATER DISTRIBUTION SYSTEM SPECIAL PROJECTS

DESCRIPTION AND JUSTIFICATION

Special Projects includes 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.

NEW PROJECTS

Water Main Valve Replacement Contract No. 20-308-006: This project consists of the 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. Work is projected to commence in December 2021 and will be completed in July 2022. The total three-year budget is \$1,688,000.

ONGOING PROJECTS

Traffic Management Services Contract No 19-206-006: 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. Work commenced in August 2019 and is projected to be completed August 2022. The three-year budget is \$231,000.

Water Pipe Testing Services Contract No. 19-206-004: 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 began in October 2019 and are expected to be completed October 2022. The three-year budget is \$280,000.

Water Main Flushing Program Contract No. 19-203-001: This project involves the maintenance of a water main flushing program for the Commission's water distribution system by a qualified engineering firm. Since 1997, the Commission has maintained a system-wide water main flushing program to ensure water quality throughout its entire water distribution system. The flushing program was initiated as part of the Commission's Biofilm Corrective Action Plan developed in response to a 1996 violation of the Total Coliform Rule, a national primary drinking water regulation. Since implementation of the water main flushing program, the Commission has had no Coliform bacteria violations.

The Commission's unidirectional water main flushing program is designed to flush all pitometer sections individually and includes water main pipes less than 16-inches in diameter. Unidirectional water main flushing is achieved by closing valves to isolate water mains from the actual pipe being flushed. After isolating the desired pipe and creating one intake main, hydrant(s) are flowed downstream from a dead-end valve. Water main flushing is intended to bring stronger chlorine residuals into areas where it is low and scour pipe walls of biofilm and tuberculation. Annually, the Commission flushes approximately 200 miles of water main with the intended goal of flushing 800 miles of water main over a four year cycle. The flushing program is conducted during the construction season (March-November) in the late evening/early morning hours to minimize disturbance to customers.

The Commission has engaged the services of a professional engineering consulting firm (Weston & Sampson) to implement and maintain the system-wide water main flushing program. Weston & Sampson has reviewed the Commission's current water main flushing program and made recommendations for improvements including updating the flushing database utilizing the Commission's recently restructured water distribution system model; developing methodologies to achieve greater flushing velocities for low flow areas; and evaluating the overall program effectiveness by way of a water quality sampling program. Weston & Sampson's current contract for conducting water main flushing commenced in 2019 and will continue through 2022. The Commission will be required to re-bid a new water main flushing services contract for 2023 and beyond. This project commenced in April 2019 with services continuing to December 2022. The total three-year budget for this project is \$750,000.

Subsurface Investigation Services Contract No. 19-206-005: This project includes locations where the information of conditions below the surface is inadequate. This on-call service contract is for using vacuum excavation and electronic tracing systems to locate utilities and other buried object to aid design. The services commenced in October 2019 and are to be completed by October 2022. The three-year budget is \$271,000.

Hydrant Replacement: Replacement of defective and inoperative hydrants is essential to maintain public safety and reduce unaccounted-for-water resulting from hydrant leaks. Older fire hydrants, many of which are impossible to repair due to unavailability of replacement parts, must be replaced to ensure Public Safety. Standardization of hydrants also reduces the number and styles of hydrant repair parts needed to be stored in inventory. Large quantity purchases significantly reduce unit costs and assure cost over a three-year period. Construction is projected to commence in January 2022 with a completion date of December 2023. New Hydrants will be installed through the Annual Area Emergency Contracts, Construction Projects and by Operations personnel. Custodian-equipped hydrants discourage illegally opened hydrants and reduce unaccounted-for-water loss by preventing water theft. The total three-year budget for this project is \$776,000.

City of Boston Street Opening Permit Fees: The Boston Water & Sewer Commission is required by the City of Boston's regulations to obtain street opening permits for any construction activity that will require the removal of existing street and/or sidewalk material in the public way. 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 project is renewed annually. The three-year budget total is \$7,500,000.

City of Boston Paving Restoration: The Boston Water and Sewer Commission is responsible for the permanent restoration of streets and sidewalks excavated during construction activities. On an annual basis, the Commission publicly advertises and awards contracts to private contractors for permanent restoration work. In addition, the Commission is required to reimburse City of Boston contractors for the repairs and/or replacement of the Commission's castings through the permanent restoration of the streets under the City contracts. The three-year budget totals \$7,608,000.

Streets	2022	2023	2024	2022-2024 Total
Permits	\$2,500,000	\$2,500,000	\$2,500,000	\$7,500,000
Paving	\$2,608,000	\$2,500,000	\$2,500,000	\$7,608,000
Total	\$5,108,000	\$5,000,000	\$5,000,000	\$15,108,000

PROJECT CASH FLOW

Table 14 on page 44 illustrates the cash flow information for the Water Special Program for 2022-2024. Three-year expenditures this program total \$19,104,000, of which \$7,762,000 will be spent in 2022.

Work Associated with MWRA Lead Service Identification & Replacement Program MWLLP

Copper Pipe Connected Water Meter



Lead Pulled from Street



Table 14 - Water Special

Capital Improvement Program
2022 - 2024
Water Special

50000

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
Water Main Valve Replacement	281,000	281,000	282,000	281,000	281,000	282,000	-	-	-	-	-	-	1,688,000	-	-	1,688,000
Ongoing Projects																
Traffic Management Services	9,000	9,000	9,000	10,000	9,000	9,000	9,000	10,000	9,000	8,000	10,000	10,000	111,000	60,000	60,000	231,000
Water Pipe Testing Services	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	120,000	80,000	80,000	280,000
Water Main Flushing Program	10,000	-	-	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	250,000	250,000	250,000	750,000
Subsurface Investigation	9,000	9,000	9,000	10,000	9,000	9,000	10,000	9,000	9,000	8,000	10,000	10,000	111,000	80,000	80,000	271,000
Hydrant Replacement	-	-	-	-	-	93,000	94,000	93,000	94,000	-	-	-	374,000	402,000	-	776,000
Operations Permits	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	300,000	2,500,000	2,500,000	2,500,000	7,500,000
Paving	120,000	96,000	10,000	22,000	295,000	295,000	295,000	295,000	295,000	295,000	295,000	295,000	2,608,000	2,500,000	2,500,000	7,608,000
Totals	\$639,000	\$605,000	\$520,000	\$533,000	\$834,000	\$928,000	\$648,000	\$647,000	\$647,000	\$551,000	\$555,000	\$655,000	\$7,762,000	\$5,872,000	\$5,470,000	\$19,104,000
Bonds	339,000	315,000	229,000	242,000	514,000	514,000	515,000	514,000	514,000	513,000	515,000	615,000	5,339,000	5,160,000	5,160,000	15,659,000
Rate	300,000	290,000	291,000	291,000	320,000	414,000	133,000	133,000	133,000	38,000	40,000	40,000	2,423,000	712,000	310,000	3,445,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$639,000	\$605,000	\$520,000	\$533,000	\$834,000	\$928,000	\$648,000	\$647,000	\$647,000	\$551,000	\$555,000	\$655,000	\$7,762,000	\$5,872,000	\$5,470,000	\$19,104,000

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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 mainly by combined systems; however, major portions of each area have been or are in the process of being separated. The South End has been partially 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
Installation of Drain Manhole - West Fourth St at Dorchester Ave



The backbone of the Commission's sewer 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	30,316	Total Linear Feet	8,096,751	Combined Sewer	143 Miles
Manholes	49,761	Total Linear Miles	1,533	Combined Sewer Overflow	12 Miles
Outfalls	279	Pumping Stations	8	Sanitary Sewer	710 Miles
Regulators	81			Storm Drain	667 Miles
Tide gates	201				

OBJECTIVES

Primary Objectives of the 2022-2024 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 discharges 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 2022-2024 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 2022-2024 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 80 miles of sewer pipe in 2022. This along with TV inspection under other programs will result in the inspection of 80 miles of pipe in 2022 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 7 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, 21-309-0009, CMOM for future contracts (TBD – to be determined), 21-309-009, 21-309-010, 21-309-001, 21-309-002, 21-309-014, and 20-309-014. Also included in the Sewer System CIP are South Boston Separation contracts 20-309-11P, 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 3.

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 2022-2024 Sewer System Capital Program.

WASTEWATER PROJECTS HIGHLIGHTS

- East Boston Separation Phase 3 & 4
- South Boston Separation (Contracts 1, 2 & 3)
- Replacement and Rehabilitation of Sewer and Drains Citywide
- CCTV of Sewers and Storm Drains/CMOM Program
- Replacement of Tidegates
- Sewer Separation in Roxbury (Contracts 1, 2 & 3)
- Infiltration/Inflow Analysis
- Downspout Disconnection Program

PROJECT CASH FLOW

Table 15 on page 50 illustrates Sewer Distribution System by Category. Graph 6 on page 52 illustrates the capital expenditures by program of the Total Sewer Program for 2022-2024. Graph 7 on page 53 displays total sewer expenditures by funding source for 2022. Graph 8 on page 54 illustrates Sewer Expenditure by Funding Source for 2022-2024. Three-year total expenditures are \$110.9 million, of which \$50.8 million is anticipated to be spent in 2022. The three-year amounts are distributed in the Sewer Program as follows: Sewer R&R \$76.6 million or 69.1%, Increase Capacity \$2.2 million or 2.0%, Separation \$20.1 million or 18.1%, and Special \$12.0 million or 10.8%.

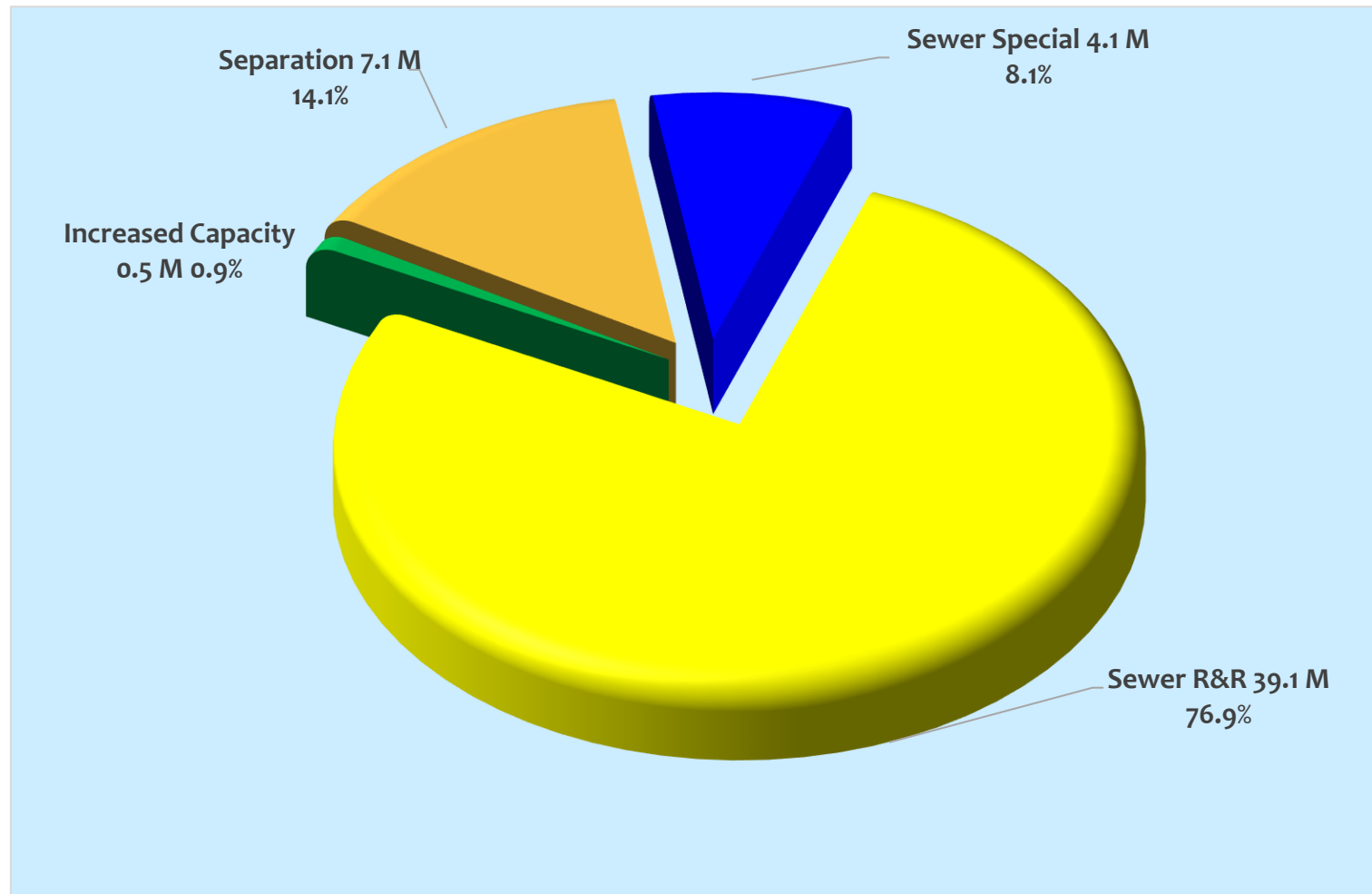


TABLE 15 - SEWER DISTRIBUTION SYSTEM BY CATEGORY

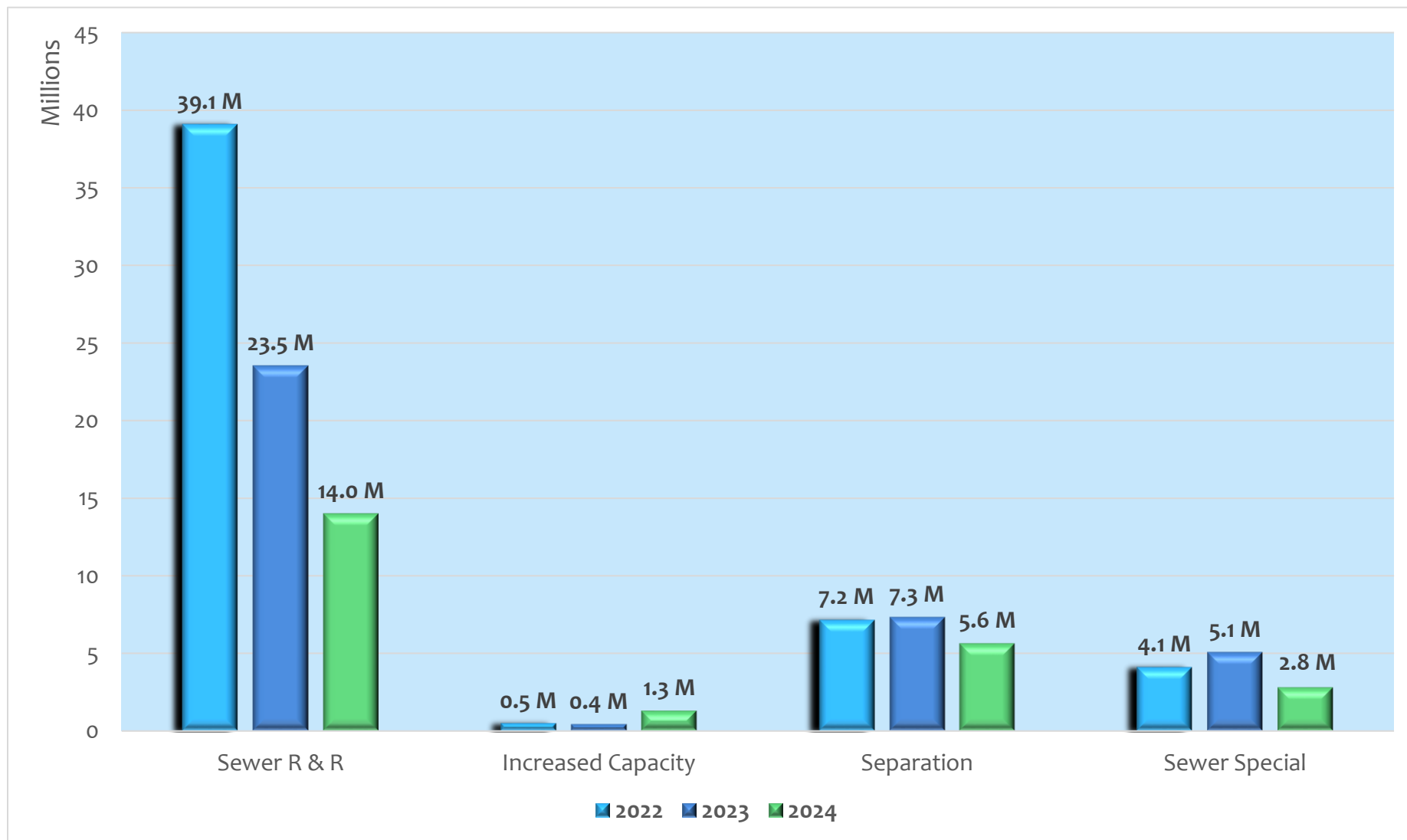
Capital Improvement Program
2022 - 2024
Sewer Total

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
Sewer R&R																
Bonds	2,751,000	2,169,000	1,637,000	1,194,000	1,383,000	1,848,000	2,040,000	2,184,000	1,490,000	861,000	631,000	1,242,000	19,430,000	4,084,000	1,480,000	24,994,000
Rate	1,057,000	1,057,000	1,236,000	1,083,000	1,401,000	1,496,000	1,581,000	815,000	960,000	1,170,000	1,580,000	1,468,000	14,904,000	15,763,000	8,883,000	39,550,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	237,000	230,000	230,000	265,000	265,000	380,000	536,000	535,000	530,000	530,000	520,000	506,000	4,764,000	3,673,000	3,612,000	12,049,000
Totals	4,045,000	3,456,000	3,103,000	2,542,000	3,049,000	3,724,000	4,157,000	3,534,000	2,980,000	2,561,000	2,731,000	3,216,000	\$ 39,098,000	\$ 23,520,000	\$ 13,975,000	\$ 76,593,000
Increased Capacity																
Bonds	-	-	-	-	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	480,000	420,000	1,300,000	2,200,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$ -	\$ -	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 480,000	\$ 420,000	\$ 1,300,000	\$ 2,200,000
Separation																
Bonds	372,000	116,000	117,000	124,000	116,000	117,000	123,000	116,000	117,000	124,000	116,000	116,000	1,674,000	1,425,000	1,425,000	4,524,000
Rate	145,000	145,000	145,000	145,000	145,000	145,000	195,000	195,000	145,000	145,000	95,000	95,000	1,740,000	1,406,000	600,000	3,746,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	249,000	-	-	-	-	500,000	500,000	500,000	500,000	500,000	500,000	500,000	3,749,000	4,500,000	3,600,000	11,849,000
Totals	\$ 766,000	\$ 261,000	\$ 262,000	\$ 269,000	\$ 261,000	\$ 762,000	\$ 818,000	\$ 811,000	\$ 762,000	\$ 769,000	\$ 711,000	\$ 711,000	\$ 7,163,000	\$ 7,331,000	\$ 5,625,000	\$ 20,119,000
Sewer Special																
Bonds	165,000	165,000	456,000	496,000	501,000	518,000	567,000	272,000	316,000	147,000	117,000	136,000	3,856,000	4,825,000	2,550,000	11,231,000
Rate	20,000	20,000	20,000	20,000	20,000	10,000	20,000	20,000	20,000	20,000	30,000	30,000	250,000	250,000	250,000	750,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$ 185,000	\$ 185,000	\$ 476,000	\$ 516,000	\$ 521,000	\$ 528,000	\$ 587,000	\$ 292,000	\$ 336,000	\$ 167,000	\$ 147,000	\$ 166,000	\$ 4,106,000	\$ 5,075,000	\$ 2,800,000	\$ 11,981,000
Sewer Total	\$ 4,996,000	\$ 3,902,000	\$ 3,841,000	\$ 3,327,000	\$ 3,891,000	\$ 5,074,000	\$ 5,622,000	\$ 4,697,000	\$ 4,138,000	\$ 3,557,000	\$ 3,649,000	\$ 4,153,000	\$ 50,847,000	\$ 36,346,000	\$ 23,700,000	\$ 110,893,000
Bonds	3,288,000	2,450,000	2,210,000	1,814,000	2,060,000	2,543,000	2,790,000	2,632,000	1,983,000	1,192,000	924,000	1,554,000	25,440,000	10,754,000	6,755,000	42,949,000
Rate	1,222,000	1,222,000	1,401,000	1,248,000	1,566,000	1,651,000	1,796,000	1,030,000	1,125,000	1,335,000	1,705,000	1,593,000	16,894,000	17,419,000	9,733,000	44,046,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	486,000	230,000	230,000	265,000	265,000	880,000	1,036,000	1,035,000	1,030,000	1,030,000	1,020,000	1,006,000	8,513,000	8,173,000	7,212,000	23,898,000
Totals	\$ 4,996,000	\$ 3,902,000	\$ 3,841,000	\$ 3,327,000	\$ 3,891,000	\$ 5,074,000	\$ 5,622,000	\$ 4,697,000	\$ 4,138,000	\$ 3,557,000	\$ 3,649,000	\$ 4,153,000	\$ 50,847,000	\$ 36,346,000	\$ 23,700,000	\$ 110,893,000

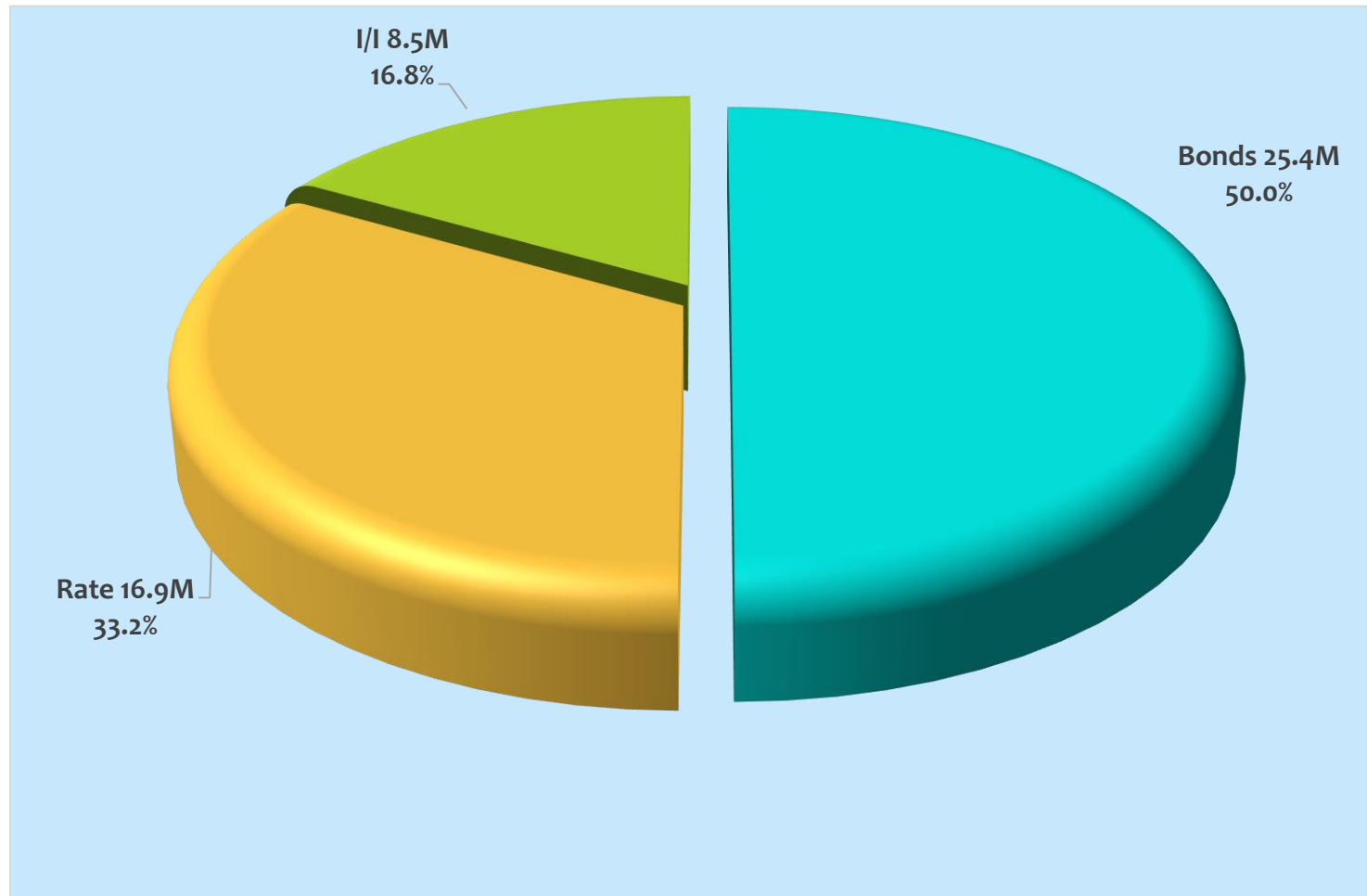
Graph 5 – 2022 Total Sewer Expenditures by Program \$50.8 Million



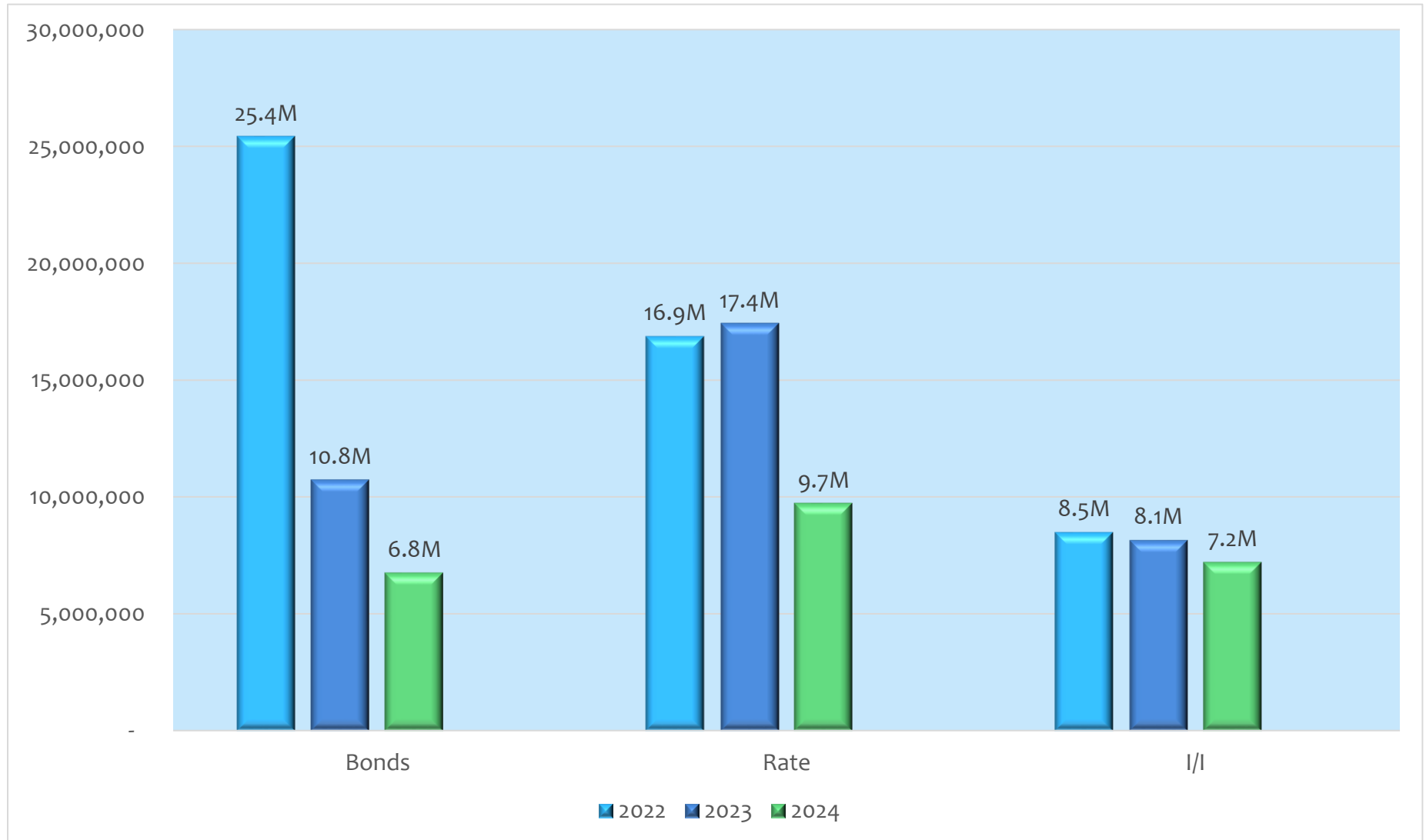
Graph 6 – 2022 - 2024 Total Sewer Expenditures by Program \$110.9 Million



Graph 7 - 2022 Total Sewer Expenditure by Funding Source \$50.8 Million



Graph 8 - 2022 - 2024 Sewer Expenditure by Funding Source \$110.9 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.

New PROJECTS

CCTV of Sewers and Storm Drains/CMOM - Contract No. 22-309-009: This project entails the inspection of sewers and drains using closed-circuit TV cameras utilizing the SCREAM coding system to assess the structural condition of the pipes. Approximately 30 miles of various sized pipes will be cleaned and inspected. Construction is expected to commence in March 2022 and is expected to be completed by March 2023. The three-year budget is \$750,000.

CCTV of Sewers and Storm Drains/CMOM - Contract No. 22-309-010: This project entails the inspection of sewers and drains using closed-circuit TV cameras utilizing the SCREAM coding system to assess the structural condition of the pipes. Approximately 30 miles of various sized pipes will be cleaned and inspected. Construction is expected to commence in March 2022 and is expected to be completed by March 2023. The three-year budget is \$750,000.

Future CCTV of Sewers & Storm Drains/CMOM Contracts 23-309-009, 23-309-010, 24-309-009 & 24-309-010: This project entails the inspection of sewers and drains using closed-circuit TV cameras utilizing the SCREAM coding system to assess the structural condition of the pipes. Approximately thirty (30) miles of various sized pipes will be cleaned and inspected under each contract. The majority of this contract will be completed in 2022 with project closeout expected during the first quarter of 2023. Construction is expected to commence in March 2022 and to be complete by March 2023. The three year budget for this project is \$3,300,000.

CCTV of Sewers - Contract No. 22-309-004: This project includes television inspection and cleaning of sewer pipes in the City of Boston for streets, where water main work is programmed, to assess the need for sewer and/or drain replacement. Construction is expected to commence in April 2022 and is expected to be completed by December 2022. The three-year budget is \$350,000.

South Boston Sewer Separation-Contract 4 - Contract No. 23-309-012: This project includes upgrades of the sanitary sewer systems to continue highlight level service to the community and support future

development along Dorchester Avenue. Construction is expected to commence in April 2024 and is expected to be completed by April 2026. The three-year budget is \$500,000.

Sewer Replacement & Rehabilitation ("R&R") in Roslindale and West Roxbury - Contract No. 22-309-001: This project includes rehabilitation of sewers and point repairs identified by the Planning Department during the Roslindale Sanitary Sewer Evaluation Survey. The intent of this project is to reduce I/I into the Roslindale Interceptor. Construction is expected to commence in January 2024 and is expected to be completed by June 2025. The three-year budget is \$50,000.

Sewer R & R Citywide - Contract No. 22-309-002: This project includes the rehabilitation and replacement of sewers where SSOs have occurred to mitigate future overflows. Construction is expected to commence in January 2024 and is expected to be completed by December 2024. The three-year budget is \$50,000.

Sewer R & R in Upper Roxbury - Contract No. 22-309-003: This project includes the replacement and rehabilitation of failing 1800s combined sewers where SSOs have occurred to mitigate future overflows. Construction is expected to commence in January 2024 and is expected to be completed by December 2025. The three-year budget is \$100,000.

Sewer R & R in City Proper - Contract No. 22-308-001: This project includes the replacement of rehabilitation of sewer mains in Boston Proper. Construction is expected to commence in January 2024 and is expected to be completed by December 2025. The three-year budget is \$50,000.

Sewer R & R Citywide - Contract No. 22-308-002: This project includes the replacement of rehabilitation of sewer mains Citywide. Construction is expected to commence in January 2024 and is expected to be completed by December 2025. The three-year budget is \$50,000.

Sewer R & R in the Georgetowne Neighborhood - Contract No. 22-308-003: This project includes the replacement of rehabilitation of sewer mains in the Georgetowne Neighborhood of West Roxbury. Construction is expected to commence in January 2024 and is expected to be completed by December 2025. The three-year budget is \$50,000.

ONGOING PROJECTS

CCTV OF Sewers and Storm Drains/CMOM - Contract No. 21-309-009: This project entails the inspection of sewers and drains using closed-circuit TV cameras utilizing the SCREAM coding system to assess the structural condition of the pipes. Approximately 30 miles of various sized pipes will be cleaned and inspected. The majority of this contract will be completed in 2021 with project closeout expected during the first quarter of 2022. The program represents progressive increase in the amount of pipe cleaned and televised with an end goal of completing approximately 10% of the system annually. Construction commenced in May 2021 and is expected to be completed by March 2022. The three-year budget is \$330,000.

CCTV OF Sewers and Storm Drains/CMOM - Contract No. 21-309-010: This project entails the inspection of sewers and drains using closed-circuit TV cameras utilizing the SCREAM coding system to assess the structural condition of the pipes. Approximately 30 miles of various sized pipes will be cleaned and inspected. The majority of this contract will be completed in 2021 with project closeout expected during the first quarter of 2022. The program represents progressive increase in the amount of pipe cleaned and televised with an end goal of completing approximately 10% of the system annually. Construction

commenced in May 2021 and is expected to be completed by March 2022. The three-year budget is \$330,000.

South Boston Sewer Separation-NMBI Phase 1 – Contract 21-309-05A: This project includes the rehabilitation of the 102" New Boston Main Interceptor (NMBI) between the approximately the crossing at Dorchester Brook Sewer to the Columbus Park Headworks, both siphon chambers at Andrew Square, and other associated manhole/cambers. Initial evaluation of the siphon chambers at Andrew Square identified significant deterioration of both structures. Construction is projected to commence in April 2022 and is expected to be completed in 2024. The three-year budget is \$11,488,000.

Construction Supervision Services-NBBI Rehabilitation – Contract 21-103-001: This project includes the rehabilitation of the 102" New Boston Main Interceptor (NMBI) between the approximately the crossing at Dorchester Brook Sewer to the Columbus Park Headworks, both siphon chambers at Andrew Square, and other associated manhole/cambers. Initial evaluation of the siphon chambers at Andrew Square identified significant deterioration of both structures. Construction is projected to commence in April 2022 and is expected to be completed in 2024. The three-year budget is \$919,000.

Sewer Renewal & Rehabilitation in Hyde Park – Contract 21-309-001: This project includes 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 September 2022 and is expected to be completed by October 2024. The three-year budget is \$1,000,000.

Sewer Renewal & Rehabilitation in South Boston and Dorchester – Contract 21-308-001: This project includes rehabilitation and replacement of damaged sewers and drainpipes in South Boston and Dorchester. Construction is projected to commence in July 2022 and is expected to be completed by December 2024. The three-year budget is \$1,200,000.

Sewer Renewal & Rehabilitation in City Proper – Contract 21-308-003: This project includes rehabilitation and replacement of damaged sewers and drainpipes in City Proper. Construction is projected to commence in April 2022 and is expected to be completed by August 2023. The three-year budget is \$2,814,000.

Emergency Sewer & Storm Drain Replacement 2020 - Contract No. 20-309-014: This project includes the replacement of sewers and storm drains in critical condition, citywide. These improvements are based on the findings of the CMOM group which identified sewer and drain defects, with associated water relay. Construction is projected to commence in April 2022 and is expected to be completed by November 2022. The three-year budget is \$1,750,000.

Emergency Sewer & Storm Drain Replacement 2021-2022 Contract No. 21-309-014: Replacement of sewers and storm drains in critical condition, citywide. These improvements are based on the findings of the CMOM group which identified sewer and drain defects, with associated water relay. Construction is projected to commence in 2022 and is expected to be completed in 2023. The three-year budget is \$4,200,000.

Sewer Renewal & Rehabilitation in South End - Contract No. 20-308-001: This project includes sewer and storm drain replacement & rehabilitation on Harrison Ave. in the South End. Construction is projected to commence in February 2023 and be completed in December 2024. The three-year budget is \$1,000,000.

Sewer R & R in South End - Contract No. 20-308-002: This project includes sewer replacement & rehabilitation of pipes that are in disrepair on Shawmut Ave in the South End. Construction is expected to commence in April 2023 and be completed in December 2024. The three-year budget is \$250,000.

Sewer Renewal & Rehabilitation in Charlestown - Contract No. 20-308-003: This project includes sewer and storm drain replacement & rehabilitation on Rutherford Ave. in Charlestown. Construction is projected to commence in November 2022 and be completed in May 2024. The three-year budget is \$1,000,000.

Sewer R & R in City Proper/Charlestown - Contract No. 20-308-004: This project includes sewer replacement & rehabilitation of pipes that are in disrepair in City Proper and Charlestown. Construction is expected to commence in July 2022 and be completed in July 2024. The three-year budget is \$289,000.

Sewer R & R in City Proper/Mission Hill - Contract No. 20-308-005: This project includes sewer replacement & rehabilitation of pipes that are in disrepair in City Proper and Mission Hill. Construction is expected to commence in April 2022 and be completed in November 2024. The three-year budget is \$852,000.

South Boston Sewer Separation – Final Paving Contract 1 - Contract No. 20-309-011P: The project includes paving following upgrades of the sanitary sewer systems to continue providing a high level of service to the community and support future development along Dorchester Avenue. Construction is projected to commence in March 2022 and be completed in January 2025. The three-year budget is \$1,150,000.

South Boston Sewer Separation - Contract 1 - Contract No. 20-309-012: Construction Contract No. 1 is one of five planned contracts. This project includes sewer replacement & rehabilitation along the Dorchester Ave. corridor in South Boston. Construction commenced in July 2021 and will be completed in November 2023. The three-year budget is \$5,365,000.

South Boston Sewer Separation – Contract 3-Contract No. 22-309-012: This project includes upgrades of the sanitary sewer systems to continue high level service to the community and support future development along Dorchester Avenue. Construction is expected to commence in April 2023 and be completed in April 2025. The three-year budget is \$1,437,000.

South Boston Sewer Separation - Contract 2 - Contract No. 21-309-012: Construction Contract No. 2 is one of five planned contracts. This project includes sewer replacement & rehabilitation along the Dorchester Ave. corridor in South Boston. Construction is projected to commence in April 2022 and be completed in April 2024. The three-year budget is \$3,497,000.

Sewer & Storm Drain Improvements Associated with East Boston Sewer Separation Phase III- Contract No. 19-309-002: This project is the third phase in a multi-year plan to separate East Boston combined sewers to reduce combined sewer overflows and improve water quality in the Boston Harbor. The project also includes upgrades of the sanitary sewer systems to continue a high level of service to the community. Construction commenced in September 2021 and is projected to be completed by September 2023. The three-year budget is \$1,212,000.

Storm Drain Improvements in Allston/Brighton - Contract No. 19-309-004: This project includes sewer and storm drain rehabilitation replacement as well as the replacement of water mains in Allston/Brighton.

Construction is projected to commence in August 2022 and be completed by December 2023. The three-year budget is \$2,768,000.

South End Sewer R & R Phase I - Contract No. 19-308-001: This project includes sewer replacement & rehabilitation of 6,480 feet and 6,220 feet of storm drain relay/rehab on Washington St. and East Berkeley St. in the South End. Construction is projected to commence in April 2022 and be completed in November 2022. The three-year budget is \$482,000.

Sewer R & R in Charlestown - Contract No. 19-308-002: This project includes sewer replacement & rehabilitation of 4,329 feet and 1,909 feet of storm drain relay/rehab on Bunker Hill Ave, Vine St., Chelsea St., School St., and Bartlett St. in Charlestown. Construction is projected to commence in April 2023 and be completed in November 2025. The three-year budget is \$2,406,000.

Sewer R & R Citywide - Contract No. 19-308-003: This project includes sewer replacement & rehabilitation on Tide St, Edgerly Rd, Columbus Ave (rear), Playstead Rd and Savin Hill Ave. Construction is projected to commence in April 2022 and be completed in December 2024. The three-year budget is \$2,500,000.

City Proper Sewer R & R Improvements - Contract No. 19-308-004: This project includes sewer renewal & rehabilitation on Cambridge St, Charles St, Beacon St. and various streets within Beacon Hill. Construction is projected to commence in April 2023 and be completed by November 2025. The three-year budget is \$1,250,000.

Sewer & Drain R & R in Fenway- Contract No. 18-309-001: This project includes the replacement and rehabilitation of sanitary sewer; storm drain and combined sewer pipes in the Fenway area. Construction is projected to commence in May 2022 and be completed in November 2023. The three-year budget is \$4,102,000.

Sewer & Drain R & R in Roslindale, Hyde Park & Mattapan- Contract No. 18-309-003: This project includes replacement of sanitary sewer and drain pipes in Roslindale, Hyde Park & Mattapan. Construction is projected to commence in September 2022 and be completed by June 2024. The three-year budget is \$4,200,000.

Sewer R & R in Back Bay/Fenway- Contract No. 18-308-001: This project includes the replacement & rehabilitation of sanitary sewer and drain pipes in Back Bay/Fenway. Construction is projected to commence in October 2021 and be complete by November 2022. The three-year budget is \$1,400,000.

Sewer R & R in Dorchester- Contract No. 18-308-003: This project includes the replacement & rehabilitation of sanitary sewer and drain pipes in Dorchester. Sewers serving the area were found damaged and undersized. The work in this contract also includes the replacement of 670 feet of 8" clay pipe with new 10" sewer pipe. Construction commenced in July 2021 and will be completed by April 2022. The three-year budget is \$1,629,000.

Sewer & Drain R & R in Dorchester, Hyde Park, South Boston & West Roxbury- Contract No. 17-309-001: This project includes the replacement & rehabilitation of sanitary sewer and drain pipes in Dorchester, Hyde Park, South Boston & West Roxbury. Construction commenced in August 2021 and will be completed by February 2023. The three-year budget is \$3,008,000.

Rehabilitation of Large Diameter Sewer Mains and in City Proper and South Boston - Contract No. 17-309-015: This project includes trenchless rehabilitation of large diameter sewer conduits in City Proper / South Boston. Recent CCTV inspection of sewer and drain in these areas have shown signs of hydrogen sulfide chemical attack to the existing pipe walls. Pipes in this contract have been found defective and in need of repair as determined by CCTV inspection under contract 17-309-006. Construction is projected to commence in December 2021 and be completed by December 2022. The three-year budget is \$5,367,000.

Sewer & Drain R & R in Dorchester, Fenway/Kenmore, Mattapan and Roxbury- Contract No. 17-308-002: This project includes replacement & rehabilitation of sanitary sewer and drain pipes in Dorchester, Fenway/Kenmore, Mattapan & Roxbury. Construction commenced in July 2020 and will be completed by March 2022. The three-year budget is \$100,000.

Sewer & Drain R & R in Back Bay, Beacon Hill & City Proper- Contract No. 17-308-006: This project includes sanitary sewer & drain replacement and rehabilitation in Back Bay/Beacon Hill and City Proper. Construction commenced in July 2019 and will be completed by September 2022. The three-year budget is \$1,083,000.

Sewer & Drain Rehabilitation in City Proper- Contract No. 17-308-007: This contract will replace 2,980 feet of 8-inch to 12-inch water mains on Harvard Street, High Street, Lincoln Street, Monsignor Shea Road, and South Street in the Financial District, the Leather District, and Chinatown, along with associated sewer and storm drain relay/rehab. This work is in response to break history. Construction commenced in March 2021 and will be completed in March 2022. The three-year budget is \$215,000.

PROJECT CASH FLOW

Table 16 on the page 61 presents the cash flow expenditures for the Sewer Renewal and Replacement Program. Total 2022-2024 expenditures are \$76,593,000. Expenditures for 2022 are expected to be \$39,098,000.

Table 16 - Sewer Renewal & Replacement

Capital Improvement Program
2022 - 2024
Sewer Renewal and Replacement

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
CCTV of Sewers & Storm Drains - CMOM	-	-	-	-	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	600,000	150,000	-	750,000
CCTV of Sewers & Storm Drains - CMOM	-	-	-	-	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	600,000	150,000	-	750,000
Sewer CCTV in for Future CIP Work	-	-	-	-	-	40,000	40,000	40,000	40,000	40,000	40,000	40,000	280,000	70,000	-	350,000
Future CCTV of Sewers & Storm Drains/CMOM	-	-	-	-	-	-	-	-	-	-	-	-	-	1,600,000	1,700,000	3,300,000
South Boston Separation Contract 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500,000	500,000
Sewer R & R in Roslindale & West Roxbury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Sewer R & R Citywide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Sewer R & R in Upper Roxbury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000	100,000
Sewer Renewal & Replacement in City Proper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Sewer Renewal & Replacement Citywide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Sewer Renewal & Replacement in Georgetowne Neighb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000
Ongoing Projects																
CCTV of Sewers & Storm Drains - CMOM	110,000	110,000	110,000	-	-	-	-	-	-	-	-	-	330,000	-	-	330,000
CCTV of Sewers & Storm Drains - CMOM	110,000	110,000	110,000	-	-	-	-	-	-	-	-	-	330,000	-	-	330,000
Sewer R & R in Readville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000
Sewer R & R in South Boston	-	-	-	-	-	-	40,000	40,000	40,000	40,000	40,000	40,000	240,000	480,000	480,000	1,200,000
Sewer R & R in City Proper	-	-	-	-	-	-	-	-	-	-	-	-	-	2,814,000	-	2,814,000
New Boston Main Interceptor	2,338,000	1,765,000	1,353,000	794,000	755,000	1,177,000	1,071,000	1,112,000	273,000	-	-	520,000	11,158,000	330,000	-	11,488,000
Construction Sevices Contract 21-103-001	98,000	103,000	84,000	98,000	98,000	92,000	109,000	104,000	78,000	-	-	55,000	919,000	-	-	919,000
Emergency Sewer Replacement 2020	-	-	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,500,000	250,000	-	1,750,000
Emergency Sewer Replacement 2021 & 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	2,000,000	2,200,000	4,200,000
Sewer R & R on Harrison Ave, South End	-	-	-	-	-	-	-	-	-	-	-	-	-	250,000	750,000	1,000,000
Sewer R & Ron Shawmut Ave, South End	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250,000	250,000
Sewer R & R in Charlestown	-	-	-	-	-	-	-	-	-	-	500,000	500,000	1,000,000	-	-	1,000,000
Sewer R & R in Charlestown & Back Bay	-	-	-	-	-	-	35,000	35,000	35,000	35,000	35,000	-	175,000	26,000	88,000	289,000
Sewer R & R in City Proper & Mission Hill	-	-	-	41,000	40,000	41,000	40,000	41,000	41,000	40,000	-	-	284,000	284,000	284,000	852,000
South Boston Separation Contract 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,437,000	1,437,000
South Boston Separation Contract 1 Paving	-	-	-	35,000	35,000	35,000	75,000	75,000	70,000	70,000	60,000	45,000	500,000	450,000	200,000	1,150,000
South Boston Separation Contract 1	237,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	2,767,000	2,223,000	375,000	5,365,000
South Boston Separation Contract 2	-	-	-	-	-	115,000	231,000	230,000	230,000	230,000	230,000	231,000	1,497,000	1,000,000	1,000,000	3,497,000
Sewer & Storm Drain Improvements in East Boston	-	-	50,000.00	50,000.00	100,000.00	100,000	100,000	100,000	100,000	150,000	150,000	100,000	1,000,000	212,000	-	1,212,000
Storm Drain Improvements in Brighton	-	-	-	-	-	-	-	-	145,000	146,000	146,000	145,000	582,000	2,000,000	186,000	2,768,000
South End Sewer R & R Improvements Ph I	-	-	-	94,000	-	-	-	-	-	-	-	-	94,000	94,000	294,000	482,000
Sewer R & R Improvements in Charlestown	-	-	-	-	-	-	-	-	-	-	-	-	-	1,603,000	803,000	2,406,000
Sewer R & R Improvements Citywide	-	-	-	-	-	139,000	139,000	139,000	139,000	139,000	139,000	138,000	972,000	1,250,000	278,000	2,500,000
City Proper Sewer R & R Improvements	-	-	-	-	-	-	-	-	-	-	-	-	-	500,000	750,000	1,250,000
Sewer R & R in Fenway	-	-	-	-	-	-	250,000	250,000	250,000	250,000	250,000	250,000	1,500,000	2,602,000	-	4,102,000
Sewer R & R in Roslindale, Hyde Park & Mattapan	-	-	-	-	-	-	-	-	-	210,000	210,000	210,000	630,000	2,520,000	1,050,000	4,200,000
Sewer R & R in City Proper	20,000	20,000	50,000	75,000	100,000	150,000	200,000	200,000	200,000	150,000	100,000	75,000	1,340,000	60,000	-	1,400,000
Sewer R & R in Dorchester	-	-	-	-	229,000	237,000	229,000	336,000	369,000	229,000	-	-	1,629,000	-	-	1,629,000
Sewer R& R City Proper, Dor, Hyd Pk, SB & W. Rox	200,000	201,000	200,000	201,000	200,000	201,000	200,000	201,000	200,000	201,000	200,000	201,000	2,406,000	602,000	-	3,008,000
Rehab of Large Sewer & Drain Conduits	767,000	767,000	766,000	767,000	767,000	766,000	767,000	-	-	-	-	-	5,367,000	-	-	5,367,000
Sewer R & R in Dorchester & Roxbury	50,000	50,000	-	-	-	-	-	-	-	-	-	-	100,000	-	-	100,000
Sewer R & R in Beacon Hill	-	-	-	101,000	101,000	101,000	101,000	101,000	240,000	101,000	101,000	136,000	1,083,000	-	-	1,083,000
Sewer R & R in City Proper	115,000	100,000	-	-	-	-	-	-	-	-	-	-	215,000	-	-	215,000
Totals	\$4,045,000	\$3,456,000	\$3,103,000	\$2,542,000	\$3,049,000	\$3,724,000	\$4,157,000	\$3,534,000	\$2,980,000	\$2,561,000	\$2,731,000	\$3,216,000	\$39,098,000	\$23,520,000	\$13,975,000	\$76,593,000
Bonds	2,751,000	2,169,000	1,637,000	1,194,000	1,383,000	1,848,000	2,040,000	2,184,000	1,490,000	861,000	631,000	1,242,000	19,430,000	4,084,000	1,480,000	24,994,000
Rate	1,057,000	1,057,000	1,236,000	1,083,000	1,401,000	1,496,000	1,581,000	815,000	960,000	1,170,000	1,580,000	1,468,000	14,904,000	15,763,000	8,883,000	39,550,000
Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	237,000	230,000	230,000	265,000	265,000	380,000	536,000	535,000	530,000	530,000	520,000	506,000	4,764,000	3,673,000	3,612,000	12,049,000

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.

NEW PROJECTS

No new projects

ONGOING PROJECTS

Installation of Tide-gates City-Wide- Contract No. 19-309-001: This contract will evaluate the need for and provide design for the installation of five tide gates on drainage systems of various sizes in Water Front/North End, South Boston (Seaport), and Dorchester. The Design Department is working with the planning department to identify outfalls which may not be protected from extreme tides to prevent street flooding from surcharged drainage systems. This project includes the installation of tide-gates in City Proper, South Boston, Charlestown and Dorchester. Construction is projected to commence in April 2022 and will be completed in April 2023. The three-year budget is \$600,000.

Installation of Tide-gates City-Wide- Contract No. 20-309-001: This contract will evaluate the need for and provide design for the installation of five tide gates on drainage systems of various sizes in City Proper. The Design Department is working with the planning department to identify outfalls which may not be protected from extreme tides to prevent street flooding from surcharged drainage systems. Construction is projected to commence in January 2024 and will be completed in December 2024. The three-year budget is \$1,000,000.

Installation of Backflow Prevention Devices in North End, Charlestown, and East Boston: Installation of backflow prevention devices at storm drain outfalls to prevent the receiving water from entering the storm drain system and flooding inland areas during exceptionally high tide and river levels. This project also includes ongoing coordination with the City of Boston's effort to prevent inundation of coastal land by constructing barriers. In conjunction with the barriers, backflow prevention devices must be installed on the storm drain system by the Commission to prevent water from by-passing the barriers. The Commission and the City of Boston are committed to protect the City from predicted rising sea levels and increase in the number and severity of storms brought by climate change. The intent of this project to

identify areas and backflow prevention devices on storm drains near the outfall pipe to prevent the receiving water entry into the storm drain system. Construction is projected to commence in October 2022 and be completed in February 2023. The three-year budget is \$600,000.

PROJECT CASH FLOW

Table 17 on page 64 illustrates the 2022-2024 cash flow projection for Increased Capacity projects. Total 2022-2024 expenditures are \$2,200,000. Monies allocated for 2022 total \$480,000.

TABLE 17 - INCREASED CAPACITY

Capital Improvement Program
2022 - 2024
Increased Capacity

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
Ongoing Projects																
Installation of Tidegates Citywide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	1,000,000
Tidegate Installation Citywide	-	-	-	-	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	480,000	120,000	-	600,000
Installation of Backflow Prevention Devices	-	-	-	-	-	-	-	-	-	-	-	-	-	300,000	300,000	600,000
Totals	-	-	-	-	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	480,000	420,000	1,300,000	2,200,000
Bonds	-	-	-	-	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	480,000	420,000	1,300,000	2,200,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$0	\$0	\$0	\$0	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$480,000	\$420,000	1,300,000.00	\$2,200,000

SEWER SEPARATION

DESCRIPTION AND JUSTIFICATION

The Commission's separation program involves 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, 2020, the Commission removed more than 1,869 illegal connections, eliminating the discharge of an estimated 846,000 gallons of wastewater per day to the storm drainage system and receiving waters. In 2020 alone, the Commission eliminated 13 illicit sanitary sewer connections to storm drains, removing an estimated 5,201 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.

NEW PROJECTS

East Boston Sewer Separation Phase IV- Contract No. 23-309-002: This project includes CSO reduction in conjunction with the MWRA. The project is expected to commence in April 2024 and to be completed by April 2026. The three-year budget for this project is \$100,000.

ONGOING PROJECTS

City-Wide Correction of Illicit Sanitary Building Connections Contract No. 20-309-015: This contract involves disconnection of sanitary sewer laterals from storm drains and reconnection of laterals to sanitary sewers. Sanitary sewer laterals connected to storm drains allow untreated sewage to discharge to storm drains and from there to rivers, streams, wetlands and Boston Harbor. Sanitary sewer laterals connected to storm drains are prohibited under the Commission's NPDES Stormwater Permit and the Consent Decree. This project commenced in October 2020 and will be completed by October 2023. The three-year budget is \$1,800,000.

Construction Oversight of South Boston Sewer Separation Contract No. 20-206-002: This project includes the construction oversight of the South Boston Separation. Construction commenced in August 2021 and is projected to be completed by October 2028. The three-year budget is \$4,185,000.

Sewer Separation in East Boston Contract No. 17-309-005: This project will include the Separation of combined sewers in East Boston and West Roxbury. Work will also include replacement or rehabilitation of sewer pipes as necessary. Construction began in September 2019 and is projected to be completed by November 2021. The three-year budget is \$498,000.

Sewer Separation Upper Roxbury Phase III- Contract No. 17-309-011: This project includes the installation of sewers and drains for sewer separation in Upper Roxbury. Construction is scheduled to commence in April 2023 and is projected to be completed by November 2024. The three-year budget is \$11,500,000.

City-wide Illegal Connections Investigation Phase 5 Contract 20-206-007: This project is a continuation of the Commission's Citywide Illegal Connection Investigation Program under Phase 5. Under the Consent Decree with the EPA and NPDES Stormwater Permit the Commission is required to identify and eliminate sanitary sewer connections to storm drains and annually screen all the Commission's outfalls. Under this program illicit sanitary sewer connections to storm drains are identified using manhole inspections and sandbagging, water quality sampling, and dye tests of buildings. This program also includes wet and dry weather outfall screening to prioritize drainage sub-catchments for investigation. This project began in August 2020 and is expected to be conclude in August 2023. The three-year budget for this project is \$1,946,000.

Owner Fix of Illegal Connections: Illicit connections in the public way are usually corrected by a Commission contractor. In a few instances, homeowners must alter internal plumbing by installing an ejector pump or redirecting piping to correct an illicit connection. In these instances, the Commission will reimburse owners up to \$7,500 for the work. Illicit connections are a violation of Federal law and must be promptly corrected. This program was instituted and approved by the Commission to assist property owners with costly alterations required to correct illicit connections. The average need is four per year for a total of \$30,000 per year. Capital reserved for reimbursements for the 2022-2024 period is \$90,000.

PROJECT CASH FLOW

Table 18 on page 67 illustrates the cash flow for the Sewer Separation for 2022-2024. Total expenditures over the three-years of the program are expected to be \$20,119,000, of which \$7,163,000 is budgeted for expense in 2022.

TABLE 18 - SEWER SEPARATION

Capital Improvement Program
2022 - 2024
Sewer Separation

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
East Boston Separation PH IV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000	100,000
Ongoing Projects																
Correction of Illicit Sanitary Building Connections	50,000	50,000	50,000	50,000	50,000	50,000	100,000	100,000	50,000	50,000	-	-	600,000	600,000	600,000	1,800,000
Construction Oversight of South Boston Separation	116,000	116,000	117,000	116,000	116,000	117,000	116,000	116,000	117,000	116,000	116,000	116,000	1,395,000	1,395,000	1,395,000	4,185,000
Sewer Separation in East Boston Phase II	498,000	-	-	-	-	-	-	-	-	-	-	-	498,000	-	-	498,000
Roxbury Sewer Separation Contract 3	-	-	-	-	-	500,000	500,000	500,000	500,000	500,000	500,000	500,000	3,500,000	4,500,000	3,500,000	11,500,000
City-wide Illegal Connections Investigation PH V	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	95,000	1,140,000	806,000	-	1,946,000
Owner Fix of Illegal Connections	7,000	-	-	8,000	-	-	7,000	-	-	8,000	-	-	30,000	30,000	30,000	90,000
Totals	\$766,000	\$261,000	\$262,000	\$269,000	\$261,000	\$762,000	\$818,000	\$811,000	\$762,000	\$769,000	\$711,000	\$711,000	\$7,163,000	\$7,331,000	\$5,625,000	\$20,119,000
Bonds	372,000	116,000	117,000	124,000	116,000	117,000	123,000	116,000	117,000	124,000	116,000	116,000	1,674,000	1,425,000	1,425,000	4,524,000
Rate	145,000	145,000	145,000	145,000	145,000	145,000	195,000	195,000	145,000	145,000	95,000	95,000	1,740,000	1,406,000	600,000	3,746,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	249,000	-	-	-	-	500,000	500,000	500,000	500,000	500,000	500,000	500,000	3,749,000	4,500,000	3,600,000	11,849,000
Totals	\$766,000	\$261,000	\$262,000	\$269,000	\$261,000	\$762,000	\$818,000	\$811,000	\$762,000	\$769,000	\$711,000	\$711,000	\$7,163,000	\$7,331,000	\$5,625,000	\$20,119,000

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.

NEW PROJECTS

Sewer and Drain Models-Update & Maintenance: The purpose of this program is to update the Commission's Sewer and Drain Models to incorporate changes to the Commission's sewer and drain systems since the last time the models were updated in 2018. The project will also recalibrate the Stormwater Quality component of the Stormwater Model to the sampling data that was collected for the Stormwater Quality and Model Validation Project and will provide a general hydrologic recalibration to account for changes in the sewer and drain system. The project will provide maintenance of the models and will continue to provide support and training for Commission staff that utilize the Models. The project will update the inundation model with new LIDAR data and rerun the inundation model as needed to determine if areas of the city will change based upon implementation of flood barriers. The planning phase will commence in October 2022 and will be completed by October 2025. The three-year budget is \$1,000,000.

Dorchester Interceptor-Relief Sewer Design: Prior studies have shown that the Dorchester Interceptor is not able to convey flows during large storm events. The purpose of this project will be to design a 3,500 linear foot sewer in Gallivan Boulevard and a 4,600 linear foot sewer in Morrissey Boulevard to redirect and store excess flows from the Dorchester Interceptor and provide relief to address SSOs during large storm events. The design phase is set to commence in November 2022 with a projected completion date of June 2024. The three-year budget for this project is \$3,500,000.

Dorchester Interceptor-Storage Tank Design: Prior studies have shown that the Dorchester Interceptor is not able to convey flows during large storm events. The purpose of this project will be to design a storage facility that will provide relief to the Dorchester Interceptor to store excess flows from the Dorchester Interceptor and provide relief to address SSOs during large storm events. The design phase is set to commence in August 2024 with a projected completion date of December 2025. The three-year budget for this project is \$250,000.

Port Norfolk Pump Station: This project includes Replacement of Discharge Piping, Valves, Gates, Access Hatch, miscellaneous repairs, and upgrades to this pump station. Construction is projected to commence in January 2022 and to be completed by December 2022. The three-year budget for this project is \$1,500,000.

ONGOING PROJECTS

Drain Sensor Deployment: 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 for this project commenced in December 2021 and is to be completed by December 2024. The three-year budget is \$1,200,000.

3D Depictions of Sewer Structures Phase II: The project will produce animated files that allow Commission staff to educate themselves on how regulating structures are configured and how they operate under varying weather conditions. The depictions will provide Commission employees with knowledge about what they will see in the field and how the structure operates and how the tributary pipes impact them. These animated three-dimensional renderings will help the Commission in its goal to provide knowledge transfer to Commission employees. This project will produce animated three-dimensional interactive renderings for up to 50 sewer regulators and other sewer structures. Planning commenced in July 2021 with a completion date of December 2022. The three-year budget is \$250,000.

Lateral Testing & CCTV of Sewers & Drains (IDDE) - Contract No. 21-309-004: Under the Consent Decree with EPA the Commission must adhere to strict deadlines for completing illicit discharge investigations. Testing of sewer laterals will verify whether the laterals leak sewage to the storm drain system. CCTV of sewers and drains will aid in identifying illicit sanitary discharges and structural deficiencies in the pipes. This funding will be used to continue testing sewer laterals to determine whether they leak sewage into drains, and to CCTV inspect sewers and drains to aid in identifying illicit connections and structural deficiencies in pipes. This is expected to be a two-year contract. Construction for this project commenced in May 2021 and is expected to be completed by May 2023. The three-year budget is \$355,000.

Technical Assistance Sewer and Drain Models Contract No. 19-206-012: The purpose of this project is to acquire technical assistance in running Sewer and Drain Models. The program will also include provisions for training and manual development. The Commission has made a significant investment in both the Sewer Model and the Drain Model. Engineering staff will benefit from the technical advice on how to use the software more efficiently. Planning commenced in December 2019 and is expected to be completed in December 2022. The three-year budget is \$120,000.

Dorchester Interceptor Study Contract No. 18-206-003: The purpose of this project is to identify how the Dorchester Interceptor operates during wet weather. The Dorchester Interceptor is not able to convey flows during large storms. Several gates are in place along the interceptor to divert flows out of the interceptor. The project will identify what measures are necessary to eliminate the need for the gates. The project will meter and model flows over a three-year period. Flow meters will supplement existing data. The Commission's model will attempt to simulate flows in real time. The modeling and metering efforts will help to determine if the interceptor is too small. The project commenced in September 2018 and is projected to be completed by September 2022. The three-year budget is \$319,000.

Trilling Way Pump Station Improvements: In 2016 a condition assessment of the Commission's pump stations was completed which recommended various repairs and improvements to be made to maintain service and reliability of the pump stations. This project includes the upgrade or replacement of essential equipment and components related to the Commission's Pump Stations. The upgrades will commence in January 2022 and will be completed by December 2022. The three-year budget is \$325,000.

Discharge Notification for CSOs – Contract No. 19-206-008: The purpose of this is to comply with the anticipated new State Regulations and the Commission’s CSO NPDES Permit, which requires the Commission to notify the public of discharges from its combined sewer system. Professional metering services will be used to determine when an overflow began and when it ended. A website will be maintained for the public to access the overflow information. The planning stage commenced in August 2019 and is estimated to be completed in December 2022. The three-year budget is \$900,000.

Interactive Training Tool: This project includes the development of an interactive training tool that will support knowledge sharing specific to the operation of the Commission’s sewer and drainage systems and relevant components of the MWRA’s wastewater collection system. The Planning stage is scheduled to commence in September 2023 and is projected to be completed in December 2024. The three-year budget is \$200,000.

BWSC Union Park Pump Station Upgrades: In 2016 a condition assessment of the Commission’s pump stations was completed which recommended various repairs and improvements to be made to maintain service and reliability of the pump stations. This project includes the upgrade or replacement of essential equipment and components related to the Commission’s Pump Stations. The upgrades are expected to commence in January 2022 and are projected to be completed by December 2022. The three-year budget is \$1,000,000.

Geotechnical Service Contract No. 19-206-002: This project includes professional geotechnical services related to Commission projects. Services include soil borings and engineering analysis to design pipe and soil support systems. This is a professional services contract. To install sewer and drain pipe in deep locations and in certain soils it is required to sample and analyze the soils to determine the correct method of support for the pipes and excavations. Services commenced in January 2020 and are expected to conclude in December 2022. The three-year budget is \$100,000.

Land Survey Services Contract No. 19-206-003: This project includes surveys for Capital Improvement Projects after construction is completed. This is used to supplement Commission staff with their surveys for busier roadways and difficult to access locations. These services are necessary to complete contracts for the Capital Improvement Program. Services commenced in August 2019 and are expected to conclude in August 2022. The three-year budget is \$12,000.

Castings & Gratings: This project involves payments 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. Services are projected to commence in January 2022 and expected to conclude in December 2024. The three-year budget is \$750,000.

Survey Services for CIP Projects Contract 20-206-005: This project includes total station surveys for Capital Improvement Projects. This is used to augment Commission staff with their surveys. These services are necessary to complete contracts for the Capital Improvement Program. Services commenced in October 2020 and conclude in October 2023. The three-year budget is \$200,000.

PROJECT CASH FLOW

Table 19 on page 71 illustrates the cash flow expenditures for Sewer Special Projects for the period 2022-2024. The total expenditures for the Sewer Special program are \$11,981,000. The expenditures for 2022 are anticipated to be \$4,106,000.

TABLE 19 - SEWER SPECIAL

Capital Improvement Program
2022 - 2024
Sewer Special

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
Sewer & Drain Models Update & Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	750,000	250,000	1,000,000
Dorchester Interceptor - Relief Sewer Design	-	-	-	-	-	-	-	-	-	-	-	-	-	2,500,000	1,000,000	3,500,000
Dorchester Interceptor - Srtorage tank Design	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250,000	250,000
Port Norfolk Pump Station	-	-	250,000	250,000	250,000	250,000	300,000	-	-	-	-	-	1,300,000	100,000	100,000	1,500,000
Ongoing Projects																
Drain Sensor Deployment	-	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000	450,000	450,000	1,200,000
3D Depiction of Sewer Structures Phase II	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	13,000	-	12,000	250,000	-	-	250,000
Lateral Testing & CCTV of Sewers & Drains (IDDE) 2021	21,000	21,000	21,000	21,000	21,000	20,000	21,000	21,000	21,000	21,000	21,000	20,000	250,000	105,000	-	355,000
Technical Assistance for Sewer & Drain Models	5,000	5,000	5,000	6,000	6,000	13,000	7,000	7,000	15,000	8,000	8,000	15,000	100,000	20,000	-	120,000
Dorchester Interceptor Study	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	4,000	-	-	319,000	-	-	319,000
Trilling Way Pump Station Improvements	-	-	10,000	10,000	10,000	20,000	20,000	10,000	45,000	-	-	-	125,000	100,000	100,000	325,000
Discharge Notification for CSOs	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	600,000	300,000	-	900,000
Interactive Training Tool	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000	100,000	200,000
Upgrades to UPPS & Satellite Stat	10,000	10,000	10,000	50,000	55,000	55,000	60,000	75,000	75,000	-	-	-	400,000	300,000	300,000	1,000,000
Geotechnical Services	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	-	-	100,000	-	-	100,000
Land Survey Services	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	3,000	-	-	12,000	-	-	12,000
Castings and Gratings	20,000	20,000	20,000	20,000	20,000	10,000	20,000	20,000	20,000	20,000	30,000	30,000	250,000	250,000	250,000	750,000
Survey Services for Asbuilts	8,000	8,000	9,000	8,000	8,000	9,000	8,000	8,000	9,000	8,000	8,000	9,000	100,000	100,000	-	200,000
Totals	\$ 185,000	\$ 185,000	\$ 476,000	\$ 516,000	\$ 521,000	\$ 528,000	\$ 587,000	\$ 292,000	\$ 336,000	\$ 167,000	\$ 147,000	\$ 166,000	\$ 4,106,000	\$ 5,075,000	\$ 2,800,000	\$ 11,981,000
Bonds																
Bonds	165,000	165,000	456,000	496,000	501,000	518,000	567,000	272,000	316,000	147,000	117,000	136,000	3,856,000	4,825,000	2,550,000	11,231,000
Rate	20,000	20,000	20,000	20,000	20,000	10,000	20,000	20,000	20,000	20,000	30,000	30,000	250,000	250,000	250,000	750,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$ 185,000	\$ 185,000	\$ 476,000	\$ 516,000	\$ 521,000	\$ 528,000	\$ 587,000	\$ 292,000	\$ 336,000	\$ 167,000	\$ 147,000	\$ 166,000	\$ 4,106,000	\$ 5,075,000	\$ 2,800,000	\$ 11,981,000

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 nine contracts, which are funded by the 4:1 I/I Infiltration Inflow Reduction Mitigation Account. Contracts 09-309-008, 10-206-005, 10-309-004, 15-206-001 and 17-206-004 are complete and Contracts 14-206-002, 16-206-003, 18-206-004, 19-206-009 and 20-206-008 are ongoing. All costs are funded by the (“DEDII”) account and are 100% reimbursable; therefore, are not included in the 2022-2024 cashflow. The separation portion of the South Boston Separation contracts 20-309-012, 21-309-012, 22-309-012 and 20-206-002 and the East Boston Separation contracts 19-309-002, 21-309-002, 21-206-003 are also funded by the (“DEDII”) account and are 100% reimbursable; therefore, are not included in the 2022-2024 cashflow. Water and Sewer Renewal & Replacement portions of contracts 20-309-012, 21-309-012, 22-309-012, 19-309-002 and 21-309-002 are included in the 2022-2024 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 Services receives and reviews the Site Plan for conformance with the Commission's Engineering Design and Construction Standards. Engineering Customer Services will confirm if the project has been assessed a 4:1 compliance requirement by the DEP/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

Between July 28, 2005 and March 2020, most projects fulfilled their contribution requirement by monetary means. The Commission has collected \$33,086,742.13.

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

Ten contracts to date are funded by the dedicated account:

*South Boston Separation

**East Boston Separation

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. South Boston Sewer 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 19-206-009

10. SSES Charlestown, Contract NA
11. South Boston Separation, Contract (1) 20-309-012*
12. South Boston Separation, Contract (2) 21-309-012*
13. South Boston Separation, Contract (3) 22-309-012*
14. South Boston Separation, Contract (4) 23-309-012*
15. Construction Oversight of South Boston Separation, Contract 20-206-002*
16. East Boston Sewer Separation Phase III- Contract No. 19-309-002**
17. East Boston Sewer Separation – Phase 4 -Contract 21-309-002**
18. East Boston Sewer Separation Phase 4 Design Services

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

Contract No.	Allocations	Expenditures	Money 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	\$ 1,050,000.00	\$906,717.43	\$ 143,282.57
15-206-001	\$ 1,998,970.00	\$1,718,424.95	\$ 280,545.05
16-206-003	\$ 5,240,000.00	\$ 3,397,117.63	\$1,842,882.37
17-206-004	\$994,470.00	\$878,897.72	\$ 115,572.28
18-206-004	\$ 1,301,793.00	\$1,289,449.83	\$12,343.17
20-309-012	\$5,820,000.00	\$0.00	\$5,820,000.00
21-309-012	\$2,868,000.00	\$0.00	\$2,868,000.00
20-309-012	\$964,000.00	\$0.00	\$964,000.00
19-206-009	\$1,900,000.00	\$0.00	\$1,900,000.00
Contracts Subtotal	\$26,781,845.76	\$9,666,096.53	\$17,115,749.23
Unallocated Subtotal	\$6,304,896.37		
Collected Total	\$33,086,742.13		

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

The following proposed contracts are projected to draw from the \$6,304,896.37 unallocated portion of the dedicated account:

- Mattapan SSES (Contract No. 20-206-008), approximately \$1,500,000
- Jamaica Plain SSES (Contract 21-206-001), approximately \$1,500,000
- Dorchester Inflow Removal (Contract No. TBD), approximately \$1,000,000
- Downspout Disconnection (Contract No. TBD), approximately \$1,000,000

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	\$2,687,644.53	\$159,805.05
Boston Proper	\$13,481,619.18	\$123,893.63
Charlestown	\$498,676.80	\$49,726.44
Dorchester	\$9,070,308.99	\$5,123,787.11
East Boston	\$1,527,313.40	\$669,134.42
Roxbury/South End	\$3,124,158.67	\$2,837,409.23
West Roxbury	\$2,697,020.56	\$702,340.65

Open Contracts

Charlestown SSES: The Massachusetts Department of Environmental Protection (MassDEP) developed regulations requiring sewer system operators to conduct an infiltration and inflow (I/I) analysis of their wastewater collection system and implement a long term plan to identify and remove extraneous flows. The I/I analysis was completed and the final report was delivered to the Commission in May of 2017. The report's long term plan divided the wastewater collection system into 11 regions and recommended that the BWSC conduct a sewer system evaluation survey (SSES) in one region each year. This project is initiated to identify sources of extraneous flows in the Charlestown region of the wastewater collection system. 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. 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. The planning stage will commence in April 2022. The completion date for this contract is September 2024. The three-year budget is \$1,000,000.

Jamaica Plain SSES: The Massachusetts Department of Environmental Protection (DEP) developed regulations requiring sewer system operators to create and implement a long term infiltration and inflow (I/I) reduction plan to remove extraneous flows from the wastewater collection system. The I/I reduction plan was completed in May of 2017. The I/I reduction plan recommends that the Commission conduct sewer system evaluation surveys in sections of the wastewater collection system exhibiting excessive flows. This project is intended to identify sources of extraneous flows in the wastewater collection system serving Jamaica Plain. This project entails an infiltration and inflow, sewer system evaluation survey (SSES) to identify sources of extraneous flow in Jamaica Plain. The SSES may include flow monitoring, manhole inspections, smoke testing, dyed water testing, and television inspection of sewer pipes. The finding will be provided to the Commission in a report with recommendation for capital improvements to eliminate the sources of extraneous flows. The planning stage will commence in June 2021. The completion date for this contract is January 2023. The three-year budget is \$2,000,000.

East Boston Separation

East Boston Sewer Separation – Phase IV Design Services Contract 21-206-001: This project includes design services to augment in house capability and manage MOM increased work. Design is projected to commence in June 2022 and is projected to be completed by December 2025. The three-year budget is \$1,700,000.

East Boston Sewer Separation Phase III- Contract No. 19-309-002: This project is the third phase of a multi -year plan to separate East Boston Combined sewers. Construction is projected to commence in June 2023 and be completed in June 2025. The three-year budget is \$1,195,000.

South Boston Separation

South Boston Sewer Separation - Contract 1:

Contract 20-309-012: This project includes the 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 providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Construction Contract No. 1 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 scheduled to start in April 2021 and is projected to be completed by August 2023. The three-year budget is \$4,020,000.

South Boston Sewer Separation – Final Paving Contract 1:

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 providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Final Paving Contract No. 1 is one of two (2) planned contracts to install final pavement where new storm drains have been constructed in contracts 1 and 2 to separate approximately 400 acres in South Boston along the Dorchester Avenue Corridor. New paving will also be installed where upgrades of the sanitary sewer and water main systems impact the roadway surface. Construction is projected to commence in April 2021 and is projected to be completed by November 2024. The three-year budget is \$969,000.

South Boston Sewer Separation - Contract 2:

Contract 21-309-012: This project includes the 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 providing the highest level of service to the community and to support the BPDA's initiative to foster future development along Dorchester Avenue. Construction Contract No. 1 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 August 2023 and is projected to be completed by November 2025. The three-year budget is \$103,000.

South Boston Sewer Separation - Contract 3:

Contract 22-309-012: This project includes the 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 providing the highest level of service to the community and to support the BPDA's initiative to foster 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. This contract is currently scheduled to commence in April 2024.

South Boston Sewer Separation - Contract 4 :

Contract 23-309-012: This project includes the 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 providing the highest level of service to the community and to support the BPDA's initiative to foster 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. This contract is currently delayed.

Construction Oversight of South Boston Sewer Separation Contract No. 20-206-002: This project includes the construction oversight of the South Boston Separation. This project commenced in November 2020 and is projected to be completed by February 2027. The three-year budget is \$1,395,000.

Infiltration and Inflow Analysis SSES (Mattapan) Contract 20-206-008: The Massachusetts Department of Environmental Protection (DEP) developed regulations requiring sewer system operators to conduct infiltration and inflow (I/I) analysis of their wastewater collection system and implement a long-term plan to identify and remove extraneous flows. The I/I reduction plan was completed and delivered to the Commission in May of 2017. The report's long-term plan divided the wastewater collection system into 11 regions and recommended that the BWSC conduct a sewer system evaluation survey (SSES) in one region each year. This project is initiated to identify sources of extraneous flows in the wastewater collection system serving Mattapan. The SSES will include flow monitoring, manhole inspections, smoke testing, dyed water testing and television inspection of sewer pipes. Findings will be provided to the Commission in a report with recommendation for capital improvements to eliminate the sources of extraneous flows. The planning phase of this project commenced in April 2020 and is estimated to be completed in September 2022. The three-year budget is \$200,000.

Infiltration and Inflow Analysis SSES (Allston/Brighton) Contract No. 19-206-009: The Massachusetts Department of Environmental Protection (DEP) developed regulations requiring sewer system operators to create and implement a long-term infiltration and inflow (I/I) reduction plan to remove extraneous flows from the wastewater collection system. The I/I reduction plan was completed in May of 2017. The I/I reduction plan recommends that the Commission conduct sewer system evaluations surveys in sections of the wastewater collections system exhibiting excessive flows. This project is intended to identify sources of extraneous in the wastewater collection system serving Allston/Brighton. This project entails to identify sources of extraneous flows in the Allston/Brighton. The SSES will include flow monitoring, manhole inspections, smoke testing, dyed water testing and television inspection of sewer pipes. Findings will be provided to the Commission in a report with recommendation for capital improvements to eliminate the sources of extraneous flows. The planning phase of this project commenced in November 2019 and is estimated to be completed in April 2021. The three-year budget is \$615,000.

Roxbury Sewer Separation Design Contract No. 14-206-002: This project includes the final design and subsequent construction for sewer separation in the Dudley Square of Roxbury. Sewer Separation removes gross inflow from the sewer system and is the most direct and efficient form of I/I reduction. Sewer Separation decreases the Commission's sewer payments to MWRA and decreases CSO activity. Work includes construction of new sewer and drains. The design phase of this project began in July 2014 and will completed in December 2021. A small budget of \$128,000 will be established in 2020 to cover closing cost of this contract.

South Boston Sewer Separation - Contract 1:**Streets**

STREETS	LIMITS
A ST	West Broadway to Dorchester Av
ATHENS ST	S Boston Bypass to C St
B ST	West Second St to Dorchester Av
BOLTON ST	S Boston Bypass to B St
C ST	West Second St to West Broadway
COSTELLO CIR	
CROWLEY ROGERS WY	Delessio Ct to D St
DALESSIO CT	
DORCHESTER AV	
FLAHERTY WY	B St to D St
GOLD ST	A St to B St
JOYCE HAYES WY	Orton Marota Wy to West Seventh St
LINSKY-BARRY CT	
OFF B ST	Orton Field
ORTON MAROTTA WY	B St to D St
PRIVATE RD	
SILVER ST	Dorchester Av to B St
WEST BROADWAY	S Boston Bypass to C St
WEST FIFTH ST	Dorchester Av to B St
WEST FOURTH ST	Dorchester Av to B St
WEST SEVENTH ST	Dorchester Av to D St
WEST SIXTH ST	S Boston Bypass to B St
WEST THIRD ST	B St to C St

South Boston Sewer Separation - Contract 2

STREETS	LIMITS
ALGER ST	
BAXTER ST	C St to E St
BELL CT	
C ST	West Seventh St to Old Colony Av
COTTAGE ST	
D ST	West Seventh St to Dorchester Av
DAMRELL ST	Old Colony Av to Dorchester Av
E ST	West Seventh St to Old Colony Av
EARL ST	West Ninth St to Old Colony Av
EWER ST	West Ninth St to Damrell St
FREDERICK ST	
GLOVER CT	End to Woodward St
GUSTIN ST	End to Old Colony Av
LARK ST	#23 to Old Colony Av
MIDDLE ST	Dorchester Av to Dorchester St
MITCHELL ST	at Old Colony Av
OLD COLONY AV	Dorchester Av to Dorchester St
PRIVATE RD	
SAYWARD PL	End to Woodward St
TUCKERMAN ST	Middle St to Dorchester St
WEST EIGHTH ST	#88 to E St
WEST NINTH ST	D St to E St
WOODWARD ST	Dorchester Av to Dorchester St

South Boston Sewer Separation - Contract 3

STREETS	LIMITS
BOWEN ST	D St to Dorchester St
D ST	#215 to West Seventh St
E ST	West Broadway to West Seventh St
F ST	Silver St to Bowen St and #58 to West Seventh St
GOLD ST	D St to Dorchester St
LILLY ST	
LOVIS ST	
SILVER ST	D St to Dorchester St
TUDOR ST	D St to #156 and F St to Dorchester St
WEST FIFTH ST	D St to Dorchester St
WEST FOURTH ST	D St to Dorchester St
WEST SEVENTH ST	D St to Dorchester St
WEST SIXTH ST	D St to Dorchester St

PROJECT CASH FLOW

Table 20 on page 81 illustrates the cash flow expenditures for DEDII Projects for the period 2022-2024. The total expenditures for the DEDII program are \$42,025,000. The expenditures for 2022 are anticipated to be \$12,177,000.

Table 20 - DEDII

Capital Improvement Program
2022-2024
Dedicated Infiltration Inflow 4:1 Projects

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New																
Ongoing																
South Boston Separation Contract 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,609,000	1,609,000
South Boston Separation Contract 3	-	-	-	-	-	-	-	-	-	-	-	-	-	1,913,000	3,532,000.00	5,445,000
East Boston Separation PH IV	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000,000	5,000,000	6,000,000
Infiltration/Inflow SSES (Charlestown)	-	-	-	-	-	-	-	-	-	-	100,000	100,000	200,000	1,000,000	300,000	1,500,000
Infiltration/Inflow SSES (Jamaica Plain)	40,000	50,000	70,000	75,000	80,000	65,000	70,000	70,000	60,000	50,000	50,000	40,000	720,000	-	-	720,000
East Boston Sewer Separation Phase 4 Design Services	-	-	-	100,000	100,000	100,000	200,000	200,000	200,000	200,000	200,000	200,000	1,500,000	1,250,000	1,250,000	4,000,000
East Boston Sewer Separation PH III	100,000	200,000	300,000	300,000	300,000	300,000	400,000	400,000	500,000	500,000	400,000	300,000	4,000,000	3,645,000	-	7,645,000
South Boston Separation Contract 1	228,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	220,000	2,648,000	2,129,000	358,000	5,135,000
South Boston Separation Contract 1 Paving	-	-	-	25,000	40,000	45,000	75,000	100,000	75,000	90,000	80,000	70,000	600,000	460,000	150,000	1,210,000
South Boston Separation Contract 2	-	-	-	-	-	141,000	284,000	284,000	284,000	284,000	284,000	283,000	1,844,000	3,404,000	1,918,000	7,166,000
Construction Oversight of South Boston Separation	39,000	39,000	38,000	39,000	39,000	38,000	39,000	39,000	38,000	39,000	39,000	39,000	465,000	465,000	465,000	1,395,000
Infiltration/Inflow SSES (Mattapan)	50,000	50,000	50,000	35,000	-	-	15,000	-	-	-	-	-	200,000	-	-	200,000
Totals	457,000	559,000	678,000	794,000	779,000	909,000	1,303,000	1,313,000	1,377,000	1,383,000	1,373,000	1,252,000	12,177,000	15,266,000	14,582,000	42,025,000
DEDII	457,000	559,000	678,000	794,000	779,000	909,000	1,303,000	1,313,000	1,377,000	1,383,000	1,373,000	1,252,000	12,177,000	15,266,000	14,582,000	42,025,000
Totals	457,000	559,000	678,000	794,000	779,000	909,000	1,303,000	1,313,000	1,377,000	1,383,000	1,373,000	1,252,000	12,177,000	15,266,000	14,582,000	42,025,000

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SUPPORT PROJECTS

Various Support Projects are included in the 2022-2024 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.

OBJECTIVES

Primary Objectives of the 2022-2024 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

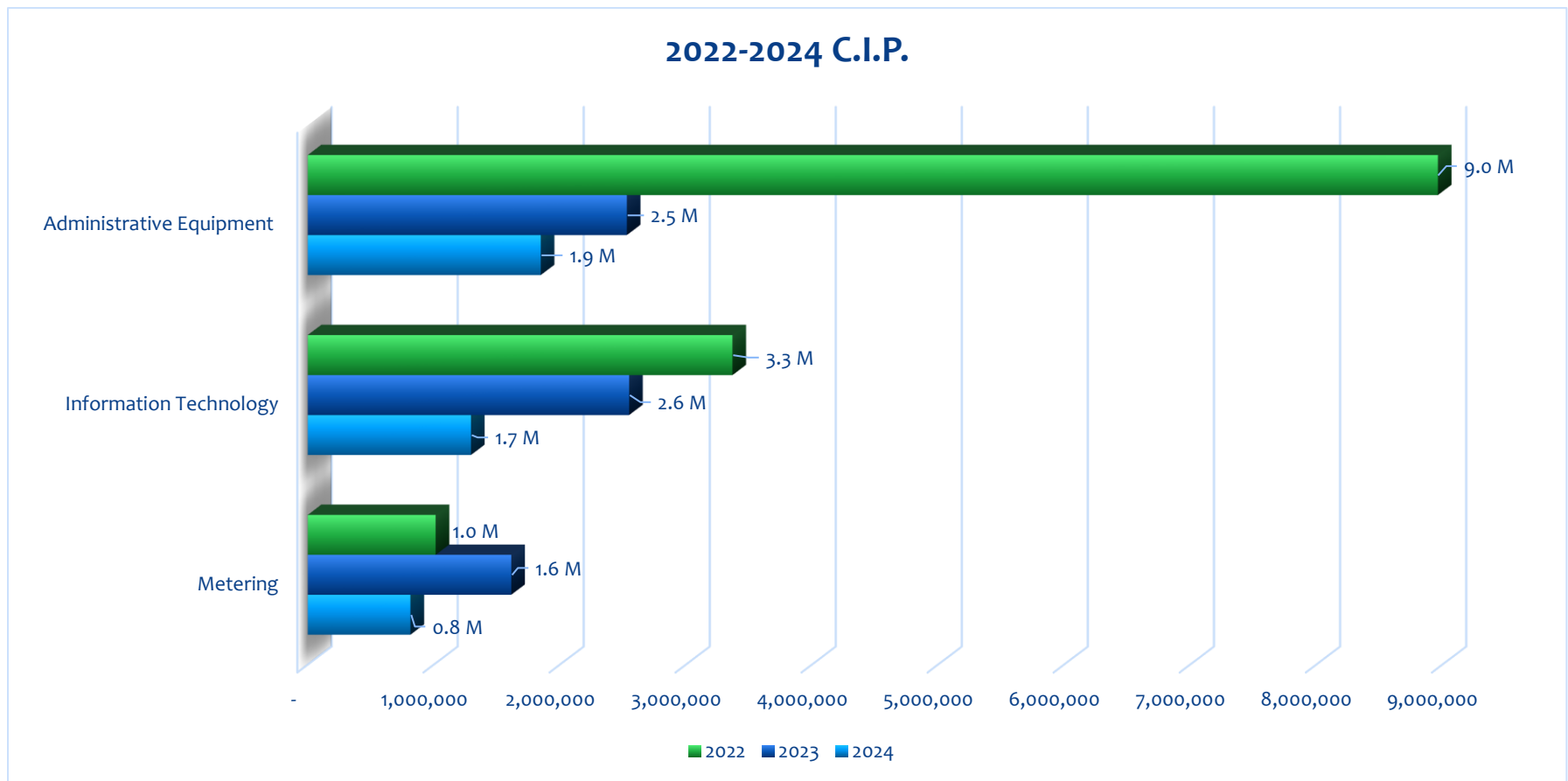
Table 21 on page 84 illustrates the Support Projects in the 2022-2024 Capital Improvement Program total \$24.4 million. Monies allocated for 2022 total \$13.4 million. Graph 11 on page 85 illustrates the Total Support expenditures for 2022-2024. Graph 12 on page 86 illustrates Support Distributions Spending by category for 2022.

Table 21 - Support Category

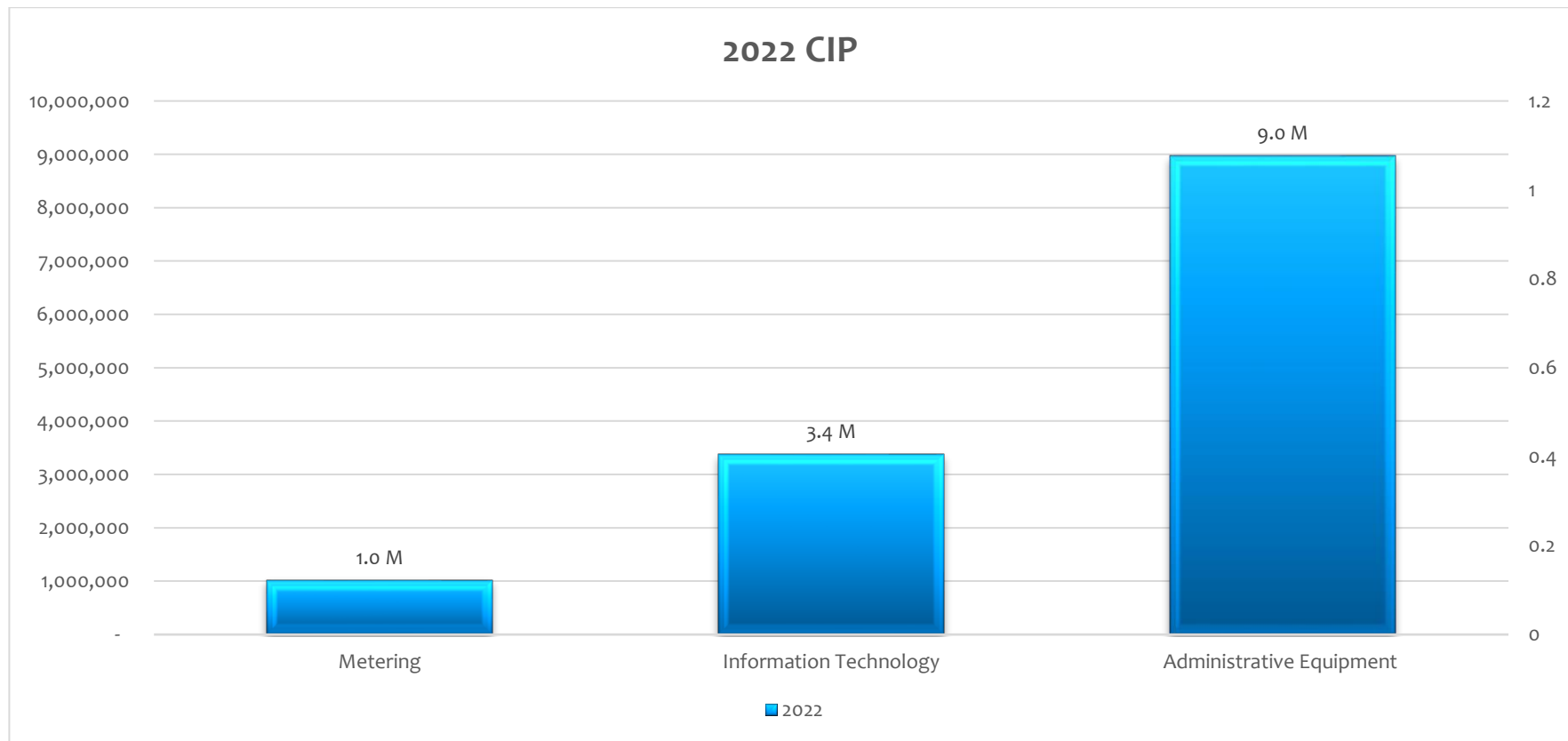
**Capital Improvement Program
2022 - 2024
Support Total**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
Metering																
Bonds	-	-	-	-	-	-	-	-	1,015,000	-	-	-	1,015,000	1,615,000	815,000	3,445,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$0	\$0	\$ -	\$0	\$0	\$ -	\$0	\$0	\$ 1,015,000	\$0	0	\$ -	\$ 1,015,000	\$ 1,615,000	\$ 815,000	\$ 3,445,000
Information Technology																
Bonds	285,000	220,000	280,000	250,000	280,000	330,000	270,000	300,000	230,000	310,000	330,000	285,000	3,370,000	2,550,000	1,700,000	7,620,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$ 285,000	\$ 220,000	\$ 280,000	\$ 250,000	\$ 280,000	\$ 330,000	\$ 270,000	\$ 300,000	\$ 230,000	\$ 310,000	\$ 330,000	\$ 285,000	\$ 3,370,000	\$ 2,550,000	\$ 1,700,000	\$ 7,620,000
Administrative Equipment																
Bonds	50,000	-	720,000	100,000	-	852,000	1,530,000	400,000	582,000	2,950,000	320,000	1,461,000	8,965,000	2,532,000	1,849,000	13,346,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$50,000	\$0	\$720,000	\$ 100,000	0	\$ 852,000	\$1,530,000	\$400,000	\$582,000	\$2,950,000	\$320,000	\$1,461,000	\$ 8,965,000	\$ 2,532,000	\$ 1,849,000	\$ 13,346,000
Support Total	\$ 335,000	\$ 220,000	\$ 1,000,000	\$ 350,000	\$ 280,000	\$ 1,182,000	\$ 1,800,000	\$ 700,000	\$ 1,827,000	\$ 3,260,000	\$ 650,000	\$ 1,746,000	\$ 13,350,000	\$ 6,697,000	\$ 4,364,000	\$ 24,411,000
Bonds	335,000	220,000	1,000,000	350,000	280,000	1,182,000	1,800,000	700,000	1,827,000	3,260,000	650,000	1,746,000	13,350,000	6,697,000	4,364,000	24,411,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	\$ 335,000	\$ 220,000	\$ 1,000,000	\$ 350,000	\$ 280,000	\$ 1,182,000	\$ 1,800,000	\$ 700,000	\$ 1,827,000	\$ 3,260,000	\$ 650,000	\$ 1,746,000	\$ 13,350,000	\$ 6,697,000	\$ 4,364,000	\$ 24,411,000

GRAPH 11 -2022-2024 TOTAL SUPPORT EXPENDITURES \$24.4 MILLION



GRAPH 12 -2022 SUPPORT DISTRIBUTION SPENDING \$13.4 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.

NEW PROJECTS

No new projects.

In conjunction with Aclara, the Commission will perform a Propagation Study of the entire City of Boston based on all the new development over the last 10 years to ensure we have proper Data Collection Unit (DCU's) coverage which increases reading percentages. It may be necessary to move a few DCU's or install a few more to maintain a high read percentage.

ONGOING PROJECTS

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. The three-year budget is \$1,600,000.

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. The three- year budget for this project is \$945,000.

Residential Metering (Water): The residential metering program is an ongoing project to replace approximately 4,000 residential meters sizes 5/8" through 2" annually. The three- year budget for this project is \$900,000.

Table 22 on page 88 illustrates cash flow for Metering projects for 2022-2024 CIP totals \$3,445,000. Metering expenditures allocated for 2022 total 1,015,000.

PROJECT CASH FLOW

Table 22 - Metering Category

Capital Improvement Program
2022 - 2024
Metering

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
No New Projects																
Ongoing Projects																
MTUs and Data Collection Units	-	-	-	-	-	200,000	-	-	200,000	-	-	-	400,000	1,000,000	200,000	1,600,000
Large Meters	-	-	-	-	-	-	-	-	315,000	-	-	-	315,000	315,000	315,000	945,000
Residential Meters	-	-	-	-	-	-	-	-	300,000	-	-	-	300,000	300,000	300,000	900,000
Totals	-	-	-	-	-	200,000	-	-	815,000	-	-	-	\$ 1,015,000	\$ 1,615,000	\$ 815,000	\$ 3,445,000
Bonds	-	-	-	-	-	200,000	-	-	815,000	-	-	-	1,015,000	1,615,000	815,000	3,445,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	-	200,000	-	-	815,000	-	-	-	1,015,000	1,615,000	815,000	\$3,445,000

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.

- Replace the Commission's Building Access Control and CCTV Security system. This project will be completed in 2021.
- Upgrade Engineering Construction Management application. This project will be completed in 2021.
- Upgrade GIS and Asset Management Systems. This project will begin 2021 and is expected to be completed in 2022.

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.

NEW PROJECTS

There are no New Projects included in Software and Hardware line items found in the tables below.

ONGOING 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 \$1,260,000. Monies are budgeted for the following items:

- Backup disk/tape
- Communications/Networking
- Server Upgrades
- B&W Network Printers
- 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 \$6,360,000. 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 Portal
- Information Security
- Disaster Recovery Software & Services
- AutoCAD & Design Software/Upgrades

PROJECT CASH FLOW

Table 23 on page 91 illustrates cash flow expenditures for IT projects for 2022-2024. Total three-year budget is \$7,620,000. Expenditures for 2022 total \$3,370,000.

Table 23 - Information Technology Category

Capital Improvement Program
2022 - 2024
Information Technology

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New																
No New Projects																
Ongoing																
Server/Network Hardware	35,000	20,000	30,000	50,000	80,000	70,000	20,000	50,000	20,000	10,000	30,000	35,000	450,000	405,000	405,000	1,260,000
Server/Network Software	250,000	200,000	250,000	200,000	200,000	260,000	250,000	250,000	210,000	300,000	300,000	250,000	2,920,000	2,145,000	1,295,000	6,360,000
Totals	285,000	220,000	280,000	250,000	280,000	330,000	270,000	300,000	230,000	310,000	330,000	285,000	3,370,000	2,550,000	1,700,000	7,620,000
Bonds	285,000	220,000	280,000	250,000	280,000	330,000	270,000	300,000	230,000	310,000	330,000	285,000	3,370,000	2,550,000	1,700,000	7,620,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	285,000	220,000	280,000	250,000	280,000	330,000	270,000	300,000	230,000	310,000	330,000	285,000	3,370,000	2,550,000	1,700,000	7,620,000

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.

NEW PROJECTS

No New Projects

ONGOING PROJECTS

Exterior Work – 980 Harrison Avenue: A summary review of building conditions undertaken in late 2017 noted several areas on the exterior of 980 Harrison Avenue that would require work over the near term. These included work on the buildings skin (limestone, composite and metal panels) and replacement of perimeter sealant. Twenty years of urban grime has left several exposed building exterior sections unsightly and in need of cleaning. Time has also had a negative effect on the sealant around building panels and at windows. The deterioration of sealant has allowed for leaks to occur when there is a driving rain. Certain building maintenance initiatives have dented some of the metal panels and additionally degraded associated seals around them. Construction will commence in the summer 2022 and be completed in the summer 2023. The total cost of this project is \$240,000.

Gasket Replacement in 2nd Floor Garage: The gasketing material at the expansion joint at the second floor garage has deteriorated and heaved out of its setting. The absence of the material does not allow the expansion joint to function as designed and presents a trip hazard to all traveling to and from vehicles parked at this level. Construction is expected to commence in the September 2022 and to be completed in December 2022. The total cost of this project is \$175,000.

Owner's Project Manager (OPM): There are pressing needs to undertake major repairs at Commission facilities. MGL Ch 149, requires that all building projects with a cost in excess of \$1.5 million have an OPM assigned to the project. Several of the projects required at Commission facilities trigger this threshold. Additionally, staff in the Facilities Department has a proven track record of capabilities in the maintenance of

facilities. Construction of facilities is a separate skill set and existing Staff has little capacity to independently undertake large scale construction projects. The Commission has engaged an OPM to provide staff with expert advice for undertaking facilities construction projects toward the restoration of Commission physical plant. The projects commenced in the summer of 2020 and will be ongoing through the entire length of this capital plan and beyond. The total cost of OPM services through 2023 are projected to be \$200,000.

Atrium Door Improvements: This project allows for the Commission to replace the original front doors of 980 Harrison Avenue. The front doors located in the atrium of 980 Harrison Avenue are original to the building and are outdated and in need of repairs. The proposed new doors will allow for cohesive pedestrian traffic at the building's main entrance, including ADA improvements. This project is projected to commence in July 2022 and completed August 2022. The total budget is \$300,000.

Selection of "House Doctors" for Facilities Projects: Several of the major components of the Commission's headquarters building (roof, HVAC system, etc.) need replacement. The original components have been begun to deteriorate and must either be replaced or completely refurbished. House Doctor/design services are architectural/engineering services required for the design and development of plans and specifications to undertake upgrades to existing components of Commission's buildings and/or to build/renovate additional buildings on Commission owned property. The House Doctor will also be utilized to undertake an evaluation of flood protection systems for the Commission Headquarters, Materials Handling Facility and two above ground pump stations. In 2020, the Board approved \$850,000.00 for these services. It is expected that all architectural/engineering work at Commission facilities will be undertaken by the House Dr. However, there may be circumstances where it makes more sense for the Commission to engage a "specialized" design contract for a unique circumstance. This project is expected to commence in January 2022 and completed in December 2024. The total three-year budget is \$850,000.

Upgrade to Building HVAC Equipment: The existing HVAC system is the system that came on-line with the Headquarters opening in 2001. As with most major building components, the system was installed well in advance of actual building opening. This project includes the replacement of existing heating/AC units throughout the Headquarters Facility. The project is scheduled to commence in the September 2022 and be completed in the October 2022. The estimated cost is \$3,500,000.

Deflection Monitoring System: At the Headquarters facility, there was an expansion joint installed between the existing building (Stride Rite factory) and the addition installed when the headquarters campus was constructed. Over time, there has been movement at the location of the expansion joint which has caused cracks and floor heaves. To mitigate the situation and eliminate trip hazards, additional deflection monitoring will need to occur, as will the replacement of expansion joint covers which no longer adequately cover the locations where they were placed. This project includes the installation of a Deflection Monitoring System to ensure that the building is only moving within acceptable parameters and the movement does not exceed permissible tolerances. The installation of these devices was undertaken in the January of 2022 and is expected to be completed by December 2024. The estimated cost is \$150,000.

Roof Upgrade Replacement: This project includes the upgrade and/or replacement of the Commission's Roof. The project is scheduled to commence in October 2022 and is projected to be completed in March 2023. The estimated cost is \$2,300,000.

Vehicles/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. In order to, minimize fleet total cost of ownership (operating and capital costs) and sure 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 fleet 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. Funding is provided for the replacement of various vehicles for utility and operational purposes. The vehicles being replaced have reached their useful life. The total amount budgeted for Vehicles total \$5,631,000.

PROJECT CASH FLOW

The 2022-2024 cash flow total \$13,346,000 is presented in Table 24 on page 95. Monies allocated in 2021 for various vehicles total \$8,965,000.

Table 24 - Administrative Equipment Category

Capital Improvement Program
2022 - 2024
Administrative Equipment

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New Projects																
No New Projects																
Ongoing																
Exterior Work - 980 Harrison Avenue	-	-	-	-	-	-	-	-	-	-	-	50,000	50,000	95,000	95,000	240,000
Gasket Replacement 2nd Floor Garage	-	-	-	-	-	25,000	-	-	-	-	-	150,000	175,000	-	-	175,000
Owner's Project Manager (OPM)	-	-	20,000	-	-	20,000	-	-	20,000	-	-	15,000	75,000	75,000	50,000	200,000
Atrium Door Improvements	25,000	-	-	25,000	-	-	250,000	-	-	-	-	-	300,000	-	-	300,000
Selection of House Doctors for Facilities Projects	-	-	100,000	-	-	100,000	-	-	100,000	-	-	50,000	350,000	250,000	250,000	850,000
Upgrade/Replacement of Building HVAC Equipment	25,000	-	-	75,000	-	-	900,000	-	-	2,500,000	-	-	3,500,000	-	-	3,500,000
Deflection Monitoring System	-	-	-	-	-	12,000	-	-	-	-	-	13,000	25,000	25,000	100,000	150,000
Rooftop Upgrade Replacement	-	-	100,000	-	-	100,000	-	-	100,000	-	-	1,000,000	1,300,000	1,000,000	-	2,300,000
Vehicles/Equipment	-	-	500,000	-	-	595,000	380,000	400,000	362,000	450,000	320,000	183,000	3,190,000	1,087,000	1,354,000	5,631,000
Totals	50,000	-	720,000	100,000	-	852,000	1,530,000	400,000	582,000	2,950,000	320,000	1,461,000	8,965,000	2,532,000	1,849,000	13,346,000
Bonds	50,000	-	720,000	100,000	-	852,000	1,530,000	400,000	582,000	2,950,000	320,000	1,461,000	8,965,000	2,532,000	1,849,000	13,346,000
Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	50,000	-	720,000	100,000	-	852,000	1,530,000	400,000	582,000	2,950,000	320,000	1,461,000	8,965,000	2,532,000	1,849,000	13,346,000

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STORMWATER/GREEN INFRASTRUCTURE/LOW IMPACT DEVELOPMENT PROJECTS

DESCRIPTION AND JUSTIFICATION

Funding is provided in the 2022-2024 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 has currently drafted a Best Management Practice ("BMP") Recommendations Report in compliance with the terms of the Consent Decree and has submitted it for review. 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.

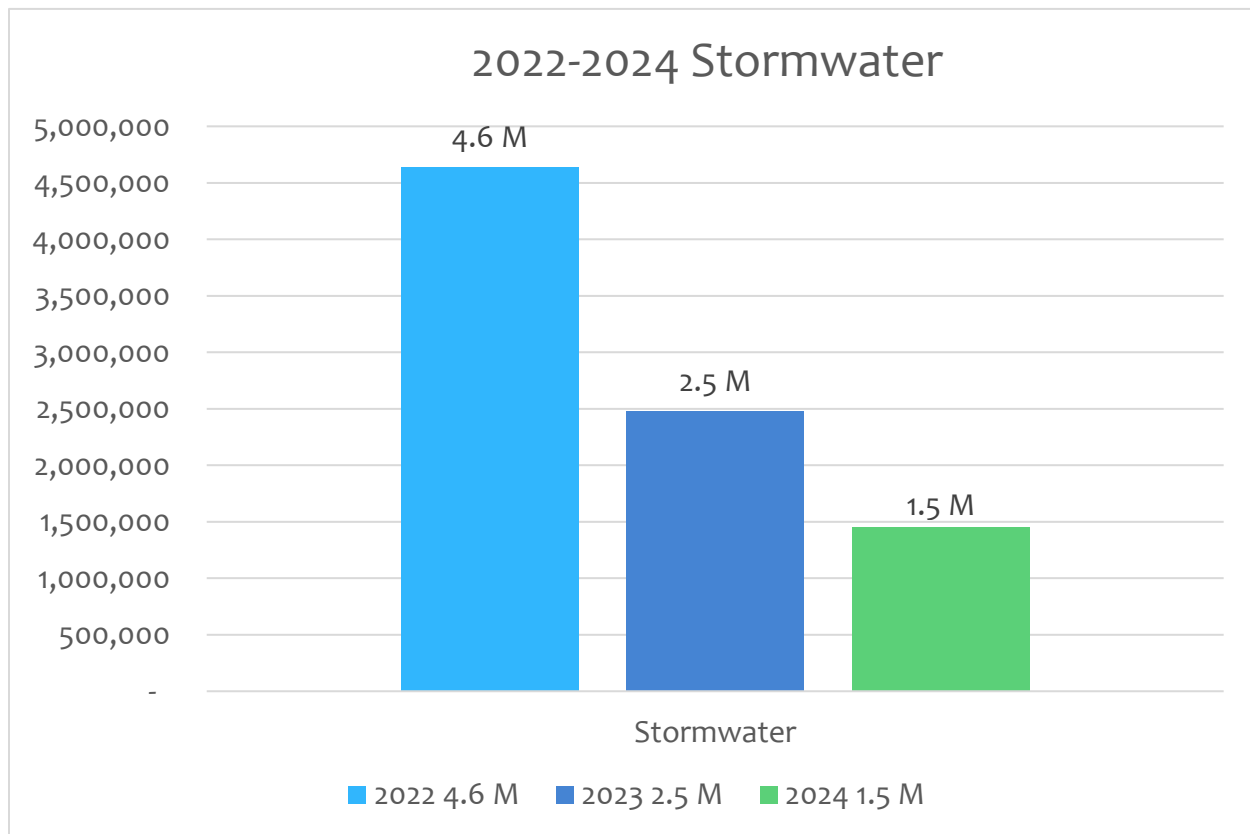
Table 25 on page 98 illustrates Stormwater by Category. Three-year total expenditures are \$8,565,000, of which \$4,635,000 is anticipated to be spent in 2022.

Table 25 - Stormwater

**Capital Improvement Program
2022 - 2024
Stormwater**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
Stormwater																
Bonds	143,000	143,000	142,000	143,000	423,000	443,000	453,000	463,000	472,000	473,000	419,000	418,000	4,135,000	2,480,000	1,450,000	8,065,000
Rate	-	-	-	-	72,000	71,000	72,000	71,000	72,000	71,000	71,000	-	500,000	-	-	500,000
PAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	143,000	143,000	142,000	143,000	495,000	514,000	525,000	534,000	544,000	544,000	490,000	418,000	4,635,000	2,480,000	1,450,000	8,565,000
Stormwater Total	143,000	143,000	142,000	143,000	495,000	514,000	525,000	534,000	544,000	544,000	490,000	418,000	4,635,000	2,480,000	1,450,000	8,565,000
Bonds	143,000	143,000	142,000	143,000	423,000	443,000	453,000	463,000	472,000	473,000	419,000	418,000	4,135,000	2,480,000	1,450,000	8,065,000
Rate	-	-	-	-	72,000	71,000	72,000	71,000	72,000	71,000	71,000	-	500,000	-	-	500,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	143,000	143,000	142,000	143,000	495,000	514,000	525,000	534,000	544,000	544,000	490,000	418,000	4,635,000	2,480,000	1,450,000	8,565,000

Graph 5 - 2022-2024 Total Stormwater Expenditures \$8.6 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 dam structure 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.

NEW PROJECTS

Harambee Park Drainage Structure Replacement: This project involves the replacement of the existing drainage overflow structure at Harambee Park and installation of phosphorus removal technology within the proposed drainage structure. Construction will commence in May 2022 and to be completed in November 2022. The three-year budget for this project is \$500,000.

Construction of Stormwater Detention Facilities Phase I: This project includes 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 will commence in July 2024 and to be completed in May 2025. The three-year budget for this project is \$500,000.

ONGOING PROJECTS

Design Stormwater Detention Facilities Phase II: The Wastewater and Storm Drainage System Facilities Plan included recommendations for temporary surface storage of stormwater to alleviate the hydraulic stress on the Commission's storm drain system from increased rainfall volumes and peak intensities that may be experienced during future storms. Under Contract 18-206-002, the Stormwater Detention Investigation, identified potential sites for stormwater storage. This planning and design project will advance the Commission's stormwater storage program. Engineering services for design of stormwater detention facilities at locations that will be determined based 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 developed as part of the design. The design phase of this project is estimated to commence in October 2023 and is projected to be completed in August 2024. The three-year budget for this project is \$520,000.

Coastal Stormwater Impact Analysis: 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. The project will review topographic changes and low-lying areas to identify areas where stormwater will gather if it is unable to discharge to receiving waters due to higher tides. The project will develop recommendations for addressing the potential inundation issues. The planning phase of this project commenced in November 2020 and is projected to be completed in August 2023. The three-year budget for this project is \$1,060,000.

Design of Stormwater Detention Facilities Phase I: 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. This planning and design project will advance the Commission's stormwater and storage program. The purpose of this project is to provide Engineering services for design of stormwater detention facilities in Roslindale and Jamaica Plain. This 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 of stormwater detention facilities is expected to start in the Spring of 2022. Construction cost estimates for the new facilities will develop as part of the design. The planning phase of this project is expected to commence in October 2021 and the design phase is projected to be completed in March 2023. The three-year budget for this project is \$850,000.

Sampling and Metering for Storm Drain Model Validation: The project will entail collection of flow metering and storm-water quality data to validate the Commission’s Storm Water Model. The Commission’s 2012 Stormwater Model Project (the 2012 Project) characterized the quality of discharges from over 200 storm drain outfalls. The Project monitored conditions at 20 locations over two 12-week periods in 2011 and 2012 to comply with conditions set forth in the Commission’s Consent Decree with the EPA. The data collected for the 2012 Project reflected conditions at the time; however, since 2012, extensive improvements have been made in the stormwater system. For example, over 500 illicit sanitary discharges have been eliminated removing an estimated 176,000 gallons of sewage per day from the drain system. Also, over 1,500 infiltration devices have been installed by developers, thus reducing the concentrations of phosphorus in stormwater runoff. Inherently, these measures improve stormwater quality; however, having current stormwater quality data with which to compare this historic data will enable the Commission to demonstrate whether stormwater quality improvements have in fact occurred. This Project proposes to continuously collect flow metering and water quality data over a multi-year period rather than the shorter period used in the past. The data will then be used to verify the Commission’s Stormwater Model. Planning commenced in May 2020 and a completion date in November 2022. The budget is \$640,000.

Constructed Wetland in Stormwater Tributary at Daisy Field: This project is to construct a vegetated subsurface gravel filter and bioretention feature to treat stormwater runoff in tributary area of Daisy Field. Construction of the gravel filter and bioretention feature to treat stormwater runoff will improve the stormwater quality entering the Charles and Muddy rivers. The construction phase is set to commence in April 2022 and is expected to be completed by November 2024. The three-year budget is \$750,000.

Construct BMPs & Green Infrastructure at City Hall Plaza: This project is being undertaken as part of the Consent Decree requirements. The purpose of this project is to install stormwater BMPs and Green Infrastructure components in the City Hall Plaza area of Boston to serve as a demonstration project for such installations. The components will have monitoring devices installed to determine their effectiveness got stormwater retention and addressing pollutant discharges. Construction commenced in August 2020 and completed by April 2022. The three-year budget is \$3,000,000.

Green Infrastructure: This line item is for funds for BWSC contributions to the construction of Green Infrastructure opportunities within BPWD projects. There are currently three projects, which have been designed by an On-Call consultant that are included in BPWD projects. These projects are New England Avenue, Codman Square as well as funding for potential GI opportunities with BPWD. Construction commenced in August 2021 and is expected to be completed November 2024. The three-year budget is \$745,000.

PROJECT CASH FLOW

Table 26 on page 103 illustrates Stormwater by Category. Three-year total expenditures are \$8,565,000, of which \$4,635,000 is anticipated to be spent in 2022.

Table 26 – Stormwater

Capital Improvement Program
2022 - 2024
STORMWATER/GREEN INFRASTRUCTURE/LOW IMPACT DEVELOPMENT

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022	2023	2024	Total 2022 - 2024
New																
Harambee Park Drainage Structure Replacement	-	-	-	-	72,000	71,000	72,000	71,000	72,000	71,000	71,000	-	500,000	-	-	500,000
Construction of Stormwater Detention Facilities PH I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500,000	500,000
Ongoing																
Design Stormwater Detention Facilities Phase II	-	-	-	-	-	-	-	-	-	-	-	-	-	20,000	500,000	520,000
Coastal Stormwater Impact Analysis	50,000	50,000	50,000	50,000	50,000	50,000	60,000	60,000	60,000	60,000	60,000	60,000	660,000	400,000	-	1,060,000
Design of Stormwater Detention Facilities Phase I	-	-	-	-	30,000	50,000	50,000	60,000	70,000	70,000	80,000	80,000	490,000	360,000	-	850,000
Sampling & Metering for Storm Drain Model Validation	64,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	64,000	-	-	640,000	-	-	640,000
Construction of Daisy Field Green Infrastructure	-	-	-	-	-	-	-	-	-	-	-	-	-	500,000	250,000	750,000
Construct BMPs & Green Infrastruct at City Hall Plaza	-	-	-	-	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,000,000	1,000,000	-	3,000,000
Green Infrastructure	29,000	29,000	28,000	29,000	29,000	29,000	29,000	29,000	28,000	29,000	29,000	28,000	345,000	200,000	200,000	745,000
Totals	143,000	143,000	142,000	143,000	495,000	514,000	525,000	534,000	544,000	544,000	490,000	418,000	4,635,000	2,480,000	1,450,000	8,565,000
Bonds	143,000	143,000	142,000	143,000	423,000	443,000	453,000	463,000	472,000	473,000	419,000	418,000	4,135,000	2,480,000	1,450,000	8,065,000
Rate	-	-	-	-	72,000	71,000	72,000	71,000	72,000	71,000	71,000	-	500,000	-	-	500,000
LWSAP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I/I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	143,000	143,000	142,000	143,000	495,000	514,000	525,000	534,000	544,000	544,000	490,000	418,000	4,635,000	2,480,000	1,450,000	8,565,000

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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

WATER REPLACEMENT

Contract 22-308-001

Street	Limits	Neighborhood	Length	Size	Type
Tyler St	Kneeland St to Beach St	Downtown	250	18, 30x36, 12	S
Tyler St	Kneeland St to Beach St	Downtown	360	12	W
Kneeland St	Tyler St to Harrison Ave	Downtown	20	15	S
Hudson St	Kneeland St to Beach St	Downtown	605	8, 12	W
Pemberton Sq	Somerset St to Somerset St	Downtown	900	12	W
Huntington Ave	Belvidere St to Massachusetts Ave	Fenway/ Kenmore	1625	8	W
Exeter St	At Commonwealth Ave	Back Bay	250	16	W
Harrison Ave Ext	Hayward Pl to Essex St	Downtown	180	10	W
Bowker St/ Hawkins St	New Chardon St to New Sudbury St	Downtown	1650	8, 12	W
Water			5,570		
Sewer			270		

Contract 22-308-002

Street	Limits	Neighborhood	Length	Size	Type
Norton St	River St to Readville St	Hyde Park	1230	8	W
Dunns Ter	End to Minot St	S. Dorchester	230	4	W
Arborcrest Ter	Gladeside Ave to Ridgeview Ave	Mattapan	490	8	W
Gladeside Ter	End to Gladeside Ave	Mattapan	225	6	W
Westmount Ave	LaGrange St to Mount Vernon St	W. Roxbury	640	8	W
Pleasant Ave	Westmount Ave to Dead End	W. Roxbury	160	8	W
Eustis St	Magazine St to Dearborn	Roxbury	2050	8	W
Roslindale Ave	West Roxbury Pkwy to Beech St	Roslindale	680	8	W
Hillis Rd	End to Church St	Hyde Park	230	6	W
Hardwick St	Bigelow St to Dunboy St	Allston/Brighton	770	8	W
Hardwick Ter	Hardwick St to End	Allston/Brighton	125	6	W
Water			6,830		

Contract 22-308-003

Street	Limits	Neighborhood	Length	Size	Type
Willers St	Edgemere Rd to Fensmere Rd	W. Roxbury	215	8	W
Georgetowne Dr	Willers St to Dedham Blvd	W. Roxbury	3120	12	W
Margaretta Dr	Georgetowne Dr to End	W. Roxbury	1120	8	W
Georgetowne Pl	Georgetowne Dr to End	W. Roxbury	875	8	W
Water			5,330		

Contract 21-308-001

Street	Limits	Neighborhood	Length	Size	Type
Dorchester Ave	Von Hillern to Columbia Rd	Dorchester	1,700	12	W
Norwell St	Park to Carmen	Dorchester	2,300	12	W
Columbia Rd	Mercer to Farragut Rd	South Boston	7,200	16	W
Farragut Rd	East Third St to Columbia Rd	South Boston	1,300	16	W
East Fourth St	P St to F919 East Fourth St	South Boston	200	12	S
East Fifth St	O St to P St	South Boston	485	12	S
East Sixth St	O St to Farragut Rd	South Boston	990	12	S
East Sixth St	K St to L S	South Boston	270	12	S
East Sixth St	518 East Sixth to Webb Pk	South Boston	140	16x24	S
East Seventh St	Viking St to M St	South Boston	285	12x18	S
East Eighth St	I St to Bayview Pl	South Boston	180	12x16	S
Marine Rd	Paige Ave to L St	South Boston	780	12	S
K St	Marine Rd to William J Day Blvd	South Boston	525	12	S
M St	Marine Rd to Columbia Rd	South Boston	220	15	S
M St	East Sixth St to East Seventh St	South Boston	240	12	S
P St	East Fourth St East Fifth St	South Boston	250	12	S
Water			12,500		
Sewer			4,565		

Contract 21-308-003

Street	Limits	Neighborhood	Length	Size	Type
North St	Union St to Blackstone St	City Proper	45	12	D
North St	Union St to Blackstone St	City Proper	160	12	W
Clinton St	North St to Commercial St	City Proper	780	12	W
Clinton St	North St to Commercial St	City Proper	280	15	S
Essex St	Washington St to Kingston St	City Proper	1,790	12	W
Essex St	Lincoln St to South St	City Proper	145	12	W
Chauncy St	Ave. De Lafayette to Summer St	City Proper	290	12, 10	S
Chauncy St	Ave. De Lafayette to Summer St	City Proper	480	12	W
Congress St	Milk St to Purchase St	City Proper	1,350	10, 12	W
Pearl St	Milk St to Purchase St	City Proper	1,020	15, 18, 24	S
Hanover St	Congress St to Blackstone St	City Proper	120	12	W
Water			4,825		
Sewer			1,590		
Drain			45		

Contract 20-308-001

Street	Limits	Neighborhood	Length	Size	Type
Harrison Ave	Massachusetts Ave to East Berkeley St	South End	6,025	16,12	W
Harrison Ave	Perry St to East Berkeley St	South End	590	30	W
Perry St	Washington St to Harrison Ave	South End	350	30	W
Union St	Washington St to Harrison Ave	South End	500	8	W
Traveler St	Washington St to Harrison Ave	South End	400	12	W
Washington St	Park St to Talbot Ave	South End	1,850	12	W
Water			9,715		

Contract 20-308-002

Street	Limits	Neighborhood	Length	Size	Type
Shawmut Av	Milford St to W. Brookline St	South End	1700	12	SL
Waltham St	Tremont St to Washington St	South End	1130	12	SL
Hanson St	Tremont St to Shawmut Av	South End	650	8	SL
Shawmut Av	Melnea Cass to Mass Ave	South End	1650	16	SL

Shawmut Av	Massachusetts Tnpk to E. Berkeley St	South End	1000	12	SL
Bond St	Milford St to Hanson St	South End	200	12	SL
Shawmut Ave	Pelham Street to Upton Street	South End	65	24	SS
Shawmut Ave	West Dedham St to Drapers Lane	South End	135	15	SD
Shawmut Ave	Mass Tpke to East Berkely Street	South End	155	15	SS
Shawmut Ave	Kendall St to Lenox St	South End	220	10	SS
Shawmut Ave	Upton St to Union Park	South End	145	18	SD
Shawmut Ave	Paul Place to Emerald Ct	South End	100	10	SS
Shawmut Ave	West Brookline St to San Juan St	South End	235	10	SS
Hanson St	Tremont St to Ringold St	South End	310	18	SD
Hanson St	Tremont St to Ringold St	South End	315	12	SS
Waltham St	Shawmut Ave to Washington Street	South End	205	10	SS
Waltham St	Rear 275-291 Shawmut Ave	South End	115	12	SS
Waltham St	Bradford St at Waltham St	South End	190	12	SS
Water			6,330		
Sewer			2,190		

Contract 20-308-003

Street	Limits	Neighborhood	Length	Size	Type
New Rutherford Ave	Cambridge St to Austin St	Charlestown	3,800	16	W
New Rutherford Ave	Cambridge St to Dunstable St	Charlestown	2,800	8	W
New Rutherford Ave	West School St to Front St	Charlestown	1,700	8	W
New Rutherford Ave	Cambridge St to Front St	Charlestown	2,400	12 to 78	SS, SD
Austin St	New Rutherford St to Warren St	Charlestown	1,000	8	W
Caldwell St	29JV132 (at Maffa Way)	Charlestown	50	24	W
Water			8,350		
Drain			2,400		

Contract 20-308-004

Street	Limits	Neighborhood	Length	Size	Type
Monument St	Bunker Hill to Medford	Charlestown	625	12	W
Tufts St	Bunker Hill to Medford	Charlestown	725	8	W
Corey St	Vine to Medford	Charlestown	825	12	W
Moulton St	Vine to end	Charlestown	100	8	W

David G Mugar Way	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Berkeley St	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Clarendon St	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Dartmouth St	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Exeter St	Beacon to Back	Back Bay/Beacon Hill	1	HY D	W
Gloucester St	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Hereford St	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Mass Ave	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Charlesgate East	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Charlesgate West	Beacon to rear Baystate	Back Bay/Beacon Hill	200	12	W
Raleigh St	Baystate to Back	Back Bay/Beacon Hill	160	12	W
Silber Way	Baystate to Back	Back Bay/Beacon Hill	160	12	W
Granby St	Baystate to Back	Back Bay/Beacon Hill	150	12	W
Water			4,745		

Contract 20-308-005

Street	Limits	Neighborhood	Length	Size	Type
Smith St	Worthington to Huntington Av	Mission Hill	150	12	W
Calumet St	St. Alphonsus to Darling	Mission Hill	700	8	W
Charles St South	Stuart St to Tremont St	City Proper	600	10	W
Warrenton Place	Charles St South to Warrenton St	City Proper	200	8	W
Warrenton Pl	Charles St South to Warrenton St.	City Proper	200	8	W
Warrenton St	Stuart to Warrenton Pl	City Proper	450	12	W
Warrenton St	Stuart to Warrenton Pl	City Proper	450	12	W
Stuart St	Charles St South to Warrenton St	City Proper	200	12	W
Providence St	Arlington St to West St	Hyde Park	840	2,6,8	W
Charles St South	Stuart St to Tremont St	City Proper	34	12	S
Fairfield St	Beacon to Back	Back Bay/Beacon Hill	200	12	W
Fairfield St	Beacon to Back	Back Bay/Beacon Hill	220	36	S
Calumet St	St Alphonsus to Darling	Mission Hill	2,220	12 to 36	S, SD
Water			6,247		
Sewer			2,474		

Contract 19-308-001

Street	Limits	Neighborhood	Length	Size	Type
E. Berkeley St	Tremont St to Washington St (SH)	South End	1,105	12	W
E. Berkeley St	Washington St to Albany St (SH)	South End	940	16 w/12	W
Washington St	E. Berkeley St to Herald (SL)	South End	1,000	16 w/12	W
Washington St	E. Berkeley St to Traveler (SH) (replace HDPE)	South End	300	8	W
Washington St	E. Berkeley St to E Brookline St (North) (SL)	South End	1,500	12	W
Washington St	E. Berkeley St to MSG Reynolds Way (South) (SL)	South End	1,805	12	W
Paul Pl	Herald to Shawmut Ave	South End	255	10	S
East Brookline St	Shawmut Ave to Washington St	South End	175	12	S
Water			6,650		
Sewer			430		

Contract 19-308-002

Streets	Limits	Neighborhood	Length	Size	Type
Vine St	Chelsea to Bunker Hill	Charlestown	600	8	W
Vine St	Chelsea to Bunker Hill	Charlestown	1,460	10,15,39x41	S
Bunker Hill St	Lowney Way to Allston	Charlestown	2,700	8	W
Bunker Hill St	Lowney Way to Allston	Charlestown	2,250	10,12,18,20,24,20x26	S
Bunker Hill St	Lowney Way to Allston	Charlestown	900	12	D
Chelsea St	Constitution to Medford	Charlestown	2,300	12	W
Chelsea St	Constitution to Medford	Charlestown	935	12,15,18,20,24,20x26	S
Chelsea St	Constitution to Medford	Charlestown	700	12	D
School St	Main to Bunker Hill	Charlestown	1,200	8	W
School St	Main to Bunker Hill	Charlestown	1,065	8,12,18	S
School St	Main to Bunker Hill	Charlestown	735	12,24	D
Bartlett	Monument SQ to Pearl	Charlestown	2,000	8 SH/SL	W
Bartlett	Monument SQ to Pearl	Charlestown	600	10, 15	D
Water			8,800		
Sewer			5,710		
Drain			2,935		

Contract 19-308-003

Streets	Limits	Neighborhood	Length	Size	Type
Dry Dock Ave	Harbor Street to Design Center Pl	South Boston	1,100	16	W
Dry Dock Ave	Harbor Street to Design Center Pl	South Boston	1,784	12,18	S
Edgerly Rd	Haviland to Westland	Back Bay	2,000	8, 12	W
Edgerly Rd	Haviland to Westland	Back Bay	1,151	12,12,18	S
Edgerly Rd	Haviland to Westland	Back Bay	805	12,18	D
Playstead Rd	Savin Hill ave to Springdale	South End	400	12	W
Savin Hill Ave	Hubbardston to Caspian	Dorchester	1,620	8, 12	W
Savin Hill Ave	Hubbardston to Caspian	Dorchester	663	15	S
Savin Hill Ave	Hubbardston to Caspian	Dorchester	742	10,12,15,18	D
Burbank St	Edgerly Rd to Edgerly Rd	Back Bay	540	12	W
Tide St	Dry Dock Ave to FID Kennedy Dr	South Boston	626	12	S
Water			5,660		
Sewer			4,224		
Drain			1,547		

Contract 19-308-004

Street	Limits	Neighborhood	Length	Size	Type
Blossom	Charles to Blossom Ct	City Proper	450	16 w 12	W
Charles	Cambridge to Blossom	City Proper	1,100	16	W
West Cedar St	Cambridge to Phillips	City Proper	250	10, 12	W
Phillips St	West Cedar to Grove	City Proper	400	8, 10	W
Cambridge	Hancock to Charles	City Proper	2,000	12	W
Boston Common	Charles to Joy	City Proper	1,200	48 W 30	W
Pinckney St	Anderson St to Joy St	Beacon Hill	675	12	W
Phillips St	Grove St to Anderson St	Beacon Hill	245	10	W
Beacon St	Joy St to Walnut St	Beacon Hill	1,250	12	W
Phillips St	West Cedar St to Grove St	City Proper	245	10	S

Revere St	Goodwin Pl to Storow Dr	Beacon Hill	770	8'	W
Phillips St	West Cedar St to Grove St	City Proper	90	10	S
West Cedar St	Cambridge St to Phillips St	City Proper	145	10	S
West Cedar St	Cambridge St to Phillips St	City Proper	105	10	S
Pinckney St	Anderson St to Joy St	Beacon Hill	250	15	S
Pinckney St	Anderson St to Joy St	Beacon Hill	280	12	S
Pinckney St	Anderson St to Joy St	Beacon Hill	135	16	S
Garden St	Phillips St to Cambridge St	Beacon Hill	285	24x30, 15	S
Phillips St	Grove St to Anderson St	Beacon Hill	185	12	S
Grove St	Revere St to Cambridge St	Beacon Hill	540	Various	S
Cedar Lane Way	Mt verson St to Chestnut St	Beacon Hill	210	12	S
Beacon St	Park St to Walnut	Beacon Hill	535	15x15	S
Beacon St/Joy St		Beacon Hill	1	12x16, 12x18	S
Beacon St	Walnut St to Spruce St	Beacon Hill	525	12	S
Beacon St	Spruce St to Charles St	Beacon Hill	420	15	S
Phillips St	West Cedar St to Grove St	City Proper	245	12	D
Phillips St	West Cedar St to Grove St	City Proper	90	10	D
Phillips St	West Cedar St to Grove St	City Proper	55	12	D
West Cedar St	Cambridge St to Phillips St	City Proper	145	15	D
West Cedar St	Cambridge St to Phillips St	City Proper	80	18	D
Water			7,090		
Sewer			3,950		
Drain			615		

Contract 18-308-001

Street	Limits	Neighborhood	Length	Size	Type
Belvidere St	#55 Clearway St to Huntington Ave	Back Bay/Fenway	670	12	W
Clearway St	#55 Clearway St to Dalton St	Back Bay/Fenway	45	12	W
Dalton St	Clearway St to Scotia St	Back Bay/Fenway	900	12	W
Saint Germain St	Massachusetts Ave to Dalton St	Back Bay/Fenway	740	8	W
Saint Germain St	at Dalton St	Back Bay/Fenway	60	15	D
Cambria St	Saint Cecelia St to Dalton St	Back Bay/Fenway	345	12	S
Boylston St	Charlesgate East to Haviland St	Fenway	325	12	W
Boylston St	Charlesgate East to Haviland St	Fenway	370	12	S
Hemenway St	Boylston St to Haviland St	Fenway	175	12	S
Huntington Ave	at West Newton	Back Bay	275	8, 12, 20	W
Huntington Ave	Ring Rd to Exeter Str	Back Bay	460	20"	W
Saint Germain St	Massachusetts Ave to Dalton St	Back Bay /Fenway	60	12"	S
Dalton Street	Clearway St to Scotia St	Back Bay/Fenway	210	15,18, 24	S
Water			3,415		
Sewer			950		
Drain			60		

Contract 18-308-003

Street	Limits	Neighborhood	Length	Size	Type
Neponset Ave	Minot St to Chickatawbut St	Dorchester	210	15	D
Neponset Ave	Chickatawbut St to # 369 Neponset Ave	Dorchester	150	15	D
Neponset Ave	Holbrook Ave to Minot St	Dorchester	105	18	S
Neponset Ave	Minot St to # 400 Neponset Ave	Dorchester	105	18	S
Neponset Ave	# 400 Neponset Ave to Redfield/Morrissey Blvd	Dorchester	25	15	S
Neponset Ave	# 400 Neponset Ave to Morrissey Blvd	Dorchester	150	15	S
Neponset Ave	# 400 Neponset Ave to Gallivan Blvd	Dorchester	115	12	S
Neponset Ave	#415 Neponset under (I-93) Expressway to # 475 Neponset Ave	Dorchester	660	10	S

Neponset Ave	#417 Neponset under (I-93) Expressway to #815 Gallivan	Dorchester	580	36" x 48"	D
Neponset Ave	Neponset under (I-93 Expressway) and in Highway Median (3a)	Dorchester	50	18/24	D
Neponset Ave	Taylor Street (adj. Neponset Bridge) to Morrissey Blvd N/B	Dorchester	210	8	W
Morrissey Blvd S/B S/B S/B	#12 Redfield Street/Morrissey to Neponset Ave	Dorchester	175	8	W
Gallivan Blvd S/B	#415 Neponset Ave. to Gallivan Blvd	Dorchester	140	12	W
Gallivan Blvd N/B	#761 Gallivan Blvd. to 851 Gallivan N/B Neponset Ave	Dorchester	750	12	W
Neponset Ave	#815 Gallivan Blvd N/B to Taylor St adj/under Neponset (Route 3A) Bridge	Dorchester	700	8 w/12	W
Redfield Street	Morrissey Blvd N/B to #49 Redfield Street	Dorchester	75	8	W
Redfield Street	#12 Redfield/Morrissey S/B under (I-93 Expressway) to Berry Street	Dorchester	370	10	ABA
Neponset Ave	#417 Neponset under (I-93 Expressway) to #815 Gallivan	Dorchester	470	12	ABA
Neponset Ave	#417 Neponset under (I-93 Expressway) to #815 Gallivan	Dorchester	405	16	ABA
Neponset Ave	#815 Gallivan (across 3A median) to #1170 Morrissey Blvd N/B	Dorchester	135	8&12	ABA
Water			3,430		
Sewer			1,055		
Drain			990		

Contract 18-309-001

Street	Limits	Neighborhood	Length	Size	Type
Kilmarnock St	Boylston St to Park Drive	Fenway	750	10,8	W
Jersey St	Boylston St to Park Drive	Fenway	1,000	12	W
Peterborough St	Park Drive to Park Drive	Fenway	2,000	12	W
Queensberry	Park Drive to Park Drive	Fenway	1,800	8	W

Kilmarnock St	Boylston St to Park Drive	Fenway	656	15x22	S
Jersey St	Boylston St to Park Drive	Fenway	845	18, 30x36	S
Peterborough St	Park Drive to Park Drive	Fenway	619	30x36	S
Queensberry	Park Drive to Park Drive	Fenway	255	15x18, 30x36	S
Private Alley 914	Jersey St to Queensberry St	Fenway	232	12	S
Private Alley 925	Kilmarnock St to Jersey St	Fenway	252	15x18, 18	S
Private Alley 926	Kilmarnock St to Jersey St	Fenway	297	15	S
Private Alley 930	Peterborough St to Queensberry St	Fenway	343	15x18	S
Boylston Street	Jersey St to Kilmarnock	Fenway	1,389	12, 15, 18, 24	D
Queensberry	Park Drive to Park Drive	Fenway	1,745	15, 18, 30x30	D
Peterborough St	Park Drive to Park Drive	Fenway	1,027	12, 17	D
Private Alley 914	Jersey St to Queensberry St	Fenway	232	18	D
Private Alley 925	Kilmarnock St to Jersey St	Fenway	221	18x24	D
Private Alley 930	Peterborough St to Queensberry St	Fenway	304	36x36	D
Water				5,550	
Sewer				3,399	
Drain				7,655	

Contract 18-309-003

Street	Limits	Neighborhood	Length	Size	Type
Bradlee St/Navarre	End under American Legion Hwy	Hyde Park	360	18	S
Clare Ave	Collins St to American Legion Hwy	Hyde Park	105	6	S
Coronado Rd	Belnel Rd to End	Hyde Park	225	10	S
Cummins Hwy	Harding Rd to American Legion Hwy	Roslindale	175	8	S
Cummins Hwy	Sycamore St to Florence St	Roslindale	105	12	S
Destefano Rd	Hyde Park Ave to End	Roslindale	330	10	S
Harding Rd	Stella Rd to Hadwin Wy	Roslindale	165	10	S
Hawthorne Ter	Hawthorne St to End	Roslindale	175	10	S
Hawthorne St	Florence St to End	Roslindale	415	15, 18	D
Herbertson Rd	Eldridge Rd to Northnourne Rd	Roslindale	105	10	S
Huntington Ave	Collins St to Thatcher St	Roslindale	215	12	S
Hyde Park Ave	#497 to #515 Hyde Park Ave	Roslindale	115	12	S
Morton St	Blue Hill Ave to Leston St	Mattapan	340	12	S
Neponset Ave	Charme Ave to Byrd Ave	Roslindale	650	10	S
Philbrick St	Neponset Ave to Mount Hope St	Roslindale	205	10	S
Rodman St	Wachusett St to Patten St	Roslindale	295	12	S

Rowe St	Seymour St to Cummins Hwy	Roslindale	255	12	S
Sycamore St	Hawthorne St to Cummins Hwy	Roslindale	300	12	S
Verrill St	Woolson St to Morton St	Mattapan	205	10	S
Wachusett St	Rodman Rd to Patten St	Roslindale	315	10, 12	S
Wellington Hill St	Duke St to Hillsboro Rd	Mattapan	330	10	S
Wildwood St	Woolson St to Morton St	Mattapan	725	12	S
Wilkins Pl	Sycamore St to End	Roslindale	195	6	S
Wyvern	Grover Ave to Florian St	Roslindale	430	10	S
Sewer			6,320		
Drain			415		

Contract 17-308-002

Street	Limits	Neighborhood	Length	Size	Type
Binney St	Longwood Ave to End		900	8 w/12	W
Blackfan Ct	Longwood Ave to End		350	12	W
Blackfan Ct	Longwood Ave to End		335	39x41	S
Bower St	Walnut Ave. to End		250	8 w/6	W
Brunswick St (Easement)	#85 Brunswick to #36 Devon Street		225	12	S
Cedar St	Sanford St. to Manchester St.		335	8	W
Children's Rd	Binney Street to End		200	12	W
Devon St	Columbia Rd. to Vaughan Ave.		250	12	W
Devon St	Vaughan Ave. to #85 Geneva Ave. (under MBTA)		200	15	S
E. Cottage St	Dudley St. to Robey St.		1,025	12	W
E. Cottage St	Dudley St. to Robey St.		245	12	S
Elm Hill Ave	Crawford St. to Warren St.		830	12	W
Fox Point Rd	Savin Hill to Morrissey Blvd.		225	8	W
Intervale St	Blue Hill Ave. to Normandy St.		650	8	W
Intervale St	Blue Hill Ave. to Normandy St.		90	15	S
Intervale St (Easement)	#37 Intervale to #86 Brunswick Street		220	15	S
Intervale St (Easement)	#37 Intervale to #86 Brunswick Street		50	15	S
Stanton St	Norfolk Street to Evans Street		1,100	8	W
Stanton St	Norfolk Street to Evans Street		300	12	S
Station St	Halleck St to Parker St.		325	12	W

Morrissey Blvd (Frontage Road A)	Victory Rd to #725	330	8	W
Westglow St	Adams St to Garner Rd	235	8	W
Vaughn Ave	#38 Vaughn to Devon Street	275	8	W
Vaughn Ave	#38 Vaughn to Devon Street	270	16	S
Vaughn Ave	#38 Vaughn to Devon Street	250	10	S
Water		7,280		
Sewer		2,185		

Contract 17-308-006

Street	Limits	Neighborhood	Length	Size	Type
Cambridge St	Temple St to Somerset St	Back Bay Beacon Hill	110	16	W
Cambridge St	Temple St to Somerset St	Back Bay Beacon Hill	120	12	W
Cambridge St	Temple St to Somerset St	Back Bay Beacon Hill	125	12	S
Cambridge St	Temple St to Somerset St	Back Bay Beacon Hill	120	15	S
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	10	4	W
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	170	6	W
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	10	8	W
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	625	12	W
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	610	16	W
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	50	12	W
Bowdoin St	Cambridge St to Derne St	Back Bay Beacon Hill	100	18	W
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	20	4	W
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	16	6	W
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	80	8	W
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	410	12	W
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	420	16	W
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	90	12	D
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	10	15	D
Derne St	Bowdoin St to Hancock St	Back Bay Beacon Hill	360	18	D
Hancock St	Cambridge St to Mount Vernon St	Back Bay Beacon Hill	60	4	W
Hancock St	Cambridge St to Mount Vernon St	Back Bay Beacon Hill	55	6	W
Hancock St	Cambridge St to Mount Vernon St	Back Bay Beacon Hill	1050	12	W
Hancock St	Cambridge St to Mount Vernon St	Back Bay Beacon Hill	350	12	D
Mount Vernon St	Hancock St to Joy St	Back Bay Beacon Hill	60	4	W
Mount Vernon St	Hancock St to Joy St	Back Bay Beacon Hill	20	6	W
Mount Vernon St	Hancock St to Joy St	Back Bay Beacon Hill	155	12	W
Lynde St	Cambridge St to Dead End	Back Bay Beacon Hill	5	4	W

Lynde St	Cambridge St to Dead End	Back Bay Beacon Hill	140	8	W
Somerset St	Beacon St to Ashburton Pl	City Proper	15	6	W
Somerset St	Beacon St to Ashburton Pl	City Proper	65	12	W
Somerset St	Beacon St to Ashburton Pl	City Proper	45	12	S
Somerset St	Beacon St to Ashburton Pl	City Proper	180	10	S
Tremont St	School St to Court St	City Proper	25	6	W
Tremont St	School St to Court St	City Proper	225	12	D
Tremont St	School St to Court St	City Proper	40	18	S
Water			4,401		
Sewer			510		
Drain			1,035		

Contract 17-308-007

Street	Limits	Neighborhood	Length	Size	Type
Lincoln St	Kneeland Street to Essex Street	City Proper	1400	8	W
South St	Kneeland Street to Beach Street	City Proper	275	8	W
South St	Kneeland Street to Beach Street	City Proper	250	18	S
Harvard St	Tyler Street to Hudson Street	City Proper	250	12	W
Harvard St	Harrison Avenue to Monsignor Shea Road	City Proper	500	12	W
Harvard St	Harrison Avenue to Monsignor Shea Road	City Proper	120	12	S
Harvard St	Harrison Avenue to Monsignor Shea Road	City Proper	135	15	D
Monsignor Shea Rd	Harvard Street to Kneeland Street	City Proper	240	8	W
Monsignor Shea Rd	Harvard Street to Kneeland Street	City Proper	265	12	W
Harold St	Holworthy Street to Hollander Street	City Proper	220	15	S
Harold St	Holworthy Street to Hollander Street	City Proper	230	24	D
Water			2,930		
Sewer			590		
Drain			365		

SEWER RENEWAL & REPLACEMENT

Contract 22-309-003

Street	Limits	Neighborhood	Length	Size	Type
Thornton St	Cedar St to Guild St	Roxbury	800	8	W

Thornton St	Cedar Sq to Guild St	Roxbury	520	8	S
Thornton St	Cedar Sq to Guild St	Roxbury	400	12,15 ,18	D
Lambert Av	Cedar St to Bartlett St	Roxbury	1255	12	W
Lambert Av	Logan St to Norfolk St	Roxbury	745	12 to 15	S
Lambert Av	Logan St to Norfolk St	Roxbury	750	TBD	D
Logan St	9 Logan St to 23 Logan St	Roxbury	110	10	S
Logan St	23 Logan St to Thornton St	Roxbury	210	8	S
Juniper St	Cedar Sq to Cedar St	Roxbury	180	12	S
Juniper St	Juniper Ter to Cedar St	Roxbury	475	TBD	D
Cedar St	Juniper St to Washington St	Roxbury	150	TBD	D
Rockledge St	4 Rockledge St to Thornton St	Roxbury	330	10	S
Rockledge St	25 Rockledge St to Thornton St	Roxbury	75	TBD	D
Guild St	Thornton St to Washington St	Roxbury	330	12	S
Guild St	Thornton St to Washington St	Roxbury	260	TBD	D
Highland St	Cedar St to Intersection	Roxbury	45	12	S
Highland St	Millmont St to Cedar St	Roxbury	440	12	S
Highland Av	Highland St to Centre St	Roxbury	10	15	D
Centre St	Highland Av to Highland St	Roxbury	595	15	S
Centre St	Highland Av to Highland St	Roxbury	460	TBD	D
Eliot Ter	Entire St	Roxbury	90	6	W
Morley St	Entire St	Roxbury	230	8	W
Morley St	Entire St	Roxbury	210	12	S
Highland St	Morley St to Norfolk St	Roxbury	150	12	S
Highland St	Norfolk St to 18 Highland St	Roxbury	40	12	S
Highland St	Norfolk St to Centre St	Roxbury	355	TBD	D
Bartlett St	Dudley St to Blanchard St	Roxbury	115	9 to 10	S
Bartlett St	Blanchard St to Bartlett Station Dr	Roxbury	455	TBD	D
Kenilworth St	13 Kenilworth St to Dudley St	Roxbury	255	12	S
Kenilworth St	13 Kenilworth St to Dudley St	Roxbury	255	TBD	D
Dudley St	Lambert Av to Shawmut Av	Roxbury	735	TBD	D
Water			2,375		
Sewer			4,175		
Drain			4,380		

Contract 21-309-001

Street	Limits	Neighborhood	Length	Size	Type
Waumbeck St	#101 to Wabeno St	Roxbury	700	10,12	S
Humboldt Ave	Waumbeck Street to Townsend St	Roxbury	625	12	S

Hollander St	Harold St to Crawford St	Roxbury	345	18	S
Walnut Ave	Harrisof St to Holworthy St	Roxbury	245	12, 18	S
Thwing St (Easement)	#55 (rear) to 43 Beech Glen (rear) Thwing (easement)	Roxbury	465	8,10	S
Sanford Street	#15 Sanford to Vallaro Rd	Hyde Park	20	18	S
Manilla Ave (Easement)	Norton St to Neponset Valley Pkwy	Hyde Park	195	18	S
Westinghouse Plaza	Readville Ave to parking lot #1 Westinghouse Pz	Hyde Park	275	20	S
Readville St	Como Rd to Albemarle St	Hyde Park	870	10	S
Chesterfield St	Epson Rd to Manilla Ave	Hyde Park	300	10	S
Danny Rd	#52 Danny Rd to #32 Danny Rd	Hyde Park	205	8	S
Como Rd	#40 Como Rd to Readville St	Hyde Park	400	10	S
Ernest Ave	Marion St to Como Rd	Hyde Park	90	8	S
Denison St	Hailey St to End	Roxbury	680	12	S
Denison St	Hailey St to End	Roxbury	400	12	W
Water			400		
Sewer			5,415		

Contract 20-309-014

Street	Limits	Neighborhood	Length	Size	Type
Montgomery St	Dartmouth St to Union Park	South End	265	48	S
Commercial St	Atlantic Ave to Cross St	Central	100	96	S
Commercial St	Atlantic Ave to Cross St	Central	655	30	S
Clarendon St	Warren St to Appleton St	South End	125	33"x3 3"	S
Fairfield St	Beacon St to Back St	Back Bay/ BH	215	36"x4 8"	S
Tremont St	West St to Avery St	Central	165	12	D
Stella Rd	Harding Rd to American Leg Hgwy	Roslindale	55	12	D
Alhambra Rd	Maple St to Willow St	West Roxbury	190	10	S
Willow St	Alhambra Rd to Centre St	West Roxbury	290	10	D
Willow St	Alhambra Rd to Centre St	West Roxbury	260	24	D
Sewer			1,550		
Drain			770		

Contract 20-309-006

Street	Limits	Neighborhood	Length	Size	Type
Gordon Avenue	#61 Gordon Avenue to Child Street	Hyde Park	185	10	SS
Windham Road	Sherrin Avenue to #85 Windham Avenue	Roslindale	460	12	SS
Belgrade Avenue	Walworth Street to #142 Belgrade Avenue	Roslindale	175	10	SS
Woodhaven Street	Messinger Street to #51 Woodhaven Street	Neponset/Mattapan	155	12	SD
Easement (Tyndale Street)	#104 Tyndale Street to #261 Belgrade Avenue	Roslindale	360	12	SS
Tyndale Street	#11 Tyndale Street to Walworth Street	Roslindale	235	12	SS
Easement (Ruskindale Road)	#24 Ruskindale Road to #80 Mariposa Street	Neponset/Mattapan	60	12	SS
Rockingham Road	#22 Rockingham Road to Cummins Highway	Neponset/Mattapan	245	12	SS
Rockingham Road	#22 Rockingham Road to Cummins Highway	Neponset/Mattapan	170	12	SD
River Street	River Street at Cummins Highway	Neponset/Mattapan	20	12	SS
Easement (Livermore Street)	Livermore Street to Kennebec Street	Neponset/Mattapan	225	10	SS
Neponsent Avenue	Wyvern Street to Byrd Avenue	Roslindale	230	12	SS
Neponsent Avenue	Wyvern Street to Byrd Avenue	Roslindale	250	12	W
Wyvern Street	Hyde Park Avenue to Florian Street	Roslindale	170	12	SD
Canterbury Street	Paine Street to American Legion Highway	Roslindale	120	12	SS
Balfour Street	Wayland Street to Dalkeith Street	Roxbury/Mission Hill	100	10	SS
Dove Street	Blue Hill Avenue to Dacia Street	Roxbury/Mission Hill	230	12	SD
Whitby Terrace	Pleasant Street to End (#23 Whitby Street)	Dorchester	270	8	SS
Hartford Street	#43 Hartford Street to Sargent Street	Roxbury/Mission Hill	210	8	SS
Hartford Street	#43 Hartford Street to Chamblet Street	Roxbury/Mission Hill	190	12	CS
VFW Parkway	#623 VFW Parkway to Brucewood Street	West Roxbury	460	12	SS
George Street	Danbury Road to River Street	Hyde Park	625	12	SS
Tileston Street	Radcliffe Road to Winborough Street	Hyde Park	480	12	SS
Tileston Street	Mercer Street to Winborough Street	Hyde Park	245	24	SD
Peacevale Road	Norfolk Street to #11 Peacevale Road	Dorchester	155	10	SS

Easement (Jones Avenue)	#49 Jones Avenue to #134 Woodrow Street	Dorchester	335	12	SS
Mountain Avenue	Dumas Street to #72 Mountain Avenue	Neponset/Mattapan	115	12	SD
Theodore Street	Middleton Street to #21 Theodore Street	Neponset/Mattapan	175	12	SD
Middleton Street	Theodore Street to Wildwood Street	Neponset/Mattapan	220	15	SD
Hildreth Street	Wildwood Street to #15 Hildreth Street	Neponset/Mattapan	125	18	SD
Sargent Street	Hartford Street to Howard Avenue	Roxbury/Mission Hill	465	12	SD
Sargent Street	Hartford Street to Howard Avenue	Roxbury/Mission Hill	400	12	SS
G Street	Thomas Park to Columbia Road	South Boston	760	8	CS
G Street	East Eighth Street to Columbia Road	South Boston	300	12	W
Sewer			1,550		
Drain			770		

Contract 20-309-002

Street	Limits	Neighborhood	Length	Size	Type
Adams Street	Winthrop Street to Chestnut Street	Charlestown	410	8	W
Adams Street	Winthrop Street to Chestnut Street	Charlestown	260	10	S
Adams Street	Winthrop Street to Chestnut Street	Charlestown	130	18	D
City Square	Main Street to Harvard Street	Charlestown	100	30	D
City Square	Harvard Street to Park Street	Charlestown	45	30	D
City Square	Harvard Street to Park Street	Charlestown	110	24	S
Common Street	Park Street to Adams Street	Charlestown	320	10	W
Common Street	Park Street to Adams Street	Charlestown	225	10	S
Main Street	Warren Street to Austin Street	Charlestown	35	24	S
Main Street	Thompson Street to Union Street	Charlestown	125	15	D
Monument Avenue	Monument Square to Main Street	Charlestown	850	8	W
Monument Avenue	Monument Square to Main Street	Charlestown	725	12,18	S
Monument Avenue	Monument Square to Warren Street	Charlestown	365	15	D
New Rutherford Avenue	Rethurford Avenue to Front Street	Charlestown	95	12	S
Park Street	Warren Street to City Square	Charlestown	810	12	W
Park Street	Common Street to Warren Street	Charlestown	180	24	D
Pleasant Street	Warren Street to Cordis Street	Charlestown	290	18	S
Pleasant Street	Monument Street to Boyle Street	Charlestown	145	12	D
Pleasant Street	Monument Square to Boyle Street	Charlestown	145	18	S

Pleasant Street	Main Street to Washington Street	Charlestown	175	12	S
Pleasant Street	Main Street to Washington Street	Charlestown	200	12	S
Soley Street	at Warren Street	Charlestown	25	18	D
Thompson Street	Main Street to Warren Street	Charlestown	175	8	W
Thompson Street	Main Street to Warren Street	Charlestown	125	10	S
Union Street	Rutherford Street to Main Street	Charlestown	235	12	S
Warren Street	Church Street to Pleasant Street	Charlestown	335	10, 15	S
Lynde Street	Union Street to Washington Street	Charlestown	345	15	S
Winthrop Street	Main Street to Adams Street	Charlestown	790	10	W
Winthrop Street	Adams Street to Common Street	Charlestown	310	12	S
Winthrop Street	Warren Street to Main Street	Charlestown	175	12	S
Winthrop Street	Warren Street to Main Street	Charlestown	155	12	D
Water			3,355		
Sewer			3,785		
Drain			1,270		

Contract 19-309-004

Street	Limits	Neighborhood	Length	Size	Type
Lake St	Lakeshore Road to Glenmont Road	Allston/Brighton	52	54	D
Lake St	Lakeshore Road to Glenmont Road	Allston/Brighton	20	24	D
Lake St	Lakeshore Road to Glenmont Road	Allston/Brighton	60	24	S
Lake St	Lakeshore Road to Glenmont Road	Allston/Brighton	100	24	S
Lake St	Lakeshore Road to Glenmont Road	Allston/Brighton	80	15	S
Lake St	Lakeshore Road to Glenmont Road	Allston/Brighton	375	12	W
Adamson St	Franklin Street to Eric Road	Allston/Brighton	125	24	D
Adamson St	Eric Road to Seven Pine Street	Allston/Brighton	120	24	D
Adamson St	Franklin Street to Seven Pine Street	Allston/Brighton	135	24	D
Adamson St	Franklin Street to Eric Road	Allston/Brighton	135	24	D
Adamson St	Everett Street to Franklin Street	Allston/Brighton	1174	12	W
Alcott St	Mansfield Street to Franklin Street	Allston/Brighton	220	24	D
Alcott St	Mansfield Street to Franklin Street	Allston/Brighton	512	16	W
Brentwood St	Appian Way to Athol Street	Allston/Brighton	200	12	S
Brentwood St	Appian Way to Athol Street	Allston/Brighton	185	12	S
Cambridge St	Hooker Street to Coolidge Road	Allston/Brighton	200	12	S
Franklin St	Raymond Street to North Harvard Street	Allston/Brighton	135	12	S
Franklin St	Lincoln Street to Bradbury Street	Allston/Brighton	240	12	S
Haskell St	Hooker Street to Coolidge Road	Allston/Brighton	220	18	D

Haskell St	Hooker Street to Coolidge Road	Allston/Brighton	580	8	W
Hooker St	Royal Street to Holman Street	Allston/Brighton	160	18	D
Hooker St	Holman Street to Arden Street	Allston/Brighton	170	18	D
Hooker St	Royal Street to Holman Street	Allston/Brighton	100	18	D
Hooker St	Royal Street to Arden Street	Allston/Brighton	75	18	D
Hooker St	Holman Street to Arden Street	Allston/Brighton	175	18	D
Hopedale St	Seattle Street to Windom Street	Allston/Brighton	205	18	D
Hopedale St	West Sorrento Street to Windom Street	Allston/Brighton	250	18	D
MA Turnpike	Seattle Street to MA Turnpike Ramp	Allston/Brighton		12	S
Mansfield St	Lincoln Street to Bradbury Street	Allston/Brighton	270	15	S
North Harvard St	Coolidge Road to Easton Street	Allston/Brighton	180	18	S
North Harvard St	Kingsley Street to Rena Street	Allston/Brighton	135	15	S
North Harvard St	Bayard Street to Rena Street	Allston/Brighton	60	18	S
Rena St	North Harvard Street to Travis Street	Allston/Brighton	350	18	S
Seattle St	Hopedale Street to Western Avenue	Allston/Brighton	250	10	S
Seattle St	Amboy Street to Mass Turnpike	Allston/Brighton	220	15	S
Windom St./Amboy	Hopedale Steet to Amboy Street	Allston/Brighton	405	44545	S
Soldiers Field Rd	Leo Birmingham Parkway to N Beacon	Allston/Brighton	1600	8	W
Soldiers Field Rd	Leo Birmingham Parkway to N Beacon	Allston/Brighton	545	10	S
Soldiers Field Rd	Leo Birmingham Parkway to N Beacon	Allston/Brighton	825	15"/1 8"	D
Soldiers Field Rd	Leo Birmingham Parkway to N Beacon	Allston/Brighton	650	10"	S
Englewood Ave	Chestnut Hill Avenue to Chiswick Road	Allston/Brighton	250	12	S
Englewood Ave	Chestnut Hill Avenue to Chiswick Road	Allston/Brighton	120	10	D
Englewood Ave	Chestnut Hill Avenue to Chiswick Road	Allston/Brighton	115	10	D
Soldiers Field Rd	North Harvard to 900' west	Allston/Brighton	1000	12	W
Bennett St	Parsons to Leicester	Allston/Brighton	200	8	W
Water			5,441		
Sewer			4,515		
Drain			3,222		

Contract 18-309-001

Street	Limits	Neighborhood	Length	Size	Type
Kilmarnock St	Boylston St to Park Drive	Fenway	750	10,8	W
Jersey St	Boylston St to Park Drive	Fenway	1,000	12	W
Peterborough St	Park Drive to Park Drive	Fenway	2,000	12	W
Queensberry	Park Drive to Park Drive	Fenway	1,800	8	W
Kilmarnock St	Boylston St to Park Drive	Fenway	656	15x22	S
Jersey St	Boylston St to Park Drive	Fenway	845	18, 30x36	S

Peterborough St	Park Drive to Park Drive	Fenway	619	30x36	S
Queensberry	Park Drive to Park Drive	Fenway	255	15x18, 30x36	S
Private Alley 914	Jersey St to Queensberry St	Fenway	232	12	S
Private Alley 925	Kilmarnock St to Jersey St	Fenway	252	15x18, 18	S
Private Alley 926	Kilmarnock St to Jersey St	Fenway	297	15	S
Private Alley 930	Peterborough St to Queensberry St	Fenway	343	15x18	S
Boylston Street	Jersey St to Kilmarnock	Fenway	1,389	12,15, 18,24	D
Queensberry	Park Drive to Park Drive	Fenway	1,745	15, 18, 30x30	D
Peterborough St	Park Drive to Park Drive	Fenway	1,027	12, 17	D
Private Alley 914	Jersey St to Queensberry St	Fenway	232	18	D
Private Alley 925	Kilmarnock St to Jersey St	Fenway	221	18x24	D
Private Alley 930	Peterborough St to Queensberry St	Fenway	304	36x36	D
Water			5,550		
Sewer			3,499		
Drain			4,918		

Contract 18-309-003

Street	Limits	Neighborhood	Length	Size	Type
Bradlee St/Navarre	End under American Legion Hwy	Hyde Park	360	18	S
Clare Ave	Collins St to American Legion Hwy	Hyde Park	105	6	S
Coronado Rd	Belnel Rd to End	Hyde Park	225	10	S
Cummins Hwy	Harding Rd to American Legion Hwy	Roslindale	175	8	S
Cummins Hwy	Sycamore St to Florence St	Roslindale	105	12	S
Destefano Rd	Hyde Park Ave to End	Roslindale	330	10	S
Harding Rd	Stella Rd to Hadwin Wy	Roslindale	165	10	S
Hawthorne Ter	Hawthorne St to End	Roslindale	175	10	S
Hawthorne St	Florence St to End	Roslindale	415	15, 18	S
Herbertson Rd	Eldridge Rd to Northnourne Rd	Roslindale	105	10	S
Huntington Ave	Collins St to Thatcher St	Roslindale	215	12	S
Hyde Park Ave	#497 to #515 Hyde Park Ave	Roslindale	115	12	S
Morton St	Blue Hill Ave to Leston St	Mattapan	340	12	S
Neponset Ave	Charme Ave to Byrd Ave	Roslindale	650	10	S
Philbrick St	Neponset Ave to Mount Hope St	Roslindale	205	10	S
Rodman St	Wachusett St to Patten St	Roslindale	295	12	S
Rowe St	Seymour St to Cummins Hwy	Roslindale	255	12	S
Sycamore St	Hawthorne St to Cummins Hwy	Roslindale	300	12	S
Verrill St	Woolson St to Morton St	Mattapan	205	10	S
Wachusett St	Rodman Rd to Patten St	Roslindale	315	10, 12	S
Wellington Hill St	Duke St to Hillsboro Rd	Mattapan	330	10	S
Wildwood St	Woolson St to Morton St	Mattapan	725	12	S
Wilkins Pl	Sycamore St to End	Roslindale	195	6	S

Wyvern	Grover Ave to Florian St	Roslindale	430	10	S
Destefano Rd	Hyde Park Ave to End	Roslindale	460	8	W
Harding Rd	Stella Rd to Hadwin Way	Roslindale	400	10	W
Cummins Hwy	Harding Rd to American Legion Hwy	Roslindale	345	16	W
Rowe St	Seymour St to Cummins Hwy	Roslindale	514	8	W
Huntington Ave	Collins St to Thatcher St	Hyde Park	1486	8	W
Hawthorne Ter	Hawthorne St to End	Roslindale	163	8	W
Hawthorne St	Hawthorne Ter to Heathcote St	Roslindale	205	10	W
Hawthorne St	Sycamore St to Florence St	Roslindale	632	8	W
Brown Ave	Cummins Hwy to Allen St	Roslindale	310	12	W
Cummins Hwy	Sycamore St to Florence St	Roslindale	378	16	W
Wellington Hill St	Duke St to Hillsboro Rd	Mattapan	509	12	W
Morton St	Blue Hill Ave to Leston St	Mattapan	500	12	W
Wildwood St	Woolson St to Morton St	Mattapan	596	12	W
Verrill St	Woolson St to Morton St	Mattapan	529	12	W
Coronado Rd	Belnel Rd to End	Hyde Park	359	8	W
Water			7,386		
Sewer			6,735		

Contract 17-309-001

Street	Limits	Neighborhood	Length	Size	Type
Buchanan Rd	President Rd to Wedgewood Rd	West Roxbury	670	10, 12 & 24	D
Courthouse Wy	Northern Ave to End	South Boston	310	10	D
Dale St	At Metropolitan Ave	Hyde Park	40	18	D
Ericsson St	Walnut St to Lawley St	Dorchester	415	12	D
Lawley St	Water St to Ericsson St	Dorchester	210	12	D
Ledgedale Rd	Buchanan Rd to Weld St	West Roxbury	360	10	D
Port Norfolk St	Water St to Ericsson St	Dorchester	820	12	D
Running Brook Rd	Woodley Ave to Westmoor Rd	West Roxbury	990	10 & 21	D
Taylor St	Water St to End	Dorchester	700	15	D
Walnut St	Ericsson St to Water St	Dorchester	660	10 & 12	D
Water St	Walnut St to Taylor St	Dorchester	260	12	D
Buchanan Rd	President Rd to Wedgewood Rd	West Roxbury	180	12	D
Courthouse Wy	Northern Ave to End	South Boston	330	10 & 12	D
Chittick Rd	Truman Pkwy to End	Hyde Park	1660	8 & 10	D
Easement	Keystone St to Glenellen Rd	West Roxbury	410	10	D
Garfield Ave	Truman Pkwy to Bow St	Hyde Park	1980	8, 10 & 12	D
Loring Pl	Garfield Ave to End	Hyde Park	310	10	D
Loring St	Garfield Ave to Chittick Rd	Hyde Park	300	8	D

Northern Ave	Courthouse Way to Seaport Blvd	South Boston	760	15	D
Oakman St	Taylor St to Walnut St	Dorchester	320	12	D
Seaport Blvd	Northern Ave to D Street	South Boston	1325	15 & 18	D
Sherrin Woods Easement	Austin St to Dale St	Hyde Park	1700	18	D
Taylor St	Rice St to Neponset Ave	Dorchester	535	12	D
Truman Pkwy	Easton Ave to Chittick Rd	Hyde Park	660	12 & 15	D
Walnut St	Franklin St to Woodworth St	Dorchester	160	12	D
Buchanan Rd	President Rd to Wedgewood Rd	West Roxbury	390	8	W
Ledgedale Rd	Buchanan Rd to Weld St	West Roxbury	360	8	W
Port Norfolk St	Water St to Ericsson St	Dorchester	1050	8	W
Running Brook Rd	Woodley Ave to Westmoor Rd	West Roxbury	790	8	W
Courthouse Way	Northern Ave to End	South Boston	1090	12	W
Water			3,680		
Drain			16,065		

Contract 17-309-015

Street	Limits	Neighborhood	Length	Size	Type
Anthony Rip Valenti Way	Canal St to Beverly St	CENT	777	60, 66, 57x60	S
Cross St	Cooper St to Fulton St	CENT	1545	48, 66	S
Hanover St	Blackstone St to JFF Surface Rd	CENT	36	36	S
Hanover St	Congress St to Union St	CENT	165	30x36	S
Hanover St	Union St to Blackstone St	CENT	155	30x36	S
Hanover St	Union St to Cross St	CENT	8	30x36	S
JFF Surface Rd	Sudbury St to New Chardon St	CENT	238	36, 48	S
JFF Surface Rd	Market St to Hanover St	CENT	362	48, 66	S
North St	Near Tunnel Entrance to Cross St	CENT	445	66	S
North Washington St	Medford St to Anthony Rip Valenti Way	CENT	291	48	S
Blackstone St	North St to Hanover St	CENT	478	15-18	S
North St	Union St to Blackstone St	CENT	342	15	S
BWSC Easement	E St to Pappas Way	SBOS	1786	40, 60, 72	S
Sewer			6,628		

INCREASED CAPACITY

19-309-001

Location	Limits	Neighborhood	Length	Size
Beverly St	Lovejoy Place to Causeway St	City Proper	N/A	N/A
Neponset Ave	Gallivan Boulevard to Taylor St (Neponset Circle)	Dorchester	N/A	N/A
Seaport Blvd	Seaport Blvd at B St.	South Boston	N/A	N/A
Seaport Blvd	Seaport Blvd at Sleeper St	South Boston	N/A	N/A

SEPARATION

Contract 17-309-005

Location	Limits	Neighborhood	Length	Size	Type
Bennington St	Meridian St to Marion St	East Boston	445	12	D
Decatur St	Border St to London St	East Boston	240	8	W
Decatur St	Border St to London St	East Boston	465	24	S
Decatur St	Border St to London St	East Boston	465	30	D
Liverpool St	Decatur St to #151 Liverpool St	East Boston	430	10	S
Liverpool St	Decatur St to #151 Liverpool St	East Boston	430	12	D
London St	Maverick St to Porter St	East Boston	1,630	12	S
London St	Maverick St to Porter St	East Boston	1,630	15, 18, 24	D
Meridian St	London St. to Central Sq	East Boston	375	12	S
Meridian St	London St to Central Sq	East Boston	375	15, 16, 18	D
Princeton St	Meridian St to Marion St	East Boston	470	12	S
Princeton St	Meridian St to Marion St	East Boston	470	12	D
Saratoga St	Meridian St to Marion St	East Boston	130	12	SD
Saratoga St	Meridian St to Marion St	East Boston	850	4, 6, 8	W
Sumner St	Lamson St to Jeffries St	East Boston	1,040	6, 12	W
Sumner St	Lamson St to Jeffries St	East Boston	1,075	12	S

Sumner St	Lamson St to Jeffries St	East Boston	1,075	18	D
Webster St	Lamson S to #468 Sumner St	East Boston	1,000	12, 24	D
Webster St	#254 Webster St to Jeffries St	East Boston	845	24"x27"	S
Lubec St	Lamson St to #252 Webster St	East Boston	825	10, 12, 15	D
Baker St	Gove St to Porter St	West Roxbury	855	12, 15	D
Water			2,130		
Sewer			5,290		
Drain			7,700		

Contract 17-309-011

Street	Limits	Neighborhood	Length	Size	Type
Alaska St	Blue Hill Ave to #25	Roxbury	210	12	D
Alaska St	Blue Hill Ave to #25	Roxbury	215	12	S
Aspen St	Copeland St to Dunreath St	Roxbury	20	15	D
Aspen St	Copeland St to Dunreath St	Roxbury	20	12	S
Blue Hill Ave	Dudley St to Maywood St	Roxbury	3,445	15, 18, 24, 30, 36, 42	D
Blue Hill Ave	Dudley St to Maywood St	Roxbury	3,480	12,15,18,24	S
Brookford St	Blue Hill Ave to Rand St	Roxbury	325	12	D
Brookford St	Blue Hill Ave to Rand St	Roxbury	320	12	S
Clifford St	At Blue Hill Ave	Roxbury	35	12	D
Clifford St	At Blue Hill Ave	Roxbury	40	12	S
Copeland Pl	At Copeland St	Roxbury	20	10	S
Copeland St	Moreland St to Langford Park	Roxbury	530	18, 24	D
Copeland St	Moreland St to Langford Park	Roxbury	250	12	S
Edgewood St	Blue Hill Ave to #23	Roxbury	275	12	D
Edgewood St	Blue Hill Ave to #23	Roxbury	30	12	S
Irwin Ave	At Blue Hill Ave	Roxbury	35	10	S
Julian St	Blue Hill Ave to Cottage Ct	Roxbury	415	12	D
Julian St	Blue Hill Ave to Cottage Ct	Roxbury	405	10	S
Lagrange Pl	Blue Hill Ave to End	Roxbury	155	10	S
Langford Park	Copeland St to End	Roxbury	135	12	D
Langford Park	Copeland St to End	Roxbury	195	10	S
Langford Park	Copeland St to End	Roxbury	210	4	W
Maywood St	Blue Hill Ave to #27	Roxbury	255	12, 15	D
Maywood St	Blue Hill Ave to #27	Roxbury	245	12	S
Maywood St	Blue Hill Ave to #27	Roxbury	705	8	W
Montrose St	Moreland St to Warren St	Roxbury	20	10	S
Moreland St	Blue Hill Ave to Warren St	Roxbury	890	18, 30, 36	D

Moreland St	Blue Hill Ave to Warren St	Roxbury	925	12, 15	S
Moreland St	Blue Hill Ave to Warren St	Roxbury	20	12	W
Perrin St	Moreland St to Waverly St	Roxbury	30	15	D
Perrin St	Moreland St to Waverly St	Roxbury	30	15	S
Rand St	Entire Street	Roxbury	25	12	D
Rand St	Entire Street	Roxbury	90	12	S
Southwood St	Blue Hill Ave to #21	Roxbury	450	12, 15	D
Waverly St	Blue Hill Ave to #26	Roxbury	910	12, 15	D
Waverly St	Blue Hill Ave to #26	Roxbury	940	10	S
West Cottage St	Blue Hill Ave to #80	Roxbury	370	10	S
Winthrop St	Blue Hill Ave to Cleveland St	Roxbury	80	30	D
Woodbine St	Blue Hill Ave to #30	Roxbury	530	12	D
Woodbine St	Blue Hill Ave to #30	Roxbury	550	10	S
Water			935		
Sewer			8,335		
Drain			8,560		

SOUTH BOSTON SEPARATION

20-309-012 CONTRACT I

Street	Limits	Neighborhood	Length	Size	Type
A St	W. Broadway to Dorchester Ave	South Boston			
Athens St	S Boston Bypass to C St	South Boston			
B St	W. Second St to Dorchester Ave	South Boston			
Bolton St	S Boston Bypass to B St	South Boston			
C St	W. Second St to W. Broadway	South Boston			
Costello Cir		South Boston			
Crowley Rogers Wy	Dalessio Ct to D St	South Boston			
Dalessio Ct		South Boston			
Dorchester Ave		South Boston			
Flaherty Wy	B St to D St	South Boston			
Gold St	A St to D St	South Boston			
Joyce Hayes Wy	Orton Marota Wy to W Seventh St	South Boston			
Silver St	Dorchester Ave to B St	South Boston			
St Cashmir St		South Boston			
W. Broadway	S. Boston Bypass to C St	South Boston			
W. Fifth St	Dorchester Ave to B St	South Boston			
W. Fourth St	Dorchester Ave to B St	South Boston			
W. Seventh St	Dorchester Ave to D St	South Boston			
W. Sixth St	S. Boston Bypass to B St	South Boston			

21-309-012 CONTRACT II

Street	Limits	Neighborhood	Length	Size	Type
Baxter St	C St to E St	South Boston	626	12, 15, 18	D
Baxter St	C St to E St	South Boston	321	12	S
Baxter St	C St to E St	South Boston	1,125	8	W
Bell Ct	At D St	South Boston	25	12	S
C St	Old Colony Ave to West Seventh St	South Boston	144	12	S
C St	Old Colony Ave to West Seventh St	South Boston	310	12	W
D St	Dorchester Ave to West Seventh St	South Boston	1,217	30,36,42,60	D
D St	Dorchester Ave to West Seventh St	South Boston	1,250	18,24	S
D St	Dorchester Ave to West Seventh St	South Boston	2,495	12,30	W
Damrell St	Dorchester Ave to Old Colony Ave	South Boston	732	15,18	D
Damrell St	Dorchester Ave to Old Colony Ave	South Boston	802	12	S
Damrell St	Dorchester Ave to Old Colony Ave	South Boston	830	12	W
E St	Old Colony Ave to West Seventh St	South Boston	732	15,18	D
E St	Old Colony Ave to West Seventh St	South Boston	802	12	S
E St	Old Colony Ave to West Seventh St	South Boston	590	8,10	W
Earl St	Old Colony Ave to West Ninth St	South Boston	161	12	S
Earl St	Old Colony Ave to West Ninth St	South Boston	160	6,8	W
Ewer St	Damrell St to West Ninth St	South Boston	368	18	D
Ewer St	Damrell St to West Ninth St	South Boston	88	12	S
Ewer St	Damrell St to West Ninth St	South Boston	585	8	W
Glover Ct	Woodward St to End	South Boston	179	12	D
Glover Ct	Woodward St to End	South Boston	4	12	S
Gustin St	Old Colony Ave to End	South Boston	151	12	D
Gustin St	Old Colony Ave to End	South Boston	56	10	S
Middle St	Dorchester Av to Dorchester St	South Boston	791	12	D
Middle St	Dorchester Av to Dorchester St	South Boston	801	12	S
Middle St	Dorchester Av to Dorchester St	South Boston	845	8	W
Old Colony Ave	Dorchester Av to Dorchester St	South Boston	145	12,24	D
Old Colony Ave	Dorchester Av to Dorchester St	South Boston	1,096	12,15	S
Old Colony Ave	Dorchester Av to Dorchester St	South Boston	2,655	8,10,12	W

Tuckerman St	Middle St to No. 18 Tuckerman St	South Boston	91	12	D
Tuckerman St	Middle St to No. 18 Tuckerman St	South Boston	23	10	S
West Eight St	East St to End	South Boston	94	12	D
West Eight St	East St to End	South Boston	463	12,15	S
West Eight St	East St to End	South Boston	855	8	W
West Ninth St	D St to E St	South Boston	540	36,42	D
West Ninth St	D St to E St	South Boston	542	12,15,24	S
West Seventh St	At D St	South Boston	66	42,48	D
West Seventh St	At D St	South Boston	83	18,42	S
West Seventh St	At D St	South Boston	110	12,30	W
Woodward St	Dorchester Av to Dorchester St	South Boston	356	12	D
Woodward St	Dorchester Av to Dorchester St	South Boston	345	10,12,15	S
Woodward St	Dorchester Av to Dorchester St	South Boston	680	4,8	W
Water			11,240		
Sewer			6,895		
Drain			6,075		

22-309-012 CONTRACT III

Street	Limits	Neighborhood	Length	Size	Type
Bowen St	D St to Dorchester St	South Boston	1,230	12,15	D
Bowen St	D St to Dorchester St	South Boston	1,415	10,15	S
Bowen St	D St to Dorchester St	South Boston	990	8,12	W
D St	# 215 to W. Seventh St	South Boston	760	12,24	D
D St	# 215 to W. Seventh St	South Boston	265	10,15	S
D St	# 215 to W. Seventh St	South Boston	1,465	12,30	W
E St	W. Broadway to W. Seventh St	South Boston	1,180	12	D
E St	W. Broadway to W. Seventh St	South Boston	600	10,12	S
E St	W. Broadway to W. Seventh St	South Boston	1,205	12	W
F St	Silver St to Bowen St to West Seventh St	South Boston	810	12,15,18,30	D
Gold St	D St to Dorchester St	South Boston	1,230	12	D
Gold St	D St to Dorchester St	South Boston	1,030	15	S
Gold St	D St to Dorchester St	South Boston	1,030	8	W
Lilly St		South Boston			
Lovis St		South Boston			
Silver St	D St to Dorchester St	South Boston	960	12,15	D
Silver St	D St to Dorchester St	South Boston	1,150	10,12	S
Tudor St	D St to #156 and F St to Dorchester St	South Boston	130	12,15	D
Tudor St	D St to #156 and F St to Dorchester St	South Boston	645	10	S
W Fifth St	D St to Dorchester St	South Boston	1,545	12,30	D

W Fifth St	D St to Dorchester St	South Boston	1,115	8,12	W
W Fourth St	D St to Dorchester St	South Boston	1,245	12,24,30	D
W Fourth St	D St to Dorchester St	South Boston	1,965	8,20	W
Seventh St	D St to Dorchester St	South Boston	1,500	18,36,42	D
Seventh St	D St to Dorchester St	South Boston	545	24	S
W Sixth St	D St to Dorchester St	South Boston	1,160	12	D
W Sixth St	D St to Dorchester St	South Boston	545	24	S
W Sixth St	D St to Dorchester St	South Boston	540	8	W
Water			8,310		
Sewer			6,195		
Drain			11,750		

EAST BOSTON SEPARATION

Contract 19-309-002

Street	Limits	Neighborhood	Length	Size	Type
Cottage Street	Maverick St to Sumner St	East Boston	500	12	W
Orleans Street	Porter St to Gove St	East Boston	700	12	W
Orleans Street	Gove St to Maverick St	East Boston	650	8, 12	W
Maverick Street	Orleans St to Cottage St	East Boston	750	16	W
Sumner Street	Bremen St to Clippership Ln	East Boston	650	12	W
Falcon Street	Border to Brooks	East Boston	1,150	6, 8	W
Everett Street	Orleans St to Lamson St	East Boston	1,550	10	W
Cottage St	Maverick St to Everett St	East Boston	70	28x42	S
Cottage St	Maverick St to Everett St	East Boston	210	36x36	S
Cottage St	Maverick St to Everett St	East Boston	205	12x16	S
Maverick St	Bremen St to Orleans St	East Boston	115	12	S
Maverick St	Frankfort St to Orleans St	East Boston	131	15	S
Maverick St	McKay PL to Cottage St	East Boston	215	15	S
Maverick St	McKay PL to Cottage St	East Boston	65	15	S
Maverick St	McKay PL to Frankfort St	East Boston	120	15	S
Maverick St	Cottage St to Geneva St	East Boston	40	12	S
Sumner St	Seaver St to Lamson St	East Boston	160	12	S
Webster St	Orleans St to #74 Webster St	East Boston	220	36	S
Falcon St	Border St to Meridan St	East Boston	250	12	S
Falcon St	Meridan St to Brooks St	East Boston	30	12	S
Porter St	Chelsea St to Porter St	East Boston	N/A	N/A	D
Orleans St	Porter St to Gove St	East Boston	650	15	S

Orleans St	Gove St to Maverick St	East Boston	600	15	S
McKay PL	Maverick St to End	East Boston	65	10	D
Cottage Street	Porter St to Maverick St	East Boston	1,150	60x60	D
Cottage Street	Maverick St to Sumner St	East Boston	525	24	D
Cottage Street	Maverick St to Everett St	East Boston	525	24	D
Orleans Street	Porter St to Gove St	East Boston	650	48x51	D
Orleans Street	Gove St to Maverick St	East Boston	600	48x51	D
Orleans Street	Maverick St to Summer St	East Boston	525	24	D
Maverick St	Bremen St to Orleans St	East Boston	150	12	D
Maverick St	Frankfort St to Cottage St	East Boston	500	18	D
Everett Street	Orleans St to # 10 Everett St	East Boston	100	12	D
Everett Street	Cottage St to #66 Everett St	East Boston	50	12	D
Everett Street	Cottage St to #124 Everett St	East Boston	575	18	D
Sumner Street	Orleans St to #292 Sumner St	East Boston	25	18	D
Sumner Street	#292 Sumner St to Wilbur Ct	East Boston	210	12	D
Sumner Street	Seaver St to Cottage St	East Boston	725	18	D
Sumner Street	Maverick Sq to Clippership Ln	East Boston	310	30	D
Haynes Street	Marginal St to #52 Haynes St	East Boston	125	12	D
Lexington Street	Border St to Meridian St	East Boston	170	18	D
Lexington Street	Meridian St to Marion St	East Boston	620	15	D
West Eagle Street	Border St to Meridian St	East Boston	260	18	D
West Eagle Street	Meridian St to Brooks St	East Boston	850	15	D
Porter Street	Chelsea St to Porter St	East Boston	N/A	N/A	D
WATER			5,950		
SEWER			5,966		
DRAIN			6,245		



Boston Water and Sewer Commission

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