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August 28, 2024

Mr. Todd Borci
Office of Environmental Stewardship
US EPA Region 1
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Mail Code OES04-4
Boston MA, 02109-3912

Ms. Susannah King, NPDES Section Chief
Wastewater Management Section
Department of Environmental Protection
1 Winter Street - 5th Floor
Boston, MA 02108

RE: Massachusetts Water Resources Authority NPDES Permit Number MA0103284 – MWRA Annual Infiltration and Inflow (I/I) Reduction Report for Fiscal Year 2024

Dear Mr. Borci and Ms. King:

In compliance with the requirements of MWRA's NPDES Permit MA0103284 - Part I, Item 18.bb (ii) "Infiltration/Inflow" (page 28 of 32), the Authority submits this cover letter and the six Attachments listed below that together comprise the MWRA Annual Infiltration and Inflow (I/I) Reduction Report for Fiscal Year 2024.

Attachment 1 – Overview of MWRA Regional I/I Reduction Plan
Attachment 2 – MWRA Regional I/I Reduction Plan – FY24 Progress Update and Detailed Implementation Schedule for FY25 Activities
Attachment 3 – MWRA Actions Taken to Reduce I/I During FY24
Attachment 4 – Status Update on MWRA's I/I Local Financial Assistance Program
Attachment 5 – I/I Reduction Status Update for Member Communities
Attachment 6 – CY23 Community Wastewater Flow Data

Should you require additional information, please contact Stephen Estes-Smargiassi, Director of Planning and Sustainability at Stephen.Estes-Smargiassi@mwra.com.

Sincerely,

David W. Coppes, P.E.
Chief Operating Officer

cc: Areeg Abd-Alla, Environmental Engineer III, MassDEP
David Wu, Director, MWRA, Environmental Quality
Wendy Leo, Senior Program Manager, MWRA, Environmental Quality
Kristen Hall, Senior Program Manager, MWRA Community Support Program

ATTACHMENT 1
TO
MWRA ANNUAL I/I REDUCTION REPORT FOR FY24
Reporting Period – July 2023 Through June 2024

OVERVIEW OF MWRA REGIONAL I/I REDUCTION PLAN

The MWRA Board of Directors approved the Regional Infiltration/Inflow (I/I) Reduction Plan on May 23, 2001 and authorized staff to submit the Plan to EPA and MassDEP as required under MWRA's NPDES Permit. The plan was submitted to EPA and MassDEP in June 2001 and MassDEP approved the plan in a letter dated November 19, 2002. A full copy of the Regional I/I Reduction Plan (dated September 2002) was included as Attachment 2 to the August 29, 2003 MWRA Annual I/I Reduction Report for FY03. The Regional I/I Reduction Plan is available at https://www.mwra.com/projects-programs/major-programs/local-ii-community-financial-assistance .

The Regional I/I Reduction Plan combines recommendations from the I/I Task Force Report (March 2001) with ongoing MWRA I/I reduction initiatives. The updated plan replaces the Authority's 1990 I/I Reduction Policy. Implementation of the Regional I/I Reduction Plan focuses on the cooperative efforts of member communities, MassDEP, EPA and MWRA to develop and implement I/I reduction and sewer system rehabilitation projects.

Under the plan, MWRA has full legal and fiscal responsibility for implementation of operation, maintenance and I/I reduction programs for the MWRA-owned interceptor system. Each member community retains full legal and fiscal responsibility for implementation of operation, maintenance and I/I reduction programs for community-owned sewers. MWRA will provide technical and financial assistance to member communities and work cooperatively with MassDEP, EPA and other stakeholders to help solve local and regional sewer problems. MWRA's Regional I/I Reduction Plan is organized into five major goals:

1. MWRA will continue its current operation and maintenance program for the MWRA-owned interceptor system leading to the identification, prioritization and rehabilitation of structural and I/I problems.

2. MWRA will work cooperatively with member communities, MassDEP and EPA to eliminate sewer system backups into homes and other buildings and to minimize health and environmental impacts of SSOs related to I/I.

3. MWRA will work cooperatively with member communities, MassDEP and EPA to reduce I/I in the regional collection system with emphasis on the following: (1) inflow reduction in areas tributary to sewer backups and SSOs; (2) private source inflow reduction; (3) infiltration that may impact groundwater or surface water resources; and (4) excessive infiltration as defined in MassDEP regulations or guidance documents.

4. MWRA will work cooperatively with member communities, MassDEP and EPA to expand existing efforts to educate and involve the public regarding regional sewer backup, SSO and I/I reduction issues.

5. MWRA will provide technical assistance and work cooperatively with member communities, MassDEP and EPA regarding guidance on local operation and maintenance and capital improvement programs intended to provide a reasonable level of sewer service to local sewer users/ratepayers.

ATTACHMENT 2
TO
MWRA ANNUAL I/I REDUCTION REPORT FOR FY24
Reporting Period – July 2023 Through June 2024

MWRA REGIONAL I/I REDUCTION PLAN - FY24 PROGRESS UPDATE AND DETAILED IMPLEMENTATION SCHEDULE FOR FY25 ACTIVITIES

This document provides a progress update for FY24 accomplishments and a description of the activities to be accomplished during FY25 for each of the I/I reduction strategies in the MWRA Regional I/I Reduction Plan. The update appears in bold type directly below each I/I reduction strategy. This document is intended to satisfy Condition 5 of DEP's November 19, 2002 letter approving the MWRA Regional I/I Reduction Plan.

Goal 1 under MWRA's Regional I/I Reduction Plan is:

> *MWRA will continue its current operation and maintenance program for the MWRA-owned interceptor system leading to the identification, prioritization, and rehabilitation of structural and I/I problems.*

Strategy A: Utilize MWRA's internal TV inspection equipment that currently includes one fully outfitted internal TV inspection vehicles equipped with 6000 feet of multi-conductor cable. MWRA also utilizes an OZ-camera that has a 200X zoom capability. Annual inspection schedules are outlined in MWRA's Collection System O&M Manual. This strategy has an ongoing schedule that has been initiated.

Strategy B: Utilize MWRA's sonar camera to inspect siphons and force mains. Annual inspection schedules are outlined in MWRA's Collection System O&M Manual. This strategy has an ongoing schedule that has been initiated.

Strategy C: Physical inspection of collection system manholes and structures by Operations Division field crews. Annual inspection schedules are outlined in MWRA's Collection System O&M Manual. This strategy has an ongoing schedule that has been initiated.

Work by MWRA under these three Strategies is ongoing.

During FY24, MWRA properly operated and maintained the MWRA-owned interceptor system. Annual performance targets and ongoing accomplishments are tracked as part of the Authority's MAXIMO maintenance database and are reported monthly to MWRA senior management. Specific activities undertaken by MWRA for FY24 are detailed in Attachment 3. Additional information on MWRA's FY24 maintenance activities is provided under separate submittal - NPDES Part I.18.g Annual Maintenance Status Sheets.

During FY25, MWRA will continue to properly operate and maintain the MWRA-owned interceptor system.

Goal 2 under MWRA's Regional I/I Reduction Plan is:

> *MWRA will work cooperatively with member communities, DEP, and EPA to eliminate sewer system backups into homes and other buildings and to minimize health and environmental impacts of SSOs related to I/I.*

Strategy A: MWRA will provide technical assistance to DEP to develop a uniform format for use by communities for reporting wastewater backup and sewer system overflow information. A representative group of communities should be consulted for review. MWRA will provide technical assistance to DEP to develop a system to record the information reported by communities into a usable database format. This database may have the capability to be linked to GIS mapping and the information may be made available to communities, MWRA, DEP, EPA, watershed groups, the general public, etc. upon appropriate request. This strategy has an ongoing schedule that should be initiated in the short-term. Completion of this strategy requires a significant resource commitment by DEP. Collection and recording of sewer backup and SSO information from member community sewer systems is the responsibility of DEP. DEP will be responsible for management of collection and distribution of these records. (Cross-reference this strategy to the I/I Task Force Report recommendations 4.1 Strategy A-2 and 5.2 Strategy B-2)

Work by MWRA under this Strategy is ongoing.

During spring 2001, MWRA provided MassDEP a draft SSO reporting/record keeping electronic database format that was developed by Malcolm-Pirnie, Inc. under contract to MWRA. This work was completed by MWRA as technical assistance to MassDEP. A follow-up letter dated June 20, 2001 requested MassDEP identify the format for finalizing the SSO reporting/record keeping electronic database.

During FY04, MassDEP (in conjunction with staff in the Massachusetts Information Technology Division), developed a revised format SSO electronic database package. This project was part of statewide efforts to upgrade computerized resources and electronic access. The system was demonstrated at an April 8, 2004 MassDEP/MWRA joint community workshop.

In May 2005, MassDEP developed a revised Reporting Form "Sanitary Sewer Overflow/Bypass/Backup Notification Form (rev 05/2005)." This form was made available on the MassDEP web site and reporting was via FAX or by mail. Following development of the web based reporting form by MassDEP, rollout of the SSO reporting/record keeping electronic database was not completed.

As requested by MassDEP, on August 22, 2011 MWRA provided MassDEP specific SSO site location information for SSO's on MWRA-owned northern system sewers (for events during the period January 2000 through June 2011), including street location, longitude and latitude location, and GIS site maps.

In January 2013, MassDEP developed the most recent revised Reporting Form "Sanitary Sewer Overflow (SSO)/Bypass Notification Form" (pdf version - rev 01/2013). As of July 2020, this pdf form is available on the MassDEP web site (a Word version of the form is also available – rev 1/2018) and reporting using the form is via FAX or by mail.

During FY16, MWRA added more specific information on SSOs on the MWRA web site at: https://www.mwra.com/your-sewer-system/sanitary-sewer-overflows-ssos. This information includes information on what an SSO is, public health impacts, how SSOs can be prevented, and what MWRA does when an SSO occurs. The web site also includes an interactive GIS site map for SSOs that have been reported by MWRA for the following SSO event display selections: currently active, past 2 days, past 30 days, and past 12 months.

In January 2021, Governor Baker signed *An Act Promoting Awareness of Sewage in Public Waters* into law: https://malegislature.gov/Laws/SessionLaws/Acts/2020/Chapter322. This law ensures that the public knows when untreated sewage flows into Massachusetts waters. The regulations apply to owners of outfalls from which there are sewage discharges that either directly or indirectly discharge to a receiving water. MassDEP had twelve (12) months to develop regulations to support the implementation of the law (January 2022). Communities had six (6) months thereafter to comply with the regulations (July 2022). MWRA was part of the stakeholder group providing input to MassDEP's development of the regulations.

In FY22, MWRA enhanced its existing CSO public notification program to add notifications of SSOs (in compliance with the new sewage notification regulation 314 CMR 16.00). Additionally, MWRA updated its SSO notification website. In response to a request from MassDEP, MWRA assisted in notifying member communities of their responsibilities under the new regulation. MWRA also provided comment on the draft regulation.

In FY23, MWRA began sending notifications to media outlets (as required by 314 CMR 16.00). Along with Cambridge and Somerville, MWRA held a public meeting on CSO control in the Charles River and Mystic River/Alewife Brook watersheds that included discussion of flooding, system capacity and I/I reduction requirements. This was the second meeting in a series that would continue over the next year and a half. MWRA also continued outreach and education efforts with local Boards of Health in preparation for the new sewage notification regulation.

In FY24, MWRA continued its existing sewage notification program which includes notifications of SSOs (in compliance with the new sewage notification regulation 314 CMR 16.00). MWRA also completed its Final Sewage Notification Plan, submitted it to MassDEP, and published it for public comment as required by 314 CMR 16.00. Beginning July 6, 2022, MWRA also enters notifications into the MassDEP database within 18 hours of the start of each discharge, so information can be made available in MassDEP's portal. MWRA believes the database and portal developed by MassDEP to comply with the Sewage Notification Regulation 314 CMR 16.00 meets the intent of this strategy.

Strategy B: Once a central information database is established (see Strategy A), MWRA will periodically delineate areas which may be "at risk" for backups and SSOs that may be impacted by the MWRA-owned collection system. MWRA will evaluate potential improvements to the MWRA-owned collection system that may reduce the risk of sewer backups and SSOs. This strategy should be completed in the mid to long-term. (Cross-reference this strategy to the I/I Task Force Report recommendations 4.3 Strategy C-2 and 5.5 Strategy E-2)

Work by MWRA under this Strategy is complete as noted below. Some ongoing work performed by MWRA that is associated with this Strategy is also noted.

MWRA utilizes MassDEP's Sanitary Sewer Overflow (SSO)/Bypass Notification Form to report SSOs from MWRA's collection system.

MWRA does not have SSOs related to dry weather sewer system capacity issues. MWRA does not have SSOs related to wet weather sewer capacity issues for rainfall events at or below the MassDEP recommended standard design storm for inflow having a one-year recurrence interval and a duration of six hours (see MassDEP's Guidelines for Performing I/I Analyses and Sewer System Evaluation Surveys – Revised May 2017). The one-year, six-hour storm produces approximately 1.72 inches of rainfall in the Boston area. During extreme storm events that exceed the MassDEP recommended design storm, I/I entering the upstream community-owned collection systems may cause an occasional SSO in the MWRA regional interceptor system.

During FY24, MWRA continued its ongoing priority program to clean and inspect inverted siphons in the MWRA-owned collection system. This program is intended to minimize potential SSOs upstream of siphons and reduce the risk of hydraulic limitations and/or blockage from debris buildup in siphon barrels. The cleaning and inspection program will continue in FY25.

Strategy C: Once a central information database is established (see Strategy A) and member communities have delineated areas which may be "at risk" for backups and SSOs, MWRA - jointly with DEP - will provide technical assistance to member communities to evaluate potential improvements to local infrastructure that may reduce the risk of sewer backups and SSOs. MWRA will assist communities to determine if impacts from the regional collection system are an issue. The schedule for this strategy is dependent on prior actions by DEP and member communities. (Cross-reference this strategy to the I/I Task Force Report recommendations 4.3 Strategy C-1 and 5.5 Strategy E-1)

MassDEP's roll-out of the SSO reporting/record keeping electronic database was not completed (see Strategy A above). However, the database and portal developed by MassDEP to comply with the Sewage Notification Regulation 314 CMR 16.00 may meet the intent of this strategy.

As part of its ongoing program to support member community I/I reduction and sewer system rehabilitation programs, MWRA offers technical assistance to communities to review local I/I reduction plans and local/regional SSO problems. MWRA also offers member communities financial assistance for I/I reduction projects. During FY25, at the request of member communities, MWRA will continue to provide technical and financial assistance on local sewer system projects.

Strategy D: For the MWRA-owned interceptor system, MWRA will review and analyze the health and environmental impacts of existing SSO sites. SSO sites will be prioritized based on the frequency and duration of activations and the resulting health and environmental impacts, including: potential for human contact, impact to water supply, impact to shellfish beds or other economic resources, impact to animal or aquatic habitat, etc. This strategy will be completed in

the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 5.3 Strategy C-1)

Work by MWRA under this Strategy is complete. As previously stated, MWRA does not have SSOs related to dry weather sewer system capacity issues. MWRA also does not have SSOs related to wet weather sewer capacity issues for rainfall events at or below the MassDEP recommended standard design storm for inflow having a one-year recurrence interval and a duration of six hours (see MassDEP's Guidelines for Performing I/I Analyses and Sewer System Evaluation Surveys – Revised May 2017). Since prior SSOs have been eliminated for sewer capacity issues at or below the collection system design standard for inflow, additional work under this strategy is not necessary.

Strategy E: Utilizing the priority ranking to be completed in Strategy D above, as well as system hydraulic analyses, MWRA (for the MWRA-owned interceptor system) - in conjunction with DEP and EPA - will evaluate the potential to eliminate each overflow. Appropriate I/I reduction and/or relief sewer projects that may eliminate (or minimize) SSOs from MWRA-owned interceptors will be evaluated. This strategy will be initiated in the short to mid-term; however, implementation of projects developed from the evaluation may span beyond the long-term time frame as defined within the Regional I/I Reduction Plan. (Cross-reference this strategy to the I/I Task Force Report recommendation 5.3 Strategy C-2)

Work by MWRA under this Strategy is complete as noted below. Some ongoing work that is associated with this Strategy is also noted.

As previously stated, MWRA does not have SSOs related to dry weather sewer system capacity issues. MWRA also does not have SSOs related to wet weather sewer capacity issues for rainfall events at or below the MassDEP recommended standard design storm for inflow having a one-year recurrence interval and a duration of six hours (see MassDEP's Guidelines for Performing I/I Analyses and Sewer System Evaluation Surveys – Revised May 2017). Since prior SSOs have been eliminated for sewer capacity issues at or below the collection system design standard for inflow, additional work under this strategy is not necessary.

During FY14, MassDEP revised its Regulation 314 CMR 12.00 *Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers*. The revisions include a requirement for all public entities that own a sewer system to complete an I/I analysis by December 31, 2017 and submit it to MassDEP for review. The analysis also must include an assessment of the risk of SSOs. In FY18, MWRA submitted the required I/I analysis as a chapter in the MWRA Wastewater Collection System Operation & Maintenance Plan (December 2017).

As part of its ongoing program to support member community I/I reduction and sewer system rehabilitation programs, MWRA offers technical assistance to communities to review local I/I reduction plans and local/regional SSO problems. MWRA also offers member communities financial assistance for I/I reduction projects. During FY25, at the request of member communities, MWRA will continue to provide technical and financial assistance on local sewer system projects. MWRA will also continue to work on projects in the MWRA Capital Improvement Program, as summarized in Attachment 3.

Strategy F: For those overflows that are unlikely to be eliminated in the short to mid-term (based on the evaluation from Strategy E, above), MWRA (for the MWRA-owned interceptor system) will consider developing interim measures to relocate or otherwise mitigate the impact of existing overflows on human and natural resources. The priority ranking (from Strategy D, above) will be utilized in development of interim mitigation measures. This strategy has an ongoing schedule that should be initiated in the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 5.3 Strategy C-3)

Work by MWRA under this Strategy is ongoing.

As previously stated, MWRA does not have SSOs related to dry weather sewer system capacity issues. MWRA also does not have SSOs related to wet weather sewer capacity issues for rainfall events at or below the MassDEP recommended standard design storm for inflow having a one-year recurrence interval and a duration of six hours (see MassDEP's Guidelines for Performing I/I Analyses and Sewer System Evaluation Surveys – Revised May 2017). The one-year, six-hour storm produces approximately 1.72 inches of rainfall in the Boston area.

During FY24, MWRA continued its ongoing priority program to clean and inspect inverted siphons in the MWRA-owned collection system. This program is intended to minimize potential SSOs upstream of siphons and reduce the risk of hydraulic limitations and/or blockage from debris buildup in siphon barrels. The cleaning and inspection program will continue in FY25. Please see Attachment 3 for more specific details.

During extreme storm events that exceed the MassDEP recommended standard design storm for inflow, I/I entering the upstream community-owned collection systems may cause an occasional SSO in the MWRA regional interceptor system. Continued coordination with member communities to reduce I/I from local collection systems will help to minimize SSOs that may occur during extreme storm events. In September 2022, an additional $100 million in 75% grants and 25% interest-free loans was added as Phase 14 of the I/I Local Financial Assistance Program to help fund community I/I reduction projects.

In June 2024, the MWRA Board of Directors approved two additional phases of the I/I Local Financial Assistance Program to be added in the coming years. Phase 15 will be added as an additional $100 million 10-year interest-free loan only phase to be used by communities if their grant/loan funds have all been distributed (prior to the initiation of the next grant/loan funding phase), and will become available in FY25. Phase 16 will be included as an additional $125 million in 75% grants and in 25% interest-free 10 year loans), and will become available in FY26. The current program total of $860.75 million will be increased to $1.086 billion with the addition of these funding phases. Through FY24, $560 million in grants and interest-free loans has been distributed to 43 member sewer communities to fund 685 local projects (see details in Attachment 4).

Strategy G: MWRA will assist DEP, member communities, and other regional stakeholders to inform local plumbing inspectors of the regional priority of eliminating sewer system backups. Plumbing inspectors will be requested to work more closely with local DPW staff to identify sewer system backup problem areas and locations where backflow prevention devices may be required. MWRA expects to meet this strategy by distributing a letter to the plumbing inspector in each

member community that discusses sewer backups, potential public health impacts, backflow prevention, and coordination with the local DPW to identify problem areas. This strategy will be completed in the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 4.2 Strategy B-4)

Work by MWRA under this Strategy is complete as noted below.

On September 26, 2005, MWRA distributed an informational package on Sewer Backups and Sanitary Sewer Overflows to all service area community plumbing inspectors, Health Departments (Boards of Health), DPW Directors, Engineering Departments, and collection system operators. The package included information from fourteen separate sources and provided many web links for additional information. On September 29, 2005, MWRA sent a copy of the informational package to EPA, MassDEP, all MWRA water-only member communities, and local watershed associations. Currently this type of information is widely available via the internet.

Specific information on SSOs and backups into homes is provided on the MWRA web site at: https://www.mwra.com/your-sewer-system/sanitary-sewer-overflows-ssos**. This site includes information on what an SSO is, public health impacts, how SSOs can be prevented, and what MWRA does when an SSO occurs. Links on the site include:**

- **DEP's Home Care Guide on Flooding and Sewage Backups;**
- **Cleanup Procedures After a Sewer Backup, from the Boston Water and Sewer Commission; and,**
- **FEMA and Red Cross Guide on Flooded Property Hazards and Repair.**

Goal 3 under MWRA's Regional I/I Reduction Plan is:

> *MWRA will work cooperatively with member communities, DEP, and EPA to reduce I/I in the regional collection system with emphasis on the following: (1) inflow reduction in areas tributary to sewer backups and SSOs, (2) private source inflow reduction, (3) infiltration that may impact groundwater or surface water resources, and (4) excessive infiltration as defined in DEP regulations or guidance documents.*

Strategy A: MWRA will continue to analyze available MWRA wastewater metering data to estimate community infiltration and inflow rates. MWRA will provide this information along with technical assistance to help interpret the information to member communities. This strategy has an ongoing schedule that has been initiated. (Cross-reference this strategy to the I/I Task Force Report recommendations 6.1 Strategy A-1 and 7.1 Strategy A-1).

Work by MWRA under this Strategy is ongoing.

The second MWRA Wastewater Meter Replacement project was completed in March 2023. The metering system upgrade project was completed at a design cost of $3.2 million and an installation cost of $3.6 million. Installation was completed at the end of 2021. An additional $9.1 million for future meter equipment asset protection is included within the MWRA CIP after FY28.

During FY24, MWRA continued to estimate community infiltration and inflow rates on a bimonthly basis. CY23 community wastewater flow data is included as Attachment 6.

These flow data tables are available to all users on MWRA's website (https://www.mwra.com/media/file/2023-regulatoryinfiltration-inflow-reports). Community wastewater flow rate basis data is distributed to member communities throughout the year on a bimonthly basis.

During FY25, MWRA will continue to estimate community infiltration and inflow rates and make this information available to MWRA member communities. MWRA will provide the information to EPA and MassDEP as part of the annual summary report on actions taken to reduce I/I (submitted annually by September 1 per the Deer Island Treatment Plant NPDES Permit).

Strategy B: MWRA, in cooperation with member communities, will evaluate the feasibility of developing and operating an expanded emergency notification system (ENS). Currently, the MWRA remotely monitors wastewater flow at key locations within the regional collection system before and during wet weather events. Interested communities are notified when sewer system depths reach critical levels. The Authority and member communities use this information to forecast problem areas, predict potential sewer system overflows and deploy work crews. The MWRA's wastewater metering system will be upgraded over the next few years. This upgrade may impact the ENS. MWRA is also investigating, over the next three to five years, the benefits of adding SCADA-type meters at some key locations in the collection system. After completion of the two ongoing projects, MWRA will evaluate whether an ENS system can be used efficiently to provide information at the local level. This strategy will be completed in the long-term or more extended time frame subject to the schedule of the ongoing projects noted above. (Cross-reference this strategy to the I/I Task Force Report recommendation 5.4 Strategy D-1)

Work by MWRA under this Strategy is complete as noted below.

MWRA's first Wastewater Meter Replacement project was completed in FY06. The system was used to monitor wastewater flow at key locations within the regional collection system before and during wet weather events. Interested communities are notified when sewer system depths reach critical levels.

The second MWRA Wastewater Meter Replacement project was completed March 2023. The metering system upgrade project was completed at a design cost of $3.2 million and an installation cost of $3.6 million. Installation was completed at the end of 2021. Project work included a complete review of metering equipment and software technologies, review of MWRA's community metering methodologies and subsequent design and construction of upgrades. An additional $9.1 million for future meter equipment asset protection is included within the MWRA CIP after FY28.

Strategy C: MWRA will provide technical assistance to member communities to establish written infiltration and inflow identification and removal programs as outlined in the I/I Task Force Report. This strategy has an ongoing schedule that will be initiated in the short to mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendations 6.1 Strategy A-1 and 7.1 Strategy A-1)

Work by MWRA under this Strategy is ongoing.

During FY14 (as of April 25, 2014), MassDEP revised its Regulation 314 CMR 12.00 *Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and*

***Indirect Dischargers*. The revisions include a requirement for all public entities that own a sewer system to complete an I/I analysis by December 31, 2017 and submit it to MassDEP for review. The analysis also must include an assessment of the risk of SSOs. In FY18, MWRA submitted the required I/I analysis as a chapter in the MWRA Wastewater Collection System Operation & Maintenance Plan (December 2017).**

During FY24, MWRA staff continued to meet with community representatives to provide technical assistance and discuss local programs. Communities are often interested in utilizing MWRA wastewater meter data and flow component analyses for local I/I and SSES studies. Communities also discuss what sewer system rehabilitation actions other communities are pursuing. MWRA's Advisory Board Operation Committee meetings, as well as Wastewater Advisory Committee (WAC) meetings, are used as platforms for member communities to share information on projects and lessons learned. All member sewer communities are actively participating in MWRA's I/I Local Financial Assistance Program (see Attachment 4). Community I/I reduction programs are generally being conducted by local engineering consultants under contract to the communities. These projects generally utilize standards established in MassDEP's May 2017 I/I Guidelines. This work will continue in FY25.

Strategy D: MWRA will provide technical assistance to member communities that seek to emphasize infiltration removal that may impact groundwater and surface water resource areas. MWRA will provide GIS mapping information to member communities that identifies water resource areas, provides an overlay of local and regional sewers, and delineates watersheds. The I/I Task Force Report recommends communities target areas where infiltration reduction will provide the most meaningful benefit for aquifer recharge, stream flow, wetlands and water levels in lakes and ponds. The Task Force also recommends communities coordinate their infiltration reduction efforts with appropriate EOEA Watershed Teams, local watershed groups and the local conservation commission. Distribution of MWRA mapping information is intended to assist member communities in fulfilling this I/I Task Force recommendation. This strategy has an ongoing schedule that will be initiated in the short to mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 7.1 Strategy A-5)

Work by MWRA under this Strategy is complete as noted below. Some ongoing work performed by MWRA that is associated with this Strategy is also noted. Additional community technical assistance is provided upon request as noted under Strategy C, above.

During FY05, MWRA completed a major upgrade to its electronic sewer database and GIS mapping system. Also during FY05, MWRA completed coordination with local communities to more accurately map connection points of local sewers to the MWRA interceptor system and GPS located all wastewater meter sites. Significant GIS mapping upgrades were rolled-out in FY06. In July 2006, MWRA provided GIS maps with detailed water resource information overlaid with the local sewer system to each MWRA member sewer community. In addition, land use mapping was also distributed to the communities. The distribution of this GIS mapping information fulfilled MWRA's work under Strategy D.

Beginning in FY14 and continuing through FY24, MWRA updated prior (or developed new) GIS mapping information partnership agreements with most MWRA member water and sewer communities to share MWRA/community GIS mapping data. Under the

partnership agreements, MWRA and member communities have signed nondisclosure agreements that detail security protocols necessary to safeguard water and sewer system data. MWRA continues to coordinate with member communities to add GIS partners and update existing data. This work will continue in FY25.

Strategy E: MWRA, in coordination with the MWRA Advisory Board, will continue to fund the I/I Local Financial Assistance Program to provide grants and loans to member sewer communities to fund local I/I reduction projects. Through September 2002, MWRA has authorized a total budget of $140.75 million to fund this program. Financial assistance is provided through 45 percent grants and 55 percent interest-free loans for eligible projects. The MWRA Board of Directors has approved the program through FY2010. The I/I Local Financial Assistance Program is fully detailed in the "Program Guidelines" document available from the MWRA Community Support Program. This strategy has an ongoing schedule that has been initiated. (Cross-reference this strategy to the I/I Task Force Report recommendation 10.2 Strategy B-1)

Work by MWRA under this Strategy is ongoing.

In June 2004, the MWRA Board of Directors approved an additional $40 million ($18 million in grants and $22 million in interest-free loans) to increase the total I/I Local Financial Assistance Program budget to $180.75 million and extended program distribution through FY13. The additional $40 million (Phase 5) in financial assistance funds became available to the communities in FY05.

In June 2006, the MWRA Board of Directors approved an additional $40 million ($18 million in grants and $22 million in interest-free loans) to increase the total I/I Local Financial Assistance Program budget to $220.75 million and extended program distributions through FY15. The additional $40 million (Phase 6) in financial assistance funds became available to the communities in FY07.

In June 2009, the MWRA Board of Directors approved an additional $40 million ($18 million in grants and $22 million in interest-free loans) to increase the total I/I Local Financial Assistance Program budget to $260.75 million and extended program distributions through FY18. The additional $40 million (Phase 7) in financial assistance funds became available to the communities in FY10.

In June 2012, the MWRA Board of Directors approved an additional $40 million ($18 million in grants and $22 million in interest-free loans) to increase the total I/I Local Financial Assistance Program budget to $300.75 million and extended program distributions through FY21. The additional $40 million (Phase 8) in financial assistance funds became available to the communities in FY13.

In June 2014, the MWRA Board of Directors approved an additional $160 million ($120 million in 75% grants and $40 million in 25% interest-free 10-year loans) to increase the total I/I Local Financial Assistance Program budget to $460.75 million and extended program distributions through FY25. The additional $160 million ($80 million each for Phases 9 and 10) in financial assistance funds became available to the communities in FY15. Note that MWRA enhanced Phase 9 and 10 of its grant/loan community funding program by increasing the grant portion from 45% to 75%. Also, the loan portion repayment period was extended from 5 to 10 years.

In June 2018, the MWRA Board of Directors approved an additional $200 million ($150 million in 75% grants and $50 million in 25% interest-free 10-year loans). The additional $200 million ($100 million each for Phases 11 and 12) in financial assistance funds became available to the communities in FY19. Also in June 2018, the MWRA Board of Directors approved an additional $100 million 10-year interest-free loan only Phase 13 to be used by communities if their grant/loan funds have all been distributed (prior to the initiation of the next grant/loan funding phase). These approved funding phases increased the total I/I Local Financial Assistance Program budget to $760.75 million and extended program distributions through FY30.

In September 2022, the MWRA Board of Directors approved an additional $100 million ($75 million in 75% grants and $25 million in 25% interest-free 10-year loans). This funding phase (Phase 14) increased the total I/I Local Financial Assistance Program budget to $860.75 million. The additional $100 million in financial assistance funds became available to the communities on September 30, 2022.

In June 2024, the MWRA Board of Directors approved an additional $100 million 10-year interest-free loan only phase to be used by communities if their grant/loan funds have all been distributed (prior to the initiation of the next grant/loan funding phase). Also in June 2024, the MWRA Board of Directors approved an additional $125 million ($93.75 million in 75% grants and $31.25 million in interest-free 10 year loans). The current program total of $860.75 million will be increased to $1.086 billion with the addition of these funding phases. The additional $100 million Phase 15 funds are scheduled to become available during FY25, and the $125 million Phase 16 funds will become available in FY26.

Through FY24, MWRA's commitment to fund local sewer rehabilitation projects under the I/I Local Financial Assistance Program totaled $860.75 million. During FY24, MWRA continued to provide grants and loans to member sewer communities to fund local I/I reduction and sewer system rehabilitation projects. A total of $29.2 million was distributed during FY24. Since program inception in May 1993, $560 million has been distributed to fund 685 local projects. The Program Guidelines, Financial Assistance Application and summary of available funds by community are posted on the MWRA Community Support Program web page at https://www.mwra.com/projects-programs/major-programs/local-ii-community-financial-assistance. A status update on MWRA's I/I Local Financial Assistance Program is included as Attachment 4.

During FY25, MWRA will continue to distribute funds and assist communities in the management of projects under the I/I Local Financial Assistance Program. MWRA's remaining financial assistance funds are authorized for distribution through FY34.

Strategy F: MWRA, in coordination with the MWRA Advisory Board, will continue to provide emergency assistance to member communities for sewer services on local collection systems that are routinely performed by MWRA staff for the MWRA-owned interceptor system. Examples of past community assistance provided by MWRA staff include: emergency response assistance, bypass pumping, internal TV inspection, sewer cleaning, flow metering, engineering technical

assistance, etc. This strategy has an ongoing schedule that has been initiated. (Cross-reference this strategy to the I/I Task Force Report recommendations 9.6 Strategy F-2 and 10.2 Strategy B-2)

Work by MWRA under this Strategy is ongoing.

During FY24, MWRA continued to provide emergency assistance to member communities, as requested. These efforts typically included internal CCTV inspection of local sewers and associated sewer cleaning, as well as other emergency assistance. During FY25, MWRA will continue to provide emergency assistance to member communities.

Goal 4 under MWRA's Regional I/I Reduction Plan is:

> *MWRA will work cooperatively with member communities, DEP, and EPA to expand existing efforts to educate and involve the public regarding regional sewer backup, SSO, and I/I reduction issues.*

Strategy A: MWRA will act as a "clearinghouse" to collect and distribute information on I/I and SSO issues. Other groups, agencies, associations, community representatives, and local citizens wishing to disseminate information on I/I and SSO issues within the region can provide a copy to MWRA that will be copied and distributed. MWRA staff will maintain a database of contacts with Federal, State and community officials, as well as, local associations and individuals that wish to stay informed on I/I and SSO issues. Summary mailings will be made periodically. MWRA, in coordination with the MWRA Advisory Board, will also act as a clearinghouse to inform regional stakeholders about the progress of efforts to increase state and federal funding for I/I reduction and SSO projects. Regional stakeholders will be advised on the most appropriate time to provide input and lobbying efforts. This strategy has an ongoing schedule that will be initiated in the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendations 8.1 Strategy A-1, 10.4 Strategy C-5, and 10.4 Strategy D-2)

Work by MWRA under this Strategy is ongoing including information on both the wastewater and water systems.

During FY24, MWRA distributed technical information to member community Public Works Directors, City/Town Engineers, local wastewater/water system operators, community consultants and local watershed groups, including:

- **MWRA continued to estimate community infiltration and inflow rates on a bimonthly basis. These flow data tables are available to all users on MWRA's web site (www.mwra.com). CY23 community wastewater flow data is included as Attachment 6. Community wastewater flow rate basis data is distributed to member communities throughout the year on a bimonthly basis.**
- **March 13, 2024: MWRA staff provided an update presentation on the I/I Local Financial Assistance Program to the MWRA Board of Directors. All Staff Summaries to the MWRA Board of Directors are posted on MWRA web site at www.mwra.com.**
- **March 13, 2024: MWRA staff provided an update presentation on the Local Water System Assistance Program to the MWRA Board of Directors. All Staff**

Summaries to the MWRA Board of Directors are posted on MWRA web site at www.mwra.com.

- **April 2024: Annual community I/I surveys were distributed to member sewer communities to develop a projected three (3) year spending plan for the I/I Local Financial Assistance Program.**

- **June 2024: Annual community I/I questionnaires were distributed to member sewer communities to acquire information on FY24 local I/I reduction programs for development of MWRA's Annual I/I Reduction Report (see Attachment 5).**

During FY25, MWRA will continue to distribute information on I/I and SSO issues, as appropriate.

Strategy B: MWRA will develop and distribute a summary of previous information/technology distributions regarding I/I reduction and SSOs. The summary will be organized by topic and distributed to all regional stakeholders in MWRA's database of contacts. This summary can be used as a tool to help reference previously distributed information. This strategy will be completed in the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 8.1 Strategy A-2)

Work by MWRA under this Strategy is complete as noted below.

On August 8, 2007, MWRA distributed a Technical Transfer Summary package that included lists of previously distributed information under five separate topic headings: (1) Reports, Handbooks, and Guidelines; (2) Sewer Back-ups, SSOs, and Flooding; (3) Public Source I/I Reduction; (4) Private Source I/I Reduction; and (5) Brochures and Bill Stuffers. Additional information/technology distributions will continue under Strategy A, above.

Strategy C: MWRA, jointly with DEP (and possibly other regional organizations), will organize periodic demonstration projects and/or workshops to bring together regulators, community representatives, vendors, environmental groups, consultants, contractors, etc. Workshops may cover topics such as: new or revised regulations, I/I reduction technologies, updates/progress on Task Force Report recommendations, etc. MWRA and DEP conducted a joint workshop on private source inflow reduction during November 2001. Lessons learned from this workshop will help shape future efforts under this strategy. Completion of this strategy requires a significant resource commitment by DEP. This strategy has an ongoing schedule that will be initiated in the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendations 8.1 Strategy A-3 and 8.2 Strategy B-6)

Work by MWRA under this Strategy is ongoing. Following-up on the 2001 joint private inflow reduction workshop, additional joint workshops were held in 2002 and 2004.

On April 27, 2011, representatives from MassDEP, EPA, and MWRA met to discuss I/I reduction in the region. The potential for future workshops was noted, but no specific plans have been developed for organizing additional joint workshops.

During FY14 (as of April 25, 2014), MassDEP revised its Regulation 314 CMR 12.00 *Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and*

***Indirect Dischargers*. The revisions included a requirement for all public entities that own a sewer system to complete an I/I analysis by December 31, 2017 and submit it to MassDEP for review. The analysis also must include an assessment of the risk of SSOs. In FY18, MWRA submitted the required I/I analysis as a chapter in the MWRA Wastewater Collection System Operation & Maintenance Plan (December 2017).**

During FY17, MassDEP revised its *Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Surveys*.

On October 6, 2017, both MassDEP and MWRA staff provided an update presentation and had discussions with the MWRA Wastewater Advisory Committee.

On November 29, 2017, staff from USEPA, MassDEP, and MWRA met to discuss mutual areas of interest regarding wastewater metering and I/I reduction programs.

On an annual basis, MWRA staff provide an update presentation to the MWRA Board of Directors on both the I/I Local Financial Assistance and Local Water System Assistance Programs.

Periodically, MWRA staff provided update presentations to the MWRA Advisory Board and member community representatives, as well as the Wastewater Advisory Committee and Water Supply Citizens Advisory Committee, on a variety of related topics including: I/I Local Financial Assistance Program, Local Water System Assistance Program, Lead Service Line Replacement Loan Program, water and wastewater metering, water and wastewater flow data, rate assessment methodologies, water and wastewater permitting and regulations, etc.

During FY25, MWRA will continue to work cooperatively with MassDEP on this strategy.

Strategy D: MWRA will develop a summary of available public education material such as local/regional billing inserts, Water Environment Federation (WEF) brochures, "How-To" pamphlets, etc. The summary will provide information on where to obtain the material. A listing of available public education materials will be posted on the MWRA Internet site. MWRA will also make copies of public education material available to communities and local associations. MWRA will pilot this strategy by distributing to member communities sample copies of the "Fat-Free Sewers" brochure developed cooperatively by the Water Environment Federation (WEF) and EPA. MWRA will recommend use of the brochures for public education. This strategy has an ongoing schedule that will be initiated in the short-term. (Cross-reference this strategy to the I/I Task Force Report recommendations 8.2 Strategy B-1 and 8.2 Strategy B-4)

Work by MWRA under this Strategy is ongoing.

MWRA distributed the Fat-Free Sewers brochure to wastewater system operators in July 2003. In conjunction with the Technical Transfer Summary package distributed on August 8, 2007 (see Strategy B, above), MWRA included a separate topic heading for "Brochures and Bill Stuffers" that can be used by local communities as educational materials. Links to educational materials are provided on www.mwra.com.

In FY24, the MWRA School Education Program distributed "It's a Toilet, Not a Trash Can" brochures and "What To Flush – the 3 Ps Only (Pee, Poop, Paper)" window clings to schools and community groups. The brochure can be downloaded from the School Program page on www.mwra.com and the window clings can be ordered. The MWRA School Program developed a new classroom activity involving reading and designing wet wipe labels to establish which materials are dispersible vs. flushable. The activity has been well received by both teachers and students.

Strategy E: Depending on the outcome of the summary of available information being developed under Strategy D, MWRA (jointly with DEP and possibly other regional organizations) may develop informational materials that will educate the public on I/I and SSO issues. This effort may include "how-to" pamphlets that detail a step-by-step process for disconnecting private inflow sources or similar information. The development of new materials under this strategy will be targeted to fill gaps that are not covered by existing/available public education material. This strategy will be completed in the mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 8.2 Strategy B-2)

Work by MWRA under this Strategy is complete as noted below.

As part of the Technical Transfer Summary package distributed on August 8, 2007 (see Strategy B, above), MWRA included a separate topic heading specifically for "Brochures and Bill Stuffers" that can be used by local communities as educational materials. There are sufficient example brochures available so that no additional work is needed under this strategy. Communities actively involved with private inflow removal programs have generally been using available sample brochures and other public education materials to develop public education information related to their specific project. Information already available via local engineering consultants is also utilized.

Strategy F: Upon request from member communities, MWRA will assist member communities in providing a link from the local DPW or community internet site to the MWRA internet site. The possibility of a link or reference to other regional bodies that are involved in sewer system issues (such as DEP, EPA, New England Water Environment Association, New England Interstate Water Pollution Control Commission, watershed associations, etc.) will also be investigated. This strategy will be completed in the mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 8.2 Strategy B-3)

Work by MWRA under this Strategy is complete as noted below.

Local communities, state agencies, regional associations, etc. all maintain their own web pages with numerous information links. MWRA's website contains links to the communities' websites and links to other organizations. Based on current broad use of the web, additional work under this strategy is not needed. MWRA continues to revise and upgrade its website www.mwra.com and the MWRA Community Support Program page: https://www.mwra.com/projects-programs/major-programs/local-ii-community-financial-assistance .

Strategy G: MWRA will integrate information on I/I and SSO issues into existing MWRA school education materials. MWRA's School Education staff will identify what types of materials are appropriate for their programs. This strategy has an ongoing schedule that will be initiated in

the mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 8.3 Strategy C-1)

Work by MWRA under this Strategy is ongoing. The focus of MWRA's School Education Program is to provide a general understanding of water and wastewater transport and treatment systems with emphasis on water conservation and environmental awareness issues. Educational materials are designed for students spanning elementary to high school levels.

Strategy H: Upon request from DEP, MWRA will provide technical assistance to DEP to develop and issue DEP press releases prior to and during extreme wet weather events to notify the public of possible sewer system backups and overflow problems. The I/I Task Force Report recommends DEP develop a standardized format that includes a request that system users minimize non-essential water consumption activities and includes a standardized high sewer flow warning. Completion of this strategy is dependent on DEP actions. This strategy has an ongoing schedule that should be initiated in the short to mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 5.4 Strategy D-2)

Work by MWRA under this Strategy is ongoing. In FY24, MWRA continued its existing sewage notification program which includes notifications of SSOs (in compliance with the new sewage notification regulation 314 CMR 16.00). MWRA also completed its Final Sewage Notification Plan, submitted it to MassDEP, and published it for public comment as required by 314 CMR 16.00. Beginning July 6, 2022, MWRA also enters notifications into the MassDEP database within the prescribed timeframe after the start of each discharge, so information can be made available in MassDEP's portal. MWRA believes the database and portal developed by MassDEP to comply with the Sewage Notification Regulation 314 CMR 16.00 meets the intent of this strategy.

Strategy I: Upon request from member communities, MWRA will provide technical assistance to communities to provide residents with information on I/I reduction, SSOs and backups using local cable stations or other media outlets. This strategy has an ongoing schedule that will be initiated in the mid to long-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 8.2 Strategy B-7)

Work by MWRA under this Strategy is ongoing. Starting July 6, 2022, MWRA sends notifications to media outlets (as required by 314 CMR 16.00). Along with Cambridge and Somerville, MWRA has held a number of meetings regarding CSO control in the Charles River and Mystic River/Alewife Brook watersheds that included discussion of flooding, system capacity and I/I reduction requirements. MWRA also continued outreach and education efforts with local Boards of Health as needed.

Goal 5 under MWRA's Regional I/I Reduction Plan is:

MWRA will provide technical assistance and work cooperatively with member communities, DEP, and EPA regarding guidance on local operation and maintenance and capital improvement programs intended to provide a reasonable level of sewer service to local sewer users/ratepayers.

Strategy A: MWRA will provide all member communities a copy of the I/I Task Force Report (which includes recommendations for sewer system operation and maintenance). MWRA will

maintain a supply of I/I Task Force Reports and will provide additional copies to MWRA member communities and regional stakeholders, as requested. This strategy has an ongoing schedule that has been initiated.

Work by MWRA under this Strategy is complete as noted below.

MWRA provided all member communities and all interested parties copies of the I/I Task Force Report in April 2001, shortly after the Report was completed. MWRA continues to maintain a supply of I/I Task Force Reports and provides additional copies to MWRA member communities and regional stakeholders, as requested. In July 2003, all member communities were provided a copy of the MWRA Regional I/I Reduction Plan. Both the I/I Task Force Report and MWRA Regional I/I Reduction plan are posted on MWRA's Community Support Program web page at: https://www.mwra.com/projects-programs/major-programs/local-ii-community-financial-assistance **.**

Strategy B: MWRA will request member communities provide a copy of their existing local Sewer Use Regulations to MWRA, will review those local Regulations that are submitted, and will make recommendations for improvements. MWRA may utilize a committee representing a cross-section of sewer system stakeholders to assist in accomplishing this strategy. This strategy will be completed in the mid-term. (Cross-reference this strategy to the I/I Task Force Report recommendation 9.1 Strategy A-2)

Work by MWRA under this Strategy is complete as noted below.

MWRA did not proceed with work under this strategy pending issuance of EPA's SSO Rule, including CMOM Regulations that were likely to impact local sewer use regulations. EPA's draft SSO Rule was not promulgated. During FY04, MassDEP distributed a new guideline document – *"Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems"* dated August 2003. This manual was developed by New England Interstate Water Pollution Control Commission (NEIWPCC) under a grant from EPA. The Guideline Document was written by a committee consisting of NEIWPCC member state environmental agencies, EPA, and wastewater consultants. The manual is available at www.neiwpcc.org. Chapter 4 of the manual "Optimizing Legal Authority" includes sections on Sewer Use Ordinances; therefore, additional work by MWRA under this strategy is not necessary. Web links to information provided by MassDEP, USEPA, and NEIWPCC are posted on MWRA's Community Support Program web page at: https://www.mwra.com/projects-programs/major-programs/local-ii-community-financial-assistance **.**

Strategy C: MWRA will develop a Member Community Collection System Operation and Maintenance Manual Guidance Document and Overflow Response Plan. This guidance document will be provided to all member communities. This strategy will be completed in the short-term.

Work by MWRA under this Strategy is complete as noted below.

A Member Community Collection System Operation and Maintenance Manual Guidance Document and Overflow Response Plan was developed and submitted to EPA and MassDEP for review in June 2001. This guidance document was made available to

member communities. During FY04, MassDEP distributed a new guideline document – "*Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems*" dated August 2003. This manual was developed by New England Interstate Water Pollution Control Commission (NEIWPCC) under a grant from EPA. It was written by a committee consisting of NEIWPCC member state environmental agencies, EPA, and wastewater consultants. The manual is available at www.neiwpcc.org. MWRA provided its collection system O&M manual and the community collection system guidance document to the NEIWPCC committee for review. With the publication of the NEIWPCC manual, further efforts on the Member Community Collection System Operation and Maintenance Manual Guidance Document are not required.

During FY14, MassDEP revised its Regulation 314 CMR 12.00 *Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers*.

During FY17, MassDEP revised its *Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Surveys*.

ATTACHMENT 3
TO
MWRA ANNUAL I/I REDUCTION REPORT FOR FY24
Reporting Period – July 2023 Through June 2024

MWRA ACTIONS TAKEN TO REDUCE I/I DURING FY24

During FY24, the MWRA Field Operations Department's Technical Inspection program staff have internally inspected approximately 32 miles of Authority-owned interceptors, internally inspected 21 inverted siphon barrels with sonar inspection equipment, and physically inspected 681 sewer manholes and other structures (diversion chambers, siphon headhouses, tide gates, etc.). Throughout the internal inspection process, problems such as physical defects, manhole frame and cover defects, infiltration/inflow sources, sediment, grease deposits, etc. are noted and stored in MWRA's electronic maintenance (MAXIMO) database. Maintenance work is then scheduled based on the identified problem.

Through FY24, MWRA's maintenance work included hydraulic/mechanical cleaning of 28 miles of Authority-owned sewers, cleaning of 47 siphon barrels and replacement of 28 sewer manhole frames and covers. In addition, 45 sewer manholes were rehabilitated via cement mortar lining under MWRA's annual sewer manhole rehabilitation contract (MWRA's FY25 annual sewer manhole rehabilitation contract is scheduled to rehabilitate 40 sewer manholes). Potential structural problems and infiltration sources identified during the inspection process are referred to engineering staff for follow-up review and analysis of cost-effective repairs.

MWRA is undertaking a number of significant capital projects to rehabilitate portions of Authority-owned interceptors and provide additional hydraulic capacity. During FY24, MWRA continued rehabilitation of sewer interceptors under the Interceptor Renewal/Asset Protection Program. Evaluation and design of interceptor rehabilitation began in FY09. The program includes a series of twelve interceptor renewal projects to be phased over multiple years at a cost of over $150 million. Each of these projects will provide structural repairs for existing pipelines and reduce I/I entering the MWRA interceptor system. MWRA's Interceptor Renewal/Asset Protection Projects #1 through #7 for rehabilitation construction of a variety of Sewer Sections are programmed in the Final FY25 CIP at a cost of nearly $70 million. Interceptor Renewal/ Asset Protection Projects #1 through #7 include:

1. Interceptor Renewal/Asset Protection Project #1: Rehabilitation design and construction of 12,240 linear feet of the Reading Extension Sewer Sections 75, 74 and 73 primarily in Stoneham, with short reaches in Wakefield and Woburn. Also, included was rehabilitation of 2,280 linear feet of Metropolitan Sewer Section 46 in Stoneham, as well as, rehabilitation of 62 sewer manholes and structures along the pipeline route. Construction began in FY17 and was completed during FY19. Total design, construction and construction services costs were approximately $2.9 million.

2. Interceptor Renewal/Asset Protection Project #2: Rehabilitation design and construction of Sections 4, 5, 6 and 186 on the North Metropolitan Sewer in Winthrop (just upstream of the Deer Island Treatment Plant). Work will include rehabilitation of approximately 3,700 linear feet of 108-inch brick sewer. Portions of this sewer were previously rehabilitated using a shotcrete process in the 1990s. A preliminary design study for this project was completed in April 2018. The design contract phase is scheduled to begin at the start of FY26 with a design/construction budget of $9.4 million.

3. Interceptor Renewal/Asset Protection Project #3: Rehabilitation design and construction of Dorchester Interceptor Sewer Sections 240, 241 and 242. Design for this project began in FY18. Construction/construction services phases were completed December 2021. The overall design, construction and construction services costs were approximately $5.3 million.

4. Interceptor Renewal/Asset Protection Project #4: Rehabilitation design and construction of Cambridge Branch Sewer Sections 23, 24, 26 and 27 in Charlestown, Everett, Somerville and Cambridge. A preliminary design study for Cambridge Branch Sewer Sections 23 - 24 and 26 - 27 was completed in FY18. The design contract phase is scheduled to begin in FY25 with a design/construction budget of $12 million.

5. Interceptor Renewal/Asset Protection Project #5: Rehabilitation design and construction of portions of New Neponset Valley Sewer Sections 607, 609 and 610 in Milton. The design contract phase is scheduled to begin in FY28 with a design/ construction budget of $16.2 million.

6. Interceptor Renewal/Asset Protection Project #6: Rehabilitation design and construction of portions of Sections 12, 14, 15 and 62 in Chelsea. The design contract phase is scheduled to begin in FY30 with a design/construction budget of $13.2 million.

7. Interceptor Renewal/Asset Protection Project #7: Rehabilitation design and construction of portions of Sections 41, 42, 49, 54 and 65 in Malden and Melrose. Design Notice To Proceed issued August 2020 with a design cost of $2.6 million. Construction budget estimated at $9.4 million. Anticipated Construction Notice To Proceed date is May 2025.

ATTACHMENT 4
TO
MWRA ANNUAL I/I REDUCTION REPORT FOR FY24
Reporting Period: July 2023 Through June 2024

STATUS UPDATE ON MWRA's I/I LOCAL FINANCIAL ASSISTANCE PROGRAM

Financial Assistance Update

All 43-member sewer communities are participating in MWRA's $860.75 million Infiltration/Inflow (I/I) Local Financial Assistance (grant/loan) Program. The program began in May 1993 and, through FY24, $560 million has been distributed to fund 685 local I/I reduction and sewer system rehabilitation projects. The program budget of $860.75 million includes the addition of $100 million (Phase 14) approved by the MWRA Board of Directors for distribution beginning on September 30, 2022. For Phase 14, the grant component remains as 75% of the eligible project cost. In June 2018, the MWRA Board of Directors approved the addition of $300 million for distribution beginning in FY19, including: Phase 11 ($100 million in grant/loan funds), Phase 12 ($100 million in grant/loan funds) and Phase 13 ($100 million in loan only funds). For Phases 11 and 12, the grant component remained as 75% of the eligible project cost. The table on page 2 provides a summary of funding allocations, distributions, and funds remaining for each MWRA sewer community. Distribution of grant and loan financial assistance to member communities has been approved through FY30. The table on page 3 provides a summary of funding distributions by fiscal quarter since Program inception.

In June 2024, the MWRA Board of Directors approved two additional phases of the program to be added in the coming years. Phase 15 will be added as an additional $100 million loan only phase and will become available in FY25. Phase 16 will be included as an additional $125 million in grant/loan funds, and will become available in FY26. The current program total of $860.75 million will be increased to $1.086 billion with the addition of these funding phases.

Program Background

MWRA's I/I Local Financial Assistance Program was initiated to provide funding to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Following recommendations from the MWRA Advisory Board, the MWRA Board of Directors has approved a total program budget of $860.75 million. The funds have been allocated among the 43 MWRA sewer communities based on respective share of MWRA's wholesale sewer charge. Financial assistance for Phases 1 and 2 (total of $63.75 million) was distributed for approved projects as a 25 percent grant and a 75 percent interest-free loan. The grant/loan split was revised for distribution of the Phase 3 through 8 funds (total of $237 million) to a 45 percent grant and a 55 percent interest-free loan. The interest-free loan portion for Program Phases 1 through 8 has been repaid to MWRA over a five-year period beginning one year after the date the funds are distributed.

The grant/loan split was again enhanced for distribution of Phases 9 through 12 funds (total of $360 million) to a 75 percent grant and a 25 percent interest-free loan. The interest-free loan repayment period for Program Phases 9 through 12 was extended to ten years from the previous five (again beginning one year after the date the funds are distributed). Phase 13 is a $100 million loan-only phase also with a ten-year repayment. Phase 13 loan funds are to be used by communities if their grant/loan funds have all been distributed (prior to the initiation of the next grant/loan funding phase). The grant/loan split for distribution of Program Phase 14 funds (total of $100 million) remains at a 75 percent grant and a 25 percent interest-free loan. The interest-free loan repayment period for Program Phase 14 funds also remains at a ten years.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
COMMUNITY FUNDING SUMMARY THROUGH JUNE 2024

Community	Total Allocations (Phases 1 - 14)	Total Distributions (Phases 1 - 14)	Percent Distributed	Funds Remaining
Arlington	$15,473,000	$13,015,900	84%	$2,457,100
Ashland	$4,348,500	$2,928,860	67%	$1,419,640
Bedford	$6,354,600	$3,109,158	49%	$3,245,442
Belmont	$9,325,100	$5,135,100	55%	$4,190,000
Boston	$246,921,200	$122,868,059	50%	$124,053,141
Braintree	$16,449,000	$12,272,977	75%	$4,176,023
Brookline	$24,005,200	$19,666,200	82%	$4,339,000
Burlington	$9,632,800	$8,522,800	88%	$1,110,000
Cambridge	$44,640,100	$28,830,100	65%	$15,810,000
Canton	$7,565,900	$4,464,250	59%	$3,101,650
Chelsea	$13,510,100	$13,510,100	100%	$0
Dedham	$10,400,000	$9,240,000	89%	$1,160,000
Everett	$15,251,500	$11,611,500	76%	$3,640,000
Framingham	$23,045,000	$13,671,000	59%	$9,374,000
Hingham	$3,202,500	$2,812,500	88%	$390,000
Holbrook	$3,149,600	$1,349,600	43%	$1,800,000
Lexington	$13,715,300	$12,155,300	89%	$1,560,000
Malden	$23,373,900	$6,725,900	29%	$16,648,000
Medford	$22,077,600	$7,961,600	36%	$14,116,000
Melrose	$11,456,300	$10,106,300	88%	$1,350,000
Milton	$10,164,500	$10,164,500	100%	$0
Natick	$10,522,600	$6,832,600	65%	$3,690,000
Needham	$11,267,600	$4,018,600	36%	$7,249,000
Newton	$39,277,400	$39,277,400	100%	$0
Norwood	$13,239,400	$6,879,400	52%	$6,360,000
Quincy	$36,950,000	$32,325,000	87%	$4,625,000
Randolph	$11,400,800	$4,971,058	44%	$6,429,742
Reading	$8,789,100	$6,709,100	76%	$2,080,000
Revere	$19,090,900	$6,302,900	33%	$12,788,000
Somerville	$29,265,800	$18,995,800	65%	$10,270,000
Stoneham	$8,919,900	$7,829,900	88%	$1,090,000
Stoughton	$8,962,900	$7,902,900	88%	$1,060,000
Wakefield	$11,116,900	$9,836,900	88%	$1,280,000
Walpole	$6,940,000	$5,141,050	74%	$1,798,950
Waltham	$25,062,400	$19,214,560	77%	$5,847,840
Watertown	$11,475,800	$8,865,800	77%	$2,610,000
Wellesley	$10,429,700	$6,889,700	66%	$3,540,000
Westwood	$4,932,300	$3,091,300	63%	$1,841,000
Weymouth	$21,750,900	$15,548,584	71%	$6,202,316
Wilmington	$4,822,000	$2,462,000	51%	$2,360,000
Winchester	$7,673,000	$5,923,000	77%	$1,750,000
Winthrop	$6,293,400	$5,083,400	81%	$1,210,000
Woburn	$18,505,500	$16,515,500	89%	$1,990,000
Totals	$860,750,000	$560,738,156	65%	$300,011,844

MWRA I/I Local Financial Assistance Program - Fiscal Year Breakdown

FY	Distribution Cycle	Distribution Amount	Distribution Cycle	Distribution Amount	Distribution Cycle	Distribution Amount	Distribution Cycle	Distribution Amount	FY Total
FY93	Aug 1992	$0	Nov 1992	$0	Feb 1993	$0	May 1993	$2,714,883	$2,714,883
FY94	Aug 1993	$3,096,468	Nov 1993	$4,096,133	Feb 1994	$3,191,032	May 1994	$251,494	$10,635,127
FY95	Aug 1994	$354,126	Nov 1994	$976,700	Feb 1995	$1,894,030	May 1995	$6,489,891	$9,714,747
FY96	Aug 1995	$0	Nov 1995	$504,100	Feb 1996	$2,921,600	May 1996	$3,902,426	$7,328,126
FY97	Aug 1996	$1,682,061	Nov 1996	$1,581,266	Feb 1997	$395,100	May 1997	$3,530,758	$7,189,185
FY98	Aug 1997	$1,066,300	Nov 1997	$1,157,260	Feb 1998	$909,350	May 1998	$2,001,608	$5,134,518
FY99	Aug 1998	$1,521,100	Nov 1998	$2,464,263	Feb 1999	$1,481,700	May 1999	$5,758,077	$11,225,140
FY00	Aug 1999	$1,315,767	Nov 1999	$1,847,900	Feb 2000	$1,679,000	May 2000	$1,070,100	$5,912,767
FY01	Aug 2000	$1,148,400	Nov 2000	$388,000	Feb 2001	$1,640,931	May 2001	$804,800	$3,982,131
FY02	Aug 2001	$4,480,735	Nov 2001	$704,040	Feb 2002	$1,804,200	May 2002	$5,002,691	$11,991,666
FY03	Aug 2002	$1,962,600	Nov 2002	$4,461,768	Feb 2003	$7,955,752	May 2003	$1,836,600	$16,216,720
FY04	Aug 2003	$2,021,940	Nov 2003	$1,306,200	Feb 2004	$1,770,760	May 2004	$3,295,400	$8,394,300
FY05	Aug 2004	$2,756,659	Nov 2004	$6,013,436	Feb 2005	$4,054,060	May 2005	$2,636,700	$15,460,855
FY06	Aug 2005	$5,377,487	Nov 2005	$4,589,600	Feb 2006	$1,519,463	May 2006	$6,489,676	$17,976,226
FY07	Aug 2006	$0	Nov 2006	$4,947,414	Feb 2007	$8,789,300	May 2007	$8,121,023	$21,857,737
FY08	Aug 2007	$3,915,500	Nov 2007	$4,355,750	Feb 2008	$1,392,400	May 2008	$4,436,600	$14,100,250
FY09	Aug 2008	$4,196,399	Nov 2008	$352,000	Feb 2009	$1,990,300	May 2009	$4,872,400	$11,411,099
FY10	Aug 2009	$5,462,736	Nov 2009	$616,600	Feb 2010	$2,679,600	May 2010	$4,845,000	$13,603,936
FY11	Aug 2010	$723,700	Nov 2010	$3,183,250	Feb 2011	$4,123,100	May 2011	$4,258,900	$12,288,950
FY12	Aug 2011	$3,695,100	Nov 2011	$2,417,378	Feb 2012	$848,300	May 2012	$7,010,324	$13,971,102
FY13	Aug 2012	$21,299,965	Nov 2012	$1,004,610	Feb 2013	$2,460,000	May 2013	$2,675,000	$27,439,575
FY14	Aug 2013	$7,550,310	Nov 2013	$0	Feb 2014	$2,929,700	May 2014	$2,271,852	$12,751,862
FY15	Aug 2014	$4,053,000	Nov 2014	$7,647,400	Feb 2015	$10,128,648	May 2015	$4,803,450	$26,632,498
FY16	Aug 2015	$3,983,100	Nov 2015	$5,783,000	Feb 2016	$7,195,116	May 2016	$5,483,000	$22,444,216
FY17	Aug 2016	$2,352,100	Nov 2016	$6,553,210	Feb 2017	$2,918,900	May 2017	$10,434,030	$22,258,240
FY18	Aug 2017	$8,085,900	Nov 2017	$10,311,545	Feb 2018	$1,377,800	May 2018	$1,909,730	$21,684,975
FY19	Aug 2018	$4,107,370	Nov 2018	$12,150,449	Feb 2019	$19,027,200	May 2019	$11,067,748	$46,352,767
FY20	Aug 2019	$14,287,100	Nov 2019	$10,990,840	Feb 2020	$9,635,048	May 2020	$5,454,250	$40,367,238
FY21	Aug 2020	$6,087,196	Nov 2020	$9,789,250	Feb 2021	$9,642,573	May 2021	$11,878,316	$37,397,335
FY22	Aug 2021	$5,582,842	Nov 2021	$7,692,520	Feb 2022	$4,149,000	May 2022	$13,903,765	$31,328,127
FY23	Aug 2022	$4,897,221	Nov 2022	$4,024,558	Feb 2023	$4,076,134	May 2023	$8,736,800	$21,734,713
FY24	Aug 2023	$4,761,170	Nov 2023	$15,133,250	Feb 2024	$5,718,977	May 2024	$3,612,630	$29,226,027
Total		$131,824,352		$137,043,690		$130,299,074		$161,560,222	$560,738,156

MWRA funding is provided to a community following execution of a standard financial assistance agreement that stipulates the project scope, schedule and loan repayment requirements. Communities are required to provide periodic schedule and expenditure progress reports to MWRA. For planning and design projects, the work products (reports, plans, specifications, and bidding documents) are reviewed and approved by MWRA. During project construction, MWRA staff perform site visits to document sewer rehabilitation progress.

Program Goals

The I/I Local Financial Assistance Program is a critical component of MWRA's Regional I/I Reduction Plan. Specifically, local sewer system rehabilitation projects are intended to at least offset ongoing collection system deterioration to prevent a net increase in regional I/I. In the long-term, system rehabilitation should result in lower I/I, which will allow for future increases in sanitary (residential, commercial, industrial, and institutional) flow without a net increase in total wastewater flow to the Deer Island Treatment Plant.

A second goal of the program is to assist member communities in implementing effective annual local collection system maintenance programs to assure efficient operation and ongoing collection system repair/replacement.

Type of Local Projects Receiving Funding

Funding has been provided to local communities for eligible I/I reduction projects including planning, design, construction, and engineering services during construction. These projects generally take one to three years to complete. Seventy-nine percent of funds distributed to date have financed local construction projects. The table below details funds distributed by project phase for both completed and ongoing projects.

PROJECT PHASE	COMPLETE PROJECTS ($ millions)	ONGOING PROJECTS ($ millions)	TOTAL ($ millions)
Planning/Study:	$ 52.3	$ 13.0	$ 65.3 (12%)
Design:	18.1	8.9	27.0 (5%)
Construction:	324.1	119.6	443.6 (79%)
Eng. Services During Const.:	20.8	4.0	24.8 (4%)
TOTAL	$ 415.3 (74%)	$ 145.5 (26%)	$ 560.7 (100%)

Program Results

The I/I Local Financial Assistance Program began in May 1993. Through FY24, a total of 685 local I/I reduction and sewer system rehabilitation projects have been funded through the MWRA's grant/loan program. During FY24, MWRA distributed a total of $29.2 million in grants and loans to member communities to help fund 20 local I/I reduction projects (see Section Pages 4-10 to 4-51 for community project details). Cumulative results for the program are summarized below.

Results for all projects (FY93 through FY24) for planning/inspection include the following:

- 2,614 miles of sewer TV inspected
- 1,758 miles of sewer flow isolated
- 1,489 miles of sewer smoke tested
- 70,535 sewer manholes inspected
- 79,232 buildings inspected.

Results for all projects (FY93 through FY24) targeting infiltration reduction include the following:

- 84 miles sewer replaced
- 363 miles sewer CIPP lined
- 195 miles sewer tested/chemically sealed
- 3,415 sewer spot repairs
- 20,129 service connection repairs
- 4.8 miles underdrains sealed.

Results for all projects (FY93 through FY24) targeting inflow reduction include the following:

- 1,208 catch basins disconnected
- 49 miles of new or replaced storm drains
- 24,994 manholes rehabilitated/sealed
- 4,069 manhole covers replaced or inflow seals installed
- 551 sump pumps redirected
- 5,839 downspouts/area drains disconnected.

Stormwater and Infiltration/Inflow Impacts to the Collection System

Wastewater discharged by member sewer communities to MWRA is influenced by seasonal and wet-weather conditions related to stormwater in combined sewer systems, groundwater infiltration, and stormwater and tidal inflow. Infiltration/Inflow (I/I) is extraneous water that enters all wastewater collection systems through a variety of sources.

Infiltration into a Sanitary Sewer

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes/manholes or deteriorated joints. Typically, many sewer pipes and sewer service laterals are below the surrounding groundwater table. Therefore, leakage into the sewer (infiltration) is a broad problem that is difficult and expensive to identify and reduce.

Inflow is extraneous flow entering the collection system through point sources and may be directly related to storm water run-off from sources such as roof leaders, yard and area drains, basement sump pumps, ponded manhole covers, cross connections from storm drains or catch basins, leaking tide gates, etc. Inflow causes a rapid increase in wastewater flow that occurs during and continuing after storms and extreme high tides. The volume of inflow entering a collection system typically depends on the magnitude and duration of rainfall, as well as related impacts from snowmelt, flooding, and storm surge.

Inflow into a Sewer Manhole

Stormwater in Combined Sewers is, by design, collected in the combined sewer system to be transported to a downstream treatment facility. Additional system capacity is available via combined sewer overflow (CSO) storage facilities and outfalls that may be active during rainfall events.

Regional Wastewater Flow Trends

Wastewater Flow Graph 1 (page 4-7) provides long-term regional flow data for the Deer Island Treatment Plant collection system and annual rainfall. The long-term average daily flow for the total system is about 349 mgd (last 35 years from 1989-2023) and the average annual rainfall is 43.5 inches (Boston Logan Airport Data). Wastewater Flow Graph 2 (page 4-8) shows the five-year running averages (flow and rainfall) as a means of smoothing the annual variability in the long-term data displayed in Wastewater Flow Graph 1. The five-year running average daily flow has declined from approximately 391 mgd (in the five year period beginning in 1989) to approximately 324 mgd (in the most recent 5-year period), a reduction of 67 mgd or 17% of wastewater flow tributary to the Deer Island Treatment Plant.

During dry summer months, total system minimum flows drop to as low as 220 mgd. Few problems exist within local and regional sewer systems during dry weather or as a result of small and medium storm events. In contrast, peak wet-weather flow, during occasional periods of significant rainfall, exceeds the 1,270 mgd plant capacity, more than 3.5 times the average flow due to the influence of combined sewer flow, as well as, infiltration and inflow. The collection system has additional capacity available at combined sewer overflow (CSO) storage facilities and outfalls. Extreme storm events that occur during periods of high groundwater, may cause sewer system surcharging and sanitary sewer overflows (SSOs).

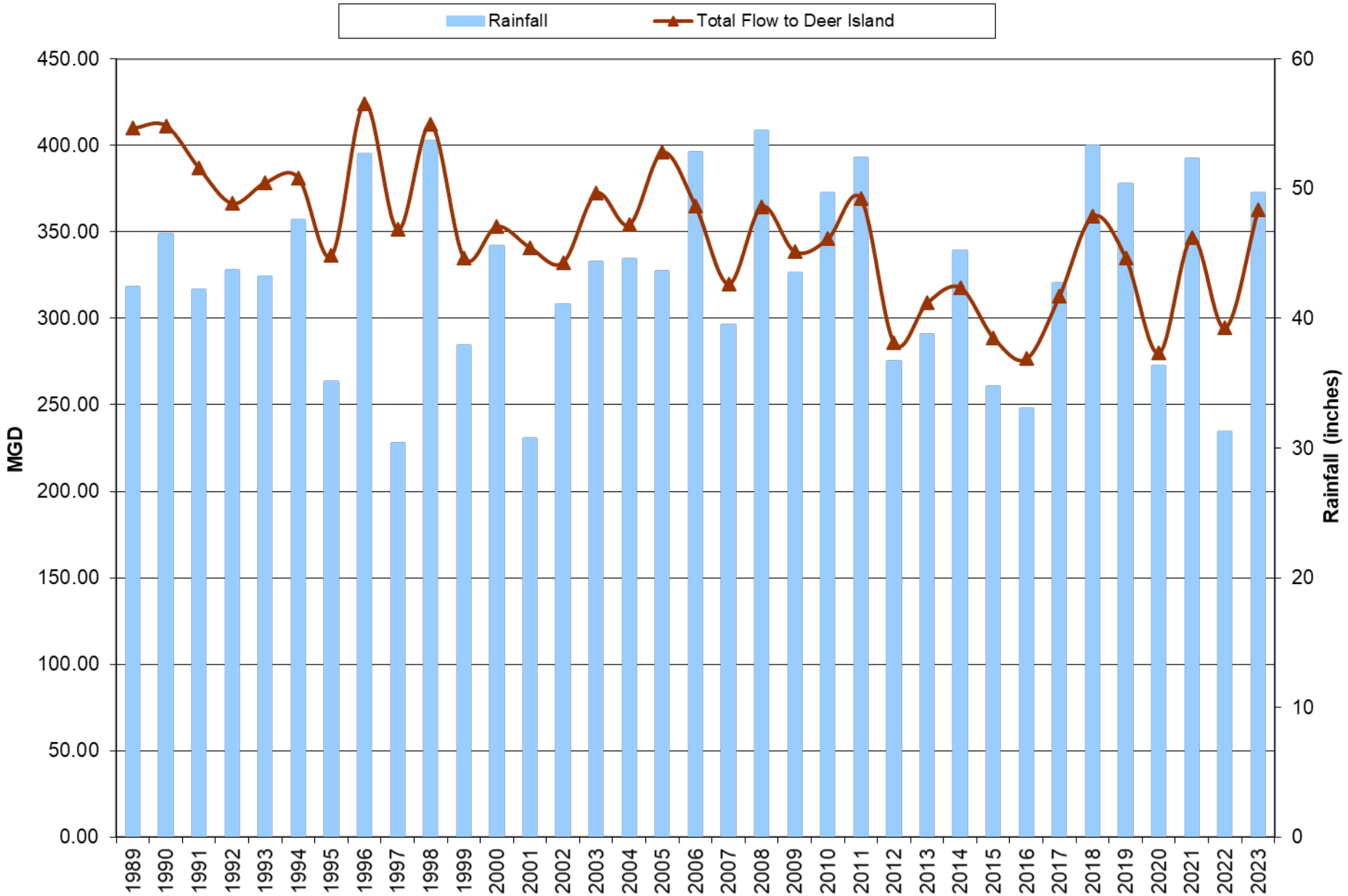
Over the last five years (2019-2023), MWRA's average daily flow of 324 mgd has been about 7% below the long-term average of 349 mgd. The five-year average rainfall of 44.0 inches is consistent with the long-term average of 43.5 inches.

The estimated average daily flow reduction associated with completed local I/I reduction projects that have received MWRA financial assistance is about 103 million gallons per day (mgd). This flow reduction "ballpark" figure is based on the communities' (or their consultants') peak I/I reduction estimates, which have been prorated by MWRA staff to estimate an annual average I/I reduction. The estimated I/I reduction represents groundwater and stormwater that no longer enter the collection system at the point of sewer repair.

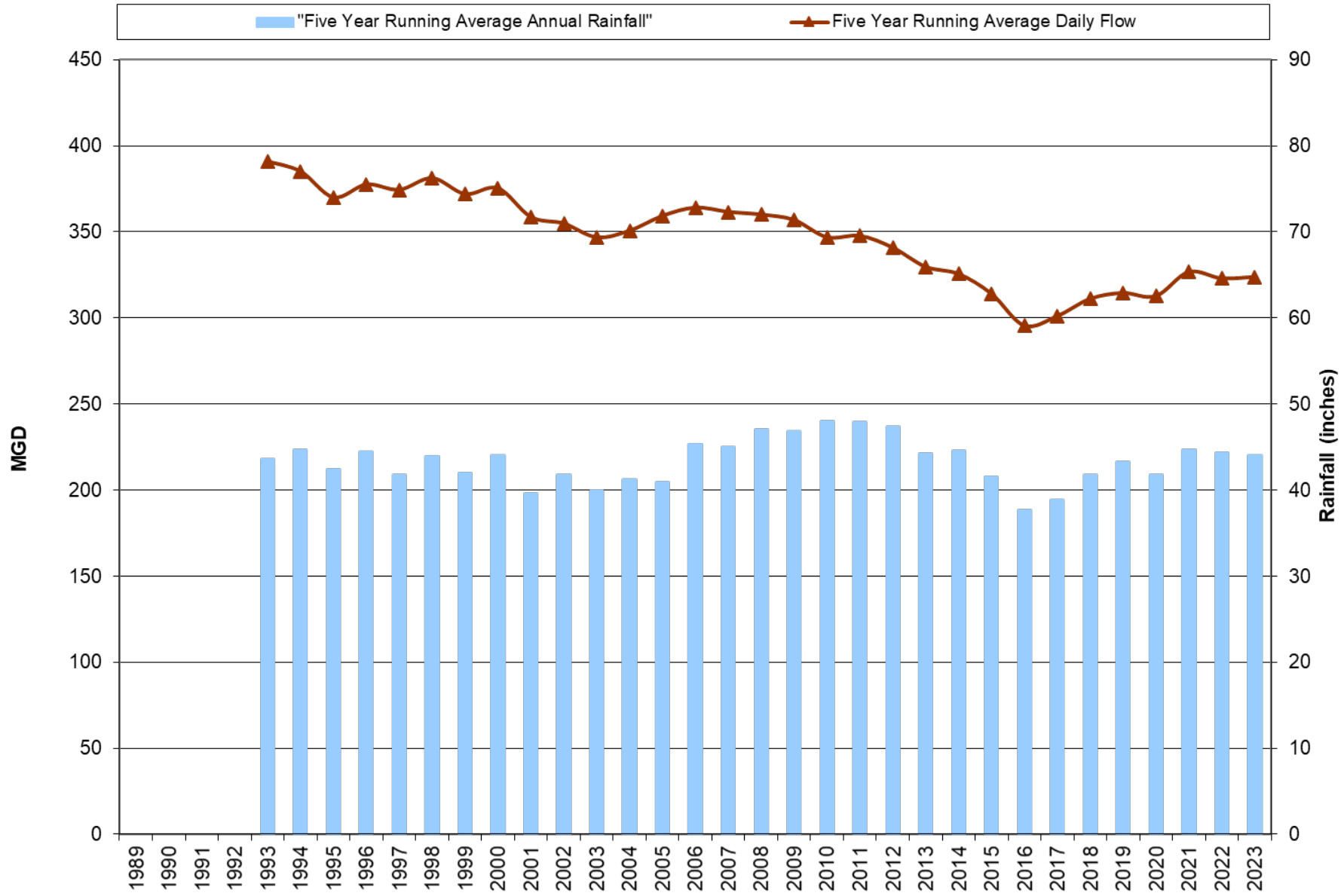
Regional wastewater flow trends are influenced by many factors, including:

- MWRA's financial assistance for local I/I reduction and sewer rehabilitation projects provide gradual improvements to the regional collection system by reducing I/I and stormwater sources. However, each year the regional collection system gets older and continues to deteriorate, which increases I/I;
- Sewer capacity gained by elimination of I/I in one subsystem may allow additional I/I to enter the collection system at a different location (known as infiltration migration), resulting in less net flow reduction at the end of the collection system;
- CSO separation projects reduce stormwater tributary to the combined sewer system leading to decreased flows. However, MWRA's pumping and interceptor relief upgrades, as well as CSO optimization projects, are intended to maximize sewer flow to the treatment plant leading to increased flows;
- Wastewater flows within the collection system vary dramatically due to changes in precipitation. For example, annual average daily flow for MWRA's system varies up to 100 mgd from year to year (from a low of less than 300 mgd to a high of more than 400 mgd). Small flow reductions for individual projects are dwarfed by regional flow fluctuations; and,
- Over the last 20 years, the decline in per capita indoor water use within the MWRA service area could account for about 20 mgd in wastewater flow reduction after the increase in wastewater flow from increased sewered population is accounted for.

Wastewater Flow Graph 1
MWRA Long-Term Regional Flow Data
NOAA Annual Rainfall at Logan Airport



Wastewater Flow Graph 2
MWRA Long-Term Regional Flow Data
NOAA Annual Rainfall at Logan Airport



Community Projects Funded During FY24

During FY24, MWRA distributed a total of $29.2 million in grants and loans to member communities to help fund 21 local I/I reduction projects. Community projects are funded quarterly under the MWRA I/I Local Financial Assistance Program. Attached (following this page) are funding summaries for the four quarterly funding distributions during FY24:

- First Quarter FY24 - August 2023 Funding Cycle with $4,761,170 distributed to four communities: Hingham, Lexington, Milton and Woburn (see Section Pages 4-10 to 4-18);

- Second Quarter FY24 - November 2023 Funding Cycle with $15,133,250 distributed to seven communities: Boston, Brookline, Dedham, Somerville (2 projects), Stoneham, Wakefield, and Westwood (see Section Pages 4-19 to 4-31);

- Third Quarter FY24 - February 2024 Funding Cycle with $5,718,977 distributed to five communities: Arlington, Braintree, Canton, Chelsea, and Weymouth (see Section Pages 4-32 to 4-42); and

- Fourth Quarter FY24 - May 2024 Funding Cycle with $3,612,630 distributed to four communities: Ashland, Hingham, Walpole, and Wellesley (see Section Pages 4-43 to 4-51).

MWRA I/I Local Financial Assistance Program Funding Summary

August 2023 Funding Cycle

Community	Funding Allocation
Hingham	$ 181,170
Lexington	$ 1,590,000
Milton	$ 1,150,000
Woburn	$ 1,840,000
Total	$ 4,761,170

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF HINGHAM, MASSACHUSETTS

CONTRACT FY23-S1: I/I INVESTIGATION & REHABILITATION PROGRAM
YEAR 2&3 ANNUAL SEWER PROGRAM - I/I SERVICES

MWRA PROJECT NO. WRA-P14-15-3-1416

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. The project work area includes Hingham Sewer Subareas 7 and 8. Project work will include, but not be limited to, the following:

ON-CALL WASTEWATER SERVICES CONTRACT FY23-S1 (CONTRACT 2, WORK ORDER NO. 1)

YEAR 2&3 ANNUAL SEWER PROGRAM – I/I SERVICES:

Contract 2 - Prioritized sewer recommended rehabilitations as described in the Year 2 & 3 Annual I/I Reports including: sewer cleaning/inspection with CCTV inspection of sewer mains; chemical root treatment of sewer mains; trenchless sewer repairs including sewer testing and grouting of sewers and taps; installing CIP sewer pipe; installing structural CIP sewer pipe; installing CIP lateral liners; installing short liners; installing structural short liners; performing open cut point repairs; testing & grouting service connections; performing manhole rehabilitations; replacing sewer manhole frames & covers; and furnishing/installing sewer manhole inflow dishes.

Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application received July 6, 2023 and the Agreements For Engineering Services By And Between The Town of Hingham, MA And Weston & Sampson Engineers. Peak infiltration reduction is estimated to be 0.02 mgd. Total project cost is estimated at $181,170. Eligible MWRA I/I Local Financial Assistance is $181,170 (Phase 14 Funding Distribution).

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF HINGHAM, MASSACHUSETTS

CONTRACT FY23-S1: I/I INVESTIGATION & REHABILITATION PROGRAM
YEAR 2&3 ANNUAL SEWER PROGRAM - I/I SERVICES

MWRA PROJECT NO. WRA-P14-15-3-1416

PROJECT SCHEDULE

Item	Start Date	Completion Date
On-Call Wastewater Services		
Year 2&3 Annual Sewer Program Construction	Fall 2023	Spring 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
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MWRA PROJECT NO. WRA-P14-17-3-1411

TOWN OF LEXINGTON

PHASE 9 SEWER REHABILITATION CONSTRUCTION AND PHASE 14 SSES

SCOPE OF SERVICES

This project includes multiple phases within the Town of Lexington's ongoing Sewer System Improvement Program. The objective of this project is to rehabilitate community sewer basins that contribute excessive I/I to the sanitary sewer system. The project area is primary located within Lexington Sewer Basin 13. Project work will include, but not be limited to the following tasks:

(1) Sewer System Evaluation Survey - Phase 14 is an I/I investigation project. The objective of this project is to identify and quantify I/I present in Sewer Basin 03. This project is part of the investigation and reporting phase of the program.

(2) Phase 9 Construction is a construction project that will remove I/I through rehabilitation of manholes and pipeline sections. The proposed work is to be performed in Sewer Basin 13. Construction work will be based on the Phase 9 design. The completion of this work will remove approximately 164,000 gpd of peak infiltration.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement For Engineering Services By and Between the Town of Lexington and Weston & Sampson Engineers, Inc. and the approved MWRA I/I Local Financial Assistance Project Application received January 14, 2022. Total project cost is estimated at $1,653,000. Eligible MWRA I/I Local Financial Assistance is $1,590,000 (Phase 14 SSES Cost = $370,000 / Phase 9 Construction Cost = $1,220,000). As a result of the above work, an estimated 0.16 mgd of peak infiltration will be removed from the collection system.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-17-3-1411

TOWN OF LEXINGTON

PHASE 9 SEWER REHABILITATION CONSTRUCTION AND PHASE 14 SSES

PROJECT SCHEDULE

Description of Work	Start Date	Completion Date
Phase 14 SSES	March 2023	February 2024
Phase 9 Rehabilitation Construction and Refinements	August 2023	June 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
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TOWN OF MILTON, MASSACHUSETTS
CY2023 SEWER REHBILITATIONS - DESIGN / CONSTRUCTION
MWRA PROJECT NO. WRA-P14-21-3-1417

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. The project area includes Milton Subareas DI-01 / G-05 / G-08A / G-08B / G-O8C / G-10B / G-11A / G-12A / G-12B / G-12D / G-12E / G-13 / G-15 / NI-21 / S-07B / T. Project work will include, but not be limited to, the following:

CY2023 Sewer Rehabilitations - Design / Construction: The objective of the project is to rehabilitate the municipal sewer system through CIP pipe and manhole cementitious lining. This is a comprehensive rehabilitation project that will also remove I/I sources identified in the Town's CIP Project 2 & 3 I/I Investigation Projects and the CY2022 Sewer Investigation Project (MWRA Project No. WRA-P11-21-3-1154). Project work will include the design and construction of cost-effective and value-effective sewer rehabilitations in Milton Subareas DI-01 / G-05 / G-08A / G-08B / G-O8C / G-10B / G-11A / G-12A / G-12B / G-12D / G-12E / G-13 / G-15 / NI-21 / S-07B / T.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement(s) For Engineering Services By and Between the Town of Milton and Weston & Sampson Engineers, Inc. and the approved MWRA I/I Local Financial Assistance Project Application received July 24, 2023. Total project cost is estimated at $1,500,000. Eligible MWRA I/I Local Financial Assistance is $1,150,000 (Phase 14 Allocation Limit). As a result of the above work, an estimated 0.06 mgd of peak infiltration will be removed from the collection system.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
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TOWN OF MILTON, MASSACHUSETTS
CY2023 SEWER REHBILITATIONS - DESIGN / CONSTRUCTION
MWRA PROJECT NO. WRA-P14-21-3-1417

PROJECT SCHEDULE

Item	Start Date	Completion Date
Design	May 2023	September 2023
Advertise	October 2023	October 2023
Bid Opening	November 2023	November 2023
Contract Award	November 2023	December 2023
Rehabilitation Construction	December 2023	April 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
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PROJECT NO. WRA-P14-43-3-1418

CITY OF WOBURN

CIP PROJECT 3 & 4 POST CONSTRUCTION FLOW EVALUATIONS; AND NORTH WOBURN TRUNK SEWER PLANNING, DESIGN & CONSTRUCTION

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. The city is requesting money for design, planning and construction projects. These projects are part of the City of Woburn's East Woburn Sewer Capital Improvement (CIP) Plan. A summary of the projects is detailed below:

CIP Project 3 and CIP Project 4 Post Construction Flow Evaluations will evaluate pre-rehabilitation and post-rehabilitation flow isolation values to estimate peak infiltration removed through rehabilitations.

Project work on the North Woburn Trunk Sewer will be separated into two sections. On the north section of the Trunk Sewer, there will be planning and investigation work, and on the south section of the Trunk Sewer, there will be rehabilitation construction.

The north section of the North Woburn Trunk Sewer (approximately 4500 LF) is a city-owned sewer interceptor that flows from north to south from the Wilmington town line to the Anderson Transportation Center. Work in this section of the Trunk Sewer will include, but not be limited to: field investigations, manhole inspections, flow isolation and television inspection, project mapping, data analysis, preliminary design, cost effective analyses and reporting. This work will also be performed in local sewers tributary to the north section of the Woburn Trunk Sewer North; approximately 20,000 LF in Mini-Systems ES-13, ES-14 and ES-15.

The south section of the North Woburn Trunk (approximately 12,000 LF) is a city-owned interceptor that flows from north to south along the Aberjona River from Mishawum Road to an MWRA interceptor south of Montvale Avenue. This section of the Trunk Sewer was television inspected and evaluated for rehabilitation in 2011. Inspection will be performed on the south section of the North Woburn Trunk to confirm existing conditions prior to design of rehabilitations. The objective of the project is to design and construct trenchless and dig-and-replace rehabilitations to eliminate infiltration and inflow from the North Woburn Trunk Sewer (South Section).

The total project cost is estimated at $4,602,712. Eligible MWRA I/I Local Financial Assistance is $1,840,000 (Post Flow Evaluations = $50,000; North Section Evaluations/Design= $552,712; South Section Rehab = $1,237,288). Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application (received July 11, 2023) and the Agreement For Engineering Services By and Between the City of Woburn, MA and Weston & Sampson Engineers, Inc. Estimated quantity of I/I to be reduced will be calculated following completion of project design.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

PROJECT NO. WRA-P14-43-3-1418

CITY OF WOBURN

CIP PROJECT 3 & 4 POST CONSTRUCTION FLOW EVALUATIONS; AND NORTH WOBURN TRUNK SEWER PLANNING, DESIGN & CONSTRUCTION

PROJECT SCHEDULE

Description of Task	Start Date	Completion Date
CIP Project 3 Post Construction Flow Evaluation 2023	July 2023	September
CIP Project 4 Post Construction Flow Evaluation 2023	July 2023	September
North Woburn Trunk Sewer (South):		
Rehabilitation Design 2023	July 2023	December
Bid & Award 2024	January 2024	March
Rehabilitation Construction 2024	April 2024	August
Warranty Re-Testing	April 2025	
North Woburn Trunk Sewer (North):		
Evaluation and Reporting 2023	July 2023	December

MWRA I/I Local Financial Assistance Program Funding Summary

November 2023 Funding Cycle

Community	Funding Allocation
Boston	$ 523,350
Brookline	$ 3,771,000
Dedham	$ 1,180,000
Somerville	$ 6,878,900
Stoneham	$ 970,000
Wakefield	$ 1,310,000
Westwood	$ 500,000
Total	$ 15,133,250

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
MWRA PROJECT NO. WRA-P14-05-3-1419

REHABILITATION OF SEWER AND DRAINS (PHASE 1)
IN THE SOUTH END

BWSC CONTRACT NO. 19-308-001

SCOPE OF SERVICES

Project work under this contract includes the structural lining of 2300 LF of 10 to 42-inch sewer/drain; the rehabilitation of eight (8) sewer manholes; and the performance of all other work pursuant to the terms and conditions detailed within the plans and specifications of BWSC Contract No. 19-308-001 [Rehabilitation of Sewer and Drains (Phase 1) in the South End] and the approved MWRA I/I Local Financial Assistance Project Application received October 24, 2023.

Project work will take place in South End District of Boston. Work locations include:

West Brookline Street	Washington Street to No. 63 West Brookline Street
Waterford Street Easement	No. 180 Shawmut Street to Washington Street
Herald Street	No. 100 Shawmut Street to Washington Street

Total project cost is estimated at $10,679,337. Eligible MWRA I/I Local Financial Assistance is $523,350. The average annual infiltration reduction at contract completion is estimated to be 0.06 mgd.

PROJECT SCHEDULE

Item	Start Date	Completion Date
Contract Bid / Award	December 2022	January 2023
Construction	April 2023	July 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-07-3-1420

TOWN OF BROOKLINE
DESIGN & CONSTRUCTION OF RECOMMENDED
SEWER REHABILITATIONS IN SEWER SUBAREA NI-6 WEST

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. This project includes a combination of planning, investigation, design and construction. In 2018, Brookline initiated a sewer system capital improvement program with the goal of rehabilitating all non-CIPP lined sanitary sewer mains and their associated manholes throughout Town.

The planning and investigation work includes, but is not limited to, the following: field inspections of all sewer manholes within Sewer Subarea NI-6 West; review of smoke testing results and completing smoke testing within Sewer Subareas DI-1, DI-2, DI-4, DI-6, DI-7, DI-9, NI-10, S-6, S-14, Carlton Street and St Mary's Street.

The design component of the project involves the preparation of biddable construction documents based on the planning and investigation work completed. Separate construction contracts will be administered for the CIPP lining of sewers in Sewer Subarea NI-6 West and sewer manhole rehabilitation in Sewer Subarea NI-6 West.

The construction component of the project involves the construction of measures outlined in the biddable construction documents and construction administration. An estimate of the recommended sewer rehabilitations will include, but is not limited to:

- Installing approximately 29,300 LF of cured-in-place pipe (CIPP) lining;
- Performing heavy cleaning of approximately 4400 LF of sewer main;
- Performing cleaning and CCTV inspection of 4400 LF of sewer main;
- Installing epoxy lining on approximately 2000 VF of sewer manholes;
- Installing approximately 150 gallons of injection grouting;
- Reconstruction of approximately 15 sewer manhole benches/inverts
- Reconstruction of approximately 10 VF of grading course/corbel/wall; and
- Adjusting and/or replacing 10 sewer manhole frame and covers.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement For Engineering Services By and Between the Town of Brookline and BETA Group, Inc. and the approved MWRA I/I Local Financial Assistance Project Application received October 2, 2023. The total project cost is estimated at $3,771,000. Eligible MWRA I/I Local Financial Assistance is $3,771,000 (Planning/Design = $305,230; Construction Rehabilitations = $3,251,770; Police Detail = $214,000). At the completion of this project, it is estimated that 0.02 mgd of annual average infiltration will be removed from the collection system.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-07-3-1420

TOWN OF BROOKLINE

DESIGN & CONSTRUCTION OF RECOMMENDED SEWER REHABILITATIONS IN SEWER SUBAREA NI-6 WEST

PROJECT SCHEDULE

General Description of Work Performed	Start Date	Completion Date
I/I Planning & Investigations	December 2023	April 2024
Design of Recommended Sewer Rehabilitations	December 2023	March 2024
Construction of Sewer Rehabilitations	May 2024	October 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF DEDHAM, MASSACHUSETTS
I/I IDENTIFICATION & REHABILITATION
MWRA PROJECT NO. WRA-P14-12-3-1421

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. Project work will include, but not be limited to, the following:

Sewer rehabilitation work includes the installation of approximately 12,629 LF of 6 to 15-inch cured-in-place (CIP) pipe liners, 114 LF of 8 to 24-inch CIP short pipe liners and cementitious lining of 1133 VF of sewer manholes. (Estimated Rehabilitation Construction Cost = $1,006,700 / Estimated Police Detail Cost = $93,200).

Additional work includes conducting a topside physical survey in as many as 686 sewer manholes within Dedham Sewer Subareas PP / SS / UU / VV / YY / ZZ. (Estimated Manhole Survey Cost = $73,300 / Estimated Police Detail Cost = $6800).

The above work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application received October 12, 2023 and the Agreement For Professional Services By And Between The Town of Dedham, MA And Weston & Sampson Engineers, Inc.

Total project cost is estimated at $1,180,000. Eligible MWRA I/I Local Financial Assistance is $1,180,000 (MWRA I/I Phase 14 Funding Allocation Limit). As a result of the above work, an estimated 0.24 mgd of peak infiltration will be removed from the collection system upon contract completion.

PROJECT SCHEDULE

Item	Start Date	Completion Date
Rehabilitation Construction	April 2024	December 2024
Warranty Retesting	March 2025	June 2025
Manhole Inspection	February 2024	March 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A-1
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-30-3-1425

CITY OF SOMERVILLE

EAST SOMERVILLE & WINTER HILL SEWER REHABILITATIONS

SCOPE OF SERVICES

The objective of the East Somerville & Winter Hill Sewer Rehabilitation Project is to repair and replace deficient sewer infrastructure, fix structurally failing assets, and remove infiltration from Somerville's combined system. Somerville conducted CCTV investigations on approximately 194,000 LF of sewer in its Winter Hill and East Somerville neighborhoods in 2022 and 2023. Results of these inspections indicated that many of these sanitary pipes and manholes were in failing condition. The City prioritized these defects for sewer rehabilitation, resulting in the East Somerville & Winter Hill Sewer Rehabilitations Project. Work in this project's Base Bid includes, but is not limited to: 1805 LF of open cut sewer replacement; eight (8) sewer spot repairs; installing 580 LF of sewer service laterals; 13,275 LF of CIPP lining; replacement of 17 manholes; rebuilding one (1) bench/invert; epoxy coating 625 VF of manholes; cleaning/inspecting/sealing 315 LF of sewers; and cutting 15 protruding service connections. Additional work included as a Bid Alternate 1 includes heavy cleaning and CCTV inspections of sewer pipelines in Somerville's Ward 2 neighborhood (costs for Bid Alternate 1 project work is not included in the MWRA funding application).

The total rehabilitation construction cost is estimated at $4,607,625. Eligible MWRA I/I Local Financial Assistance is $4,017,683. Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application (received November 9, 2023) and the Agreements For Engineering Services By and Between the City of Somerville, MA and Woodard & Curran, Inc. As a result of the East Somerville & Winter Hill Rehabilitations Project, an estimated 0.95 MGD of infiltration will be reduced from the collection system.

PROJECT SCHEDULE

Description of Task	Start Date	Completion Date
Rehabilitation Construction	June 2023	September 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A-2
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-30-3-1426

CITY OF SOMERVILLE

FOSS PARK SEWER SEPARATION PRELIMINARY DESIGN

SCOPE OF SERVICES

The objective of the Foss Park Sewer Separation Project is to decrease demand on the MWRA wastewater collection system by separating storm drainage from approximately 81 acres of Somerville's existing combined system.

The project will consist of the design of sewer separation through the addition or replacement of sanitary and/or stormwater pipes on selected streets that currently have only a single sewer pipe or pipes with inadequate capacity; rehabilitation of existing conduits and manholes to extend their useful life and reduce infiltration; and installation of green stormwater infrastructure systems. When completed, the project will significantly improve the performance of the City's drainage system, reducing mild to severe recurrent flooding, mitigate combined sewer overflows (CSOs), reduce infiltration and inflow volumes, improve water quality in the Mystic River, and build capacity in the drainage system for the City to continue sewer separation. In this Preliminary Design phase, the City will refine estimates of I/I reduction and design/develop contract bidding documents for construction work to follow.

The total cost of preliminary design is estimated at $3,146,865. Eligible MWRA I/I Local Financial Assistance is $2,861,217. Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application (received August 11, 2023) and the Agreement For Engineering Services By and Between the City of Somerville, MA and Stantec. As a result of the project construction that will follow this design work, and estimated 3.9 million gallons of stormwater is expected to be redirected from the collection system during the 1-year, 6-hour storm.

PROJECT SCHEDULE

Description of Task	Start Date	Completion Date
Preliminary Design	October 2023	September 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-31-3-1423

TOWN OF STONEHAM
PHASE 9 SEWER SYSTEM I/I REHABILITATION

SCOPE OF SERVICES

The objective of the project is I/I identification and removal, and sewer system rehabilitation for structural deficiencies, through pipeline/manhole rehabilitation and replacement. Phase 9 Sewer System I/I rehabilitation work will be conducted primarily in Stoneham Study Area 4.

Investigations conducted in 2018 and 2019 included CCTV inspection of approximately 40,000 LF of 6 to 15-inch diameter sewer main and inspection of approximately 250 sewer manholes. Rehabilitation recommendations from these investigations included:

1. CIP lining of approximately 17,000 LF of sewer main;
2. Grouting sewer service connections;
3. Cutting of protruding service connections;
4. Replacement of defective manhole drop connections;
5. Performing approximately eight (8) excavation point repairs; and
6. Rehabilitation of manholes.

For the Phase 9 Rehabilitation Contract, these recommendations will be reviewed holistically with past rehabilitation recommendations and additional discussions with the Town regarding problem I/I areas. Final rehabilitations will be designed based on the severity of defects, their associated I/I contribution, and the cost effectiveness of rehabilitation for I/I removal. Pipeline rehabilitation methods will consist primarily of cured-in-place pipe lining, but may also include: testing and sealing of pipe joints and service connections, cured-in-place spot repairs and open cut excavation repairs. Manhole rehabilitation methods may include lining of manhole chimneys; chemical sealing of walls and joints, pipe connections and benches and inverts; as well as cementitious lining and epoxy lining of manholes.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement for Engineering Services By and Between the Town of Stoneham and Arcadis U.S., Inc. and the approved MWRA I/I Local Financial Assistance Project Application received October 17, 2023. Total project cost is estimated at $1,115,000. Eligible MWRA I/I Local Financial Assistance is $970,000 (Study/Planning/Design = $110,000 / Construction Engineering = $165,000 / Construction = $695,000). For the Phase 9 Sewer Rehabilitation, estimated I/I reductions will be determined during pre-rehabilitation CCTV investigations, manhole inspections and engineering condition assessments.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-31-3-1423

TOWN OF STONEHAM
PHASE 9 SEWER SYSTEM I/I REHABILITATION

PROJECT SCHEDULE

Description of Work	Start Date	Completion Date
Planning / Design	January 2024	April 2024
Bidding / Award	April 2024	May 2024
Rehabilitation Construction	June 2024	May 2025

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-33-3-1422

TOWN OF WAKEFIELD
SEWER SYSTEM INFILTRATION REHABILITATION (YEAR 6) –
DESIGN & CONSTRUCTION

SCOPE OF SERVICES

The purpose of this project is to reduce I/I through identifying, designing and rehabilitating sewer system infrastructure in specific community sewer areas. The project is part of an ongoing effort by the Town to reduce infiltration and inflow. Project work will include, but not be limited to, the following:

1. Investigation and Reporting work for SSES (Year 7);
2. Design of sewer rehabilitations (Year 6) for project construction work;
3. Perform 1250 LF of cleaning and inspection of sewers;
4. Perform 14,325 LF of cleaning, inspection, testing and sealing of sewers;
5. Perform testing of 4065 joints;
6. Perform sealing of 2033 joints;
7. Perform 600 VF of cementitious lining in manholes;
8. Perform exterior grouting and interior patching to 50 manholes;
9. Replace 8 manhole frame and covers;
10. Furnish and install 10 manhole inflow dishes;
11. Install CIP short liners in 186 LF of sewer main;
12. Install CIPP in 7640 LF of sewer main;
13. Grout 145 reinstated service connections;
14. Cut 25 intruding service connections;
15. Television inspect and test 25 service connections; and
16. Grout 25 service connections after television inspection and testing.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement For Engineering Services By and Between the Town of Wakefield and Weston & Sampson Engineers, Inc. and the approved MWRA I/I Local Financial Assistance Project Application received October 13, 2023. Total project cost is estimated at $1,310,000 (Design/Construction Services = $260,000) (Construction = $934,000) (Investigation = $116,000). Eligible MWRA I/I Local Financial Assistance is $1,310,000. The estimated annual average of I/I removed after the completion of this rehabilitation project is approximately 0.05 MGD.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-33-3-1422

TOWN OF WAKEFIELD
SEWER SYSTEM INFILTRATION REHABILITATION (YEAR 6) –
DESIGN & CONSTRUCTION

PROJECT SCHEDULE

General Description of Work Performed	Start Date	Completion Date
Design	December 2023	April 2024
Bid Opening / Contract Award	May 2024	July 2024
Rehabilitation Construction	July 2024	April 2025
Retesting & Warranty Inspection	March 2026	April 2026
I/I Investigations / Reporting (Year 7)	March 2024	September 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF WESTWOOD, MASSACHUSETTS
FY23 / FY24 I/I REHABILITATION

MWRA PROJECT NO. WRA-P14-38-3-1424

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. Project work will include, but not be limited to, the following:

FY23 / FY24 I/I Rehabilitation Construction: Based upon CCTV inspections (14,589 LF) conducted in July/August 2023, sewer rehabilitation work includes approximately: cleaning 300 LF of sewer main; installing 2400 LF of CIP sewer main; grouting 10 leaks at services/joints; repairing (via full wrap) 47 lateral connections; rehabilitating nine (9) sewer manholes (via cementitious sealing); grouting three (3) sewer manholes; and raising & resetting one (1) sewer manhole frame & cover. Project work will be performed within the Nahatan Street / Colburn Street neighborhood. (Eligible Construction Cost = $500,000).

The above work will be performed pursuant to the terms and conditions detailed within the December 7, 2022 Agreement For Inflow/Infiltration Investigation Engineering Services (Contract # DPW-23-C-022) By and Between the Town of Westwood and Environmental Partners, LLC and the approved MWRA I/I Local Financial Assistance Project Application received October 26, 2023.

Total project cost is estimated at $616,650 (Design & Bidding Cost = $125,000 / Construction Cost = $391,650 / Construction Services Cost = $100,000). Eligible MWRA I/I Local Financial Assistance is $500,000 (Eligible Construction Cost = $500,000). As a result of the above work, an estimated 0.12 mgd of peak infiltration will be removed from the collection system.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF WESTWOOD, MASSACHUSETTS
FY23 / FY24 I/I REHABILITATION

MWRA PROJECT NO. WRA-P14-38-3-1424

PROJECT SCHEDULE

Item	Start Date	Completion Date
I/I Investigations	January 2023	July 2023
Rehabilitation Design	July 2023	November 2023
Rehabilitation Construction	April 2024	July 2024

MWRA I/I Local Financial Assistance Program Funding Summary

February 2024 Funding Cycle

Community	Funding Allocation
Arlington	$ 800,000
Braintree	$ 232,577
Canton	$ 1,337,400
Chelsea	$ 1,750,000
Weymouth	$ 1,599,000
Total	$ 5,718,977

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-01-3-1428

TOWN OF ARLINGTON

PHASE #16 SANITARY SEWER REHABILITATION DESIGN & CONSTRUCTION / PHASE #14 POST-CONSTRUCTION FLOW EVALUATION

SCOPE OF SERVICES

The Town of Arlington requests funding for the following projects which are part of the Town's Sewer System Capital Improvement Program. The Sewer System CIP is designed to reduce Inflow and Infiltration. Each phase of the Program includes the most cost-effective repairs remaining within the Town. The work included in the Phase #16 Design and Rehabilitation Construction projects (Task 1 & 2) will be located in various portions of Investigation Area #1 through Area #11.

Task 1 - Phase #16 Design, Bid & Award:
The goal of the Phase #16 Design, Bid & Award project is to design the removal of cost-effective sources of infiltration and inflow (I/I) and produce contract documents suitable for public bidding within the investigation areas named above.

Task 2 - Phase #16 Rehabilitation Construction & Construction Services:
The goal of the Phase #16 Construction project is to rehabilitate and repair sewer infrastructure and remove sources of I/I identified during previous Sewer System Investigation Projects and included in the Phase #16 Design, Bid & Award project, within the investigation areas stated above.

Task 3 - Phase #14 Post Construction Flow Evaluation:
The Phase #14 Post-Construction Flow Evaluation will compare pre- and post-rehabilitation ground water levels and flow isolation data to estimate the quantity of peak infiltration removed from the sewer system from the Phase #14 Construction project. A Draft & Final Report will be prepared evaluating the pre- and post-construction flows.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement For Engineering Services By and Between the Town of Arlington and Weston & Sampson Engineers, Inc. and the approved MWRA I/I Local Financial Assistance Project Application received January 12, 2024. Total project cost is estimated at $800,000. Eligible MWRA I/I Local Financial Assistance is $800,000 (Eligible Phase #16 Design, Bid, & Award Cost = $95,000 / Eligible Phase #16 Construction Cost = $550,000 / Eligible Phase #16 Construction Services Cost = $140,000 / Eligible Phase #14 Post Construction Flow Evaluation Cost = $15,000). Upon contract completion, this work will result in an estimated removal of 0.04 MGD of peak I/I flow from the sanitary sewer system.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-01-3-1428

TOWN OF ARLINGTON

PHASE #16 SANITARY SEWER REHABILITATION DESIGN & CONSTRUCTION / PHASE #14 POST-CONSTRUCTION FLOW EVALUATION

PROJECT SCHEDULE

Description of Work	Start Date	Completion Date
Phase #16 Design, Bid & Award	January 2024	June 2024
Phase #16 Construction Rehabilitation	August 2024	November 2024
Phase #16 Construction Warranty Retest	May 2025	June 2025
Phase #14 Post-Construction Flow Evaluation	June 2024	July 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF BRAINTREE, MASSACHUSETTS

FY24 (YEAR 12) I/I INVESTIGATION

MWRA PROJECT NO. WRA-P14-06-1-1430

SCOPE OF SERVICES

The purpose of this project is to identify community sewer subareas that contribute excessive I/I and evaluate rehabilitation options on a continuous set schedule. Project work will include, but not be limited to, the following:

FY24 (Year 12) I/I Investigation: Investigation work will include: clean, CCTV inspect and record as many as 48,800 LF of sewer main in Braintree Sewer Subareas L1 / R2; review CCTV inspection videos (as many as 48,800 LF) to locate problem areas and I/I sources within manhole-to-manhole segments of the sewer main; flow isolate as many as 47,700 LF of sewer main in Subareas L1 / R2; perform as many as 245 topside sewer manhole inspections in Subareas L1 / R2; and submit a letter report summarizing the results of this work, identifying those areas which appear to contribute excessive I/I, and provide detailed conclusions and recommendations (including a cost-effectiveness analysis for identified I/I sources and a transportation & treatment cost calculation).

Total project cost is estimated at $232,577 (Investigation Services = $232,577). Eligible MWRA I/I Local Financial Assistance is $232,577 (Program Phase 12 Distribution).

Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application (received January 23, 2024) and the Agreement For Engineering Services By And Between The Town of Braintree, MA and Weston & Sampson Engineers, Inc.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF BRAINTREE, MASSACHUSETTS

FY24 (YEAR 12) I/I INVESTIGATION

MWRA PROJECT NO. WRA-P14-06-1-1430

PROJECT SCHEDULE

Item	Start Date	Completion Date
Investigation	March 2024	June 2024
Investigation Review	July 2024	October 2024
Reporting	November 2024	February 2025

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM

ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF CANTON, MASSACHUSETTS
I/I IDENTIFICATION & REHABILITATION (CANTON SEWER SUBAREA 27)

TOWN OF CANTON PROJECT # 23-009S
MWRA PROJECT NO. WRA-P14-10-3-1427

SCOPE OF SERVICES

The purpose of this project is to identify and quantify community sub-areas that contribute excessive I/I and evaluate/construct sewer system rehabilitation options. This project includes a combination of I/I planning, design and construction. The project area was initially delineated based on previous I/I flow metering and flow isolation results that were completed in 2021 / 2022 (MWRA Project Nos. WRA-P11-10-1-1163 / 1188). Sewer manhole and CCTV inspections were completed in this area to further define the rehabilitation design scope. The results of the inspections were used to design sewer rehabilitation options to address infiltration in Canton Sewer Subarea 27.

The project objective is to rehabilitate the sewer, both mainline and manholes, to prevent extraneous water from entering the sewer system through infiltration. Project work includes CCTV inspection of approximately 4500 LF of sewer main along Traverse Place and Curtis Road; CIPP rehabilitation of approximately 14,570 LF of 8, 10 and 15-inch diameter sewer main and rehabilitation of 80 sewer manholes (via cementitious lining) in Canton Sewer Subarea 27.

The project is located within the Town of Canton, specifically on the following streets: Oak Road, Shore Drive, Pleasant Circle, Country Club Road, Pleasant Garden Road, Wampatuck Drive, Capper Drive, Sherman Street, Curtis Road, Revere Court, Washington Street and Roberts Road.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement For Professional Engineering Services By and Between the Town of Canton and Kleinfelder Northeast, Inc. (dated February 16, 2023) and the approved MWRA I/I Local Financial Assistance Project Application (received January 11, 2024).

Total project cost is estimated at $1,337,400 (Planning Cost = $218,200 / Design Cost = $48,500 / Construction Cost = $945,300 / Construction Services Cost = $125,400). Eligible MWRA I/I Local Financial Assistance is $1,337,400. As a result of the above work, an estimated 0.14 mgd of peak infiltration will be removed from the collection system.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF CANTON, MASSACHUSETTS
I/I IDENTIFICATION & REHABILITATION (CANTON SEWER SUBAREA 27)

TOWN OF CANTON PROJECT # 23-009S
MWRA PROJECT NO. WRA-P14-10-3-1427

PROJECT SCHEDULE

Item	Start Date	Completion Date
CCTV Inspection	March 2023	March 2023
Rehabilitation Design	March 2023	October 2023
Rehabilitation Construction	November 2023	June 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-11-3-1429

CITY OF CHELSEA

DOWNTOWN BROADWAY UTILITY IMPROVEMENTS PROJECT

SCOPE OF SERVICES

The objective of the project is to continue the City's strategic efforts towards separating the sewer and drain systems and eliminating CSOs in the CHE-004 Bellingham Combined Sewershed by redirecting sewer laterals to a new sanitary sewer. Additional project benefits include inflow and flood risk reduction within the project area. Investment in combined sewer separation from this project will not result in inflow reduction at the conclusion of this construction project (Phase 1), as the downstream areas are still configured with a weir to route flows to the MWRA sewer at the intersection of Marginal Street and Pearl Street. It will require Phase 2 construction to complete the sewer separation and eliminate the CSO regulator weir and connection to the MWRA sewer from the 72-inch storm drain.

The project is a key step in the City's plan for I/I reduction, sewer separation and flood prevention. The City has developed a City-Wide Master Plan that defines a long-term strategy for implementing a plan to fully separate the sewer and drain systems, reduce I/I and mitigate flooding within the City.

The project area is generally along Broadway (from City Hall Avenue to Williams Street). It also includes Winnisimmet Street (from 2nd Street to Broadway) and Congress Street (from Park Street to Broadway).

The scope of work includes gravity sewer, storm drain and water main improvements. Eligible project work includes open-cut installation of approximately 7,230 LF of PVC or RCP sewer main and storm drain (8 to 18-inch) and 320 LF of trenchless jack and bore steel casing to support installation of a 15-inch PVC sewer main carrier pipe. Sewer service laterals will be CCTV inspected and rehabilitated via cured-in place (CIP) lining or excavated and replaced based on observed conditions. Work also includes installation of manholes, catch basins and other appurtenances related to the aforementioned utilities.

The above work will be performed pursuant to the terms and conditions detailed within the Agreement For Engineering Services By and Between the City of Chelsea and Dewberry Engineers, Inc. and the approved MWRA I/I Local Financial Assistance Project Application received January 15, 2024. Total construction cost is estimated at $11,803,000. Eligible MWRA I/I Local Financial Assistance is $1,750,000. An estimate of the annual I/I removal volume will be determined after the completion of both Phase 1 and Phase 2 construction.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

MWRA PROJECT NO. WRA-P14-11-3-1429

CITY OF CHELSEA

DOWNTOWN BROADWAY UTILITY IMPROVEMENTS PROJECT

PROJECT SCHEDULE

Description of Work	Start Date	Completion Date
Design		January 2024
Bid & Award	January 2024	March 2024
Construction	March 2024	March 2026

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM

TOWN OF WEYMOUTH, MASSACHUSETTS
YEAR 11 (2024) I/I REHABILITATION – CONSTRUCTION
YEAR 13 I/I INVESTIGATION – STUDY AND REPORTING
MWRA PROJECT NO. WRA-P14-39-3-1431

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. Project work will include, but not be limited to, the following:

Year 11 (2024) I/I Rehabilitation - Construction (Estimated Cost = $1,135,000):

Project work will include 8800 LF of pipeline chemical root treatment; 13,105 LF of cleaning and television inspection; testing 1390 joints; sealing 685 joints; installing 9600 LF of cured-in-place pipe and 28 LF of cured-in-place short liners; grouting 165 reinstated service connections; grouting of 34 service laterals; installing CIP lateral liners at 10 locations; performing open cut point repairs at two (2) locations; performing manhole cementitious lining at 90 locations; repairing one (1) sewer manhole bench & invert; providing root treatment at 16 manholes; and installing 11 manhole inflow dishes.

Town-Wide Sewer System Investigation Program - Year 13 (Estimated Cost = $585,000):

1. Flow isolate as much as 110,600 LF of 6 to 12-inch sewer in Subareas B-5 and B-6 to quantify infiltration amounts within manhole-to-manhole segments of sewer. The inspection will be conducted between the hours of 12AM and 6AM when groundwater levels are typically at their highest and sanitary flows are at a minimum.
2. Light clean, TV inspect, videotape and record as much as 121,400 LF of 6 to 18-inch sewer in Subareas B-5 and B-6. The TV inspection will be performed to locate problem areas and I/I sources within manhole-to-manhole segments of sewer. The inspection will be conducted in Spring 2024 when groundwater levels are typically at their highest.
3. Conduct topside physical survey of as many as 760 sewer manholes in Subareas B-5 and B-6 for defects and I/I sources. A written log will be furnished for each manhole inspected.
4. Prepare a letter report that details areas in which work was performed, summarizes work completed to date and includes recommendations, a cost-effectiveness analysis and prioritization analysis for rehabilitation of pipeline/manhole defects and I/I sources identified during this investigation. Estimated construction costs will also be provided.

Total project cost is estimated at $1,720,000. Eligible MWRA I/I Local Financial Assistance is $1,599,000. Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application (received February 1, 2024) and the Agreements For Engineering Services By And Between The Town of Weymouth, MA And Weston & Sampson Engineers, Inc.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM

TOWN OF WEYMOUTH, MASSACHUSETTS
YEAR 11 (2024) I/I REHABILITATION – CONSTRUCTION
YEAR 13 I/I INVESTIGATION – STUDY AND REPORTING
MWRA PROJECT NO. WRA-P14-39-3-1431

PROJECT SCHEDULE

Item	Start Date	Completion Date
Year 11 (2024) I/I Rehabilitation – Construction:		
Design	November 2023	February 2024
Bid and Award	March 2024	April 2024
Rehabilitation Construction	May 2024	October 2024
Town-Wide Sewer System Investigation Program - Year 13:		
Flow Isolation	March 2024	May 2024
CCTV Inspection	March 2024	May 2024
Manhole Inspection	March 2024	May 2024
Data Review / Letter Report	June 2024	November 2024

MWRA I/I Local Financial Assistance Program Funding Summary

May 2024 Funding Cycle

Community	Funding Allocation
Ashland	$ 908,800
Hingham	$ 218,830
Walpole	$ 335,000
Wellesley	$ 2,150,000
Total	$ 3,612,630

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF ASHLAND, MASSACHUSETTS
I/I REHABILITATION IN ASHLAND SUB-BASINS 1 / 2 / 3 / 4
MWRA PROJECT NO. WRA-P14-02-3-1432

SCOPE OF SERVICES

The purpose of this project is to identify, quantify and rehabilitate community sub-basins that contribute excessive I/I. The proposed work will be conducted in sections of Ashland's sewer system. All four Sub-Basins (1, 2, 3 and 4) have received I/I analysis and SSES work twice since 1987, with removal of the all cost-effective I/I sources. There has been clear water flow identified in sewer services from previous studies and sewer main CCTV work. The investigation portion of this project consists of sewer service CCTV inspections to identify any additional removable I/I sources. This project also includes removal of the identified I/I sources, including service lateral, sewer manhole, and sewer main repairs. Project work will include, but not be limited to, the following:

1. Sewer Service and Main CCTV Inspection: This work will utilize a remote controlled close circuit television to inspect service laterals and sewer main to identify if the clear water flow identified during previous investigations is groundwater related. Service CCTV will inspect approximately 6,575 LF in Sub-Basin 1, 7,600 LF in Sub-Basin 2, 8,100 LF in Sub-Basin 3, and 4,800 LF in Sub-Basin 4. Sewer Main CCTV will inspect approximately 29,750 LF of sewer mains in Sub-Basin 1. The recordings will be reviewed and recommendations for repairs and I/I quantified.

2. Sewer Main and Manhole Cleaning: Work consists of cleaning approximately 6,400 LF of sewer main and manholes.

3. Brick Manhole Riser Repair, Frame, and Cover Replacement: Work consists of replacing damaged frame and covers and repairing seven (7) brick risers to eliminate surface water from entering sewer manholes identified during previous investigations.

The above work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application and the Engineering Services Contracts by and between the Town of Ashland, MA and Haley & Ward, Inc.

Total project cost is estimated at $1,149,700. Eligible MWRA I/I Local Financial Assistance is $908,800 (Program Phase 10 / 11 /12 Funding Allocation).

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF ASHLAND, MASSACHUSETTS
I/I REHABILITATION IN ASHLAND SUB-BASINS 1 / 2 / 3 / 4
MWRA PROJECT NO. WRA-P14-02-3-1432

PROJECT SCHEDULE

Item	Start Date	Completion Date
CCTV Inspections and Reporting	May 2024	January 2025
I/I Rehabilitation	June 2024	December 2027

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF HINGHAM, MASSACHUSETTS

CONTRACT FY23-S1: I/I REHABILITATION PROGRAM
2024 ANNUAL SEWER PROGRAM INVESTIGATIONS

MWRA PROJECT NO. WRA-P14-15-3-1435

SCOPE OF SERVICES

The purpose of this project is to identify and rehabilitate community subareas that contribute excessive I/I, evaluate rehabilitation options and rehabilitate the sewer system on a continuous set schedule. The project work area includes Hingham Sewer Subareas 1, 2, 3, 8 and 9. Project work will include, but not be limited to, the following:

ON-CALL WASTEWATER SERVICES CONTRACT FY23-S1 (Contract 2 - Work Order No. 2) will include but not be limited to: installing approximately 2,200 LF of CIP sewer pipe; and installing 130 LF of CIP lateral liners. This work will take place on Downer Avenue, Cushing Avenue, Grove Avenue, South Street, and Summer Street.

2024 ANNUAL SEWER PROGRAM INVESTIGATIONS will include: television inspection of as many as 35,000 LF of sewers in Subareas 1, 2, and 3; topside manhole inspections of as many as 240 sanitary sewer manholes; performing a GIS Mapping update; populating database with inspection information; and submitting a detailed letter report that will describe the areas in which work was performed, summarize the work completed to date and include recommendations, a cost-effectiveness analysis, and a prioritization analysis for rehabilitation of those pipeline and manhole defects and sources of infiltration and inflow that have been identified during this investigation.

Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application received April 30, 2024 and the Agreements For Engineering Services By And Between The Town of Hingham, MA And Weston & Sampson Engineers. Peak infiltration reduction is estimated to be 0.02 mgd. Total project cost is estimated at $218,830. Eligible MWRA I/I Local Financial Assistance is $218,830 (Phase 14 Funding Distribution).

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF HINGHAM, MASSACHUSETTS

CONTRACT FY23-S1: I/I REHABILITATION PROGRAM
2024 ANNUAL SEWER PROGRAM INVESTIGATIONS

MWRA PROJECT NO. WRA-P14-15-3-1435

PROJECT SCHEDULE

Item	Start Date	Completion Date
On-Call Wastewater Services FY23-S1: I/I Rehabilitation Construction (Contract 2 - Work Order No. 2)	Spring 2024	Fall 2024
2024 Annual Sewer Program Investigations	Spring 2024	Summer 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM - PHASE 12
ATTACHMENT A
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF WALPOLE, MASSACHUSETTS

WASTEWATER CIP 2 INVESTIGATION - STUDY AND REPORTING

MWRA PROJECT NO. WRA-P14-34-1-1433

SCOPE OF SERVICES

The purpose of this project is to identify community subareas that contribute excessive I/I and evaluate rehabilitation options on a continuous set schedule. Project work will include, but not be limited to, the following:

Wastewater CIP 2 Investigation - Study and Reporting

The work proposed is part of a wastewater capital improvement plan. The project includes investigation and reporting. The CIP 2 Investigation will identify I/I within the Town's sewer system through flow isolation, CCTV sewer main inspection and topside sewer manhole inspection. The investigation will be performed in Walpole Sewer Subarea 1.

Investigation work will include the following: clean, CCTV inspect and record as many as 71,900 LF of sewer main in Subarea 1; review the CCTV inspection videos to locate problem areas and I/I sources within manhole-to-manhole segments of the sewer main; flow isolate as many as 61,800 LF of sewer main in Subarea 1; perform as many as 400 topside sewer manhole inspections in Subarea 1; and submit a letter report summarizing the results of this work, identifying those areas which appear to contribute excessive I/I, and provide detailed conclusions and recommendations (including a cost-effectiveness analysis for identified I/I sources and a transportation & treatment cost calculation).

Project work will be performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application and the Agreement For Engineering Services By And Between The Town of Walpole, MA And Weston & Sampson Engineers, Inc. Total project cost is estimated at $335,000. Eligible MWRA I/I Local Financial Assistance is $335,000 (MWRA Phase 12 Distribution).

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM - PHASE 12
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF WALPOLE, MASSACHUSETTS

WASTEWATER CIP 2 INVESTIGATION - STUDY AND REPORTING

MWRA PROJECT NO. WRA-P14-34-1-1433

PROJECT SCHEDULE

Item	Start Date	Completion Date
Investigation	April 2024	May 2024
Review	August 2024	October 2024
Reporting	November 2024	December 2024

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF WELLESLEY, MASSACHUSETTS

SEWER SYSTEM INSPECTION AND REHABILITATION
(CONTRACT NO. 19S-410-1609 & CONTRACT NO. 21C-460-1663)

MICA LANE SEWER REHABILITATION PROJECT (CONTRACT NO. 21C-460-1664)
GROVE STREET SEWER REHABILITATION (CONTRACT NO. 19C-460-1629)
OPEN-CUT SEWER REPAIRS (CONTRACT NO. 22C-460-1691)

MWRA PROJECT NO. WRA-P14-37-3-1434

SCOPE OF SERVICES

Sewer System Inspection and Rehabilitation (Contract No. 19S-410-1609 & No. 21C-460-1663):
Investigations and Sewer System Evaluation Surveys (SSES) were conducted in Subareas EC-1, WB-1, WA-1, and WC-3. The areas are based on findings from the 2018 I/I Analysis and Flow Monitoring Report. Investigation and rehabilitation work included but was not limited to: CCTV inspection of 92,000 LF of sewer; chemical root treatment of 9,000 LF of sewer; installing 24 LF of CIP short liners; testing & sealing six (6) service connections; and sealing 1,000 VF of manholes.
Total eligible consultant costs = $379,688.34. Total eligible rehabilitation costs = $1,328,821.29.

Mica Lane Sewer Rehabilitation Project (Contract No. 21C-460-1664):
This project included the planning, design, and construction of a sewer main replacement on Mica Lane. It included the disposal of a 20-inch cast iron pipe including manholes and replacement with an 18-inch PVC pipe and manholes. Additional project rehabilitation work consisted of CIPPL of 15-inch reinforced concrete pipe. Total eligible design cost = $19,502.98. Total eligible construction cost = $269,287.39.

Grove Street Sewer Rehabilitation Project (Contract No. 19C-460-1629):
This project included TV inspection, cleaning and lining of 4,175 LF of 8-inch clay pipe on Grove Street.

Open-Cut Sewer Repairs (Contract No. 22C-460-1691):
This project consisted of repairs to sewer mains at the following locations: River Ridge, Bobolink Road, Rice Street, Putney Road, Nantucket Road, and Priscilla Circle.

The above work was performed pursuant to the terms and conditions detailed within the approved MWRA I/I Local Financial Assistance Project Application received March 27, 2024. Combined cost for the above projects totals $2,357,573.53. Eligible MWRA I/I Local Financial Assistance is $2,150,000.00. Estimated infiltration and inflow removal will be determined at the end of investigations.

MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
ATTACHMENT B
FINANCIAL ASSISTANCE AGREEMENT

TOWN OF WELLESLEY, MASSACHUSETTS

SEWER SYSTEM INSPECTION AND REHABILITATION
(CONTRACT NO. 19S-410-1609 & CONTRACT NO. 21C-460-1663)

MICA LANE SEWER REHABILITATION PROJECT (CONTRACT NO. 21C-460-1664)

GROVE STREET SEWER REHABILITATION (CONTRACT NO. 19C-460-1629)

OPEN-CUT SEWER REPAIRS (CONTRACT NO. 22C-460-1691)

MWRA PROJECT NO. WRA-P14-37-3-1434

PROJECT SCHEDULE

Item	Start Date	Completion Date
Sewer System Inspection and Rehabilitation (Contract No. 19S-410-1609 & No. 21C-460-1663)		
Sewer Inspection/Rehabilitation	April 2019	August 2024
Mica Lane Sewer Rehabilitation Project (Contract No. 21C-460-1664)	June 2021	June 2022
Grove Street Sewer Rehabilitation Project (Contract No. 19C-460-1629)	April 2020	June 2020
Open-Cut Sewer Repairs (Contract No. 22C-460-1691)	July 2022	June 2023

ATTACHMENT 5
TO
MWRA ANNUAL I/I REDUCTION REPORT FOR FY24
Reporting Period: July 2023 Through June 2024

I/I REDUCTION STATUS UPDATE FOR MEMBER COMMUNITIES

The MWRA is working cooperatively with member communities to develop phased I/I reduction programs throughout the service area. The Authority will encourage continuing community efforts in I/I reduction as detailed in the MWRA Regional I/I Reduction Plan. Many community I/I projects are funded through MWRA's I/I Local Financial Assistance Program. This $860.75 million grant/loan program was established to provide funding to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Through FY24, MWRA has distributed $560 million to fund local projects. A detailed update on MWRA's I/I Local Financial Assistance Program is included as Attachment 4 to this report.

The Authority has instituted a computer-based questionnaire format for communities to submit annual status reports on their I/I reduction programs. All 43 member sewer communities have submitted information to MWRA for FY24. Community information is summarized below:

1. ARLINGTON: North System

Background Information:
- Miles of Sewer: 117
- Sewered Population: 46,271
- Three Year (CY20 - CY23) Annual Average I/I: 2.19 mgd
- MassDEP Administrative Actions Since 2010: ACOP-NE-10-1N006 (August 2010)

Latest I/I or SSES Reports:
Phase #10 Sanitary Sewer Rehabilitation - Post Rehabilitation Flow Evaluation (July 2020)
Phase #11 Sanitary Sewer Rehabilitation - Post Rehabilitation Flow Evaluation (July 2021)
Phase #12 Sanitary Sewer Rehabilitation - Post Rehabilitation Flow Evaluation (July 2022)
Phase #13 Sanitary Sewer Rehabilitation - Post Rehabilitation Flow Evaluation (July 2023)
Phase #14 Sanitary Sewer Rehabilitation - Post Rehabilitation Flow Evaluation (July 2024)

Private Source Inflow Removal Program: The Town developed a Private Inflow Removal Program that was submitted to DEP in April 2022. Building inspections for private inflow removal are ongoing. Work completed through 6/28/23 includes: 2308 of the planned 3420 buildings (67% for this project phase) have been internally inspected for illicit connections to the sanitary sewer. Forty-one (41) positive inflow sources (sump pumps / basement drains / open sewer cleanouts) at 38 locations have been identified. One hundred forty-five (145) suspect inflow sources (sump pumps / basement drains / open sewer cleanouts) at 141 locations have been identified. The Town paired the remaining building inspections with a Water Meter Replacement Program to obtain a higher percentage of building entries. Building inspections are in progress. Dye testing investigation of the private inflow sources was performed in Spring 2024. Dye testing is ongoing, pending additional building inspections for properties that still need to be accessed.

I/I Rehabilitation Projects in Design or Construction:
The Phase #13 Post Construction Flow Evaluation Report was completed Summer 2023 (MWRA Project No. WRA-P14-01-3-1404).
The warranty inspections for the Phase #14 Sanitary Sewer Rehabilitations - Bid No. 22-34 were completed in May 2024. The Phase #14 Post Construction Flow Evaluation Report will be completed in July 2024.
The Phase #15 Sanitary Sewer Rehabilitations - Bid No. 23-50 was substantially completed in July 2024. The following work was completed: 40 linear feet of open cut point repairs of sanitary sewers; replacement of six (6) service wyes; installation of two (2) precast concrete sewer manholes; root treatment of 1,462 lf of sewer and two (2) manholes; installed 5,630 lf of cured-in-place pipe (CIPP) lining; grouted 92 service connections in cured-in-place pipe; cut seven (7) protruding service connections; cementitious lining of 192 vertical feet of manholes; grouted and patched two (2) manholes; replaced three (3) manhole frames and covers; installation of two (2) manhole inflow dishes; 208 lf cleaning, inspection, testing, and sealing of mainline joints; and

tested and grouted two (2) service connections. The warranty inspections will be completed in the upcoming Spring 2025, pending groundwater conditions.
The Phase #16 Sanitary Sewer Rehabilitations-Bid No. 24-39 is expected to be opened in August 2024. The project is expected to be substantially complete by November 2024 with warranty inspections completed by November 2025.

Reporting Period Activity: The warranty inspections for the Phase #14 Sanitary Sewer Rehabilitations - Bid No. 22-34 were completed in May 2024. The Phase #14 Post Construction Flow Evaluation Report will be completed in July 2024. The Phase #15 Sanitary Sewer Rehabilitations - Bid No. 23-50 was substantially completed in July 2024. In March 2024, funds ($800,000) were distributed for the Phase #16 Sanitary Sewer Rehabilitation Design & Construction Project and Phase #14 Post-Construction Flow Evaluation (MWRA Project No. WRA-P14-01-3-1428). In March 2023, funds ($760,000) were distributed for the Phase 15 Sewer System Rehabilitation Construction Project and Phase #13 Post Construction Flow Evaluation (MWRA Project No. WRA-P11-01-3-1404).

MWRA I/I Local Financial Assistance Program: The community has financed twenty-eight (28) I/I reduction projects through the Authority's funding assistance program. Of the $15,473,000 allotted through the Program's Phases 1 - 14, the community has $2,457,100 remaining in funding assistance.

2. ASHLAND: South System

Background Information:
- Miles of Sewer: 78
- Sewered Population: 14,717
- Three Year (CY20 - CY23) Annual Average I/I: 0.46 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: I/I Analysis Report: July 2020
SSES Initial Phase Report: July 2020
Smoke & Dye Testing Report: August - October 2020
Inflow Removal Recommendations Report: July 2023

Private Source Inflow Removal Program: the Town performs sump pump inspections in basements during meter change outs. Through this process, they have completed 70 sump pump inspections and are in the process of sending out letters to the homeowners of the locations identified to remove private inflow sources.

I/I Rehabilitation Projects in Design or Construction: In May 2024, MWRA funds were distributed for I/I Identification & Rehabilitation Project in Ashland Sub-Basins 1/2/3/4 (MWRA Project No. WRA-P14-02-3-1168). Project work is ongoing. Details of this project are included in Attachment 4. The Town is also in the process of awarding an IFB for 10 sewer flow meters to set out in the system to monitor I/I. Construction on the pumps at the Chestnut Street Pump Station is scheduled to begin this fall. Construction contracts have been signed.

Reporting Period Activity: Town forces continue to jet problematic and high grease areas. The Town is also in the process of upgrading the Chestnut Street Sewer Pump Station. Upgrades include replacing pumps, electronics, SCADA system and drives. The Town is in the process of updating the status of the sewer capacity for the Bracket Road and Chestnut Street Pump Stations. Several housing projects in Town are in various development stages (from conceptual to site plan review). Mitigation will be discussed with these potential developments.

In March 2021, MWRA funds were distributed for an I/I Identification & Rehabilitation Project (MWRA Project No. WRA-P11-02-3-1168). Project work is complete. Dye testing was performed in September 2022. An Inflow Removal Recommendations Report was completed July 2023 including recommendations to remove private inflow sources identified by smoke and dye testing. The Town also purchased a portable mainline sewer camera crawler featuring a 10-inch touchscreen on the 600 foot motorized reel and a pan-tilt camera head. The crawler only takes two Town operators to run this system and is transportable using a pickup truck or all-terrain vehicle.

MWRA I/I Local Financial Assistance Program: The community has financed nine (10) I/I reduction projects through the Authority's funding assistance program. Of the $4,348,500 allotted through the Program's Phases 1 - 14, the community has $1,419,640 remaining in funding assistance.

3. BEDFORD: North System

Background Information:
- Miles of Sewer: 77
- Sewered Population: 13,947
- Three Year (CY20 - CY23) Annual Average I/I: 1.08 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: Phase #5 Sewer System Investigation (May 2018)
Phase #6 Sewer System Investigation (May 2022)

Private Source Inflow Removal Program: The Town identified 50 sump pumps during their Phase #5 Sewer System Investigation and plans on designing a project for removing the sump pumps connected to the sewer system. Sump pump connections in nine (9) apartment buildings were disconnected from the Town's sewer and rerouted to overland flow.

I/I Rehabilitation Projects in Design or Construction: Phase #6 SSES design was completed in September 2022 and construction is anticipated to begin Spring 2024 (MWRA Project Nos. WRA-P14-03-3-1176 / 1402).

Reporting Period Activity: Phase #7 flow isolation performed late Winter of 2024, January and February, and early Spring, March and April, for a large portion of the town's sewer system. Phase #6 Sewer System Investigation work is complete. Data evaluation and reporting to be complete.

The The Middlesex Turnpike Sewer Force Main Replacement – Phase II and Middlesex Turnpike Pump Station Rehabilitation projects have been bid, and construction is expected late Summer/early Fall 2024 for both projects. The Middlesex Turnpike Gravity Sewer Upgrades Phase I and Phase II were completed Spring 2023.

MWRA I/I Local Financial Assistance Program: The community has financed ten (10) I/I reduction projects through the Authority's funding assistance program. Of the $6,354,600 allotted through the Program's Phases 1 - 14, the community has $3,245,442 remaining in funding assistance.

4. BELMONT: North System

Background Information:
- Miles of Sewer: 76
- Sewered Population: 26,932
- Three Year (CY20 - CY23) Annual Average I/I: 1.39 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: Manhole Cover Insert Pilot Study (March 2020)
Sewer System Rehabilitation Inflow/Infiltration Removal (May 2020)
Private Sector Sump Pump Removal & Sewer System Rehabilitation (March 2021)

Private Source Inflow Removal Program: The Private Sector Sump Pump Removal & Sewer System Rehabilitation Project is complete. 24 of 28 identified sump pumps connected to the sewer system were removed and redirected to a separate drain service to the storm drain. The 4 remaining sump pumps were inspected and were confirmed to have no sump pump connected to the system homeowner disconnected or relocated the system.

I/I Rehabilitation Projects in Design or Construction: The Private Sector Inflow Removal Project and The Mainline CIPP Lining Project have been completed (MWRA Project Nos. WRA-P11-04-3-1116 / 1124). Approximately 16,500 LF of sewer main was CIPP lined. An estimated 30,200 gpd of infiltration was removed.

Reporting Period Activity: The Town is currently completing a Town wide I/I Flow Monitoring Evaluation. A Sewer System Evaluation Survey is expected to be competed in FY25 utilizing Phase 11 Funding.
The Town has also inspected approximately 17,000 LF of sewer and storm drain associated with the Town's 2024 Pavement Management Program (PMP). Point repairs, service replacements and new manholes will be conducted on structural defects within the PMP limits in the Summer of 2024. Additional future trenchless repairs will be conducted to complete the recommended repairs.

MWRA I/I Local Financial Assistance Program: The community has financed eight (8) I/I reduction projects through the Authority's funding assistance program. Of the $9,325,100 allotted through the Program's Phases 1 - 14, the community will have $4,190,000 remaining in funding assistance.

5. BOSTON: North and South Systems

Background Information:

- Miles of Sewer: 854
- Sewered Population: 673,957
- Three Year (CY20 - CY23) Annual Average I/I: 26.56 mgd
- MassDEP Administrative Actions: None (Cooperative Agreement Exists)

Boston North is one of MWRA's five combined sewer service communities (Boston North, Brookline, Cambridge, Chelsea and Somerville). Portions of Boston North are impacted by projects under MWRA's CSO Control Plan.

Latest I/I or SSES Reports: Charlestown SSES; West Roxbury/Hyde Park SSES; Jamaica Plain SSES; Allston-Brighton SSES; Mattapan SSES; City-Wide I/I Analysis; Roslindale SSES; Dorchester SSES; West Roxbury Low Level Sewer I/I Study; Roxbury Canal Sewer Separation Study; Upper Neponset Valley Sewer Inflow Survey; Granite Avenue I/I Survey; Dorchester High Level Sewer I/I Survey; Lower Dorchester Brook Sewer Study; and Longwood Medical Area I/I Survey.

Private Source Inflow Removal Program: Since 1994, the Downspout Disconnection Program has conducted approximately 38,000 building surveys and 10,520 dye water tests. Approximately 26,447 downspouts have been disconnected. From CY05 - CY23, a total of seventy-five (75) large impervious areas were surveyed to identify inflow sources. All seventy-five (75) areas have been dye tested.

I/I Rehabilitation Projects in Design or Construction: BWSC has both completed and is currently working on a wide variety of separation and I/I identification/rehabilitation projects. To date, eighty-seven (88) I/I identification/rehabilitation projects have received funding through the MWRA I/I Local Financial Assistance Program [Projects include fifty (50) sewer separation projects, five (5) downspout disconnection projects, fourteen (15) sewer system rehabilitation projects and eighteen (18) Sewer System Evaluation Surveys / Planning Studies.]

From FY07 - FY24, BWSC completed the following MWRA-financed I/I rehabilitation projects: South Boston Sewer Separation - Phase I, East Boston Sewer Separation Phase I; Upper Roxbury Area Sewer Separation Phase 2; Dudley Square Sewer Separation; Fairfield Street Sewer Rehabilitation; Rehabilitation of Sewers in the Fenway (Audubon Circle / St. Mary's Street Area); A Street Area Sewer Separation (South Boston Gillette Headquarters); Mass Ave - Dorchester Separation (New Market Square Area); East Boston (Border/ Meridian Street Area) Sewer Separation; Sewer Rehabilitation in Back Bay/Kenmore/Hyde Park/Mattapan; Albany Street Sewer Separation; Sewer Rehabilitation in Dorchester/Mattapan/West Roxbury/Brighton; Talbot Avenue High Level Sewer Area Sewer Replacement/Manhole Rehabilitation; South End Sewer Rehabilitation; Marginal Street Sewer Separation; St. Botolph Street Sewer Separation; Maverick Street Sewer Separation; West Side Interceptor and Public Garden Lining; Back Street Sewer Separation and Chester Park Area Sewer Separation.

Ongoing I/I rehabilitation projects (funded through the MWRA I/I Local Financial Assistance Program) include: South End Sewer Rehabilitation (WRA-P14-05-3-1419), Upper Roxbury Area Sewer Separation Phase III (MWRA Project No. WRA-P11-05-3-1189), South Boston Sewer Separation Phase I (MWRA Project No. WRA-P11-05-3-1171), East Boston Sewer Separation Phase II (MWRA Project No. WRA-P11-05-3-1121) and East Boston Sewer Separation Phase III (MWRA Project No. WRA-P9-05-3-1180).

BWSC entered into an I/I reduction agreement with the MassDEP in January 1986. As provided in the agreement, BWSC has performed a Phase II SSES on separated sewer areas within the City. BWSC also has an ongoing tide gate/regulator inspection and repair program and performs separation projects on pockets of combined sewers tributary to separated sewer areas.

Reporting Period Activity: BWSC is required to report to the EPA on I/I reduction measures under their NPDES permit. This reporting requirement coincides with the MWRA's required submittal dates; therefore, please refer to the BWSC NPDES report for a summary of activities during this period.

MWRA I/I Local Financial Assistance Program: The Commission has financed eighty-seven (88) I/I identification/reduction projects through the Authority's funding assistance program. Of the $246,921,200 allotted through the Program's Phases 1 - 14, the Commission has $124,053,141 remaining in funding assistance.

6. BRAINTREE: South System

Background Information:

- Miles of Sewer: 140
- Sewered Population: 39,049
- Three Year (CY20 - CY23) Annual Average I/I: 3.13 mgd
- MassDEP Administrative Actions: ACO Docket No. CWA-AO-R01-FY21-16 (July 2021)

Latest I/I or SSES Report:
Main Interceptor Investigation (June 2021)
Annual I/I Removal Program - Year 9 I/I Investigation (September 2021)
2020 Annual Wastewater Flow Monitoring (November 2021)
Smoke Testing 2021 (April 2022)
Interceptor Modeling 2022 (March 2023)
Annual I/I Removal Program - Year 10 I/I Investigation (January 2023)
Smoke Testing 2022 (June 2023)
Annual I/I Removal Program - Year 11 (December 2023)
Smoke Testing 2023 (April 2024)
Collection System Modeling (Ongoing)
Annual I/I Removal Program, Year 12 (Ongoing)

Private Source Inflow Removal Program: The Town continues to perform building inspections in conjunction with water meter changeouts. The Town has performed multiple building inspections over the past two years. One (1) private inflow source was removed from the sewer system and redirected.

Sump pump removal program is ongoing. Ten (10) private source sump pump removal contracts have redirected 296 sump pumps to date. The Developer Flow Reduction Program is now 6 to 1 per MassDEP ACO. During CY13/14, a sump pump amnesty letter was sent out with the Town's annual water report to all users. The letter resulted in 31 customer calls to have their sump pump connections checked. To date, 27 inspections have taken place and nine (9) sump pumps have been identified for removal. Actual removal/rerouting of the sump pumps has not yet taken place.

I/I Rehabilitation Projects in Design or Construction: Year 12 (FY24) I/I Investigation - Study (MWRA Project No. WRA-P14-06-1-1430) was funded in March 2024. The Year 11 (FY23) I/I Rehabilitation (Study/Design/Construction) Project is ongoing (MWRA Project No. WRA-P14-06-3-1407). Investigation work will include: clean, CCTV inspect and record as many as 41,700 LF of sewer main in Braintree Sewer Subareas M1 / S2 / S3; review CCTV inspection videos (as many as 41,700 LF) to locate problem areas and I/I sources within manhole-to-manhole segments of the sewer main; flow isolate as many as 34,600 LF of sewer main in Subareas M1 / S2 / S3; perform as many as 450 topside sewer manhole inspections in Subareas HC1 / HC2 / HC3 / M1 / S2 / S3; and submit a letter report summarizing the results of this work, identifying those areas which appear to contribute excessive I/I, and provide detailed conclusions and recommendations (including a cost-effectiveness analysis for identified I/I sources and a transportation & treatment cost calculation).

Construction plans and specifications (to remove cost-effective and value-effective I/I identified during the above Year 11 I/I Investigation) will be developed and submitted, followed by rehabilitation construction. Project work will be undertaken within Braintree Sewer Subareas HC1 / HC2 / HC3 / M1 / S2 / S3 and will include: cleaning, inspection, testing and sealing of joints in approximately 3500 LF of sewers; installing CIPP in approximately 7200 LF of sewers; installing short liners in sections of sewer at six (6) locations; installing lateral liners at seven (7) locations; cutting five (5) intruding laterals at the connection to the main line; testing and grouting 15 laterals at the connection to the main line; performing an open cut point repair at one (1) location; manhole cementitious lining in 40 sewer manholes; installing six (6) sewer manhole inflow dishes; replacing two (2) sewer manhole frame and covers; raising four (4) manhole frame and covers 2-feet above grade; cleaning and television inspection of 375 LF of sewers not previously television inspected; and performing top-side visual inspection of 20 sewer manholes. As a result of the above work, an estimated 0.40 mgd of peak I/I will be removed from the collection system upon contract completion.

The Year 10 (FY22) I/I Rehabilitation (Design/Construction) Project is substantially complete (MWRA Project No. WRA-P14-06-3-1406). Project work has been undertaken within Braintree Sewer Subareas C1 / C2 / C4 / E1 / E2 and includes: cleaning, inspection, testing and sealing of joints in approximately 3500 LF of sewers; installing CIPP in approximately 7200 LF of sewers; installing short liners in sections of sewer at six (6) locations; installing lateral liners at seven (7) locations; cutting five (5) intruding laterals at the connection to the main line; testing and grouting 15 laterals at the connection to the main line; performing an open cut point repair at one (1) location; manhole cementitious lining in 40 sewer manholes; installing six (6) sewer manhole inflow dishes; replacing two (2) sewer manhole frame and covers; raising four (4) manhole frame and covers 2-feet above grade; cleaning and television inspection of 375 LF of sewers not previously television inspected; and performing top-side visual inspection of

20 sewer manholes. As a result of the above work, an estimated 0.40 mgd of peak I/I will be removed from the collection system upon contract completion.

Reporting Period Activity: The Annual I/I Removal Program, Year 11 investigation is complete. The Annual I/I Removal Program, Year 10 was completed January 2023. Approximately 0.06 mgd of peak infiltration was observed during television inspections and 0.02 mgd of peak infiltration and 6000 gpd of peak inflow was identified during manhole inspections. The Interceptor Modeling 2022 project was completed March 2023. The Smoke Testing 2022 project was completed June 2023. The Smoke Testing 2021 project was completed April 2022 (MWRA Project No. WRA-P11-06-3-1142).

MWRA I/I Local Financial Assistance Program: The community has financed nineteen (20) I/I reduction projects through the Authority's funding assistance program. Of the $16,449,000 allotted through the Program's Phases 1 - 14, the community has $4,176,023 remaining in funding assistance.

7. BROOKLINE: North and South Systems

Background Information:

- Miles of Sewer: 110
- Sewered Population: 63,084
- Three Year (CY20 - CY23) Annual Average I/I: 2.52 mgd
- Mass DEP Administrative Actions: None

Brookline is one of MWRA's five combined sewer service communities (Boston North, Brookline, Cambridge, Chelsea and Somerville). Portions of Brookline are impacted by projects under MWRA's CSO Control Plan.

Latest I/I or SSES Report:

Wastewater Master Plan Update (December 2013)
Sewer Condition Survey in Subareas NI-9, NI-10 & NI-11 Technical Memo (September 2014)
2018 Smoke Testing Phase 1 Summary Report (Subareas NI-4, NI-5, NI-7, NI-8 & NI-9)
2020 Smoke Testing Phase 2 Summary Report (Subareas NI-7 & NI-12)
2024 Smoke Testing Phase 3 Summary Report (ongoing)

Private Source Inflow Removal Program: The Town is in the process of developing a Private Flow Source Identification and Removal Program. A 4:1 Flow Reduction is enforced for large residential and commercial projects. The community is continuing its public outreach for private inflow identification/removal. Engineering Division personnel check for illicit sump pumps during inspections.

The Town is working on the policy for removal of private inflow sources in their sewer use regulations that still needs Town meeting approval. The Town's long term plan is to CIPP all the public sewer mains and epoxy line all public sewer manholes. After the Town has completely rehabilitated its sewer system in a particular basin, it will then address suspected private inflow sources.

I/I Rehabilitation Projects in Design or Construction: PW/24-18: Sewer System Rehab and PW/24-19 Epoxy Lining of Sewer Manholes are in the process of awarding. Contract PW/23-23: Sewer System Repairs has been awarded. Project work will include spot repairs; entire sewer main replacements and redirection of direct storm water connections located during smoke testing. (WRA-P14-07-3-1420)

Contract PW/23-22: Epoxy Lining of Sewer Manholes has been awarded. Project work included epoxy lining 1,754 VSF of sanitary sewer manholes. Contract PW/23-21: Sewer System Rehabilitation (CIPP) is 87% complete. Project work includes CIPP lining of 22,500 LF of 6 to 12-inch sewer main. (WRA-P14-07-3-1403)

Contract PW/22-17: Epoxy Lining of Sewer Manholes is complete. Project work included epoxy lining 2,550 VF of sanitary sewer manholes. Manhole epoxy lining work began after the completion of Contract PW/22-16: CIPP lining work to ensure a tight seal at inlets/outlets. Contract PW/22-16: Sewer System Rehabilitation is complete. Project work included CIPP lining of 35,400 LF of 8 to 18-inch sanitary sewer pipe. (WRA-P11-07-3-1184)

Reporting Period Activity: The Town is reviewing an approved large development at the intersection Pleasant Street and John Street. Initial calculations show this project will trigger a 2 for 1 type I/I reduction. The Town is also reviewing the development's sewer capacity analysis.

In December 2023, funds ($3,771,000) were distributed for the following project: Design & Construction of Recommended Sewer Rehabilitations in Sewer Subareas NI-6 (MWRA Project #WRA-P14-07-3-1420). Details of this project are included in Attachment 4.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $24,005,200 allotted through the Program's Phases 1 - 14, the community has $4,339,000 remaining in funding assistance.

8. BURLINGTON: North System

Background Information:
- Miles of Sewer: 117
- Sewered Population: 25,790
- Three Year (CY20 - CY23) Annual Average I/I: 1.59 mgd
- MassDEP Administrative Actions Since 2010: ACO-NE-15-1N001 (October 2015)

Latest I/I or SSES Reports: Project 8 Sewer System Evaluation Survey (January 2019)
Project 9 SSES (September 2019)
Project 10 SSES (February 2021)
Project 11 SSES (December 2021)
Project 12 SSES (Ongoing)

Private Source Inflow Removal Program: The Town attempted to inspect 38 Amnesty List properties to identify improper connections to the sanitary sewer system. Twenty (20) of the 38 house-to-house inspections were performed. A work summary memorandum (dated December 2, 2021) details the results of the inspections.

I/I Rehabilitation Projects in Design or Construction: Project 10 and 11 Sewer Rehabilitations warranty retest inspections were completed Spring 2024. The project removed an estimated 37,904 gpd of cost effective, value effective and non-excessive recommended peak infiltration. In November 2020, MWRA funds were distributed for the design and construction of sanitary sewer rehabilitations in the Project 10 & 11 Areas and a Project 11 Area SSES Report. These projects are a component of Burlington's CIP and part of a multi-phased sewer rehabilitation program (MWRA Project No. WRA-P11-08-3-1156).

Project 11 SSES was completed December 2021 and identified 21,309 gpd of cost effective, value effective, and non-excessive recommended removable peak infiltration.

Project 10 SSES was completed February 2021 and identified 16,818 gpd of cost effective, value effective, and non-excessive recommended removable peak infiltration.

Project 8 and 9 Rehabilitations were completed Fall 2021. The project removed an estimated 64,188 gpd of cost effective, value effective and non-excessive recommended peak infiltration.

Reporting Period Activity: In June 2023, funds were distributed for the design and construction of sanitary sewer rehabilitations in the Project 10 & 11 Areas and a Project 12 Area SSES Report (MWRA Project No. WRA-P14-08-3-1415).
The Town's sewer connection fund balance (5 for 1 sewer connection fee), excluding encumbrances, is $1,922,045.

MWRA I/I Local Financial Assistance Program: The community has financed fifteen (15) I/I reduction projects through the Authority's funding assistance program. Of the $9,632,800 allotted through the Program's Phases 1 - 14, the community has $1,110,000 remaining in funding assistance.

9. CAMBRIDGE: North System

Background Information:
- Miles of Sewer: 147
- Sewered Population: 118,379
- Three Year (CY20 - CY23) Annual Average I/I: 8.20 mgd
- Mass DEP Administrative Actions Since 2010: None

Cambridge is one of MWRA's five combined sewer service communities (Boston North, Brookline, Cambridge, Chelsea and Somerville). Portions of Cambridge are impacted by projects under MWRA's CSO Control Plan.

Latest I/I or SSES Reports:
I/I Database (March 2020)
Inman Square IDDE & Sewer Separation (November 2021)
Port Phase II Infrastructure Improvements (In Progress)
I/I Development Program Alewife (In Progress)
Partial Sewer Separation Model Calibration Report (March 2022)
Ten-Year Sewer and Drain Infrastructure Plan (April 2022)
Hampshire Street Area Flow Metering (November 2022)
CSO Long-Term Control Plan (In Progress)

Private Source Inflow Removal Program: The City conducted 200 house inspections over the past year. The illicit connection at 6 Marie Ave was corrected and confirmed by post correction dye test. Correction of the illicit connection at 64 Highland Ave is still outstanding. Illicit connection at 255 Main Street was corrected in 2021 and confirmed by post correction dye test in 2024. The connection at 36 Dana Street was cleared, and no illicit connection found. An illicit connection was identified at 55 Broadway in August 2021 and the building is currently vacant. The leaking lateral will either be abandoned and plugged or lined as part of the property redevelopment. Healy Street test pits and Hemlock St infrastructure repairs noted above are to be completed in 2024. Repair/rehabilitation of leaking laterals for 3 Gray Gardens West, 18 and 27 Fainwood Circle, 18 Corcoran Lane are outstanding. As part of the Harvard Street sewer rehabilitation, in addition to 135 Norfolk and 218 Harvard noted above, an illicit sewer service was redirected at 222 Harvard Street. The City has completed house-to-house inspections in the Willard Street catchment area. This work was done as part of the design of a new stormwater outfall to the Charles River. As part of the Binney Street Stormwater Project, an IDDE investigation was completed and two (2) illicit connections on York Place were removed. As part of the River Street reconstruction project, the City is doing limited inspections on River Street.

The City continues to work with developers on I/I removal projects triggered by increased sewer flows greater than 15,000 gpd on new development projects. I/I removal projects and project planning are currently in progress for developments at: CambridgeSide 2.0 (Mall Redevelopment, 60-110 First Street); Volpe Center Redevelopment (55 Broadway); 55 Wheeler Street; 101 Smith Place; 40 Smith Place; Walden Square 2; CHA Jackson Place, IQHQ Redevelopment (62-100 Whittemore Avenue) and 330 Third Street (formerly 585 3rd Street).

I/I Rehabilitation Projects in Design or Construction:

- Inman Square Improvements: under construction; sewer separation, porous asphalt and pavers, completed Fall 2023. (Estimated I/I removal: TBD - with completion of Hampshire Street Separation Project)
- CambridgeSide redevelopment (600-110 First Street): Land Boulevard/First Street Sewer Separation in design. Estimated construction completion in 2024 (Estimated I/I removal: 373,450 gpd)
- Rindge/Haskell/Yerxa infiltration and Peabody School private inflow removal. In design, estimated construction completion in 2025 (estimated I/I removal 269,256 gal)
- Willard Street Sewer Separation and reestablishment of stormwater outfall: estimated construction completion including storm drains and outfall in November 2024. (Estimated I/I removal: TBD);
- River Street Infrastructure Project: sewer replacement/rehabilitation and Blackstone Street separation: under construction, estimated completion Fall 2026 (Estimated I/I removal: 0.28 MG); 4,500 LF of CIPP (6 to 18" sewer and drain) completed as of 7/1/23.
- Port Phase 2 Infrastructure Improvements: under design; sewer rehabilitation/replacement, inflow removal, and green infrastructure. Estimated construction start in 2025. Estimated construction completion in 2027 (Estimated I/I removal: 0.57 MG);
- Harvard Street Sewer Rehabilitation: 180 feet of 18" sewer replacement, 2,600 feet of CIPP of 15" to 30" sewer, completed January 2024.
- Chapter 90 Contract 24 (Elm Street common manhole separation and infiltration, Callender Street common manhole separation): under construction, estimated construction completion in 2025. (Estimated I/I removal: TBD)
- Chapter 90 Contract 25 (Maple Street common manhole separation): estimated construction start Summer 2024. (Estimated I/I removal: TBD)
- Chapter 90 Contract 26 (Chetwynd, Gray, and Shepard Streets infiltration, Norfolk Street common manhole separation); estimated construction start Summer 2025 (Estimated I/I removal: TBD)
- Ongoing projects by various developers:
    - North Mass Ave Residential Side Street Infiltration Program is ongoing.
    - 55 Wheeler Street: Ridge/Haskell/Yerxa infiltration removal and Peabody School private inflow removal. Project work in design. Estimated construction completion 2025.

- 101 Smith Place / Walden Square 2 / 40 Smith Place: Walden Square sewer separation design complete. Construction ongoing with estimated completion March 2024.

Reporting Period Activity: In FY 2024, the City cleaned and CCTV'd approximately 142,560 LF of sanitary and combined sewers. In FY 2024, the City lined approximately 8,720 LF of sanitary and combined sewers and 1,140 LF of storm drains. Remedial Repair – In FY2024, the City's Remedial Repair Contractor has made various repairs to the City's sewer and drain system at 120 locations. Theses repairs consist primarily of spot repairs on mainline pipes, replacing manhole frames and covers and replacement of catch basins.

In November 2017 and March 2019, MWRA I/I Local Financial Assistance was distributed for the construction of the Port Infrastructure Improvement Project: Parking Lot No. 6 Stormwater Storage Tank and Combined Sewer Flow Reduction Project (MWRA Project Nos. WRA-P9-09-3-976 / 1105). Construction was completed December 2020. Over the past year, as part of the PL6 Stormwater Storage Tank Project, the City constructed a portion of the 16-inch sanitary sewer force main between Bishop Allen Drive and Massachusetts Avenue that will service the future Port Sanitary Sewer Tank (Sewer Tank and Pumping Station currently under design). A new sanitary sewer force main will also be constructed on Windsor Street (discharging to Portland Street). Estimated construction completion in 2027.

The Tobin Montessori Vassal Lane Upper School Stormwater Storage Tank Project 2 consists of the construction of a stormwater storage tank (which started this year) with an estimated completion in 2025. The proposed tank is intended to improve storm level of service for the most upstream portion of the former CAM004 catchment (approximately 200 acres), especially at the Standish Street / Vassal Lane intersection and low-lying areas near Concord Avenue.

As part of the River Street Infrastructure Reconstruction Project, a new drain extension will be constructed on River Street between Mass Avenue and Cottage Street. Estimated construction completion in 2025.

The City of Cambridge Cemetery sanitary sewer pump station and force main construction to begin 2023.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $44,640,100 allotted through the Program's Phases 1 - 14, the community has $15,810,000 remaining in funding assistance.

10. CANTON: South System

Background Information:
- Miles of Sewer: 87
- Sewered Population: 17,201
- Three Year (CY20 - CY23) Annual Average I/I: 1.65 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: I/I Management Plan (MassDEP) (June 2018)
I/I Study (June 2022)
Flow Isolation and CCTV Inspection Program (December 2022)

Private Source Inflow Removal Program: No additional inspections were reported during this period. Town has established an I/I Mitigation Fee for all new connections. Fee is paid based upon MassDEP flow rates at a 4 to 1 ratio.

I/I Rehabilitation Projects in Design or Construction: In March 2024, funds ($1,337,400) were distributed for Subarea 27 Infiltration Rehabilitation – Study / Design / Construction (Cont. 23-009S) (MWRA Project No. WRA-P14-10-3-1427).
Sewer System Rehabilitation was performed within Sewer Subsections 1-12 / 17 and included sewer manhole sealing/restoration, sewer pipe testing and sealing, CIPP lining and joint testing/sealing. Project work is complete.

Reporting Period Activity: I/I Study project work is complete (MWRA Project No. WRA-P11-10-1-1163). Project work included: (1) development of the flow metering program, including meter and gauge placement; (2) flow meters being placed into the community system in March/April 2021 (flow meters were removed in June 2021); (3) sewer manhole inspections; and (4) flow meter data analysis. I/I Report / Recommendations completed June 2022.

Flow Isolation and CCTV Inspection Program work complete (MWRA Project No. WRA-P11-10-2-1188). Field work was completed in June 2022 and included flow isolation of approximately 112,000 LF of gravity sewer within priority Canton sewer Sub-areas 7 / 16 / 18 / 22 / 24 / 27 and CCTV inspection of approximately 23,000 LF of gravity sewer. Summary Report recommendations completed December 2022. In March 2023, Town completed audit/review of 2020-2021 CCTV video (performed by Town CCTV vehicle) to determine condition assessment and PACP rating of pipe segments viewed. The results

of the work will be incorporated into the FY21 Asset Management project work and will be evaluated further for potential I/I rehabilitation work.

Extension of the existing collection system made over the past year: 4250LF of 8-inch sewer at Stillwater Estates.

MWRA I/I Local Financial Assistance Program: The community has financed nine (9) I/I reduction projects through the Authority's funding assistance program. Of the $7,565,900 allotted through the Program's Phases 1 - 14, the community has $3,101,650 remaining in funding assistance.

11. CHELSEA: North System

Background Information:

- Miles of Sewer: 42
- Sewered Population: 40,787
- Three Year (CY20 - CY23) Annual Average I/I: 3.18 mgd
- MassDEP Administrative Actions since 2010: NON #00004520 – May 10, 2018 Failed to submit I/I Analysis due 12/31/17.
- EPA Clean Water Act Administrative Order: EPA Docket No. 09-008 (March 2009)

Chelsea is one of MWRA's five combined sewer service communities (Boston North, Brookline, Cambridge, Chelsea and Somerville). Portions of Chelsea are impacted by projects under MWRA's CSO Control Plan.

Latest I/I or SSES Report: City-Wide Sewer Separation Master Plan (April 2020)
Broadway Sewer Separation [Preliminary Design Report] (December 2020)
Stormwater Management Plan (SWMP) 2021 (June 2021)
Chelsea Stormwater Outfall Monitoring Report (January 2023)

Private Source Inflow Removal Program: The City began collecting Sewer Bank fees for redevelopment projects in CY13. Local I/I Mitigation Fees are assessed for new developments and redevelopment projects at a rate of $10.30/gpd. The City has also undertaken a move toward the implementation of Green vs. Gray infrastructure to reduce the amount of stormwater discharged to its combined sewers. Efforts to date have included requiring all redevelopment projects to utilize Low Impact Development and retain/infiltrate stormwater onsite, along with incorporating green infrastructure into municipal projects (e.g., the Rain Garden at the Mace Housing Complex).
I/I Rehabilitation Projects in Design or Construction: Final design of utility and road improvements for Downtown Broadway Utilities Project (CHE-004 Sewer Separation) was completed and construction began June 2024. This project includes comprehensive sewer and drain reconstruction, including sewer separation. This would result in an estimated annual average inflow removal of 0.02 mgd. Construction completion is estimated for Spring 2026.

Final design of utility and road improvements for Central Avenue, Willow Street and Watts Street is complete (Contract No. 2022-303 / MWRA Project No. WRA-P11-11-3-1175). Project work includes sewer improvements to remove inflow and drain construction that will reduce localized flooding. Central Avenue work included installation of 729 LF of new 30-inch storm drain with new affiliated manholes and laterals for catch basin connectivity (30-inch reinforced concrete pipe installation is nearing completion). Additional installation of 299 LF of new 12-inch PVC storm drain from Willow Street to Highland Street with two new catch basins and new drain manhole. Willow Street work included installation of 182 LF of new 18-inch storm drain, 101 LF of new 10-inch storm drain, 129 LF of new 12-inch storm drain, and 26 LF of new 12-inch sanitary main, with connections to existing and new catch basins/manholes. Watts Street work included installation of 311 LF of new 12-inch storm drain and 33 LF of new 10-inch storm drain with affiliated connections to new manholes and catch basins. This would result in an estimated annual average inflow removal of 0.012 mgd. Construction on this project began June 2022 and is scheduled to complete September 2024.

In August 2021, funds ($1,630,000) were distributed to support the Central Avenue, Willow Street and Watts Street Utility Improvement Project (MWRA Project No. WRA-P11-11-3-1175). In March 2024, funds ($1,750,000) were distributed for the following project: Downtown Broadway Utility Improvements Project. (MWRA Project # WRA-P14-11-3-1429). Project is ongoing.

Reporting Period Activity: The Willow Street/Watts Street/Central Avenue Utility, Road, And Traffic Improvements project is nearing completion and will remove significant inflow volumes and peaks, estimated at

(1) Design Storm peak hour inflow rate reduction:	2.43 MGD
(2) Design storm inflow volume reduction:	0.39 MG
(3) Average Annual inflow reduction:	4.30 MG
(4) Average Annual inflow reduction:	0.012 MGD

MWRA I/I Local Financial Assistance Program: The community has financed fifteen (16) I/I reduction projects through the Authority's funding assistance program. Of the $13,510,100 allotted through the Program's Phases 1 - 14, the community has $0 remaining in funding assistance.

12. DEDHAM: South System

Background Information:

- Miles of Sewer: 89
- Sewered Population: 24,507
- Three Year (CY20 - CY23) Annual Average I/I: 1.92 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report:
2020 Sewer Manhole Investigations (August 2020)
2021 Sewer Manhole Investigations (August 2021)
2022 Sewer Manhole Investigations (October 2023)
2023 Sewer Manhole Investigations (Ongoing)
2022 Town-Wide Flow Monitoring (November 2022)
2023 Sewer Manhole Investigations (August 2023)
2024 Sewer Manhole Investigations (Ongoing)

Private Source Inflow Removal Program: The Town has finalized a Private Infiltration Removal Policy that will allow the community to use its Sewer Enterprise Fund to locate and eliminate infiltration observed in private property sewer laterals. The Town adopted a Sewer System Enterprise Fund at its May 2009 Town Meeting. A Municipal Buildings Inspection Program was undertaken to identify inflow sources. Inspections identified approximately 78,231 gpd of peak inflow. The Town removed the 78,231 gpd of peak inflow during CY15-23.

In FY24 the Town was working with property owners on a private way to disconnect 3 private catch basins that were directly connected to the Town's sewer system. Through a Notice To Correct, the property owners retained the services of a professional engineer to design the disconnection of these catch basins. The catch basins were disconnected in September 2023 by a contractor hired by the property owners and inspected by the Town. It is estimated that the Town was able to remove approximately 430,000 GPD of peak storm inflow from the Town's sewer system.

The Town, as part of the 2021 Private Infiltration Removal & Investigations Contract (from 04/21/21 to 12/31/21) (MWRA Project No. WRA-P11-12-3-1166), has completed the installation of approximately 190 LF of CIP lateral liners for seven (7) residential properties and open cut point repairs for two (2) residential properties identified as having infiltration from previous wet weather inspections. The project was estimated to have removed approximately 50,000 gpd of infiltration.

Smoke testing was conducted within approximately 140,000 LF of sewer to identify potential inflow sources. Testing results detected 27 inflow sources contributing approximately 78,231 gpd of peak design storm inflow. Of the 27 defects identified, six (6) were located within the Town's ROW and have been rehabilitated by the Town forces.

A Private Building Inspection was conducted within three of the Town's seven precincts. This program was promoted throughout the community as voluntary. The Town provided penalty amnesty to all residents/commercial property owners who participated. There were 3581 locations within the three precincts. Only 1510 property owners (42%) permitted inspections. Of the 1510 inspections performed, fifty-eight (58) direct and one (1) indirect inflow sources were observed (contributing 418,951 gpd of estimated peak inflow). These sources consisted of thirty-seven (37) sump pumps, one (1) floor drain, nine (9) interior open cleanouts, four (4) exterior open cleanouts, five (5) direct driveway drains, one (1) indirect driveway drain and one (1) roof leader. Due to low program participation, the Town is not going to perform private building inspections within the remaining four precincts at this time. House-to-house inspections still remain on hold for the foreseeable future.

I/I Rehabilitation Projects in Design or Construction: The Town, as part of the last contract extension year for the 2021 Sewer On-Call Services Contract (from 1/1/23 to 12/31/23), has completed the installation of approximately 4,400 linear feet of CIPP long liners, approximately 9 linear feet of CIPP short liners, approximately 915 vertical feet of sewer manholes cementitious lined and exterior grouted. The work also consisted of completing the chemical root treatment of approximately 13,000 linear feet of sewer main. The cost associated with all the sewer rehabilitation performed in 2021 was approximately $360,000. This project was designed to remove an estimated 108,000 GPD of infiltration.
The Town is also nearing completion of its annual sewer system inspection program under its new 2024 Sewer On-Call Services Contract. The Town also retained the service of Weston & Sampson to conduct top-side manhole inspection for several of our sewer sub-basins. The Town plans to utilize this data, along with our previous year's backlog work to perform additional rehabilitation on the most cost-effective sewer lines/manholes in 2024 utilizing our on-call rehabilitation contract.

The Town, as part of the 2022 Private Infiltration Removal & Investigations Contract (from 06/06/22 to 12/31/22), has completed the installation of approximately 320 LF of CIP lateral liners for nine (9) residential properties identified as having infiltration from previous wet weather inspections. The project was estimated to have removed approximately 12,500 gpd of infiltration.

The Town, as part of the first contract extension year for the 2021 Sewer On-Call Services Contract (from 1/1/22 to 12/31/22), has completed the chemical root treatment of approximately 20,000 LF of sewer main and 26 sewer manholes.

The Town, as part of the 2021 Sewer On-Call Services Contract (from 1/1/21 to 12/31/21) (MWRA Project Nos. WRA-P11-12-3-1130/1166), has completed the installation of approximately 4600 LF of CIPP, 10 LF of short liners and 620 VF of manhole exterior grouting and interior cementitious lining. The project was estimated to have removed approximately 62,000 gpd of infiltration.

Also, as part of the 2020 Sewer Rehabilitation On-Call Services Project (MWRA Project No. WRA-P11-12-3-1130/1166), the Town completed the installation of 13,000 LF of CIPP lining, 150 LF of short liners and 1500 VF of manhole exterior grouting and interior cementitious lining. The project was estimated to have removed approximately 142,000 gpd of infiltration.

The Town issued an Order To Correct to Nobles & Greenough School to remove observed infiltration associated with their annual wet weather inspections of the private sewer system that connects to the Town's municipal sewer system. Nobles & Greenough worked with the Town and its current 2020 Sewer On-Call Services Contract to install approximately 1900 LF of CIPP and 63 VF of manhole exterior grouting and interior cementitious lining. The project was estimated to have removed approximately 21,000 gpd of infiltration.

The Town is also nearing completion of its annual sewer system inspection program under its existing 2021 Sewer On-Call Services Contract. The Town consultant conducted top-side manhole inspections within several sewer sub-basins. The Town plans to utilize this data, along with our previous year's backlog work, to perform additional rehabilitation on the most cost-effective sewer lines/ manholes in 2023, utilizing the Town's on-call rehabilitation contract.

Starting in March 2022, the Town began cleaning and inspecting approximately 115,000 LF of sewer main and 58 private laterals that showed signs of infiltration during their mainline inspections and performing top-side manhole inspection of approximately 800 manholes.

Reporting Period Activity: In November 2023, funds ($1,180,000) were distributed for the I/I Identification & Rehabilitation project (MWRA Project No. WRA-P14-12-3-1421). Project work is ongoing. Details of this project are included in Attachment 4. Approximately 310 LF of sewer main extensions were installed throughout the Town by private developers. Upon completion of the private projects, the Town took ownership of the sewer mains.

MWRA I/I Local Financial Assistance Program: The community has financed nineteen (19) I/I reduction projects through the Authority's funding assistance program. Of the $10,400,000 allotted through the Program's Phases 1 - 14, the community has $1,160,000 remaining in funding assistance.

13. EVERETT: North System

Background Information:

- Miles of Sewer: 72
- Sewered Population: 49,075
- Three Year (CY20 - CY23) Annual Average I/I: 1.89 mgd
- MassDEP Administrative Actions Since 2010: None
- EPA Clean Water Act Administrative Order: EPA Docket No. 09-026 (August 2009)

Latest I/I or SSES Report: EPA Administrative Order Compliance Report (January 2017)
Lower Broadway I/I Investigation (November 2018)
2018 Sewer I/I Investigation (December 2018)

Private Source Inflow Removal Program: A Sewer and Drain Ordinance was adopted in Fall 2018. To date, the City has collected fees from developments totaling approximately $1.65 million. Fees are used to fund future I/I identification/removal projects.

I/I Rehabilitation Projects in Design or Construction: In June 2022, funds ($2,550,200) were distributed for the Paris Street Sewer Separation Project (MWRA Project No. WRA-P11-13-3-1192). The objective of this project is to disconnect catch basins connected to the sewer system and install new drain infrastructure in the Paris Street area, in order to remove sewer system inflow. The construction design is based the 'Draft Evaluation Memo - Inflow/Infiltration Project Approach' report (dated October 2015). Construction work was delayed but began January 2024.

Reporting Period Activity: The Village I/I Rehabilitation Project (MWRA Project No. WRA-P11-13-3-1162) covers I/I rehabilitation in the Village and Main Street areas in order to reduce I/I sources and repair sewer defects. Construction rehabilitation work includes: CIPP lining, lateral grouting, dig and replace sewer rehabilitation, manhole rehabilitation and point repairs. Approximately 0.14 mgd of peak infiltration and 0.11 mgd of peak inflow is anticipated to be removed.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $15,251,500 allotted through the Program's Phases 1 - 14, the community has $3,640,000 remaining in funding assistance.

14. FRAMINGHAM: South System

Background Information:

- Miles of Sewer: 231
- Sewered Population: 69,727
- Three Year (CY20 - CY23) Annual Average I/I: 2.99 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: Citywide I/I Study / SSES Phase 1 / CWMP (December 2005); SSES Phase 2 (March 2006); SSES Phase III (November 2006); SSES Phase IV / V (2010); Blackberry Lane SSES (Complete); SSES Phase VI (September 2021); SSES Phase VII (Spring 2024)

Private Source Inflow Removal Program: The City's capital improvements plan now includes multiple phases of inflow removal projects. The first phase was financed in the FY17 budget cycle. The City is currently developing capital projects that will incorporate the removal of the illicit connections identified during the field reconnaissance efforts of the SSES programs. The capital project program will include the redirection of illicit flows as well as the extension of storm drain systems to remove flow from the sewer system. During this year's capital project development cycle, the City will determine the proposed rehabilitation areas and improvements required in order to further refine the costs and timing of the actual inflow removal projects.

The City has submitted an updated inflow removal scope of work and schedule to MassDEP for their review and approval. The plan includes working with City government to develop and initiate a program for sump pump and other inflow source (i.e., roof and area drains) removal. This work was included as part of the FY20 capital budget request for the City's Phase 6 SSES project. The Phase 6 SSES FY20 appropriation was approved by the City Council in June 2019.

The Phase 6 SSES (MWRA Project No. WRA-P11-14-1-1149) began in July 2019. Initial study work included performing 58 dye tests of suspect inflow sources and undertaking flow/rainfall/groundwater monitoring from March 16, 2020 to June 8, 2020 within fifteen (15) subcatchments of the Phase 6 SSES tributary area. Phase 6 manhole inspections (700 total) were completed in April 2021. Flow isolation and CCTV inspection work (20,000 LF) was completed in May 2021. Smoke testing (49,700 LF) was completed September 2021. A project summary memorandum has been completed.

From the Phase 6 SSES findings, design contract documents were developed for the Private Inflow Removal Pilot Project. The project is currently awaiting approval for bidding from the City's administration This Pilot Project calls for the removal of sump pumps at six (6) locations. These locations have been visually observed to be connected to the sewer.

Phase 7 SSES smoke testing and any necessary dye testing took place in the fall of 2023. Phase 7 is now complete and a report was submitted to the city during the spring of 2024. The private inflow source removal did not make any progress over the last year. FY26 capital planning will begin shortly and the private inflow source removal will be looked at for submission of a FY26 funding request and an approach on how to remove these sources.

I/I Rehabilitation Projects in Design or Construction: The Union Avenue & Pearl Street Sewer System Rehabilitation Project (Contract PW-407 / MWRA Project No. WRA-P11-14-3-1148) is complete. Project work included replacement of 650 LF of 8-inch sewer main; replacement of 250 LF of 10-inch sewer main; installation of 575 LF of 10-inch CIP sewer main liner; installation of 575 LF of 12-inch CIP sewer main liner; replacement of 800 LF of sewer service laterals; and replacement of 11 sewer manholes. The limits of the project area were Union Avenue (between Proctor Street and Beech Street) and Pearl Street (between Lincoln Street and Franklin Street).

The Worcester Road Wastewater Infrastructure Improvements Project: Phase II Design - Westbound (MWRA Project No. WRA-P11-14-3-1113) is ongoing. Phase II of the project is located along the westbound side of Worcester Road (adjacent to the Natick border). The Phase II final design phase involves the installation of approximately 1950 LF of new gravity sewer piping along Concord Street and Worcester Road.

The Worcester Road Wastewater Infrastructure Improvements Project: Phase III Design - North-South Sewer Connector (MWRA Project No. WRA-P11-14-3-1113) is ongoing. Phase III of the project is located along a cross-country alignment off

Worcester Road, adjacent to the Natick border, from the Burr Street Extension to Cochituate Road. The Phase III final design phase involves the installation of approximately 4200 LF of new gravity sewer piping along this cross-country alignment.

The Worcester Road Wastewater Infrastructure Improvements Project: Phase I - Eastbound (Contract PW-402 / MWRA Project Nos. WRA-P11-14-3-1112/1113) is complete. Project work included contracted wastewater infrastructure replacement along Worcester Road. Phase I work was located along the eastbound side of Worcester Road (Concord Street to Natick Town Line) and included residential work along Pierce Street and Dinsmore Avenue. Project work included installation of 600 LF of 8-inch PVC and DI gravity sewer piping; installation of 930 LF of 10-inch PVC gravity sewer piping; installation of 710 LF of 12-inch PVC gravity sewer piping; installation of 6-inch PVC gravity sewer piping for sewer service connections; installation of 12 sewer manholes; and cleaning and CCTV inspection of 5820 LF of storm drain.

The Sewer Defects Repairs (Phase 2) Project (Contracts PW-375 & 379 / MWRA Project No. WRA-P11-14-3-1102) is complete. Project work included contracted sewer main/manhole rehabilitation and replacement throughout the City. Phase 1 repairs (implemented in late 2017) corrected defects at and south of Waverly Street. Phase 2 addressed repairs between Worcester Road (Route 9) and Waverly Street to the southerly City limits and in the vicinity of Concord Street to the City limits in East Framingham. Project work included cleaning and CCTV inspection of 55,000 LF of sewer main; root treatment of 3000 LF of sewer main; testing and sealing of 140 sewer main joints; CIPP spot repairs within 150 LF of sewer main; CIP lining of 18,621 LF of sewer main; lining 90 LF of sewer service connections; lining 976 VF of sewer manholes; performing 50 spot sewer manhole repairs; rebuilding 10 sewer manhole inverts; and flow isolating 6175 LF of sewer main.

The Union Avenue Area Sewer Improvements (Contract 2) Evergreen Street Sewer Rehabilitation Project (Contract PW-369 / MWRA Project No. WRA-P11-14-3-1101) is complete. Project work included contracted sewer main/manhole rehabilitation and replacement in the Union Avenue area. Project work included replacement of approximately 1550 LF of 8-inch VC sewer main; replacement of approximately 375 LF of sewer service laterals; CIP lining of approximately 475 LF of 8-inch VC sewer main; and replacement of approximately 11 sewer manholes. The project's work area included: Evergreen Street / Learned Street / Myrtle Street / Thurber Street / Lincoln Street.

Reporting Period Activity: City Operations staff performed 454 LF of sewer main replacements at three (3) locations. City Operations staff / on-call service providers also installed 4,815 LF of CIPP linings (at 8 locations) and rehabilitated 23 sewer manholes.
MWRA I/I Local Financial Assistance Program: The community has financed nineteen (19) I/I reduction projects through the Authority's funding assistance program. Of the $23,045,000 allotted through the Program's Phases 1 - 14, the community has $9,374,000 remaining in funding assistance.

15. HINGHAM: South System

Background Information:
- Miles of Sewer: 33
- Sewered Population: 8,128
- Three Year (CY20 - CY23) Annual Average I/I: 0.74 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report:
Annual I/I Program (FY18) Year 2 Evaluation (December 2018)
Annual I/I Program (FY19) Year 3 Evaluation (August 2019)
Annual I/I Program (FY23) Year 2&3 Evaluation (2022)
Annual I/I Program Year 4 Evaluation (Ongoing)

Private Source Inflow Removal Program: The house-to-house sump pump inspection and roof leader disconnection programs were limited due to ongoing COVID-19 restrictions. Through CY17-21, approximately 500 homes were inspected for sump pumps. During FY23, two (2) sump pumps on Shute Avenue were identified as being connected to the sanitary system. These sump pumps have been removed.

I/I Rehabilitation Projects in Design or Construction: FY23 On Call Sewer Services Contract 2, Work Order 1 included the following: 1,417 linear feet of CIPP, one lateral liner, 1,117 linear feet of mainline grouting, grouting of six laterals, two short liners, and cementitious lining of 12 manholes. Approximately 8,064 gpd of peak removable infiltration.
FY23 On-Call Sewer Services Contract 2, Work Order 2 included the following: 2,194 linear feet of CIPP and three lateral liners. Approximately 9,288 gpd of peak removable infiltration.
Year 4 of the Annual I/I investigation program began in May 2024. Field investigation is complete, and reporting is currently ongoing. The project area included sewer subarea 2.
Repaired the Malcolm Street Pump Station wet well where a source of infiltration was identified. Approximately 7,200 gpd of peak removable infiltration.

Reporting Period Activity: Replaced Malcolm Street Pump Station control panel and pumps. Mill Street Pump Station wet well liner replacement was performed. New control panel at Greenbush Pump Station was installed. One new pump installed and two existing pumps rehabilitated at Broad Cove Pump Station. Wet well aerators installed at Lewis Court Pump Station and Mill Street Pump Station. New sewer manhole installed at rear of 123 Nokomis Road.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $3,202,500 allotted through the Program's Phases 1 - 14, the community has $390,000 remaining in funding assistance.

16. HOLBROOK: South System

Background Information:

- Miles of Sewer: 49
- Sewered Population: 10,359
- Three Year (CY20 - CY23) Annual Average I/I: 0.45 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: CWSRF No. 2919 Contract No. 1 (October 2009)

Private Source Inflow Removal Program: House-to-House inspections continue. All new home construction is inspected by DPW personnel and the Town Plumbing Inspector. During this reporting period, nine (9) home inspections were completed during water meter replacements. No private inflow was discovered. New development requires a $12 per gallon mitigation payment on all flow added. The mitigation funds collected are used to finance the Town's I/I identification & rehabilitation program.

I/I Rehabilitation Projects in Design or Construction: The Annual I/I Control Plan (Year 1) (MWRA Project No. WRA-P11-16-3-1193) is ongoing. Project work includes I/I identification planning, investigation and reporting: (1) Designing and developing a work plan that outlines the I/I metering program to collect wastewater flow, rainfall and groundwater data; (2) Installing, calibrating, maintaining and monitoring field instrumentation equipment. The quantity of the instrumentation and duration of their installation shall be based upon the MassDEP I/I Analysis Guidelines. The field program was installed for ten (10) weeks and was implemented Town-wide in approximately eleven (11) sewer subareas. A field investigation data summary was provided by the subcontractor. Project work will also include a Town-wide groundwater analysis to identify high groundwater/low elevation areas that may contribute private inflow and a limited sewer manhole inspection program (approximately 200 manhole inspections); (3) Quantitative analysis of data collected from the flow metering and field investigation program and included quantifying the rate of infiltration and volume of inflow into each of the metered sewer subareas; and (4) Developing a report and recommendations from the results of the overall I/I study. The report will include recommendations for further field investigations to isolate and identify specific I/I sources. Project work to date: Manhole Inspections (200 total): Complete March 2023; Town-wide Groundwater Analysis: Complete June 2023; Town-wide Flow Monitoring (10 weeks): April-June 2023; Analysis and Reporting: Complete by September 2023.

The Annual I/I Control Plan (Year 2) (MWRA Project No. WRA-P11-16-3-1193) is scheduled to be performed February 2024 - December 2024. Spring 2024 project work includes: Manhole Inspections (750 total), CCTV Inspection (22,000 LF), Flow Isolation (22,000 LF), Smoke Testing (22,000 LF) and Dyed Water Testing with CCTV Inspection.

Reporting Period Activity: No new reporting for FY24. In FY23, three (3) new single family homes connected from the previous year extension/sub-divisions. No sewer extensions done in the past year. In FY22, approximately 800 LF of 8-inch sewer was added to the community system via a new subdivision off South Street. Approximately 1500 LF of 8-inch sewer was added to the community system via a new subdivision off South Franklin Street.

MWRA I/I Local Financial Assistance Program: The community has financed three (3) I/I reduction projects through the Authority's funding assistance program. Of the $3,149,600 allotted through the Program's Phases 1 - 14, the community has $1,800,000 remaining in funding assistance.

17. LEXINGTON: North System

Background Information:
- Miles of Sewer: 171
- Sewered Population: 33,856
- Three Year (CY20 - CY23) Annual Average I/I: 3.38 mgd
- MassDEP Administrative Actions since 2010: ACO-NE-11-015 (July 2011)
- EPA Clean Water Act Administrative Order: EPA Docket No. 11-015 (July 2011)

Latest I/I or SSES Reports: Town-Wide Flow Metering (November 2019)
SSES Phase 10: Sewer Basin 10 (January 2020)
SSES Phase 11: Sewer Basin 09 (March 2021)
SSES Phase 12: Sewer Basin 02 (November 2021)
SSES Phase 13: Sewer Basins 04 & 14 (March 2023)
SSES Phase 14: Sewer Basin 03 (February 2024)
SSES Phase 15: Sewer Basin 08 (Ongoing)

Private Source Inflow Removal Program: The Town is using the February 2012 *Lexington Sewer Use Code Review* to update their current regulations to incorporate a sewer bank or other funding options. A private inflow identification program based on the February 2012 Private Inflow Removal Program Letter Report is currently on hold.

I/I Rehabilitation Projects in Design or Construction: The Phase 9 Sewer System Improvements project started in July 2023 and most of the work has been completed by November 2023. This project's goal is to remove I/I primarily in Sewer Basin 13 (approx. 80,000 gpd). Warranty inspection and retest still needs to be scheduled and should be complete by the end of Spring 2025.
The Phase 10 Sewer System Improvements project is currently in the design phase and likely will go out to bid late summer/early fall 2024. This project's goal is to remove I/I primarily in Sewer Basin 10 (approx. 64,000 gpd).

The Phase 8 Sewer System Improvements construction began March 2022. Project work, including Warranty Inspection, was complete May 2023. The project's goal was to remove I/I sources primarily within Sewer Basin 11. The Sewer System Evaluation Survey for Sewer Basin 09 (Phase 11) was completed in March 2021. The project identified approximately 35,000 gpd of cost-effective removable peak I/I within 55,000 LF of sewer main.

Reporting Period Activity: The Sewer System Evaluation Survey for Sewer Basin 03 (Phase 14) was completed February 2024. The Sewer System Evaluation Survey for Sewer Basins 04 & 14 (Phase 13) was completed in March 2023. New sewer services were installed at 17 locations.

MWRA I/I Local Financial Assistance Program: The community has financed fourteen (14) I/I reduction projects through the Authority's funding assistance program. Of the $13,715,300 allotted through the Program's Phases 1 - 14, the community has $1,560,000 remaining in funding assistance.

18. MALDEN: North System

Background Information:
- Miles of Sewer: 100
- Sewered Population: 65,969
- Three Year (CY20 - CY23) Annual Average I/I: 3.09 mgd
- MassDEP Administrative Actions: NON #00004556 - May 9, 2018 (Failed to submit I/I Analysis due 12/31/17)
- EPA Clean Water Act Administrative Order: EPA Docket No. 09-002 (January 2009)

Latest I/I or SSES Report: Hydraulic Model and Capacity Assessment Final Report (December 2012)
Phase IV I/I Assessment Program (April 2020)

Private Source Inflow Removal Program: The City is planning to perform a community-wide smoke testing program to identify roof runoff connections and other illicit discharges. The City's DPW Commission voted to approve a revised Water & Sewer Fee Schedule on October 9, 2018. This revised schedule includes a new sewer connection fee of $500 plus an I/I fee of $8.50/gpd for new connections with a design flow over 15,000 gpd.

I/I Rehabilitation Projects in Design or Construction: Preparing plans and specs for year 3 and year 4 of the 5 year I/I removal plan.
Contract 2022-S-1 was bid August 2022, as part of the City's 2022 Sewer Lining Program. The City has compiled a list of approximately 28,000 LF of sewer lines that will be initially cleaned and CCTV inspected. As the CCTV tapes are completed, the City will review the tapes and select the sewer mains to be CIPP lined. For bidding purposes, the City anticipates approximately 19,000 LF of sewer main will be CIPP lined. The City has completed a five-year plan of sewer collection system rehabilitation contracts based on study results and recommendations.

Reporting Period Activity: In June 2021, MWRA funds ($1,084,000) were distributed to continue the City-Wide SSES and Sewer Improvements - Design / Construction Projects (MWRA Project No. WRA-P11-18-3-1174).

MWRA I/I Local Financial Assistance Program: The community has financed seven (7) I/I reduction projects through the Authority's funding assistance program. Of the $23,373,900 allotted through the Program's Phases 1 - 14, the community has $16,648,000 remaining in funding assistance.

19. MEDFORD: North System

Background Information:
- Miles of Sewer: 120
- Sewered Population: 59,624
- Three Year (CY20 - CY23) Annual Average I/I: 3.17 mgd
- MassDEP Administrative Actions Since 2010: None
- EPA Clean Water Act Administrative Order: EPA Docket No. 09-027 (August 2009)

Latest I/I or SSES Report: IICP Update Phase 1 (February 2021)
James Street & Swan Street SSES (February 2022)
Mini-System A & G SSES Phase II (May 2024)

Private Source Inflow Removal Program: Suspected inflow locations were found during Phase 1 inspections. Two (2) additional locations found in FY22/23. Removal plans are to be developed.

I/I Rehabilitation Projects in Design or Construction: The Mini-System P Sewer Rehabilitation project is substantially complete. Mini-System P Sewer Rehabilitation CIPP lining work is approximately 50% complete. A City-wide sewer rehabilitation design contract started June 2024 and is ongoing.

Reporting Period Activity: Vassar Street Sewer Relay was completed April 2024 with approximately 90 LF of clay replaced with PVC. Sycamore Avenue Sewer Relay was completed February 2024 with approximately 650 LF of clay replaced with PVC.

MWRA I/I Local Financial Assistance Program: The community has financed nine (9) I/I reduction projects through the Authority's funding assistance program. Of the $22,077,600 allotted through the Program's Phases 1 - 14, the community has $14,116,000 remaining in funding assistance.

20. MELROSE: North System

Background Information:
- Miles of Sewer: 75
- Sewered Population: 29,784
- Three Year (CY20 – CY23) Annual Average I/I: 1.90 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: 2019 Phase 2 SSES Summary Report (Spring 2021)
2020 Phase 3 SSES Summary Report (Summer 2021)
2022 Sewer Manhole Frame and Cover Replacement Project (Spring 2022)
2023 Sewer Rehabilitation Project – Sewer Manhole Lining (Spring 2023)
2024 Sewer Rehabilitation Project – CIPP Lining Design & Bidding (Summer/Fall 2023)
2024 Sewer Rehabilitation Project – CIPP Lining Construction (Summer 2024)

Private Source Inflow Removal Program: Smoke testing was performed in the six (6) subareas where investigations were done as part of the 2020 SSES - Phase 3 (MWRA Project No. WRA-P11-20-3-1137). All findings from SSES Phases 1-3 will be investigated in the near term. The City, as part of its water main replacement projects, continued performing basement inspections for illicit connections.

I/I Rehabilitation Projects in Design or Construction: Sewer Rehabilitation Design Project (MWRA Project No: WRA-P14-20-3-1414) began Spring 2023. The City bid the 2024 CIPP Lining project and the contract was awarded to Green Mountain Pipeline for $1,365,250. Construction of pipeline improvements began in June 2024 and will continue through the summer. The project is partially funded through the MWRA I/I Local Financial Assistance Program, Phases 12 and 14. Additional funds (as needed) will be paid from the City's I/I mitigation fee fund.

The 2023 Sewer Replacement Project (Sewer Manhole Lining) was completed June 2023. The project included the grouting of leaks and cementitious lining of forty-four (44) sewer manholes. The average I/I removal for the project was approximately 0.03 mgd.

The 2020 Sewer Rehabilitation Project (CIPP Lining) was completed in May 2021. Post-construction flow isolation was completed in Spring 2022. The I/I removal was approximately 0.07 mgd or an approximate 84% infiltration reduction based on the pre-construction flow isolation estimates. Approximately 6100 LF of 6 to 12-inch sewer main received root treatment. Approximately 21,000 LF of CIPP liners were installed in 6 to 20-inch sewer mains.

The City also commenced with the removal and replacement of sewer manhole frames and covers that were identified with multiple holes in their manhole covers during the SSES Phases 1-3 projects (2022 Sewer Manhole Frame and Covers Replacement Project). To date, eighty (80) manhole frames and covers have been replaced.

Reporting Period Activity: During FY24, the City collected $94,773 in I/I mitigation fees. The fees are stored in a dedicated fund and are only used for work related to I/I reduction. The sewer enterprise fund fully covered the costs of sewer system operations, maintenance, debt service and other expenses. The City maintains reserves equal to at least 10% of the operating budget.

Extensions of the Collection System: During FY24, 148 Myrtle St. converted a single family to a 5-unit multi-family residence, adding approximately 1540 gpd of wastewater flow.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $11,456,300 allotted through the Program's Phases 1 - 14, the community has $1,350,000 remaining in funding assistance.

21. MILTON: South System (Small Portion Tributary to the North System)

Background Information:

- Miles of Sewer: 98
- Sewered Population: 27,963
- Three Year (CY20 - CY23) Annual Average I/I: 2.25 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: CIP Program 1 Investigation (January 2020)
CIP Project 2 Investigation (January 2021)
CIP Project 3 Investigation (December 2021)
CY2022 Sewer Investigation (September 2022)
2022 Pump Station Evaluations (March 2023)

Private Source Inflow Removal Program: The Town is continuing to pursue the removal of sump pumps and other private inflow sources identified through a previously completed building inspection program. All new connections to the municipal sanitary sewer system will be charged a one-time I/I mitigation fee. Connection applicants must remove four gallons of I/I from the sewer system for each one gallon of new wastewater flow requested in the connection permit. If there are not sources of I/I that, at the discretion of the DPW Director, are appropriate for removal at the time of the permit, a monetary fee may be required (at a cost of $3.00 per gallon of flow per day to be removed).

Also, a building inspection is performed during the final water meter reading when a house is being sold. If the building inspection identifies an illegally connected sump pump, a fine is issued and the residence cannot be sold until the sump pump has been rerouted and inspected. Additionally, during the water meter replacement program, Town inspectors have been trained to identify sump pumps and note whether they are: (a) connected to the sewer, (b) daylighted to the outside, or (c) unknown. The Town's Engineering Department then performs follow-up inspections as needed.

I/I Rehabilitation Projects in Design or Construction: The CY2022 Sewer Investigation was completed Spring 2022 (MWRA Project No. WRA-P11-21-3-1178). Data review/reporting complete September 2022. The 2022 Pump Station Evaluations were complete March 2023.

Approximately 1150 LF of 2-inch HDPE low-pressure sewer was installed on Randolph Avenue as part of a sewer betterment plan to the area. Approximately 70 LF of 8-inch sewer was extended on Highland Street as part of a private property endeavor. The Highland Street extension was accepted by the Town in May 2022.

The Drain and Sewer Improvements Project (Milton Contract No. DS21-1) began in November 2021 and reached substantial completion in April 2022 (MWRA Project No. WRA-P11-21-3-1178). It is estimated this project removed 3168 gpd of infiltration through comprehensive sewer pipeline and manhole repairs.

CIP Project 3 Investigation was completed Spring 2021 (MWRA Project No. WRA-P11-21-3-1178). Data review and reporting complete December 2021. Approximately 34,128 gpd of peak infiltration was observed during television inspections and 10,224 gpd of peak infiltration and 7700 gpd of peak inflow was identified during manhole inspections.

Reporting Period Activity: The CY2024 Sewer Rehabilitations project is ongoing (MWRA Project No. WRA-P14-21-3-1417). This design incorporated three years of investigations (CIP 2 Investigation, CIP 3 Investigation, and CY2022 Sewer Investigation). The project rehabilitations are focused on CIPP and manhole cementitious lining. Pre-construction flow isolation was completed in Spring 2024. I/I removal will be estimated once post-construction flow isolation is completed.

MWRA I/I Local Financial Assistance Program: The community has financed twenty-four (24) I/I reduction projects through the Authority's funding assistance program. Of the $10,164,500 allotted through the Program's Phases 1 - 14, the community has $0 remaining in funding assistance.

22. NATICK: South System

Background Information:

- Miles of Sewer: 129
- Sewered Population: 32,803
- Three Year (CY20 - CY23) Annual Average I/I: 1.26 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: Town-Wide SSES (Ongoing)
I/I Study (Ongoing)

Private Source Inflow Removal Program: The Town-Wide SSES (MWRA Project No. WRA-P5-22-1-523) included a house-to-house inspection component. Home inspections are also conducted in conjunction with the water meter replacement program. The Town has prepared an informational handout on eliminating sump pump connections to the wastewater system, which is distributed to targeted/suspect areas of the community. Home inspections were suspended this year due to COVID-19 restrictions.

I/I Rehabilitation Projects in Design or Construction: Work on Contract No. S-162 (awarded to National Water Main Cleaning Co. Inc. in August 2020) has continued over the past year. Between July 1, 2023 and June 30, 2024 the following additional quantities of rehab work items have been completed: 22 service lateral and chimney repairs through a combination of excavated point repairs and CIPP installations, 1 emergency sewer chimney repair, and 1 collapsing sewer manhole removal and 320 lf of 10" CIPP lining. The Contract completion date has been extended to allow final paving work at point repair location and completion of SMH rehabilitation.
Peak infiltration removal at 100% contract completion is expected to be ±215,000 gpd, estimated based on review of the inspection reports for the structures being worked on. Inflow removal, using MassDEP's design storm characteristics (0.29 in/hr average rainfall intensity for 6-hr period) is conservatively estimated to be 48,000 gpd.

This project was approved with planned MWRA funding from Phase 10 ($969,000), Phase 11 ($1,250,000), and Phase 12 ($1,250,000). Money from Phases 10 and 11 has been distributed to the Town. An Application for Phase 12 funds is forthcoming to cover remaining project costs.

Reporting Period Activity: The Town has completed the purchase of the CCTV inspection vehicle (MWRA Project No. WRA-P9-22-1-966). Training on the equipment has been completed. The vehicle (with Town personnel) performed a portion of the above Natick Contract No. S-162 CCTV inspection work.

Extensions of the Collection System: (1) Fox Hill Drive (1386 LF of 8-inch sewer, 1 pump station, and 732 LF of 4-inch force main installed in previous years): For the reporting period there were no additional connections made. 16 sewer stubs remain for future connection. (2) McHugh Farms: The remaining 8 service connections were made in this development during the last year. This development is complete at this time. (3) Windy Lo (1246 lf of 8 inch sewer installed in previous years): As of June 30, 2024 and additional 3 sewer connections were made. (4) 21 Summer Street: Not an extension or modification to the collection system however this is a conversion from an old commercial building to a mixed use building with retail below and residential above. There will be 24 bedrooms within this facility and approximately 4400 square feet of retail space. There is one sewer connection for this building. The connection has been installed; however, occupancy has not been granted to this building as of this date so no associated flow at this point. (5) 69 East Central Street: Not an extension or modification to the collection system, however this is conversion from an old bank to a mixed use building with retail below and residential above. There will be 9,685 square feet of ground floor commercial space on the first floor. The remainder of the building will consist of 24 one-bedroom units and 6 two-bedroom units. There is one sewer connection for this building. As of this report, the sewer connection has not been installed and occupancy has not been granted as it is still in construction. (6) St. Benedict's School (89 Union Street) – This was a previously empty lot (farm) that will now house the St. Benedict Classical Academy. This school will have approximately 15 classrooms with a total student/teacher/administration population of 346. This will add an approximate 1,730 gallons per day (using 310 CMR). This project will consist of 432 LF of 8-inch PVC sewer and three manholes on site tying into the sewer main on Union Street. Future projects will include additional buildings as well as addition sewer manholes and pipe on-site. (7) Old St. Patrick's School Site (45 East Central Street): Not an extension or modification to the collection system; however the site is being converted from an old church school building and convent to a mixed use building with retail below and residential above as well as additional residential town house buildings (duplexes) on the lot. There will be approximately 15,000 square feet of ground floor retail/commercial space on the first floor. The reminder of the building as well as the four associated buildings on site will consist of 4 four-bedroom units, 9 three-bedroom units, 28 two-bedroom units and 13 one-bedroom units. There will be nine services to the sewer mains – 1 for the mixed-use building and eight individual services for the four other buildings. As of this report, the sewer connections have not been installed and no occupancy has been granted as the buildings are still under construction. (8) 7-11 Washington Street: Not an extension or modification to the collection system; however this lot is being converted from strictly retail/commercial to a mixed use building with approximately 4,500 square feet of retail below and 48 residential units above (8 two-bedroom units and 40 one-bedroom studios). There is one sewer connection for this building. As of this report, the sewer connection has not been installed into the building, although it has been installed off the roadway. Occupancy has not been granted as this project is still early in construction.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $10,522,600 allotted through the Program's Phases 1 - 14, the community has $3,690,000 remaining in funding assistance.

23. NEEDHAM: South System

Background Information:

- Miles of Sewer: 130
- Sewered Population: 30,757
- Three Year (CY20 - CY23) Annual Average I/I: 2.20 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: CCTV Inspection (2018)
Continuous Flow Monitoring (12 subareas) (Ongoing)

Private Source Inflow Removal Program: A private source identification program, using Town-owned CCTV inspection equipment, is ongoing. The Town continues to enforce 4:1 I/I removal prior to issuing occupancy permits. I/I mitigation funds forthcoming from the Muzi Ford property redevelopment (redevelopment of the site is delayed by the proponent pending

project funds). Boston Children's Hospital development under construction with sewer bank funds being deposited prior to Certificate of Occupancy.

I/I Rehabilitation Projects in Design or Construction: Nearing the completion of Phase I of 128 Sewer Interceptor upgrades which includes approximately lining 5,500 LF of 18-inch sewer and 4,000 LF of 21-inch sewer. No estimates are ready for I/I removal. Phase II of the Sewer Interceptor Design to be completed this Fall which will consist of constructing replacement sewer under the MBTA tracks a Valley Road likely for construction in 2025.
The proposed rehabilitation/replacement work will be undertaken in three phases. Phase 1a: Lining from Kendrick Street to the last manhole on I-95 (7300 LF); Phase 1b: Replacement from the last manhole on I-95 to Valley Road @ Norwich Road (2900 LF); Phase 1c: Lining from Valley Road @ Norwich Road to the Siphon (3400 LF); Future Phase 2: Replacement of the I-95 Shoulder Sewer (5400 LF); and Future Phase 3: Replacement from Kendrick Street to I-95 (2000 LF). Sewer rehabilitation designs are ongoing. Bid Documents for the sewer lining are being prepared.

The Town has performed an evaluation of the I-95 interceptor to assess influent flows and the condition of the interceptor. Site access improvements to the MWRA Sewer Interceptor at Route 128 were made. As part of this project, a large rock obstruction was removed from the sewer system. This obstruction was preventing CCTV inspection work from being performed. The remaining CCTV inspection work was subsequently completed and the interceptor sewer evaluation report was submitted in December 2021. The remaining portion of the sewer site access project involves rehabilitating a sewer manhole in the breakdown lane of Route 128 with a new frame and cover. Sewer manhole work in now complete.

2019 I/I Removal Construction Contract design completed Summer 2019. Project bid August 2019. Rehabilitation construction (Needham Contract No. 20DPW022C / MWRA Project No. WRA-P11-23-3-1128) was substantially complete in March 2020. Additional defects/infiltration areas were noted during the post-CCTV inspection and warranty inspection of the contract work. Three (3) additional sewer manholes were rehabilitated in August/September 2021. An estimated 0.47 mgd of peak infiltration was removed from the sanitary system upon contract completion.

Reporting Period Activity: Twelve meters (ten permanent and two portable area velocity flow modules) have been installed for continued I/I monitoring. The Lake Drive Sewer Pump Station Replacement Design & Construction Project bid process has been completed. Pump Station reconstruction work started this past Spring and is near completion (after substantial delays in deliveries of equipment and supplies).

Approximately 500 LF of sewer extension on Walker Lane was completed. The Town anticipates four homes to connect to the sewer extension. Three (3) properties have subsequently abandoned their septic systems and connected to the sewer. In addition, an existing 50-foot section of AC pipe was removed and replaced as part of the project.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $11,267,600 allotted through the Program's Phases 1 - 14, the community has $7,249,000 remaining in funding assistance.

24. NEWTON: North and South Systems

Background Information:

- Miles of Sewer: 284
- Sewered Population: 88,190
- Three Year (CY20 - CY23) Annual Average I/I: 7.42 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Reports:
CIP - Project 9 Inspection and Assessment (April 2020)
CIP Project 6 Flow Evaluation (November 2021)
CIP - Project 10 Inspection and Assessment (January 2022)
CIP - Project 11 Inspection and Assessment (December 2022)
CIP Project 7 Flow Evaluation (Ongoing)

Private Source Inflow Removal Program: No work undertaken during this reporting period.

I/I Rehabilitation Projects in Design or Construction: The CIP Project 7 post construction flow evaluation is being drafted. The estimated I/I removal is 165,051 gpd of peak infiltration, 71,784 gpd of peak rain-induced infiltration and 102,112 gpd of peak inflow.

The CIP Project 8 Rehabilitations are substantially complete (MWRA Project Nos. WRA-P11-24-3-1126 / 1158). Warranty inspections are complete and repairs are ongoing. The estimated I/I removal is 658,788 gpd of peak infiltration and 92,967 gpd of peak inflow.
CIP Project 9 – Phase I Rehabilitations are ongoing. I/I identified in the CIP Project 9 investigation area is planned for rehabilitation as part of a three (3) phased construction project. Phase II and Phase III Rehabilitations will begin upon completion of Phase I construction. The estimated I/I removal is 329,145 gpd of peak infiltration and 38,192 gpd of removable inflow.

CIP Project 11 Inspection and Assessment is complete and included investigating 106,266 LF of sewer and 740 manholes. CIP Project 10 Inspection and Assessment is complete and included investigating 121,166 LF of sewer and 714 manholes. CIP Project 9 Inspection and Assessment is complete and included investigating 132,489 LF of sewer and 852 sewer manholes. The estimated I/I removal is 329,145 gpd of peak infiltration and 38,192 gpd of peak inflow. CIP Project 8 Inspection and Assessment is complete and included investigating 138,354 LF of sewer and 854 sewer manholes. The estimated I/I removal is 658,788 gpd of peak infiltration and 92,967 gpd of peak inflow.

CIP Project 7 Rehabilitations are complete (MWRA Project No. WRA-P11-24-3-1126). The estimated I/I removal is 165,051 gpd of peak infiltration, 71,784 gpd of peak rain-induced infiltration and 102,112 gpd of peak inflow. CIP Project 6 Rehabilitations are complete. The estimated I/I removal is 299,399 gpd of peak infiltration, 64,224 gpd of peak rain-induced infiltration and 501,408 gpd of peak inflow.

Reporting Period Activity: The CIP Project 9 Sewer Rehabilitations and Oak Hill Park Area Sewer Replacement (MWRA Project No: WRA-P14-24-3-1408) is ongoing. CIP Project 9 is part of the City's 11 Year Sewer Capital Improvement Plan. The project area for CIP Project 9 includes Newton Subareas A001/ A002 / A003 / A010 / A011 / A013 / A015. The project area for the Oak Hill Park Area Sewer Replacement Project includes Newton Subarea A001. The objective is to design 'dig and replace' rehabilitations that will eliminate infiltration and inflow. Total project work will include: installing CIPP liners in approximately 35,000 LF of sewers; cementitious lining approximately 200 sewer manholes; installing structural CIPP liners in 11,175 LF of 6 to 12-inch diameter sewer main; sealing approximately 20 underdrain access ports; installing approximately 300 LF of short liners; and performing open cut point repairs on sewer lines at approximately 45 locations.

MWRA I/I Local Financial Assistance Program: The community has financed thirty-one (31) I/I reduction projects through the Authority's funding assistance program. The community has used its entire MWRA Phase 1 - 14 funding allocation ($39,277,400).

25. NORWOOD: South System

Background Information:
- Miles of Sewer: 108
- Sewered Population: 31,458
- Three Year (CY20 - CY23) Annual Average I/I: 3.44 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: I/I Assessment and GIS Tracking Program (2019)

Private Source Inflow Removal Program: As part of the Meadowbrook Area Sewer Inspection, ten (10) buildings were identified with various illicit connections and eleven (11) sources have been removed to date. Within the Hawes Brook sewer tributary area, eight (8) property owners have been notified to redirect sump pumps.

I/I Rehabilitation Projects in Design or Construction: The Airport Interceptor Sewer Manhole Replacement Project (Town of Norwood Contract No. NPW-23-01) was bid in August 2022 and is substantially complete. Project work included the full demolition and replacement of 16 sewer manholes situated along a cross-country right-of-way adjacent to the Norwood Memorial Airport. All manholes were raised above the 100 year flood elevation. Several connections to existing manholes from inactive pipes were eliminated. Project work also included additional CIPP lining of sewer main from Meadow Street and Fortune Drive.

Meadowbrook Priority Area 5 Rehabilitation Construction (MWRA Project No. WRA-P9-25-3-974 / Town Bid No. NPW-19-03) bid September 2018. Rehabilitation work is complete. Project work included CIPP lining of 7515 LF of sewer main, installation of 600 LF of 8-inch PVC sewer main, lining 38 sewer manholes and CIPP lining of 123 house service connections.

Area 3 and Area 4 Sewer Rehabilitation Project is complete. Rehabilitation work included CIPP lining 8245 LF of sewer main, CIPP lining of 217 service connections, manhole rehabilitation and installation of 605 LF of 8-inch PVC sewer main.

Reporting Period Activity: Design and permitting of the Airport Interceptor Sewer Manhole Replacement Project (Town of Norwood Contract No. NPW-23-01) is complete. Sewer manhole replacement project was bid August 2022 and completed Fall 2023.

MWRA I/I Local Financial Assistance Program: The community has financed twenty-one (21) I/I reduction projects through the Authority's funding assistance program. Of the $13,239,400 allotted through the Program's Phases 1 - 14, the community has $6,360,000 remaining in funding assistance.

26. QUINCY: South System

Background Information:

- Miles of Sewer: 209
- Sewered Population: 101,636
- Three Year (CY20 - CY23) Annual Average I/I: 4.53 mgd
- MassDEP Administrative Actions Since 2010: None
- EPA Administrative Actions: Consent Decree (June 2021)

Latest I/I or SSES Report: Fall 2018 Sewer Investigation (April 2019)
CMOM Self-Assessment Program (April 2019)
2020 SSES and Update Project (February 2020)
Supplemental SSES Report (November 2022)

Private Source Inflow Removal Program: The City has partnered with the Plumbing Inspector on its FOG Program. As part of this program, the inspector visits CV License Holders for Grease Trap Inspections. While inspecting for grease traps, the inspector also observes the property for illegal inflow connections. Although this program directly addresses FOG discharges, it has been successful in identifying direct private inflow sources for removal.

The City continues its opportunistic residential and business inspections to identify sump pumps and private drain infrastructure connected to the sewer system. The City's Storm Water Discharge Ordinance forbids non-sanitary connections. A new fee structure was made effective July 1, 2013. Part II, Chapter 270, Article II 270-5 of the City's Ordinance outlines penalties for illegal connections and discharges to the sanitary sewer system: https://ecode360.com/29090773. The fee structure remains in effect and has resulted in improvements to the system.

Developers contribute one percent of total project value to the City of Quincy Sewer and Drain Rehabilitation Fund (QSDRF). Additionally, as part of site plan review, the City is engaged in mitigation negotiations and requires I/I removal by applicants whose flow exceeds 15,000 gpd up to 4:1. Through June 30, 2024, the QSDRF had a balance of $3,211,736.22.

The City owns a CCTV sewer inspection vehicle. The vehicle provided significant input towards the development of the Coastal Structures I/I Evaluation & Identification Study. Also, many of the open cut and rehabilitation repairs on the Phase IIB Coastal Structures I/I Reduction Project were identified via the City's CCTV vehicle during I/I investigative efforts in the Houghs Neck area.

I/I Rehabilitation Projects in Design or Construction: The FY2024 Sewer & Drain Improvement Design Project (MWRA Project No. WRA-P14-26-2-1413) began Summer 2023. Project work is ongoing.

FY24 Sewer CIPP Project Contract 1 awarded in July 2023. Work includes 25,600 LF of CIPP lining for 8-inch, 10-inch, 12-inch, and 15-inch sewer pipe on Huckins Ave, Seaway Street, Mayflower Road, Winslow Road, Standish Carrigg Road, Billings Street, Newbury Ave, Kendall Street, East Squantum Street, Hollis Ave, Hodges Ave, Cummings Ave, West Squantum Street, Safford Street, Hayward Street, Vane Street, Holmes Street, Belmont Street, John Street, Farrington Street, Wilson Ave, Elliot Ave, Hamilton Ave, Taylor Street, Highland Ave, Fayette Street, Hobart Street, Chapman Street, Greenwood Ave, Woodbine Street, Brook Street, and North Central Ave. Work also includes manhole restoration, lining of various existing sewer laterals, and open cut spot repairs. The awarded price was $3,034,775.00. Project is anticipated to be substantially complete by January 2025.
FY24 Sewer CIPP Project Contract 2 awarded in July 2024. Work includes 43,450 LF of CIPP lining for 8-inch, 10-inch, and 12-inch sewer pipe on Parkhurst Street, Rock Island Road, Charles Street, Macy Street, Darrow Street, Hobomack Road, Norton Road, Chickatabut Road, Narragansett Road, Longwood Road, Algonquin Road, Sea Street, Moffat Road, Homer Road, Ford Street, Barbour Terrace, Palmer Street, Wilgus Road, Oakwood Road, Beebe Road, Lind Street, Broady Ave,

Empire Street, Brockton Ave, Northfield Ave, Bethel Terrace, Riverbank Road, Forbush Ave, Chesley Road, Gertrude Ave, Grace Road, Bowes Ave, Northfield Ave, Rhude Street, Adams Street, Quarterdeck Road, Sargent Street, Howe Street, Hodgkinson Street, Sextant Circle, Doane Street, Captains Walk, Yardarm Lane, Bicknell Street, Taffrail Road, Bicknell Street, Nun Buoy Lane, Saint Germain Street, Prescott Terrace, Harris Street, Ryden Street, Edwards Lane, Commonwealth Ave, Dee Road, Berry Street, Abigail Ave, Southern Artery, and Presidential Drive. Work also includes manhole restoration, lining of various existing sewer laterals, and open cut spot repairs. The awarded price was $2,818,295.00. Project is anticipated to be substantially complete by January 2025.
The FY22 Sewer CIPP Project Contract 1 Design Project (MWRA Project No. WRA-P11-26-3-1159) was complete March 2022. The FY22 Sewer CIPP Project Contract 1 construction began June 2022. Work included approximately 24,500 LF of CIPP lining for 6-inch, 8-inch, 10-inch and 12-inch sewer pipe on Standish Road, Mayflower Road, Lansdowne Street, Deerfield Street, Heath Street, Phillips Street, Marlboro Street, Wayland Street, West Squantum Street, John Street, Montclair Avenue, Sagamore Avenue, Vershire Street, Sterling Street, Ruthven Street, Evans Street, Harvard Street, Barham Avenue, Hilma Street, Clement Terrace, Elliot Avenue, Hamilton Avenue, Wilson Avenue and Sherman Street, Pratt Road, Commander Shea Boulevard, Sagamore Street, Prospect Street, Blackwell Street, Edwin Street, Hollis Avenue, Hancock Street, Cummings Avenue, Landers Street, Sachem Street, Wendell Avenue, Sewall Street, Newport Avenue, Holbrook Road, Fayette Street and North Central Avenue. Work also included improvements at 156 manholes and three (3) sewer main spot repairs on Holbrook Road, Wendell Avenue and West Squantum Street. Project work was substantially complete in May 2023. Warranty Inspections are scheduled for completion Fall 2023.

The FY22 Sewer CIPP Project Contract 2 Design Project (MWRA Project No. WRA-P11-26-3-1159) was complete March 2022. The FY22 Sewer CIPP Project Contract 2 construction began in June 2022. Work included approximately 24,500 LF of CIPP lining for 8-inch, 10-inch, 12-inch, 15-inch and 18-inch sewer pipe on Hull Street to Lakeside Avenue Easement, Avalon Avenue, Murdock Avenue, Edinboro Road, Arnold Street, Fifth Avenue, Ring Avenue, Edwards Street, Hyde Street, Forum Road, Phipps Street, Norman Road, Carter Street, Plymouth Street, Cedar Street, Oakland Avenue, Adams Circle, Miles Drive, Joan Drive, Priscilla Lane, Quarry Street, Ernest Avenue, Dunn's Court, Dunn's Hill Road, Filbert Street, Sunnyside Road, Stedman Street, Mullin Avenue, Calvin Road, Calvin Road to Sea Street Easement, Avalon Beach Easement, School Street, Hancock Street, Quincy Avenue, Faxon Park Road, Blanchard Road and Faxon Lane. Work also included improvements at 146 manholes. Project work was substantially complete in May 2023. Warranty Inspections are scheduled for completion Fall 2023.

Reporting Period Activity: The City is currently performing field investigations as part of their Area 3 SSES, which is scheduled to be completed in November 2025. Field work includes sewer cctv, flow monitoring, manhole inspections, and smoke testing. This work is currently being performed by the City's vendor TetraTech and is ongoing.

The City began work on the Areas 1&2 Supplemental SSES, the FY23 sewer design project/sewer flow analysis/sewer hydraulic model refinements, and the Area 3 SSES in Summer 2022 (MWRA Project No. WRA-P11-26-3-1190). The Supplemental SSES Report was completed in November 2022. This report was developed as a requirement of the City's Consent Decree and summarized previously inspected SSES areas throughout the City (SSES Area 1 & 2) as well as delineated future SSES areas (SSES Areas 3, 4, & 5). This report summarized completed SSES inspections and prioritized recommendations to minimize I/I throughout the system. The delineation of SSES Area 3 will structure the Area 3 SSES to be completed by November 2025.

The City installed fifteen (15) temporary flow meters City-wide to support calibration and verification of their hydraulic model. The flow data will be used to identify areas of the City contributing infiltration and inflow. The model will provide input to the City for sewer areas that may be hydraulically deficient. Project work is ongoing.

MWRA I/I Local Financial Assistance Program: The community has financed twenty (20) I/I reduction projects through the Authority's funding assistance program. Of the $36,950,000 allotted through the Program's Phases 1 - 14, the community has $4,625,000 remaining in funding assistance.

27. RANDOLPH: South System

Background Information:
- Miles of Sewer: 113
- Sewered Population: 34,920
- Three Year (CY20 - CY23) Annual Average I/I: 1.68 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: Wastewater System Metering Program (June 2017)
I/I Removal and Martindale Pump Station Rehabilitation (January 2020)
Sanitary Sewer System Investigation (November 2022)

Private Source Inflow Removal Program: The Town developed a sump pump inspection and amnesty program. As a result of the program, the Town was contacted by 202 homeowners having sump pumps. Internal inspections were completed to determine sump pump locations. One hundred twenty-one homes (121) were determined to have sump pumps connected to the sewer system. Ninety-four (94) of these homes have drainage directly adjacent to the homes. Each of the 94 homes was inspected. Design was completed to redirect these sump pumps to the drainage system. Sump pump redirection construction is complete (Randolph Contract Nos. 08-SP1/2/3) (MWRA Project No. WRA-P6-27-3-655). Total peak flow inflow removed is estimated to be 0.61 mgd.

I/I Rehabilitation Projects in Design or Construction: The Martindale Pump Station wet well lining work is complete (Randolph Contract 20-S1 / MWRA Project No. WRA-P11-27-3-1139).

An I/I Investigation Report (July 2013) was drafted for the community areas affected by the March 2010 storm events. As a result of that report, a rehabilitation contract (Randolph Contract 15-S1/ MWRA Project No. WRA-P8-27-3-820) was designed (March 2015) and bid (April 2015). Rehabilitation construction is complete and included lining of the Vine Street Pump Station wet well, CIPP lining 1600 LF of sewer main, installing seven (7) short liners, grouting of 24 service connections, installing nine (9) manhole liners, digging and replacing two (2) sewer mains, testing and sealing of 5500 LF of sewer main and root removal within 500 LF of sewer main.

A Town-Wide wastewater flow metering program was performed during Spring 2017. Data review/report preparation completed Summer 2018.

Reporting Period Activity: The Town conducted CCTV inspection of approximately 50,000 LF of sewer mains between November 2021 and March 2022. This is part of a larger I/I Design / Rehabilitation Project (MWRA Project No. WRA-P11-27-3-1139). There have been no modifications and/or extensions of the collection over the last year. A small number of family homes were connected to the system in 2022 / 2023.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $11,400,800 allotted through the program's Phases 1 - 14, the community has $6,429,742 remaining in funding assistance.

28. READING: North System

Background Information:
- Miles of Sewer: 100
- Sewered Population: 25,334
- Three Year (CY20 - CY23) Annual Average I/I: 1.14 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: Infiltration and Inflow (I/I) Investigations Final Report (November 2012)
I/I Investigations Report - Section 2 Supplement (November 2014)

Private Source Inflow Removal Program: The Town is continuing to work with property owners where illicit connections were found during the Building Inspection Program. The Town is working to establish a private inflow removal program, which will utilize funds collected under development fees. In FY24, four (4) sewer manholes were raised out of the flood elevation in a cross-country sewer main, eliminating inflow.

I/I Rehabilitation Projects in Design or Construction: The Town is in the process of identifying additional sewer mains for Cured-in-Place Pipe Lining and CCTV. The Collection System Lining Project began Summer 2022 and is now complete. Project work consisted of approximately 15,500 LF of CIPP lining, 6000 LF of CCTV inspection and testing & sealing of laterals at 130 locations (MWRA Project No. WRA-P11-28-3-1164).

Reporting Period Activity: The Town installed/replaced approximately 1400 LF of service laterals to 45 residences. In FY22, the Town received $23,295 in sewer I/I connection fees from various developments. In FY23/24, the Town received $0 in sewer I/I connection fees from various developments.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $8,789,100 allotted through the Program's Phases 1 - 14, the community has $2,080,000 remaining in funding assistance.

29. REVERE: North System

Background Information:

- Miles of Sewer: 98
- Sewered Population: 61,944
- Three Year (CY20 - CY23) Annual Average I/I: 2.99 mgd
- MassDEP Administrative Actions since 2010: None
- EPA Clean Water Act Administrative Order: CD 1:10-cv-11460 (November 16, 2010)

Latest I/I or SSES Reports:

SSES - Phase X Field Investigations (CWSRF 4387) (April 2020)
Illicit Connection Detection (Phase 5) (CWSRF 4386) (April 2020)
SSES - Phase XI Field Investigations (CWSRF 6648) (April 2021)
SSES - Phase XII Field Investigations (CWSRF 6800) (April 2022)
SSES - Phase XIII Field Investigations (CWSRF 6805) (August 2023)

Private Source Inflow Removal Program: Contract 9A project work to begin Summer/Fall 2023. Work includes redirection of 55 sump pumps and installation of 1325 LF of drain extensions. Contract 8A project work began Fall 2022. Work includes redirection of 25 sump pumps and installation of 530 LF of drain extensions. The City continues to maintain a 10:1 I/I removal fee based on development size. The City continues to maintain a 10:1 I/I removal fee based on development size.

I/I Rehabilitation Projects in Design or Construction: In FY23, rehabilitation work included: CIPP lining of 13,380 LF of 8-inch sewer; CIPP lining of 2200 LF of 10-inch sewer; CIPP lining of 300 LF of 12-inch sewer; installing service lateral connection liners at 355 locations; installing full length service lateral connection liners at 20 locations; performing 799 VF cement/epoxy manhole lining; sealing 88 manhole corbels; and performing 18 sewer spot repairs. Sewer extensions added: Approximately 210 LF (8-inch PVC) on Walnut Street, 150 LF (8-inch PVC) on Winthrop Place and 150 LF (8-inch PVC) on Campbell Court.

Reporting Period Activity: In December 2021, $300,000 in funds were distributed for Phase 12 Designs of Recommended Sewer Rehabilitations Project (MWRA Project No. WRA-P11-29-2-1183). Project work detailed designs for CIPP lining of sewer mains and laterals focused on infiltration reduction as well as Inflow Removal and associated drainage improvements. In August 2022, $500,000 in funds were distributed for Phase 13 Designs of Recommended Sewer Rehabilitations Project (MWRA Project No. WRA-P11-29-2-1196). Project work included drainage and stormwater design in support of inflow redirection. Phase 12 and 13 Designs are now complete.

MWRA I/I Local Financial Assistance Program: The community has financed eight (8) I/I reduction projects through the Authority's funding assistance program. Of the $19,090,900 allotted through the Program's Phases 1 - 14, the community has $12,788,000 remaining in funding assistance.

30. SOMERVILLE: North System

Background Information:

- Miles of Sewer: 165
- Sewered Population: 81,045
- Three Year (CY20 - CY23) Annual Average I/I: 4.34 mgd
- MassDEP Administrative Actions: Unilateral Order (September 2010)

Somerville is one of MWRA's five combined sewer service communities (Boston North, Brookline, Cambridge, Chelsea and Somerville). Portions of Somerville are impacted by projects under MWRA's CSO Control Plan.

Latest I/I or SSES Report:

CIP Project 1 - Manhole Inspection, Assessment and Design (March 2021)
CIP Project 2 - Pipeline Inspection, Assessment, and Design (March 2022)
Citywide Drainage and Water Quality Master Plan (November 2022)
Ward 2 - Pipeline Inspection, Assessment, Design and Construction (June 2023)
FY22-23 Pipeline Inspection, Assessment, Design and Construction (Ongoing)
CSO Control Program - Joint Efforts by Cambridge, MWRA & Somerville (Ongoing)
Winter Hill & East Somerville (FY22-23) Pipeline Inspection, Assessment, Design (Ongoing)
West Somerville & Ten Hills (FY23-FY24) Pipeline Inspection, Assessment, Design (Ongoing)

Private Source Inflow Removal Program: The Engineering Division reviewed 88 site construction permits. Each permit enforced the Engineering Site Permit Rules and Regulations. Most involved some amount of redirection of stormwater from the combined sewer system and/or reduced stormwater runoff through groundwater recharge.

I/I Rehabilitation Projects in Design or Construction:
East Somerville & Winter Hill Sewer Rehabilitation: The East Somerville & Winter Hill Sewer Rehabilitation project was substantially completed in June 2024. As of June 30, 2024, the East Somerville & Winter Hill Sewer Rehabilitation has completed approximately 13 Excavated Point Repairs (EPRs) on the gravity sewer, replacement of 8 manhole-to-manhole pipe segments of gravity sewer totaling 800 linear feet, Cured-in-Place Pipe (CIPP) rehabilitation of 47 manhole-to-manhole pipe segments of gravity sewer totaling 12,300 linear feet, 11 new 4-foot diameter sewer manholes, replacement of 10 sewer manholes, and the rehabilitation and lining of 69 sewer manholes as of June 30, 2024. An additional 2 EPRs, 500 linear feet of gravity sewer replacement, and 1,500 linear feet of CIPP remain and are expected to be completed by August 2024. It is estimated that 0.9MGD of I/I has been removed as a result of completed work.
Poplar Street Pump Station: The Poplar Street Pump Station has progressed, including the slab for the 4- million-gallon storage tank. Approximately ¼ of the total 42" force main has been installed. The remainder of the project, including the influent box culvert and pump house, is bid and will be progressing according to critical path of the storage tank construction. The bid contract drawings for the station includes a 4 million-gallon storage tank and 50 MGD pumping capacity. The Pump Station is expected to be online in late 2026.
Spring Hill Sewer Separation: The construction of this project started in February 2022. To date, the contractor has lined approximately 7,600 LF of (combined) sewer main, and installed approximately 10,200 LF of separated storm sewer line and approximately 2,900 LF of separated sanitary sewer line. Estimated I/I removal is 2.5 MGD (inflow) that will be realized once the Poplar Street Pump Station is completed. In addition, there is an estimated I/I removal of 30,000 GPD (inflow) due to the proposed Green Stormwater Infrastructure that will be realized once construction of this project is complete. Substantial completion of new utility installation is currently anticipated in November 2024.
West Somerville and Ten Hills Sewer Rehabilitation: The contract for the West Somerville & Ten Hills Sewer Rehabilitation project was executed in May 2024 and mobilization occurred in late June 2024. The project consists of general underground utility repair and specialty trenchless pipe rehabilitation on gravity sanitary and storm sewer ranging from 8-in to 20-in diameter. Work includes 13 Excavated Point Repairs (EPRs) on the gravity sewer, replacement of manhole-to-manhole pipe segments of gravity sewer totaling 1,100 linear feet, Cured-in-Place Pipe rehabilitation of manhole-to-manhole pipe segments of gravity sewer totaling 12,500 linear feet, installation or replacement of 12 sewer manholes, and the rehabilitation and lining of 310 vertical feet of sewer manholes. Additional rehabilitation of approximately 7,100LF of separated storm sewer is included in this project. Substantial completion is scheduled for November 2024. This project accounts for approximately 0.4 MGD of I/I removal, based on flow isolation measurements which were taken prior to the beginning of construction.

Reporting Period Activity: West Somerville & Ten Hills (FY23-FY24) Pipeline Inspection, Assessment and Design work ongoing. Winter Hill & East Somerville (FY22-23) construction substantially complete.

MWRA I/I Local Financial Assistance Program: The community has financed twelve (12) I/I reduction projects through the Authority's funding assistance program. Of the $29,265,800 allotted through the Program's Phases 1 - 14, the community has $10,270,000 remaining in funding assistance.

31. STONEHAM: North System

Background Information:
- Miles of Sewer: 75
- Sewered Population: 23,001
- Three Year (CY20 - CY23) Annual Average I/I: 2.33 mgd
- MassDEP Administrative Actions: None
- EPA Clean Water Act Administrative Order: EPA Docket No. 09-028 (August 2009)

Latest I/I or SSES Report: Infiltration/Inflow Analysis Summary Report (December 2017)
Fallon Road Sanitary Sewer Investigations (December 2022)

Private Source Inflow Removal Program: The Town conducted an inflow analysis of the Fallon Road Pump Station tributary area and is evaluating options for removal of identified private inflow sources. The Town is continuing to investigate and eliminate illicit cross-connections between the sanitary sewer and storm water systems as part of its NPDES Phase 3 & 4 MS4 Permit Investigations and Illicit Discharge Detection and Elimination Program (IDDE).

I/I Rehabilitation Projects in Design or Construction: Phase 9 Sanitary Sewer System Rehabilitation (MWRA I/I Local Financial Assistance Program Project #WRA-P14-31-3-1423) is at the 80% design stage. Construction is expected to commence September 2024.
Phase 8 Sanitary Sewer System Rehabilitation (MWRA Project No. WRA-P11-31-3-1182) contract awarded March 2023. Project work was completed October 2023.

Phase 7 Sanitary Sewer System Rehabilitation (MWRA Project No. WRA-P11-31-3-1107) contract awarded June 2021. Work included: pre- and post-rehabilitation CCTV inspection, CIPP lining, lateral connection rehabilitation by grout injection, replacement of gravity sewer and lateral connections, manhole bench reconstruction, manhole frame and cover replacement and warranty inspections of rehabilitated sanitary sewers. Project work is complete. Fallon Road / Park Street System Rehabilitation (Phase 1) Project work complete.

Reporting Period Activity: Town is continuing to investigate and eliminate illicit cross-connections between the sanitary sewer and storm water systems as part of its MS4 Permit Compliance. The Town is continuing to evaluate options for establishing a 4:1 I/I removal program in accordance with MassDEP Regulations 314 CMR 12.

MWRA I/I Local Financial Assistance Program: The community has financed thirteen (13) I/I reduction projects through the Authority's funding assistance program. Of the $8,919,900 allotted through the Program's Phases 1 - 14, the community has $1,090,000 remaining in funding assistance.

32. STOUGHTON: South System

Background Information:
- Miles of Sewer: 94
- Sewered Population: 21,493
- Three Year (CY20 - CY23) Annual Average I/I: 1.56 mgd
- MassDEP Administrative Actions since 2010: None

Latest I/I or SSES Report: Year 9 (Round 2) I/I Evaluation (March 2022)
Year 10 (Round 2) I/I Evaluation (April 2023)
Year 1 2023 I/I Investigation & Reporting (Ongoing)
Year 2 2024 I/I Investigation & Reporting (Ongoing)

Private Source Inflow Removal Program: The Town has continues to address private inflow removal through jetting and CCTV inspection of service connections.

I/I Rehabilitation Projects in Design or Construction: Years 8 / 9 / 10 I/I Rehabilitation - Design Project (MWRA Project No. WRA-P14-32-3-1410) began Spring 2023. In July 2024, additional funds ($1,060,000) were distributed for the Years 8 / 9 / 10 I/I Rehabilitation - Construction (MWRA Project No. WRA-P14-32-3-1436). Project work has been bid and is expected to be awarded Summer 2024.

Year 10 (Round 2) Spring 2022 I/I Investigation completed Spring 2022. Data review/report completed April 2023. Investigation identified 0.03 mgd of peak removable infiltration and 0.01 mgd of peak removable inflow. The third phase of the privately funded Goddard Highlands Development was also completed in Spring 2022. Approximately 5000 LF of gravity sewer, 2400 LF of force main and a municipal pump station have been installed.

Year 9 Spring 2021 I/I Investigation (MWRA Project No. WRA-P11-32-1-1170) completed Summer 2021. Data review/report preparation completed March 2022. Investigation identified 0.02 mgd of peak removable infiltration and 0.01 mgd of peak removable inflow.

Reporting Period Activity: Year 2 2024 I/I Investigation & Reporting Project is ongoing. Data review/report to be complete Summer 2025. Year 1 2023 I/I Investigation & Reporting Project (MWRA Project No. WRA-P14-32-2-1410) is ongoing. Work includes smoke testing on approximately 100,000 linear feet of gravity sewer and dye testing/flooding of identified potential sources. The objective of the smoke testing phase of the Year One Investigations project is to identify direct and indirect sources of inflow that are contributing to high wet weather flows. The program identifies both public and private sources, and evaluation of rehabilitations is ongoing. Reporting is anticipated to be complete in August 2024. Removable inflow totals to be reported upon completion of project.

The 2020 Annual Town Meeting approved $7.5 million for the construction of the South Stoughton Sewer Extension Project. This project will include the installation of 8700 LF of gravity sewer, a sewer pump station and 4300 LF of pressurized force main. The project will service 28 commercial/industrial properties in the Campanelli Business Park and Park Street area as well as 45 residential properties along Park Street, Turnpike Street and Tenth Street. Project work is ongoing.

MWRA I/I Local Financial Assistance Program: The community has financed twenty (20) I/I reduction projects through the Authority's funding assistance program. Of the $8,962,900 allotted through the Program's Phases 1 - 14, the community has $0 remaining in funding assistance.

33. WAKEFIELD: North System

Background Information:

- Miles of Sewer: 95
- Sewered Population: 27,001
- Three Year (CY20 - CY23) Annual Average I/I: 2.30 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: Sewer System Evaluation Survey - Year Four (March 2020)
Sewer System Evaluation Survey - Year Five (February 2021)
Sewer System Evaluation Survey - Year Six (March 2023)

Private Source Inflow Removal Program: The Town is developing a plan to notify residents in the Paon Boulevard area of a potential pilot building inspection program to investigate private inflow sources.

I/I Rehabilitation Projects in Design or Construction: The Sewer System Infiltration Rehabilitation – Year 5 project began construction in March 2024 and should be substantially complete (except for retest/warranty inspection) by the end of July 2024. This project is estimated to remove approximately 10,000 gpd of removable infiltration.
The Year Five Sewer System Evaluation Survey was completed in February 2021 and included CCTV and manhole inspections of approximately 16,000 LF of sewer main. This project identified 1600 gpd of recommended removable peak I/I and structural defects in select areas that are scheduled to be paved within the next few calendar years. Some of these repairs were completed within the Sewer System Infiltration Rehabilitation - Year 4 construction project (MWRA Project No. WRA-P11-33-3-1150). The remaining repairs will be incorporated into the Year 5 Sewer System Infiltration Rehabilitation construction contract.

The Sewer System Infiltration Rehabilitation (Year 3 and Year 4) construction contracts were complete February 2023.

Reporting Period Activity: The Town continues to require a 4 to 1 removal of flow from completed subdivisions/ developments. Also, the Town implemented a $500 Sewer Connection Fee in June 2019. In December 2023, funds were

distributed for the: Year 6 - Sewer System Infiltration Rehabilitation (Design & Construction). (MWRA Project No. WRA-P14-33-3-1422).

MWRA I/I Local Financial Assistance Program: The community has financed twenty-nine (29) I/I reduction projects through the Authority's funding assistance program. Of the $11,116,900 allotted through the Program's Phases 1 - 14, the community has $1,280,000 remaining in funding assistance.

34. WALPOLE: South System

Background Information:

- Miles of Sewer: 93
- Sewered Population: 19,449
- Three Year (CY20 - CY23) Annual Average I/I: 1.00 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: I/I Investigation Program (Round 2): Year 4 (January 2020)
I/I Investigation Program (Round 2): Year 5 (January 2021)
2020 Sewer Investigation (July 2021)
I/I Investigation Program (Round 2): Year 6 (April 2023)
2022 Flow Metering Program (May 2023)
CIP Year 1 Investigation (June 2024)
CIP Year 2 Investigation (Ongoing)

Private Source Inflow Removal Program: The Town includes house-to-house private inflow inspection program as part of its water meter replacement program. Effective July 1, 2020, developers are no longer required to remove I/I as a condition of a sewer connection. The I/I removal program remains in place; however, it will now be fully funded by the Town. [Previous Developer Flow Reduction Program: For new connections greater than 15,000 gpd, a 4 to 1 reduction as per 314 CMR 12.04 is required. For new connections less than 15,000 gpd, developers are required to remove I/I at a ratio of 2.3 to 1 (developers may pay the Town $13.60 per gallon should they so choose)].

I/I Rehabilitation Projects in Design or Construction: Review and reporting for the CIP Year 1 Investigation was completed June 2024. Approximately 12,816 gpd of peak infiltration was observed during television inspection and 4,176 gpd of peak infiltration and 10,946 gpd of peak inflow was identified during manhole inspection.

The 2022 Sewer System Improvements project has reached substantial completion and retest work has been completed. It is estimated this project reduced approximately 69,288 gpd of peak I/I from the town's municipal sewer system.

The CIP Year 2 Investigation is ongoing.

The 2020 Sewer System Improvements Project Design (MWRA Project No. WRA-P11-34-3-1135) was completed March 2020. The 2020 Sewer System Improvements Rehabilitation Construction Project (Walpole Contract 2020-18 / MWRA Project Nos. WRA-P11-34-3-1135 / 1146) was bid March 2020. Rehabilitation work was substantially complete in November 2020. Warranty retesting work was completed Fall 2021. This project incorporated four years of I/I investigation report findings (Year 8; Round 2, Year 1; Round 2, Year 2; and Round 2, Year 3) into its rehabilitation construction process. Approximately 35,064 gpd of infiltration was removed from pipelines and 13,752 gpd infiltration was removed from manholes.

Reporting Period Activity: In April 2024, funds ($335,000) were distributed for the Wastewater CIP Year 2 Investigation Project (MWRA Project No. WRA-P14-34-1-1433). Project work is ongoing.
The CIP 1 I/I Investigation (MWRA Project No. WRA-P14-34-1-1405) was completed in Spring 2023. Data review and reporting is ongoing.

Review and reporting for the Round 2, Year 6 Investigation data was completed April 2023. Approximately 20,880 gpd of peak infiltration was observed during CCTV inspection and 10,224 gpd of peak infiltration and 5432 gpd of peak inflow was identified during manhole inspection.

The 2020 Sewer Investigation Report (MWRA Project No. WRA-P11-34-3-1146) was based on CCTV inspection of 24,000 LF of sewer main and topside survey of 145 sewer manholes completed as part of the 2020 Sewer System Improvements Contract. Approximately 5328 gpd of infiltration was observed during CCTV inspection and 3024 gpd of infiltration was identified during manhole inspection.

The Year 5 I/I Investigation (Round 2) field work was completed Spring 2020. Data review and report preparation completed January 2021 (MWRA Project No. WRA-P11-34-3-1135). Approximately 31,968 gpd of peak infiltration was observed during television inspection and 24,912 gpd of peak infiltration and 39,130 gpd of peak inflow was identified during manhole inspection.

A total of 670 LF of 8-inch sewer main has been accepted into Walpole's system over the past year (along Winter Street and Washington Terrace).

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $6,940,000 allotted through the Program's Phases 1 - 14, the community has $1,798,950 remaining in funding assistance.

35. WALTHAM: North System

Background Information:
- Miles of Sewer: 137
- Sewered Population: 64,375
- Three Year (CY20 - CY23) Annual Average I/I: 2.83 mgd
- MassDEP Administrative Actions: ACOP-NE-10-1N001 (February 2010 / amended November 2019)

Latest I/I or SSES Report: CMOM Plan and Sewer System Flow Metering (September 2020)
Sewer System Flow Metering and Analysis (February 2022)

Private Source Inflow Removal Program: From January 2024 to June 2024, forty-one (41) sewer laterals were repaired / replaced from the main line to the property line, by City crews. The Town estimated that the relaying of old sewer laterals has removed 214 gpd of I/I based upon the length of sewer laterals (a total of 856 LF of pipe was replaced).

From July 2023 to December 2023, thirty-six (36) sewer laterals were repaired / replaced from the main line to the property line, by City crews. The Town estimated that the relaying of old sewer laterals has removed 193 gpd of I/I based upon the length of the sewer laterals (a total of 808 LF of pipe was replaced).

I/I Rehabilitation Projects in Design or Construction: The Winter Street Utility Improvements began January 2024. Sewer work includes CCTV inspection, CIPP lining, sewer repairs, and service replacements. This would result in an estimated annual average I/I removal of 44,238 gpd.

As part of MWRA's Section 101 Pipeline Extension project in the City, approximately 2,700 LF of sewer main, and sewer laterals are being replaced from Lexington Street to Totten Pond Road. Construction began in April 2023 and expected completion Spring 2025.

The Prospect Hill Road project includes lining approximately 640 LF of sewer main, associated manholes, and sealing of laterals. Several other sewer rehabilitation projects are ongoing throughout the City including sewer lining on Clark Street, Summit Ave Roadway, Glen Circle, and Lincoln Terrace. Removable infiltration and inflow totals to be reported upon completion of these projects.

Reporting Period Activity: The Wimbledon Circle Pump Station redesign and construction is complete. The Prospect Street Drainage and Sewer Improvements are complete.

MWRA I/I Local Financial Assistance Program: The community has financed ten (10) I/I projects through the Authority's funding assistance program. Of the $25,062,400 allotted through the Program's Phases 1 - 14, the community has $5,874,840 remaining in funding assistance.

36. WATERTOWN: North System

Background Information:
- Miles of Sewer: 75
- Sewered Population: 35,329
- Three Year (CY20 - CY23) Annual Average I/I: 1.49 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: CIP Project 2 Investigation and Evaluation (December 2022)
CIP Projects 3 & 4 Investigation and Evaluation (December 2022)

Private Source Inflow Removal Program: A catch basin connected to sanitary sewer system disconnected and reconnected to the storm drain system on Sexton Street.

I/I Rehabilitation Projects in Design or Construction: The CIP Project 2 Investigation and Evaluation was completed in December 2022. The project identified an estimated 12,456 gpd of removable infiltration and 4000 gpd of removable inflow. Rehabilitations design is complete with construction scheduled to begin in 2024 (MWRA Project No: WRA-P14-36-3-1401).

The CIP Projects 3 and 4 Investigation and Evaluation was completed in December 2022. The project identified an estimated 12,816 gpd of removable infiltration and 8184 gpd of removable inflow. Rehabilitations are currently in the design phase with construction to be completed upon completion of CIP Project 2 (MWRA Project No: WRA-P14-36-3-1401).

CIP Project 1 Rehabilitations (Contract 19-01S) are complete (MWRA Project Nos. WRA-P11-36-3-1109 / 1133). The project included rehabilitations identified during the CIP Project 1 Inspection and Assessment and included 12,302 LF of sewer and drain inspected as part of Contract 18-01S. The project removed of an estimated 16,128 gpd of infiltration and 38,468 gpd of inflow.

CIP Project 1A Rehabilitations (Contract 20-01S) is complete. The project included rehabilitations identified during the CIP Project 1 Inspection and Assessment. The project removed of an estimated 13,392 gpd of infiltration and 38,468 gpd of inflow.

The CIP Project 1B Rehabilitations are substantially complete (MWRA Project No. WRA-P11-36-3-1173). The project included rehabilitations identified during the CIP Project 1 Inspection and Assessment project and various Illicit Discharge Detection and Elimination (IDDE) investigation projects. The project included removal of an estimated 14,885 gpd of infiltration and 38,470 gpd of inflow. Warranty inspections are scheduled to be completed in 2023.

Reporting Period Activity: The City is relocating the sewer main located in the easement between Greenough Boulevard and the Charles River into the right of way on Greenough Boulevard. The project is under construction and approximately 280 LF of sewer has been replaced.

MWRA I/I Local Financial Assistance Program: The community has financed twelve (12) I/I investigation projects through the Authority's funding assistance program. Of the $11,475,800 allotted through the Program's Phases 1 - 14, the community has $2,610,000 remaining in funding assistance.

37. WELLESLEY: South System

Background Information:
- Miles of Sewer: 135
- Sewered Population: 28,978
- Three Year (CY20 - CY23) Annual Average I/I: 2.16 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: I/I Analysis and Flow Metering Program (April 2019)
SSES (Ongoing)

Private Source Inflow Removal Program: The Town will pursue illegal sump pump connections identified through this year's water meter change-out program. The Town still has approximately 350 meters to change out and will continue to use this opportunity to investigate any identified illegal connections. Based upon previous private source inflow studies, DPW is contacting the owners of identified illegal sump pumps. To date, 18 sump pumps have been removed from the sanitary system.

I/I Rehabilitation Projects in Design or Construction: In FY 24 as part of the third year of the contract, National Water main performed CCTV inspections on 243,323 LF of sewer mains. We have contracted with Weston and Sampson to investigate those videos and prepare a summary of deficiencies and problem areas. Both cost-effective and value-effective analyses of various sewer rehabilitation methods will be conducted to assist with recommendation for improvements to the wastewater collection system.
In FY21, the Town hired a utility contractor (NWM) to address the areas of concern based on the analysis report prepared by its sewer consultant. The contract was for two years with an option for a third year. To date, 1444 LF of short liners have been installed and made multiple spot repairs performed. Also, 10,000 LF of sewer main has been CCTV inspected and 114

sewer manholes lined. The Town has just signed the third-year option of that contract and additional rehabilitation work will be undertaken Summer/Fall 2023. In addition, the Town also hired a root control specialty contractor who cleaned and treated 9161 LF of sewer main.

Sewer System Inspection and Rehabilitation (Contract No. 16C-460-1564 / MWRA Project No. WRA-P11-37-3-1152) work consisted of CCTV inspection of 62,800 LF of sewer; chemical root treatment of 7500 LF of sewer; testing 8800 joints and sealing/retesting 3100 joints; installing 24 LF of CIP short liners; testing & sealing six (6) service connections and sealing 400 VF of manholes. Project work is complete.

Cliff Road Sewer Main Lining (MWRA Project No. WRA-P11-37-3-1152) work consisted of CCTV inspection, installation of CIPP lining within 5260 LF of 8-inch VC sewer main and reinstatement of all active house service connections on Cliff Road. Additional project rehabilitation work consisted of CCTV inspection, installation of CIPP lining within 424 LF of 8-inch VC sewer main and reinstatement of all active house service connections along a sewer easement between Kingsbury Street and Donizetti Street. Project work is complete.

Reporting Period Activity: In May 2024, funds ($2,150,000) were distributed for the Sewer System Inspection and Rehabilitation (Contract No. 19S-410-1609 & No. 21C-460-1663); Mica Lane Sewer Rehabilitation Project (Contract No. 21C-460-1664); Grove Street Sewer Rehabilitation Project (Contract No. 19C-460-1629); Open-Cut Sewer Repairs (Contract No. 22C-460-1691) Projects (MWRA Project No. WRA-P14-37-3-1434). Project work is ongoing.

A wastewater flow metering program (conducted April 11 - June 20, 2018) utilizing 38 flow meters was completed. The *Report for the I/I Analysis and Flow Metering Program* provided an overview of the results for the 2018 Flow Metering Program including recommendations for the next phase of investigations. The I/I Analysis identified approximately 3.40 mgd of total peak infiltration in the community system. Peak design storm inflow (for the 5-year, 24-hour storm) was calculated to be approximately 13.5 mgd. As a follow-up to the I/I Analysis, the Town is now conducting an SSES. The purpose of this study is to identify subareas of I/I throughout Wellesley's sanitary sewer system (MWRA Project No. WRA-P11-37-3-1152).

MWRA I/I Local Financial Assistance Program: The community has financed fifteen (15) I/I reduction projects through the Authority's funding assistance program. Of the $10,429,700 allotted through the Program's Phases 1 - 14, the community has $3,540,000 remaining in funding assistance.

38. WESTWOOD: South System

Background Information:

- Miles of Sewer: 89
- Sewered Population: 15,318
- Three Year (CY20 - CY23) Annual Average I/I: 0.65 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: FY21 Infiltration Rehabilitation Program (January 2021)
FY23 Infiltration Rehabilitation Program (September 2023)

Private Source Inflow Removal Program: A house-to-house inspection survey has been completed. The survey included inspection of 1880 residences and identified 135 suspect sump pumps. Sump pump removal notification letters forthcoming. The Town continues to use contracted services to CCTV inspect sewer mains at various locations for evidence of inflow.

I/I Rehabilitation Projects in Design or Construction: FY24 Sewer System Rehabilitation Construction was substantially completed in June 2024. The Work included installing cured-in-place pipe (CIPP) liner for approximately 3,300 linear feet; leak repairs; heavy cleaning; service lateral connection re-instatement after new CIPP liner installation; service lateral connection repairs; and manhole repairs and lining. 62,000-gpd of I/I was estimated to be reduced in the system based on inspections.
FY23 Sewer System Investigations is complete. Wastewater flow meters were installed in three locations throughout the Town. Smoke testing, manhole inspections and CCTV inspection will occur in the area upstream of the meter with the highest infiltration and inflow volumes. Smoke testing, manhole inspections and CCTV inspection will performed Summer 2023. Rehabilitation construction rehabilitation is planned for Fall/Winter 2023.

Phase 3 I/I Rehabilitation Program investigation work (CCTV and sewer manhole inspection) began March 2021 and was complete July 2021. Phase 3 I/I Rehabilitation Design work completed November 2021. Phase 3 I/I Rehabilitation (FY22 Sewer System Rehabilitation: Town Bid No. DPW-22-B-009) bid January 2022 (MWRA Project No. WRA-P11-38-3-1179). CIPP lining work was performed in June 2022. Rehabilitation construction completed Summer 2022. Warranty Inspection completed December 2022.

Reporting Period Activity: In December 2023, funds ($500,000) were distributed for the FY23 / FY24 I/I Rehabilitation Project (MWRA Project No. WRA-P14-38-3-1424). Project work is ongoing. Details of this project are included in Attachment 4.

MWRA I/I Local Financial Assistance Program: The community has financed nine (9) I/I reduction projects through the Authority's funding assistance program. Of the $4,932,300 allotted through the Program's Phases 1 - 14, the community has $1,841,000 remaining in funding assistance.

39. WEYMOUTH: South System

Background Information:

- Miles of Sewer: 205
- Sewered Population: 56,061
- Three Year (CY20 - CY23) Annual Average I/I: 4.35 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: Town-Wide Sewer Investigation - Year 9 (March 2021)
Town-Wide Sewer Investigation - Year 10 (November 2021)
Town-Wide Sewer Investigation - Year 11 (January 2023)
Town-Wide Sewer Investigation - Year 12 (April 2024)
Town-Wide Sewer Investigation – Year 13 (Ongoing)

Private Source Inflow Removal Program: The Town continues to pursue the removal of sump pumps and other private inflow sources. The Town has completed the redirection of 330 sump pumps (for an estimated 165,000 gpd of inflow removal).

I/I Rehabilitation Projects in Design or Construction: The Year 12 Investigation report was completed in April 2024 and identified approximately 80,000 gpd of infiltration and 2,000 gpd of peak design storm inflow. The Year 13 Investigation is currently ongoing.
Design of rehabilitations recommended from the Year 11 Investigation was completed in May 2024 and construction began in July 2024. Construction of these rehabilitations is estimated to remove approximately 0.041 MGD of peak infiltration and 0.011 MGD of peak design storm inflow.
The Year 9 & 10 I/I Rehabilitation Construction (Weymouth Contract No. PW-22-003-S) began Fall 2022 and was substantially complete June 2023 (MWRA Project No. WRA-P11-39-3-1195). Approximately 0.12 mgd of infiltration and 0.009 mgd of peak design storm inflow was removed through construction. The Year 9 & 10 I/I Rehabilitation Construction Design completed Spring 2022 (MWRA Project No. WRA-P11-39-2-1185).

Year 8 Rehabilitation Construction was completed May 2022 (MWRA Project No. WRA-P11-39-3-1157). Approximately 0.26 mgd of infiltration and 0.006 mgd of peak design storm inflow was removed through construction. Rehabilitation design (based on the Year 8 report recommendations) completed February 2021. The Year 8 I/I Investigation was completed in October 2019. The investigation identified approximately 0.51 mgd of infiltration and 0.06 mgd of peak design storm inflow.

Reporting Period Activity: In March 2024, funds ($1,599,000) were distributed for the Year 11 I/I Rehabilitation Construction and Year 13 I/I Investigation Study/Reporting Projects (MWRA Project No. WRA-P14-39-3-1431). Project work is ongoing. Details of this project are included in Attachment 4.

The Year 11 I/I Rehabilitation Design Project is complete (MWRA Project No. WRA-P14-39-2-1409). The design of the Year 11 I/I Rehabilitations includes approximately: 7400 LF of cleaning, inspecting, testing, and sealing of sewers; 4400 LF of light cleaning and television inspection; 2400 LF of heavy cleaning and television inspection; 7400 LF of cured-in-place pipe and structural cured-in-place pipe; installation of short liners and structural short liners at eight (8) locations; testing and grouting of 34 service laterals; installing lateral liners at five (5) locations; open cut point repair at four (4) locations; manhole cementitious lining at 52 locations; replacing one (1) sewer manhole frame & cover; repairing one (1) sewer manhole bench & invert; and installing 11 manhole inflow dishes.

The Year 12 I/I Investigation is complete (MWRA Project No. WRA-P14-39-2-1409). Field investigations have been completed. The Year 11 I/I Investigation was completed January 2023 (MWRA Project No WRA-P11-39-2-1185). The Year 10 I/I Investigation (MWRA Project No WRA-P11-39-3-1157) was completed November 2021. The Year 9 I/I Investigation was completed in March 2021.

The 2021 Town-Wide Wastewater Flow Metering Project is complete. Flow from the Town's 31 subareas was monitored with 36 flow meters from March 22 to June 16, 2021. Summary Report completed January 2022.

Sewer extensions in FY24 include: Installation of 246 LF of new sewer on Route 18 related to the Southfield development. Approximately 500 LF of sewer was removed at 655 Washington Street. Approximately 467 LF of 8-inch sewer was installed on private property on Park Avenue.

MWRA I/I Local Financial Assistance Program: The community has financed twenty-six (26) I/I reduction projects through the Authority's funding assistance program. Of the $21,750,900 allotted through the Program's Phases 1 - 14, the community has $6,202,316 remaining in funding assistance.

40. WILMINGTON: North System

Background Information:
- Miles of Sewer: 31
- Sewered Population: 4,819
- Three Year (CY20 - CY23) Annual Average I/I: 0.78 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: Infiltration/Inflow Analysis Report (December 2017)
SSES Sub-Areas 5, 6 and 8 Report (November 2018)

Private Source Inflow Removal Program: The Town is continuing private inflow source inspections on an as-needed basis. The Town continues to evaluate options for establishing a 4:1 I/I removal program in accordance with MassDEP Regulations 314 CMR 12.

I/I Rehabilitation Projects in Design or Construction: Sewer System Rehabilitation Construction for I/I rehabilitation in Sub-Areas 5 and 8 (MWRA Project Nos. WRA-P11-40-3-1118 / 1136) was completed September 2021. Project Warranty Inspections were completed Fall 2022. Minor issues had to be corrected after warranty inspections; reparations were completed in Fall 2023. An estimated 60,000 gpd of I/I was removed from the system as a result of the sewer rehabilitation.

Reporting Period Activity: Industrial Way Pump Station upgrades; Arcadis has been contacted to submit a proposal for a complete Station evaluation and upgrade.
There is a development proposal for #181 and #187 Ballardvale Street for the construction of a new office building. Arcadis provided a sewer capacity assessment and peer review for this project.
There is ongoing construction on Main Street (Map/Lot 45/142A) for a new Town of Wilmington Senior Center. Arcadis provided a sewer capacity assessment and peer review for this project.
There is ongoing construction at #146 Middlesex Avenue for a new Town of Wilmington Town Hall and School Administration Building. Arcadis provided a sewer capacity assessment and peer review for this project.
There is a redevelopment proposal for #271 Main Street for the expansion of an existing car dealership. Arcadis is providing sewer capacity assessment and peer review for this project.

MWRA I/I Local Financial Assistance Program: The community has financed eight (8) I/I reduction projects through the Authority's funding assistance program. Of the $4,822,000 allotted through the Program's Phases 1 - 14, the community has $2,360,000 remaining in funding assistance.

41. WINCHESTER: North System

Background Information:
- Miles of Sewer: 85
- Sewered Population: 22,924
- Three Year (CY20 - CY23) Annual Average I/I: 1.79 mgd
- MassDEP Administrative Actions: None

Latest I/I or SSES Report: Stowell & Marshall Road Sewer System Evaluation (January 2014)
Sewer System Evaluation Survey (SSES) Phase II (November 2016)
East Side CIP Project 1 SSES (March 2024)

Private Source Inflow Removal Program: The Town's Private Inflow Source Removal Program is ongoing. One (1) sump pump was removed from the system in FY22/23.

I/I Rehabilitation Projects in Design or Construction: East Side CIP Project 1 Design will be performed in Summer/Fall 2024. Bid and Award for East Side CIP Project 1 Rehabilitations will be performed in Winter 2025 with construction starting in Spring 2025.
The Phase II Rehabilitations (Part B) Warranty Re-Test Inspection was completed June 2022. The Phase II Sanitary Sewer Rehabilitations (Part B) removed an estimated 62,319 gpd of infiltration and 17,301 gpd of inflow.

Reporting Period Activity: The East Side CIP Project 1 SSES began in April 2022. Manhole inspections and flow isolation work is complete. Field investigations for East Side CIP Project 1 SSES, including cleaning and television inspection, were completed in June 2023. Data evaluation and reporting was completed in March 2024.

MWRA I/I Local Financial Assistance Program: The community has financed eleven (11) I/I reduction projects through the Authority's funding assistance program. Of the $7,673,000 allotted through the Program's Phases 1 - 14, the community has $1,750,000 remaining in funding assistance.

42. WINTHROP: North System

Background Information:
- Miles of Sewer: 36
- Sewered Population: 19,316
- Three Year (CY20 - CY23) Annual Average I/I: 0.99 mgd
- MassDEP Administrative Actions: NON - May 2018 Failed to Submit I/I Analysis (Due 12/31/17)

Latest I/I or SSES Report: I/I Analysis Report (October 2019)
Flow Monitoring Program (May 2020)
Phase 2 Sewer System Evaluation Survey (June 2021)
Phase 3 Sewer System Evaluation Survey (Fall 2023)

Private Source Inflow Removal Program: The DPW, in partnership with the Town's Building and Plumbing Inspectors, continues to actively seek out illegal sump pump connections to the Town's sewer system. Smoke testing was postponed due to scheduling conflicts. Smoke testing work will be included within the remaining CCTV inspection work in the next phase of the Town's Sanitary Sewer System Evaluation Survey. Inspection data will be reviewed and recommendations to remove I/I will be summarized in a report.

I/I Rehabilitation Projects in Design or Construction: The Palmyra Street and Crescent Street Sewer Improvements Project was completed in 2021/2022 (MWRA Project No. WRA-P11-42-3-1145). Project work consisted of sewer main replacement construction on Palmyra Street, Wheelock Street, Pauline Street and Crescent Street. Work included replacing approximately 1265 LF feet of 8 and 15-inch vitrified clay (VC) sewer mains with new 8 through 12-inch polyvinyl chloride (PVC) sewer mains.

The replacement of approximately 350 LF of gravity sewer on Jefferson Street was added to the Centre Business District project (MWRA Project No. WRA-P11-42-3-1144) based on unforeseen site conditions observed during construction of drainage improvements on Jefferson Street. The existing 6-inch VC sewer main in Jefferson Street was found to have collapsed in two locations and inspections noted that the remaining section of pipe was deteriorating. A new 8-inch SDR 35 PVC sewer main (including two new precast concrete manholes) was installed to replace the existing 6-inch VC sewer main.

Reporting Period Activity: Approximately 31,500 LF of 8 to 15-inch sewer main was cleaned and CCTV inspected during Fall 2021. The inspections were reviewed and infiltration observed in each subarea inspected was estimated. An analysis was also completed to determine where rehabilitation to remove I/I entering the sanitary sewer system is cost-effective. The Phase 3 SSES report is substantially complete. In December 2021, MWRA funds were distributed for the Phase 3 SSES Project (MWRA Project No. WRA-P11-42-1-1181).

MWRA I/I Local Financial Assistance Program: The community has financed fifteen (15) I/I reduction projects through the Authority's funding assistance program. Of the $6,293,400 allotted through the Program's Phases 1 - 14, the community has $1,210,000 remaining in funding assistance.

43. WOBURN: North System

Background Information:

- Miles of Sewer: 164
- Sewered Population: 40,080
- Three Year (CY20 - CY23) Annual Average I/I: 3.30 mgd
- MassDEP Administrative Actions Since 2010: None

Latest I/I or SSES Report: CIP Project 5 - Sewer Investigation and Evaluation (February 2021)
CIP Smoke Testing - Project 2 (September 2021)
North Woburn Trunk Sewer Design - Investigation (ongoing)
CIP Project 6 – Phase 1 – Sewer Investigation and Evaluation (ongoing)

Private Source Inflow Removal Program: No private inflow removal activity occurred during this reporting period.

I/I Rehabilitation Projects in Design or Construction: In September 2023, funds ($1,840,000) were distributed for the following projects: North Woburn Trunk Sewer Design & Construction, and CIP 3 & 4 Post Construction Flow Evaluations (MWRA Project No. WRA-P14-43-3-1418).
CIP Project 4 Rehabilitations began Spring 2022 (MWRA Project No. WRA-P11-43-3-1134). Project work completed Fall 2022. Warranty retest inspections were completed Spring 2023. The project removed an estimated 27,606 gpd of peak infiltration and 17,473 gpd of peak inflow.

CIP Project 3 Rehabilitations warranty retest inspections were completed Spring 2022 (MWRA Project No. WRA-P11-43-3-1108). The project removed an estimated 56,981 gpd of peak infiltration and 9602 gpd of peak inflow.

Reporting Period Activity: In September 2023, funds ($1,840,000) were distributed for the following projects: North Woburn Trunk Sewer Design & Construction, and CIP 3 & 4 Post Construction Flow Evaluations (MWRA Project No. WRA-P14-43-3-1418).

MWRA I/I Local Financial Assistance Program: The community has financed fifteen (15) I/I reduction projects through the Authority's funding assistance program. Of the $18,505,500 allotted through the Program's Phases 1 - 14, the community has $1,990,000 remaining in funding assistance.

ATTACHMENT 6
TO
MWRA ANNUAL I/I REDUCTION REPORT FOR FY24
Reporting Period – July 2023 Through June 2024

CY23 COMMUNITY WASTEWATER FLOW DATA

This Attachment contains CY23 wastewater flow data for the 43 MWRA member sewer communities. There are four separate data tables detailed below:

TABLE 1 (Section Page 6-2) presents the CY23 MWRA Wastewater Metering System Community Flow Estimates. This data is monthly total wastewater flow estimates for each of the 43-member sewer communities derived from MWRA's wastewater metering system. Each community's percent share average daily flow and percent share maximum month flow are used as components of MWRA's annual wholesale sewer charge.

TABLE 2 (Section Page 6-3) presents the CY23 MWRA Community Wastewater Flow Component Estimates. This data is developed through an engineering analysis by MWRA staff to estimate wastewater flow components, including: dry day average daily flow, average daily infiltration, average daily sanitary flow and average daily inflow. The data in TABLE 2 is annual data. The percent share for each estimated flow component is also presented. The data presented in TABLE 2 is a summary of the more detailed monthly flow component analysis presented in TABLE 4. The estimated average daily sanitary flow (non-I/I flow) includes: residential, commercial, industrial and institutional flows.

TABLE 3 (Section Page 6-4) presents the CY23 Final Community Wastewater Flow Component Estimates with additional information based on estimated community inch-diameter-miles of sewer.

TABLE 4 (Section Pages 6-5 through 6-17) presents the CY23 Estimated Community Wastewater Flow Components by month. This data is developed through an engineering analysis by MWRA staff of each community's monthly wastewater flow (derived from MWRA's wastewater metering system) to estimate flow components, including: dry day average daily flow, average daily infiltration, average daily sanitary flow and average daily inflow. The data listed as MWRA Estimated Infiltration is a calculated estimate of the infiltration entering MWRA-owned sewers that are upstream of wastewater flow meters within a community. The calculation is a weighted allocation of the Raw Estimated Infiltration to the portion of the sewer system that is MWRA-owned versus community-owned. The weighted allocation is based on inch-diameter-miles of MWRA-owned and community-owned sewer. The data presented in TABLE 4 is also presented in TABLE 2 as an annual summary.

TABLE 1 - CY23 MWRA WASTEWATER METERING SYSTEM COMMUNITY FLOW ESTIMATES

5/6/2024

Community	Total Population	Sewered Population	CY23 Average Daily Flow (ADF) By Calendar Month (MGD)												12 Month Average Daily Flow (MGD)	Percent Average Daily Flow	Max. Month ADF (MGD)	Percent Max. Month ADF
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
Arlington	46,308	46,271	7.12	5.22	7.53	4.79	5.28	4.20	5.57	5.40	5.74	4.37	3.91	7.08	5.53	1.6%	7.53	1.7%
Ashland	18,832	14,717	1.81	1.51	1.73	1.39	1.45	1.23	1.42	1.53	1.44	1.37	1.27	1.92	1.51	0.4%	1.92	0.4%
Bedford	14,383	13,947	3.30	2.75	3.75	2.72	2.81	2.32	2.70	3.09	3.24	2.53	2.21	3.44	2.91	0.8%	3.75	0.8%
Belmont	27,295	26,932	4.31	2.88	4.78	2.77	3.17	2.42	3.27	3.22	3.54	2.45	2.23	4.55	3.31	0.9%	4.78	1.1%
BWSC	675,647	673,957	108.59	83.94	110.33	83.37	86.54	83.37	107.00	98.87	100.20	80.27	77.13	108.27	94.16	26.8%	110.33	24.4%
Braintree	39,143	39,049	10.68	7.31	8.94	6.29	6.47	5.13	6.65	6.17	6.31	5.42	4.96	8.09	6.88	2.0%	10.68	2.4%
Brookline	63,191	63,084	8.91	6.38	9.50	6.64	6.50	5.78	8.22	8.28	7.64	5.72	4.94	8.95	7.31	2.1%	9.50	2.1%
Burlington	26,377	25,790	4.89	4.08	5.06	3.92	4.21	3.79	3.82	3.99	4.53	3.69	3.33	5.01	4.20	1.2%	5.06	1.1%
Cambridge	118,403	118,379	25.24	19.63	26.14	20.09	21.00	20.20	27.01	25.53	24.93	18.62	17.24	28.64	22.91	6.5%	28.64	6.3%
Canton	24,370	17,201	4.65	3.50	4.28	3.08	3.26	2.68	3.32	3.31	3.78	3.13	2.81	4.20	3.50	1.0%	4.65	1.0%
Chelsea	40,787	40,787	8.65	5.63	8.36	6.18	6.41	6.31	9.09	7.26	7.35	5.46	5.15	8.32	7.03	2.0%	9.09	2.0%
Dedham	25,364	24,507	5.70	4.07	5.33	3.58	3.60	2.94	3.84	3.85	3.79	3.08	2.77	5.23	3.99	1.1%	5.70	1.3%
Everett	49,075	49,075	6.88	5.53	7.43	5.28	5.61	5.23	6.64	6.72	6.19	4.76	4.68	6.74	5.98	1.7%	7.43	1.6%
Framingham	72,362	69,727	11.17	8.20	11.46	8.35	8.71	6.64	8.85	10.32	10.00	8.53	7.61	13.22	9.45	2.7%	13.22	2.9%
Hingham	8,565	8,128	2.35	1.47	1.99	1.20	1.26	1.01	1.53	1.52	1.32	1.01	1.01	1.70	1.45	0.4%	2.35	0.5%
Holbrook	11,405	10,359	1.70	1.23	1.56	1.11	1.11	0.99	1.13	1.03	1.04	0.91	0.97	1.34	1.18	0.3%	1.70	0.4%
Lexington	34,454	33,856	8.03	6.86	9.00	6.21	6.83	5.49	6.15	6.56	7.61	5.60	4.83	8.30	6.80	1.9%	9.00	2.0%
Malden	66,263	65,969	10.41	7.96	11.18	7.54	8.77	7.35	9.05	9.10	8.95	7.46	6.95	10.77	8.81	2.5%	11.18	2.5%
Medford	59,659	59,624	10.96	7.80	11.96	7.43	8.53	7.23	9.64	9.35	9.62	6.49	6.14	10.95	8.86	2.5%	11.96	2.6%
Melrose	29,817	29,784	5.57	4.12	6.51	3.74	4.54	3.57	4.46	3.95	4.75	3.02	2.79	5.74	4.41	1.3%	6.51	1.4%
Milton	28,630	27,963	7.22	4.81	6.73	4.05	4.17	3.23	4.84	4.65	4.82	3.68	3.20	6.43	4.83	1.4%	7.22	1.6%
Natick	37,006	32,803	4.33	3.46	4.44	3.36	3.61	2.88	3.53	3.98	3.88	3.31	2.96	4.84	3.72	1.1%	4.84	1.1%
Needham	32,091	30,757	6.34	4.87	6.31	4.64	5.19	3.85	5.77	5.99	4.77	4.12	3.71	6.32	5.17	1.5%	6.34	1.4%
Newton	88,923	88,190	23.20	17.61	25.22	15.90	16.99	13.29	18.93	21.75	19.18	14.83	12.47	23.66	18.63	5.3%	25.22	5.6%
Norwood	31,611	31,458	9.52	6.89	8.47	5.92	6.48	5.07	6.40	6.43	6.93	5.76	5.17	8.93	6.84	1.9%	9.52	2.1%
Quincy	101,636	101,636	18.32	13.56	17.38	12.60	12.95	11.88	15.57	14.65	14.33	11.79	10.82	16.28	14.20	4.0%	18.32	4.1%
Randolph	34,984	34,920	6.36	4.51	5.64	3.92	3.90	3.21	3.84	3.79	4.08	3.43	3.29	5.32	4.28	1.2%	6.36	1.4%
Reading	25,518	25,334	3.67	3.06	4.06	2.45	2.70	2.04	2.56	2.53	2.85	2.28	2.10	3.76	2.84	0.8%	4.06	0.9%
Revere	62,186	61,944	10.26	7.27	9.84	7.09	7.66	6.35	8.17	8.27	7.12	5.89	5.77	8.04	7.66	2.2%	10.26	2.3%
Somerville	81,045	81,045	14.05	8.89	14.49	9.15	10.21	10.12	14.20	13.46	12.86	8.51	8.20	15.30	11.66	3.3%	15.30	3.4%
Stoneham	23,244	23,001	5.46	4.22	5.19	4.09	4.63	4.09	4.95	4.70	5.27	3.96	3.71	5.26	4.63	1.3%	5.46	1.2%
Stoughton	29,281	21,493	4.70	3.69	4.41	3.23	3.22	2.72	3.01	2.87	3.28	2.85	2.70	3.92	3.39	1.0%	4.70	1.0%
Wakefield	27,090	27,001	5.75	4.44	6.31	4.06	4.50	3.68	4.56	4.00	4.59	3.32	2.99	5.32	4.47	1.3%	6.31	1.4%
Walpole	26,383	19,449	3.12	2.73	3.06	2.52	2.49	2.08	2.14	2.19	2.49	2.36	2.26	3.13	2.55	0.7%	3.13	0.7%
Waltham	65,218	64,375	11.31	8.77	12.39	8.55	9.87	7.55	9.10	9.85	10.40	8.29	7.48	12.23	9.67	2.8%	12.39	2.7%
Watertown	35,329	35,329	5.18	4.05	5.25	3.87	4.13	3.50	4.59	4.56	4.93	3.97	3.59	5.35	4.42	1.3%	5.35	1.2%
Wellesley	29,550	28,978	6.09	4.48	6.10	4.06	4.63	3.46	4.54	5.04	4.81	3.93	3.38	6.87	4.79	1.4%	6.87	1.5%
Westwood	16,266	15,318	2.16	1.73	2.13	1.55	1.58	1.34	1.56	1.51	1.46	1.30	1.25	1.97	1.63	0.5%	2.16	0.5%
Weymouth	57,437	56,061	12.75	8.96	11.04	7.56	7.87	6.49	8.31	8.21	8.38	7.18	6.83	10.24	8.66	2.5%	12.75	2.8%
Wilmington	23,349	4,819	1.86	1.68	2.00	1.64	1.74	1.60	1.71	2.00	2.01	1.69	1.59	1.96	1.79	0.5%	2.01	0.4%
Winchester	22,970	22,924	4.90	3.82	5.35	3.55	3.88	3.36	4.22	3.86	4.23	3.22	2.71	4.80	4.00	1.1%	5.35	1.2%
Winthrop	19,316	19,316	2.66	2.06	2.87	2.01	2.18	2.13	2.63	2.68	2.52	2.30	2.17	2.90	2.43	0.7%	2.90	0.6%
Woburn	40,876	40,080	9.93	8.35	10.49	6.66	7.52	7.45	8.52	8.51	9.15	7.35	6.82	10.18	8.42	2.4%	10.49	2.3%
Total/Average	2,391,639	2,325,337	430.06	323.98	435.99	308.11	328.16	289.25	373.01	364.53	366.31	289.21	268.10	425.47	350.86	100%	452.29	100%
Logan Airport Monthly Rainfall (in)			5.23	1.36	4.29	3.10	2.25	3.44	10.43	6.46	3.75	1.42	1.93	5.98	49.64			

TABLE 2 - 2023 MWRA COMMUNITY WASTEWATER FLOW COMPONENT ESTIMATES (CY23-12 MONTHS)

5/6/2024

	A	B	C	D	E	2023 Averages (1) F	2023 Averages (1) G	H	Components of Average Daily Flow (Estimated) (2) I	J	K	L	M	N	O	P
COMMUNITY	Community Demographics		No. of Connects to MWRA System	Miles of Local Sewers (3)	No. of Meters for Permanent System	Average Daily Flow ADF (MGD)	Percent Average Daily Flow (6)	Selected Dry Day ADF (MGD)	Average Daily Infiltration (MGD)	Infiltration As a % of Average Daily Flow	Average Sanitary Flow (MGD)	Sanitary As a % of Average Daily Flow	Average Daily Inflow (4) (MGD)	Inflow As a % of Average Daily Flow	Peak Month ADF (MGD)	Percent Peak Month ADF (6)
	Total Population	Sewered Population														
Arlington	46,308	46,271	327	117	7	5.53	1.58%	4.90	2.30	41.6%	2.60	47.0%	0.63	11.4%	7.53	1.66%
Ashland	18,832	14,717	2	78	2	1.51	0.43%	1.40	0.50	33.1%	0.90	59.6%	0.10	6.6%	1.92	0.42%
Bedford	14,383	13,947	1	77	4	2.91	0.83%	2.64	1.34	46.0%	1.30	44.7%	0.27	9.3%	3.75	0.83%
Belmont	27,295	26,932	2	76	2	3.31	0.94%	2.77	1.27	38.4%	1.50	45.3%	0.54	16.3%	4.78	1.06%
BWSC (5)	675,647	673,957	255	854	33	94.16	26.84%	78.53	20.53	21.8%	58.00	61.6%	15.63	16.6%	110.33	24.39%
Braintree	39,143	39,049	21	140	8	6.88	1.96%	6.15	2.95	42.9%	3.20	46.5%	0.73	10.6%	10.68	2.36%
Brookline (5)	63,191	63,084	10	110	14	7.31	2.08%	6.18	1.92	26.3%	4.26	58.3%	1.13	15.5%	9.50	2.10%
Burlington	26,377	25,790	1	117	1	4.20	1.20%	3.91	1.91	45.5%	2.00	47.6%	0.29	6.9%	5.06	1.12%
Cambridge (5)	118,403	118,379	127	147	9	22.91	6.53%	18.20	6.20	27.1%	12.00	52.4%	4.71	20.6%	28.64	6.33%
Canton	24,370	17,201	65	87	6	3.50	1.00%	3.17	1.77	50.6%	1.40	40.0%	0.34	9.7%	4.65	1.03%
Chelsea (5)	40,787	40,787	47	42	8	7.03	2.00%	5.19	2.19	31.2%	3.00	42.7%	1.84	26.2%	9.09	2.01%
Dedham	25,364	24,507	30	89	8	3.99	1.14%	3.60	1.80	45.1%	1.80	45.1%	0.38	9.5%	5.70	1.26%
Everett	49,075	49,075	21	72	6	5.98	1.70%	5.28	1.98	33.1%	3.30	55.2%	0.70	11.7%	7.43	1.64%
Framingham	72,362	69,727	2	231	4	9.45	2.69%	8.40	3.60	38.1%	4.80	50.8%	1.04	11.0%	13.22	2.92%
Hingham	8,565	8,128	1	33	1	1.45	0.41%	1.28	0.78	53.8%	0.50	34.5%	0.17	11.7%	2.35	0.52%
Holbrook	11,405	10,359	2	49	2	1.18	0.34%	1.09	0.49	41.5%	0.60	50.8%	0.09	7.6%	1.70	0.38%
Lexington	34,454	33,856	17	171	6	6.80	1.94%	6.19	3.99	58.7%	2.20	32.4%	0.61	9.0%	9.00	1.99%
Malden	66,263	65,969	242	100	6	8.81	2.51%	7.98	2.98	33.8%	5.00	56.8%	0.83	9.4%	11.18	2.47%
Medford	59,659	59,624	74	120	6	8.86	2.53%	7.57	3.27	36.9%	4.30	48.5%	1.30	14.7%	11.96	2.64%
Melrose	29,817	29,784	188	75	5	4.41	1.26%	3.79	1.89	42.9%	1.90	43.1%	0.62	14.1%	6.51	1.44%
Milton	28,630	27,963	56	98	13	4.83	1.38%	4.18	2.68	55.5%	1.50	31.1%	0.65	13.5%	7.22	1.60%
Natick	37,006	32,803	30	129	4	3.72	1.06%	3.39	1.49	40.1%	1.90	51.1%	0.33	8.9%	4.84	1.07%
Needham	32,091	30,757	21	130	2	5.17	1.47%	4.64	2.64	51.1%	2.00	38.7%	0.53	10.3%	6.34	1.40%
Newton	88,923	88,190	52	284	7	18.63	5.31%	16.38	8.58	46.1%	7.80	41.9%	2.25	12.1%	25.22	5.58%
Norwood	31,611	31,458	31	108	6	6.84	1.95%	6.11	3.61	52.8%	2.50	36.5%	0.73	10.7%	9.52	2.10%
Quincy	101,636	101,636	56	209	6	14.20	4.05%	12.83	4.63	32.6%	8.20	57.7%	1.37	9.6%	18.32	4.05%
Randolph	34,984	34,920	2	113	2	4.28	1.22%	3.94	1.84	43.0%	2.10	49.1%	0.34	7.9%	6.36	1.41%
Reading	25,518	25,334	2	100	2	2.84	0.81%	2.56	1.26	44.4%	1.30	45.8%	0.28	9.9%	4.06	0.90%
Revere	62,186	61,944	3	98	2	7.66	2.18%	6.72	2.72	35.5%	4.00	52.2%	0.94	12.3%	10.26	2.27%
Somerville (5)	81,045	81,045	43	165	8	11.66	3.32%	8.14	2.54	21.8%	5.60	48.0%	3.52	30.2%	15.30	3.38%
Stoneham	23,244	23,001	27	75	7	4.63	1.32%	4.25	2.75	59.4%	1.50	32.4%	0.38	8.2%	5.46	1.21%
Stoughton	29,281	21,493	1	94	2	3.39	0.97%	3.14	1.64	48.4%	1.50	44.2%	0.24	7.1%	4.70	1.04%
Wakefield	27,090	27,001	11	95	2	4.47	1.27%	4.06	2.56	57.3%	1.50	33.6%	0.41	9.2%	6.31	1.40%
Walpole	26,383	19,449	1	93	2	2.55	0.73%	2.41	1.11	43.5%	1.30	51.0%	0.14	5.5%	3.13	0.69%
Waltham	65,218	64,375	5	137	4	9.67	2.76%	8.65	3.05	31.5%	5.60	57.9%	1.02	10.5%	12.39	2.74%
Watertown	35,329	35,329	14	75	3	4.42	1.26%	3.98	1.78	40.3%	2.20	49.8%	0.44	10.0%	5.35	1.18%
Wellesley	29,550	28,978	2	135	3	4.79	1.37%	4.23	2.53	52.8%	1.70	35.5%	0.56	11.7%	6.87	1.52%
Westwood	16,266	15,318	3	89	3	1.63	0.46%	1.51	0.61	37.4%	0.90	55.2%	0.12	7.4%	2.16	0.48%
Weymouth	57,437	56,061	19	205	4	8.66	2.47%	7.92	4.12	47.6%	3.80	43.9%	0.74	8.5%	12.75	2.82%
Wilmington	23,349	4,819	2	31	1	1.79	0.51%	1.70	0.90	50.3%	0.80	44.7%	0.09	5.0%	2.01	0.44%
Winchester	22,970	22,924	102	85	7	4.00	1.14%	3.63	2.43	60.8%	1.20	30.0%	0.37	9.3%	5.35	1.18%
Winthrop	19,316	19,316	22	36	4	2.43	0.69%	2.13	0.93	38.3%	1.20	49.4%	0.30	12.3%	2.90	0.64%
Woburn	40,876	40,080	18	164	13	8.42	2.40%	7.63	3.93	46.7%	3.70	43.9%	0.79	9.4%	10.49	2.32%
Totals/Averages	2,391,639	2,325,337	1,958	5,533		350.86	100.00%	302.35	123.99	35.3%	178.36	50.8%	48.49	13.8%	452.29	100.00%

FOOTNOTES:

(1) Figures tabulated using data from the MWRA Wastewater Metering System for Calendar Year 2023.

(2) Wastewater flow components are estimated through engineering analysis by MWRA staff.

(3) Miles of Local Sewers are from MWRA's regional collection system database or as reported by the Community and do not include service laterals.

(4) Average Daily Inflow is calculated as a total inflow over the period of January through December 2023 divided by 365 days. Actual inflow during a specific storm event must be calculated separately.

(5) Community with combined sewers. Inflow figures include combined flow during storm events tributary to MWRA's WWTP.

(6) Percent average Daily Flow and Percent Peak Month ADF are the two flow-based components of MWRA's Wholesale Sewer Rate Methodology.

Column Summations: Average Daily Flow (ADF) Column F = I+K+M Average Dry Day Flow Column H = I+K

TABLE 3 - 2023 Final Community Wastewater Flow Component Estimates

Community	Sewered Population	Miles of Local Sewers	IDM of Local Sewers	Average Daily Flow ADF (MGD)	Average Annual Infiltration (MGD)	Average Annual Inflow (MGD)	Average Sanitary Flow (MGD)	ADF (GPD Per IDM)	I/I (GPD Per IDM)	Infiltration (GPD Per IDM)	Inflow (GPD Per IDM)	Inflow (GPD Per Sewer Mile)	Average Sanitary (GPD Per Sew. Pop.)
Arlington	46,271	117	947	5.53	2.30	0.63	2.60	5,839	3,094	2,429	665	5,385	56
Ashland	14,717	78	682	1.51	0.50	0.10	0.90	2,214	880	733	147	1,282	61
Bedford	13,947	77	738	2.91	1.34	0.27	1.30	3,943	2,182	1,816	366	3,506	93
Belmont	26,932	76	671	3.31	1.27	0.54	1.50	4,933	2,697	1,893	805	7,105	56
BWSC	673,957	854	14,876	94.16	20.53	15.63	58.00	6,330	2,431	1,380	1,051	18,302	86
Braintree	39,049	140	1,302	6.88	2.95	0.73	3.20	5,284	2,826	2,266	561	5,214	82
Brookline	63,084	110	1,321	7.31	1.92	1.13	4.26	5,534	2,309	1,453	855	10,273	68
Burlington	25,790	117	1,200	4.20	1.91	0.29	2.00	3,500	1,833	1,592	242	2,479	78
Cambridge	118,379	147	2,183	22.91	6.20	4.71	12.00	10,495	4,998	2,840	2,158	32,041	101
Canton	17,201	87	864	3.50	1.77	0.34	1.40	4,051	2,442	2,049	394	3,908	81
Chelsea	40,787	42	609	7.03	2.19	1.84	3.00	11,544	6,617	3,596	3,021	43,810	74
Dedham	24,507	89	861	3.99	1.80	0.38	1.80	4,634	2,532	2,091	441	4,270	73
Everett	49,075	72	622	5.98	1.98	0.70	3.30	9,614	4,309	3,183	1,125	9,722	67
Framingham	69,727	231	2,352	9.45	3.60	1.04	4.80	4,018	1,973	1,531	442	4,502	69
Hingham	8,128	33	332	1.45	0.78	0.17	0.50	4,367	2,861	2,349	512	5,152	62
Holbrook	10,359	49	408	1.18	0.49	0.09	0.60	2,892	1,422	1,201	221	1,837	58
Lexington	33,856	171	1,777	6.80	3.99	0.61	2.20	3,827	2,589	2,245	343	3,567	65
Malden	65,969	100	926	8.81	2.98	0.83	5.00	9,514	4,114	3,218	896	8,300	76
Medford	59,624	120	1,039	8.86	3.27	1.30	4.30	8,527	4,398	3,147	1,251	10,833	72
Melrose	29,784	75	611	4.41	1.89	0.62	1.90	7,218	4,108	3,093	1,015	8,267	64
Milton	27,963	98	837	4.83	2.68	0.65	1.50	5,771	3,978	3,202	777	6,633	54
Natick	32,803	129	1,277	3.72	1.49	0.33	1.90	2,913	1,425	1,167	258	2,558	58
Needham	30,757	130	1,157	5.17	2.64	0.53	2.00	4,468	2,740	2,282	458	4,077	65
Newton	88,190	284	3,081	18.63	8.58	2.25	7.80	6,047	3,515	2,785	730	7,923	88
Norwood	31,458	108	1,091	6.84	3.61	0.73	2.50	6,269	3,978	3,309	669	6,759	79
Quincy	101,636	209	2,014	14.20	4.63	1.37	8.20	7,051	2,979	2,299	680	6,555	81
Randolph	34,920	113	1,153	4.28	1.84	0.34	2.10	3,712	1,891	1,596	295	3,009	60
Reading	25,334	100	897	2.84	1.26	0.28	1.30	3,166	1,717	1,405	312	2,800	51
Revere	61,944	98	950	7.66	2.72	0.94	4.00	8,063	3,853	2,863	989	9,592	65
Somerville	81,045	165	1,862	11.66	2.54	3.52	5.60	6,262	3,255	1,364	1,890	21,333	69
Stoneham	23,001	75	574	4.63	2.75	0.38	1.50	8,066	5,453	4,791	662	5,067	65
Stoughton	21,493	94	955	3.39	1.64	0.24	1.50	3,550	1,969	1,717	251	2,553	70
Wakefield	27,001	95	1,050	4.47	2.56	0.41	1.50	4,257	2,829	2,438	390	4,316	56
Walpole	19,449	93	904	2.55	1.11	0.14	1.30	2,821	1,383	1,228	155	1,505	67
Waltham	64,375	137	1,694	9.67	3.05	1.02	5.60	5,708	2,403	1,800	602	7,445	87
Watertown	35,329	75	621	4.42	1.78	0.44	2.20	7,118	3,575	2,866	709	5,867	62
Wellesley	28,978	135	1,391	4.79	2.53	0.56	1.70	3,444	2,221	1,819	403	4,148	59
Westwood	15,318	89	784	1.63	0.61	0.12	0.90	2,079	931	778	153	1,348	59
Weymouth	56,061	205	1,911	8.66	4.12	0.74	3.80	4,532	2,543	2,156	387	3,610	68
Wilmington	4,819	31	367	1.79	0.90	0.09	0.80	4,877	2,698	2,452	245	2,903	166
Winchester	22,924	85	699	4.00	2.43	0.37	1.20	5,722	4,006	3,476	529	4,353	52
Winthrop	19,316	36	317	2.43	0.93	0.30	1.20	7,666	3,880	2,934	946	8,333	62
Woburn	40,080	164	1,575	8.42	3.93	0.79	3.70	5,346	2,997	2,495	502	4,817	92
Total	2,325,337	5,533	61,482	350.86	123.99	48.49	178.36						
Average	54,078	129	1,430	8.16	2.88	1.13	4.15	5,516	2,950	2,263	686	7,378	72

Table 4 - Estimated Community Wastewater Flow Components for 2023 — 5/6/2024 —

Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average (MGD)
Ashland	Average Daily Flow	1.81	1.51	1.73	1.39	1.45	1.23	1.42	1.53	1.44	1.37	1.27	1.92	1.51
	Dry Day Average Daily Flow	1.72	1.47	1.56	1.30	1.37	1.22	1.22	1.41	1.34	1.28	1.26	1.69	1.40
	Estimated Infiltration	0.82	0.57	0.66	0.40	0.47	0.32	0.32	0.51	0.44	0.38	0.36	0.79	0.50
	Estimated Sanitary Flow	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
	Estimated Inflow	0.09	0.04	0.17	0.09	0.08	0.01	0.20	0.12	0.10	0.09	0.01	0.23	0.10
Boston (South Only)	Raw Average Daily Flow	35.65	25.34	35.59	22.72	24.17	20.11	28.03	27.30	29.38	21.20	17.78	37.83	27.16
	Raw Dry Day Average Daily Flow	31.37	23.25	27.02	20.68	20.96	18.72	20.74	23.30	23.54	18.41	16.45	30.94	22.98
	Raw Estimated Infiltration	23.17	15.05	18.82	12.48	12.76	10.52	12.54	15.10	15.34	10.21	8.25	22.74	14.78
	MWRA Estimated Infiltration	8.70	5.65	7.06	4.68	4.79	3.95	4.71	5.67	5.76	3.83	3.10	8.53	5.55
	Final Average Daily Flow	26.95	19.69	28.53	18.04	19.38	16.16	23.32	21.63	23.62	17.37	14.68	29.30	21.61
	Final Dry Day Average Daily Flow	22.67	17.60	19.96	16.00	16.17	14.77	16.03	17.63	17.78	14.58	13.35	22.41	17.43
	Final Estimated Infiltration	14.47	9.40	11.76	7.80	7.97	6.57	7.83	9.43	9.58	6.38	5.15	14.21	9.23
	Estimated Sanitary Flow	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20
	Estimated Inflow	4.28	2.09	8.57	2.04	3.21	1.39	7.29	4.00	5.84	2.79	1.33	6.89	4.18
Braintree	Raw Average Daily Flow	11.75	7.88	9.65	6.73	6.90	5.46	7.10	6.61	6.76	5.72	5.24	8.71	7.39
	Raw Dry Day Average Daily Flow	10.47	7.11	8.05	6.20	6.11	5.42	6.24	6.23	6.27	5.24	5.11	7.40	6.66
	Raw Estimated Infiltration	7.27	3.91	4.85	3.00	2.91	2.22	3.04	3.03	3.07	2.04	1.91	4.20	3.46
	MWRA Estimated Infiltration	1.07	0.57	0.71	0.44	0.43	0.33	0.45	0.44	0.45	0.30	0.28	0.62	0.51
	Final Average Daily Flow	10.68	7.31	8.94	6.29	6.47	5.13	6.65	6.17	6.31	5.42	4.96	8.09	6.88
	Final Dry Day Average Daily Flow	9.40	6.54	7.34	5.76	5.68	5.09	5.79	5.79	5.82	4.94	4.83	6.78	6.15
	Final Estimated Infiltration	6.20	3.34	4.14	2.56	2.48	1.89	2.59	2.59	2.62	1.74	1.63	3.58	2.95
	Estimated Sanitary Flow	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
	Estimated Inflow	1.28	0.77	1.60	0.53	0.79	0.04	0.86	0.38	0.49	0.48	0.13	1.31	0.73
Brookline (South Only)	Raw Average Daily Flow	5.47	3.28	5.52	3.55	3.94	3.16	5.04	5.17	4.50	3.24	2.90	5.52	4.29
	Raw Dry Day Average Daily Flow	4.62	3.02	4.26	3.12	3.34	2.93	3.57	4.01	3.68	2.91	2.71	4.44	3.56
	Raw Estimated Infiltration	2.47	0.87	2.11	0.97	1.19	0.78	1.42	1.86	1.53	0.76	0.56	2.29	1.41
	MWRA Estimated Infiltration	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.01
	Final Average Daily Flow	5.45	3.27	5.51	3.54	3.93	3.15	5.03	5.16	4.49	3.23	2.90	5.50	4.28
	Final Dry Day Average Daily Flow	4.60	3.01	4.25	3.11	3.33	2.92	3.56	4.00	3.67	2.90	2.71	4.42	3.55
	Final Estimated Infiltration	2.45	0.86	2.10	0.96	1.18	0.77	1.41	1.85	1.52	0.75	0.56	2.27	1.40
	Estimated Sanitary Flow	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	Estimated Inflow	0.85	0.26	1.26	0.43	0.60	0.23	1.47	1.16	0.82	0.33	0.19	1.08	0.73
Canton	Raw Average Daily Flow	4.92	3.69	4.50	3.22	3.41	2.80	3.47	3.47	3.98	3.28	2.94	4.43	3.68
	Raw Dry Day Average Daily Flow	4.36	3.45	3.85	2.94	3.08	2.73	3.08	3.18	3.63	3.03	2.84	3.91	3.34
	Raw Estimated Infiltration	2.96	2.05	2.45	1.54	1.68	1.33	1.68	1.78	2.23	1.63	1.44	2.51	1.94
	MWRA Estimated Infiltration	0.27	0.19	0.22	0.14	0.15	0.12	0.15	0.16	0.20	0.15	0.13	0.23	0.18
	Final Average Daily Flow	4.65	3.50	4.28	3.08	3.26	2.68	3.32	3.31	3.78	3.13	2.81	4.20	3.50
	Final Dry Day Average Daily Flow	4.09	3.26	3.63	2.80	2.93	2.61	2.93	3.02	3.43	2.88	2.71	3.68	3.17
	Final Estimated Infiltration	2.69	1.86	2.23	1.40	1.53	1.21	1.53	1.62	2.03	1.48	1.31	2.28	1.77
	Estimated Sanitary Flow	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
	Estimated Inflow	0.56	0.24	0.65	0.28	0.33	0.07	0.39	0.29	0.35	0.25	0.10	0.52	0.34
Dedham	Average Daily Flow	5.70	4.07	5.33	3.58	3.60	2.94	3.84	3.85	3.79	3.08	2.77	5.23	3.99
	Dry Day Average Daily Flow	5.27	3.77	4.46	3.33	3.22	2.82	3.29	3.55	3.45	2.83	2.65	4.56	3.60
	Estimated Infiltration	3.47	1.97	2.66	1.53	1.42	1.02	1.49	1.75	1.65	1.03	0.85	2.76	1.80
	Estimated Sanitary Flow	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
	Estimated Inflow	0.43	0.30	0.87	0.25	0.38	0.12	0.55	0.30	0.34	0.25	0.12	0.67	0.38

Table 4 - Estimated Community Wastewater Flow Components for 2023													5/6/2024	PAGE 2	Annual Average (MGD)
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Framingham	Average Daily Flow	11.17	8.20	11.46	8.35	8.71	6.64	8.85	10.32	10.00	8.53	7.61	13.22		9.45
	Dry Day Average Daily Flow	9.66	7.82	9.73	7.81	7.84	6.58	7.47	8.84	8.85	7.90	7.46	10.73		8.40
	Estimated Infiltration	4.86	3.02	4.93	3.01	3.04	1.78	2.67	4.04	4.05	3.10	2.66	5.93		3.60
	Estimated Sanitary Flow	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80		4.80
	Estimated Inflow	1.51	0.38	1.73	0.54	0.87	0.06	1.38	1.48	1.15	0.63	0.15	2.49		1.04
Hingham	Average Daily Flow	2.35	1.47	1.99	1.20	1.26	1.01	1.53	1.52	1.32	1.01	1.01	1.70		1.45
	Dry Day Average Daily Flow	2.03	1.32	1.62	1.07	1.14	0.99	1.24	1.48	1.19	0.90	0.94	1.45		1.28
	Estimated Infiltration	1.53	0.82	1.12	0.57	0.64	0.49	0.74	0.98	0.69	0.40	0.44	0.95		0.78
	Estimated Sanitary Flow	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.50
	Estimated Inflow	0.32	0.15	0.37	0.13	0.12	0.02	0.29	0.04	0.13	0.11	0.07	0.25		0.17
Holbrook	Average Daily Flow	1.70	1.23	1.56	1.11	1.11	0.99	1.13	1.03	1.04	0.91	0.97	1.34		1.18
	Dry Day Average Daily Flow	1.50	1.22	1.36	1.03	1.00	0.98	1.04	0.98	1.00	0.85	0.93	1.21		1.09
	Estimated Infiltration	0.90	0.62	0.76	0.43	0.40	0.38	0.44	0.38	0.40	0.25	0.33	0.61		0.49
	Estimated Sanitary Flow	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60		0.60
	Estimated Inflow	0.20	0.01	0.20	0.08	0.11	0.01	0.09	0.05	0.04	0.06	0.04	0.13		0.09
Milton (South Only)	Average Daily Flow	6.80	4.48	6.28	3.76	3.91	3.01	4.54	4.31	4.50	3.44	3.00	6.01		4.51
	Dry Day Average Daily Flow	5.94	4.17	5.14	3.30	3.40	2.87	3.32	3.89	3.88	3.09	2.75	5.02		3.90
	Estimated Infiltration	4.59	2.82	3.79	1.95	2.05	1.52	1.97	2.54	2.53	1.74	1.40	3.67		2.55
	Estimated Sanitary Flow	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35		1.35
	Estimated Inflow	0.86	0.31	1.14	0.46	0.51	0.14	1.22	0.42	0.62	0.35	0.25	0.99		0.61
Natick	Average Daily Flow	4.33	3.46	4.44	3.36	3.61	2.88	3.53	3.98	3.88	3.31	2.96	4.84		3.72
	Dry Day Average Daily Flow	4.00	3.28	3.85	3.14	3.24	2.86	3.05	3.45	3.59	3.10	2.92	4.15		3.39
	Estimated Infiltration	2.10	1.38	1.95	1.24	1.34	0.96	1.15	1.55	1.69	1.20	1.02	2.25		1.49
	Estimated Sanitary Flow	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90
	Estimated Inflow	0.33	0.18	0.59	0.22	0.37	0.02	0.48	0.53	0.29	0.21	0.04	0.69		0.33
Needham	Average Daily Flow	6.34	4.87	6.31	4.64	5.19	3.85	5.77	5.99	4.77	4.12	3.71	6.32		5.17
	Dry Day Average Daily Flow	5.87	4.55	5.48	4.30	4.59	3.77	4.40	4.99	4.36	3.80	3.66	5.84		4.64
	Estimated Infiltration	3.87	2.55	3.48	2.30	2.59	1.77	2.40	2.99	2.36	1.80	1.66	3.84		2.64
	Estimated Sanitary Flow	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00
	Estimated Inflow	0.47	0.32	0.83	0.34	0.60	0.08	1.37	1.00	0.41	0.32	0.05	0.48		0.53
Newton (South Only)	Raw Average Daily Flow	14.01	10.01	14.96	9.20	9.81	7.16	11.51	13.73	11.59	8.73	7.35	14.49		11.08
	Raw Dry Day Average Daily Flow	12.70	9.10	12.47	8.26	8.39	7.14	8.76	11.14	9.86	7.83	7.00	12.19		9.59
	Raw Estimated Infiltration	8.60	5.00	8.37	4.16	4.29	3.04	4.66	7.04	5.76	3.73	2.90	8.09		5.49
	MWRA Estimated Infiltration	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02		0.01
	Final Average Daily Flow	13.99	10.00	14.94	9.19	9.80	7.15	11.50	13.71	11.57	8.72	7.34	14.47		11.06
	Final Dry Day Average Daily Flow	12.68	9.09	12.45	8.25	8.38	7.13	8.75	11.12	9.84	7.82	6.99	12.17		9.58
	Final Estimated Infiltration	8.58	4.99	8.35	4.15	4.28	3.03	4.65	7.02	5.74	3.72	2.89	8.07		5.48
	Estimated Sanitary Flow	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10		4.10
	Estimated Inflow	1.31	0.91	2.49	0.94	1.42	0.02	2.75	2.59	1.73	0.90	0.35	2.30		1.49

Table 4 - Estimated Community Wastewater Flow Components for 2023												5/6/2024	PAGE 3	Annual Average (MGD)
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Norwood	Raw Average Daily Flow	10.21	7.35	9.00	6.28	6.84	5.36	6.77	6.80	7.35	6.04	5.45	9.53	7.26
	Raw Dry Day Average Daily Flow	9.17	6.97	7.62	5.96	6.01	5.31	6.06	6.07	6.52	5.18	5.17	8.26	6.53
	Raw Estimated Infiltration	6.67	4.47	5.12	3.46	3.51	2.81	3.56	3.57	4.02	2.68	2.67	5.76	4.03
	MWRA Estimated Infiltration	0.69	0.46	0.53	0.36	0.36	0.29	0.37	0.37	0.42	0.28	0.28	0.60	0.42
	Final Average Daily Flow	9.52	6.89	8.47	5.92	6.48	5.07	6.40	6.43	6.93	5.76	5.17	8.93	6.84
	Final Dry Day Average Daily Flow	8.48	6.51	7.09	5.60	5.65	5.02	5.69	5.70	6.10	4.90	4.89	7.66	6.11
	Final Estimated Infiltration	5.98	4.01	4.59	3.10	3.15	2.52	3.19	3.20	3.60	2.40	2.39	5.16	3.61
	Estimated Sanitary Flow	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	Estimated Inflow	1.04	0.38	1.38	0.32	0.83	0.05	0.71	0.73	0.83	0.86	0.28	1.27	0.73
Quincy	Average Daily Flow	18.32	13.56	17.38	12.60	12.95	11.88	15.57	14.65	14.33	11.79	10.82	16.28	14.20
	Dry Day Average Daily Flow	16.34	12.61	14.81	11.83	11.76	11.24	13.06	13.76	13.05	11.07	10.21	14.02	12.83
	Estimated Infiltration	8.14	4.41	6.61	3.63	3.56	3.04	4.86	5.56	4.85	2.87	2.01	5.82	4.63
	Estimated Sanitary Flow	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20
	Estimated Inflow	1.98	0.95	2.57	0.77	1.19	0.64	2.51	0.89	1.28	0.72	0.61	2.26	1.37
Randolph	Average Daily Flow	6.36	4.51	5.64	3.92	3.90	3.21	3.84	3.79	4.08	3.43	3.29	5.32	4.28
	Dry Day Average Daily Flow	5.91	4.19	4.83	3.65	3.61	3.18	3.46	3.59	3.78	3.14	3.12	4.78	3.94
	Estimated Infiltration	3.81	2.09	2.73	1.55	1.51	1.08	1.36	1.49	1.68	1.04	1.02	2.68	1.84
	Estimated Sanitary Flow	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
	Estimated Inflow	0.45	0.32	0.81	0.27	0.29	0.03	0.38	0.20	0.30	0.29	0.17	0.54	0.34
Stoughton	Average Daily Flow	4.70	3.69	4.41	3.23	3.22	2.72	3.01	2.87	3.28	2.85	2.70	3.92	3.39
	Dry Day Average Daily Flow	4.36	3.50	3.90	3.06	2.94	2.68	2.79	2.79	2.91	2.65	2.55	3.56	3.14
	Estimated Infiltration	2.86	2.00	2.40	1.56	1.44	1.18	1.29	1.29	1.41	1.15	1.05	2.06	1.64
	Estimated Sanitary Flow	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Estimated Inflow	0.34	0.19	0.51	0.17	0.28	0.04	0.22	0.08	0.37	0.20	0.15	0.36	0.24
Walpole	Average Daily Flow	3.12	2.73	3.06	2.52	2.49	2.08	2.14	2.19	2.49	2.36	2.26	3.13	2.55
	Dry Day Average Daily Flow	3.00	2.56	2.80	2.40	2.29	2.03	2.09	2.09	2.37	2.26	2.19	2.86	2.41
	Estimated Infiltration	1.70	1.26	1.50	1.10	0.99	0.73	0.79	0.79	1.07	0.96	0.89	1.56	1.11
	Estimated Sanitary Flow	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
	Estimated Inflow	0.12	0.17	0.26	0.12	0.20	0.05	0.05	0.10	0.12	0.10	0.07	0.27	0.14
Wellesley	Average Daily Flow	6.09	4.48	6.10	4.06	4.63	3.46	4.54	5.04	4.81	3.93	3.38	6.87	4.79
	Dry Day Average Daily Flow	5.57	4.21	5.15	3.75	3.93	3.42	3.74	4.27	4.10	3.50	3.27	5.79	4.23
	Estimated Infiltration	3.87	2.51	3.45	2.05	2.23	1.72	2.04	2.57	2.40	1.80	1.57	4.09	2.53
	Estimated Sanitary Flow	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
	Estimated Inflow	0.52	0.27	0.95	0.31	0.70	0.04	0.80	0.77	0.71	0.43	0.11	1.08	0.56
Westwood	Average Daily Flow	2.16	1.73	2.13	1.55	1.58	1.34	1.56	1.51	1.46	1.30	1.25	1.97	1.63
	Dry Day Average Daily Flow	2.05	1.69	1.89	1.39	1.40	1.29	1.41	1.43	1.33	1.23	1.20	1.76	1.51
	Estimated Infiltration	1.15	0.79	0.99	0.49	0.50	0.39	0.51	0.53	0.43	0.33	0.30	0.86	0.61
	Estimated Sanitary Flow	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
	Estimated Inflow	0.11	0.04	0.24	0.16	0.18	0.05	0.15	0.08	0.13	0.07	0.05	0.21	0.12

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 4	Average
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	(MGD)
Weymouth	Average Daily Flow	12.75	8.96	11.04	7.56	7.87	6.49	8.31	8.21	8.38	7.18	6.83	10.24	8.66
	Dry Day Average Daily Flow	11.53	8.35	9.58	7.00	7.04	6.14	7.51	7.60	7.65	6.74	6.38	9.43	7.92
	Estimated Infiltration	7.73	4.55	5.78	3.20	3.24	2.34	3.71	3.80	3.85	2.94	2.58	5.63	4.12
	Estimated Sanitary Flow	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80	3.80
	Estimated Inflow	1.22	0.61	1.46	0.56	0.83	0.35	0.80	0.61	0.73	0.44	0.45	0.81	0.74
Subtotal (Southern System)	Raw Average Daily Flow	175.71	126.50	168.08	114.53	120.55	97.78	131.50	133.87	133.13	106.82	95.49	168.82	131.33
	Raw Dry Day Average Daily Flow	157.44	117.61	139.43	105.52	106.66	94.32	107.54	118.05	116.35	96.94	90.77	143.99	116.37
	Raw Estimated Infiltration	102.54	62.71	84.53	50.62	51.76	39.42	52.64	63.15	61.45	42.04	35.87	89.09	61.47
	MWRA Estimated Infiltration	10.77	6.89	8.55	5.64	5.75	4.71	5.70	6.67	6.86	4.58	3.80	10.02	6.68
	Final Average Daily Flow	164.94	119.61	159.53	108.89	114.80	93.07	125.80	127.20	126.27	102.24	91.69	158.80	124.66
	Final Dry Day Average Daily Flow	146.67	110.72	130.88	99.88	100.91	89.61	101.84	111.38	109.49	92.36	86.97	133.97	109.69
	Final Estimated Infiltration	91.77	55.82	75.98	44.98	46.01	34.71	46.94	56.48	54.59	37.46	32.07	79.07	54.79
	Estimated Sanitary Flow	54.90	54.90	54.90	54.90	54.90	54.90	54.90	54.90	54.90	54.90	54.90	54.90	54.90
	Estimated Inflow	18.27	8.89	28.65	9.01	13.89	3.46	23.96	15.82	16.78	9.88	4.72	24.83	14.97
South System Pump Station as Reported by NPDES	Average Daily Flow	164.20	115.20	156.50	102.90	108.50	89.30	119.70	120.60	120.10	95.50	86.30	155.50	119.78

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 5	Annual Average
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	(MGD)
Arlington	Raw Average Daily Flow	7.29	5.32	7.68	4.86	5.37	4.27	5.68	5.48	5.84	4.43	3.96	7.23	5.63
	Raw Dry Day Average Daily Flow	6.76	4.89	6.32	4.40	4.68	4.17	5.14	4.62	4.89	3.99	3.77	6.25	5.00
	Raw Estimated Infiltration	4.16	2.29	3.72	1.80	2.08	1.57	2.54	2.02	2.29	1.39	1.17	3.65	2.40
	MWRA Estimated Infiltration	0.17	0.10	0.15	0.07	0.09	0.07	0.11	0.08	0.10	0.06	0.05	0.15	0.10
	Final Average Daily Flow	7.12	5.22	7.53	4.79	5.28	4.20	5.57	5.40	5.74	4.37	3.91	7.08	5.53
	Final Dry Day Average Daily Flow	6.59	4.79	6.17	4.33	4.59	4.10	5.03	4.54	4.79	3.93	3.72	6.10	4.90
	Final Estimated Infiltration	3.99	2.19	3.57	1.73	1.99	1.50	2.43	1.94	2.19	1.33	1.12	3.50	2.30
	Estimated Sanitary Flow	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
	Estimated Inflow	0.53	0.43	1.36	0.46	0.69	0.10	0.54	0.86	0.95	0.44	0.19	0.98	0.63
Bedford	Average Daily Flow	3.30	2.75	3.75	2.72	2.81	2.32	2.70	3.09	3.24	2.53	2.21	3.44	2.91
	Dry Day Average Daily Flow	3.10	2.62	3.29	2.50	2.46	2.18	2.66	2.53	2.79	2.28	2.16	3.03	2.64
	Estimated Infiltration	1.80	1.32	1.99	1.20	1.16	0.88	1.36	1.23	1.49	0.98	0.86	1.73	1.34
	Estimated Sanitary Flow	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
	Estimated Inflow	0.20	0.13	0.46	0.22	0.35	0.14	0.04	0.56	0.45	0.25	0.05	0.41	0.27
Belmont	Average Daily Flow	4.31	2.88	4.78	2.77	3.17	2.42	3.27	3.22	3.54	2.45	2.23	4.55	3.31
	Dry Day Average Daily Flow	3.72	2.67	3.66	2.44	2.64	2.29	2.73	2.58	2.61	2.13	2.10	3.59	2.77
	Estimated Infiltration	2.22	1.17	2.16	0.94	1.14	0.79	1.23	1.08	1.11	0.63	0.60	2.09	1.27
	Estimated Sanitary Flow	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Estimated Inflow	0.59	0.21	1.12	0.33	0.53	0.13	0.54	0.64	0.93	0.32	0.13	0.96	0.54
Boston (North Only)														
Boston Charlestown	Raw Average Daily Flow	3.77	2.71	3.65	3.06	3.44	3.37	4.14	3.74	3.71	3.64	3.07	3.69	3.51
	Raw Dry Day Average Daily Flow	2.72	2.43	2.51	2.58	2.62	2.96	2.91	2.59	3.21	3.52	2.90	2.92	2.82
	Raw Estimated Infiltration	1.02	0.73	0.81	0.88	0.92	1.26	1.21	0.89	1.51	1.82	1.20	1.22	1.12
	MWRA Estimated Infiltration	0.13	0.09	0.10	0.11	0.12	0.16	0.15	0.11	0.19	0.23	0.15	0.16	0.14
	Final Average Daily Flow	3.64	2.62	3.55	2.95	3.32	3.21	3.99	3.63	3.52	3.41	2.92	3.53	3.37
	Final Dry Day Average Daily Flow	2.59	2.34	2.41	2.47	2.50	2.80	2.76	2.48	3.02	3.29	2.75	2.76	2.68
	Final Estimated Infiltration	0.89	0.64	0.71	0.77	0.80	1.10	1.06	0.78	1.32	1.59	1.05	1.06	0.98
	Estimated Sanitary Flow	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
	Estimated Inflow	1.05	0.28	1.14	0.48	0.82	0.41	1.23	1.15	0.50	0.12	0.17	0.77	0.68
Boston Columbus Park	Raw Average Daily Flow	38.38	28.63	38.09	28.92	29.46	28.97	40.14	35.74	36.29	26.64	27.45	38.55	33.17
	Raw Dry Day Average Daily Flow	29.05	26.35	29.23	26.33	24.35	24.19	25.64	27.10	30.85	24.12	24.70	28.01	26.66
	Raw Estimated Infiltration	8.75	6.05	8.93	6.03	4.05	3.89	5.34	6.80	10.55	3.82	4.40	7.71	6.36
	MWRA Estimated Infiltration	0.23	0.16	0.24	0.16	0.11	0.10	0.14	0.18	0.28	0.10	0.12	0.20	0.17
	Final Average Daily Flow	38.15	28.47	37.85	28.76	29.35	28.87	40.00	35.56	36.01	26.54	27.33	38.35	33.00
	Final Dry Day Average Daily Flow	28.82	26.19	28.99	26.17	24.24	24.09	25.50	26.92	30.57	24.02	24.58	27.81	26.50
	Final Estimated Infiltration	8.52	5.89	8.69	5.87	3.94	3.79	5.20	6.62	10.27	3.72	4.28	7.51	6.20
	Estimated Sanitary Flow	20.30	20.30	20.30	20.30	20.30	20.30	20.30	20.30	20.30	20.30	20.30	20.30	20.30
	Estimated Inflow	9.33	2.28	8.86	2.59	5.11	4.78	14.50	8.64	5.44	2.52	2.75	10.54	6.51
Boston East Boston	Raw Average Daily Flow	8.27	5.96	8.70	6.69	7.03	6.85	7.63	7.72	6.35	5.76	5.72	8.02	7.07
	Raw Dry Day Average Daily Flow	6.07	5.75	6.86	5.86	5.93	5.62	5.75	6.08	5.27	5.49	4.81	6.19	5.81
	Raw Estimated Infiltration	2.57	2.25	3.36	2.36	2.43	2.12	2.25	2.58	1.77	1.99	1.31	2.69	2.31
	MWRA Estimated Infiltration	0.37	0.32	0.48	0.34	0.35	0.31	0.32	0.37	0.25	0.29	0.19	0.39	0.33
	Final Average Daily Flow	7.90	5.64	8.22	6.35	6.68	6.54	7.31	7.35	6.10	5.47	5.53	7.63	6.74
	Final Dry Day Average Daily Flow	5.70	5.43	6.38	5.52	5.58	5.31	5.43	5.71	5.02	5.20	4.62	5.80	5.48
	Final Estimated Infiltration	2.20	1.93	2.88	2.02	2.08	1.81	1.93	2.21	1.52	1.70	1.12	2.30	1.98
	Estimated Sanitary Flow	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
	Estimated Inflow	2.20	0.21	1.84	0.83	1.10	1.23	1.88	1.64	1.08	0.27	0.91	1.83	1.26

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 6	Annual Average (MGD)
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Boston Ward Street	Raw Average Daily Flow	32.63	28.01	32.58	27.46	28.12	28.95	33.06	31.16	31.57	27.74	26.91	29.78	29.86
	Raw Dry Day Average Daily Flow	28.45	27.30	26.77	25.44	26.23	26.53	28.49	27.12	28.08	25.92	25.75	26.26	26.86
	Raw Estimated Infiltration	4.15	3.00	2.47	1.14	1.93	2.23	4.19	2.82	3.78	1.62	1.45	1.96	2.56
	MWRA Estimated Infiltration	0.68	0.49	0.40	0.19	0.31	0.36	0.68	0.46	0.62	0.26	0.24	0.32	0.42
	Final Average Daily Flow	31.95	27.52	32.18	27.27	27.81	28.59	32.38	30.70	30.95	27.48	26.67	29.46	29.44
	Final Dry Day Average Daily Flow	27.77	26.81	26.37	25.25	25.92	26.17	27.81	26.66	27.46	25.66	25.51	25.94	26.44
	Final Estimated Infiltration	3.47	2.51	2.07	0.95	1.62	1.87	3.51	2.36	3.16	1.36	1.21	1.64	2.14
	Estimated Sanitary Flow	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30
	Estimated Inflow	4.18	0.71	5.81	2.02	1.89	2.42	4.57	4.04	3.49	1.82	1.16	3.52	3.00
Boston (North Total)	Raw Average Daily Flow	83.05	65.31	83.02	66.13	68.05	68.14	84.97	78.36	77.92	63.78	63.15	80.04	73.61
	Raw Dry Day Average Daily Flow	66.29	61.83	65.37	60.21	59.13	59.30	62.79	62.89	67.41	59.05	58.16	63.38	62.16
	Raw Estimated Infiltration	16.49	12.03	15.57	10.41	9.33	9.50	12.99	13.09	17.61	9.25	8.36	13.58	12.36
	MWRA Estimated Infiltration	1.41	1.06	1.22	0.80	0.89	0.93	1.29	1.12	1.34	0.88	0.70	1.07	1.06
	Final Average Daily Flow	81.64	64.25	81.80	65.33	67.16	67.21	83.68	77.24	76.58	62.90	62.45	78.97	72.55
	Final Dry Day Average Daily Flow	64.88	60.77	64.15	59.41	58.24	58.37	61.50	61.77	66.07	58.17	57.46	62.31	61.10
	Final Estimated Infiltration	15.08	10.97	14.35	9.61	8.44	8.57	11.70	11.97	16.27	8.37	7.66	12.51	11.30
	Estimated Sanitary Flow	49.80	49.80	49.80	49.80	49.80	49.80	49.80	49.80	49.80	49.80	49.80	49.80	49.80
	Estimated Inflow	16.76	3.48	17.65	5.92	8.92	8.84	22.18	15.47	10.51	4.73	4.99	16.66	11.45
Brookline (North Only)	Average Daily Flow	3.46	3.11	3.99	3.10	2.57	2.63	3.19	3.12	3.15	2.49	2.04	3.45	3.03
	Dry Day Average Daily Flow	2.93	2.89	3.26	3.08	2.17	2.58	2.51	2.43	2.73	2.34	1.91	2.76	2.63
	Estimated Infiltration	0.78	0.74	1.11	0.93	0.02	0.43	0.36	0.28	0.58	0.44	0.01	0.61	0.52
	Estimated Sanitary Flow	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	1.90	1.90	2.15	2.11
	Estimated Inflow	0.53	0.22	0.73	0.02	0.40	0.05	0.68	0.69	0.42	0.15	0.13	0.69	0.40
Burlington	Average Daily Flow	4.89	4.08	5.06	3.92	4.21	3.79	3.82	3.99	4.53	3.69	3.33	5.01	4.20
	Dry Day Average Daily Flow	4.65	3.88	4.71	3.69	3.81	3.66	3.76	3.53	3.97	3.48	3.24	4.45	3.91
	Estimated Infiltration	2.65	1.88	2.71	1.69	1.81	1.66	1.76	1.53	1.97	1.48	1.24	2.45	1.91
	Estimated Sanitary Flow	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Estimated Inflow	0.24	0.20	0.35	0.23	0.40	0.13	0.06	0.46	0.56	0.21	0.09	0.56	0.29
Cambridge	Raw Average Daily Flow	26.43	20.80	27.42	21.08	22.02	21.16	28.14	26.86	26.28	19.40	17.93	29.92	24.00
	Raw Dry Day Average Daily Flow	19.92	19.78	20.52	18.56	18.78	18.39	19.48	20.84	20.98	17.16	16.61	20.49	19.30
	Raw Estimated Infiltration	7.92	7.78	8.52	6.56	6.78	6.39	7.48	8.84	8.98	5.16	4.61	8.49	7.30
	MWRA Estimated Infiltration	1.19	1.17	1.28	0.99	1.02	0.96	1.13	1.33	1.35	0.78	0.69	1.28	1.10
	Final Average Daily Flow	25.24	19.63	26.14	20.09	21.00	20.20	27.01	25.53	24.93	18.62	17.24	28.64	22.91
	Final Dry Day Average Daily Flow	18.73	18.61	19.24	17.57	17.76	17.43	18.35	19.51	19.63	16.38	15.92	19.21	18.20
	Final Estimated Infiltration	6.73	6.61	7.24	5.57	5.76	5.43	6.35	7.51	7.63	4.38	3.92	7.21	6.20
	Estimated Sanitary Flow	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
	Estimated Inflow	6.51	1.02	6.90	2.52	3.24	2.77	8.66	6.02	5.30	2.24	1.32	9.43	4.71
Chelsea	Raw Average Daily Flow	9.04	5.92	8.73	6.45	6.71	6.65	9.44	7.51	7.73	5.70	5.35	8.65	7.34
	Raw Dry Day Average Daily Flow	6.15	5.31	5.96	5.19	5.43	5.74	5.82	5.05	6.05	4.94	4.64	5.70	5.50
	Raw Estimated Infiltration	3.15	2.31	2.96	2.19	2.43	2.74	2.82	2.05	3.05	1.94	1.64	2.70	2.50
	MWRA Estimated Infiltration	0.39	0.29	0.37	0.27	0.30	0.34	0.35	0.25	0.38	0.24	0.20	0.33	0.31
	Final Average Daily Flow	8.65	5.63	8.36	6.18	6.41	6.31	9.09	7.26	7.35	5.46	5.15	8.32	7.03
	Final Dry Day Average Daily Flow	5.76	5.02	5.59	4.92	5.13	5.40	5.47	4.80	5.67	4.70	4.44	5.37	5.19
	Final Estimated Infiltration	2.76	2.02	2.59	1.92	2.13	2.40	2.47	1.80	2.67	1.70	1.44	2.37	2.19
	Estimated Sanitary Flow	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Estimated Inflow	2.89	0.61	2.77	1.26	1.28	0.91	3.62	2.46	1.68	0.76	0.71	2.95	1.84

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 7	
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average (MGD)
Everett	Raw Average Daily Flow	6.89	5.54	7.45	5.29	5.62	5.24	6.65	6.73	6.20	4.77	4.69	6.75	6.00
	Raw Dry Day Average Daily Flow	6.01	5.24	6.13	4.84	4.99	5.06	5.55	5.66	5.47	4.47	4.42	5.65	5.30
	Raw Estimated Infiltration	2.71	1.94	2.83	1.54	1.69	1.76	2.25	2.36	2.17	1.17	1.12	2.35	2.00
	MWRA Estimated Infiltration	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Final Average Daily Flow	6.88	5.53	7.43	5.28	5.61	5.23	6.64	6.72	6.19	4.76	4.68	6.74	5.98
	Final Dry Day Average Daily Flow	6.00	5.23	6.11	4.83	4.98	5.05	5.54	5.65	5.46	4.46	4.41	5.64	5.28
	Final Estimated Infiltration	2.70	1.93	2.81	1.53	1.68	1.75	2.24	2.35	2.16	1.16	1.11	2.34	1.98
	Estimated Sanitary Flow	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
	Estimated Inflow	0.88	0.30	1.32	0.45	0.63	0.18	1.10	1.07	0.73	0.30	0.27	1.10	0.70
Lexington	Raw Average Daily Flow	8.60	7.30	9.57	6.58	7.25	5.82	6.54	6.90	8.05	5.90	5.08	8.83	7.21
	Raw Dry Day Average Daily Flow	8.31	6.92	8.30	6.10	6.63	5.69	6.40	5.82	6.88	5.35	4.91	7.86	6.60
	Raw Estimated Infiltration	6.11	4.72	6.10	3.90	4.43	3.49	4.20	3.62	4.68	3.15	2.71	5.66	4.40
	MWRA Estimated Infiltration	0.57	0.44	0.57	0.37	0.42	0.33	0.39	0.34	0.44	0.30	0.25	0.53	0.41
	Final Average Daily Flow	8.03	6.86	9.00	6.21	6.83	5.49	6.15	6.56	7.61	5.60	4.83	8.30	6.80
	Final Dry Day Average Daily Flow	7.74	6.48	7.73	5.73	6.21	5.36	6.01	5.48	6.44	5.05	4.66	7.33	6.19
	Final Estimated Infiltration	5.54	4.28	5.53	3.53	4.01	3.16	3.81	3.28	4.24	2.85	2.46	5.13	3.99
	Estimated Sanitary Flow	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
	Estimated Inflow	0.29	0.38	1.27	0.48	0.62	0.13	0.14	1.08	1.17	0.55	0.17	0.97	0.61
Malden	Raw Average Daily Flow	10.89	8.25	11.67	7.80	9.08	7.61	9.44	9.47	9.32	7.68	7.15	11.29	9.16
	Raw Dry Day Average Daily Flow	9.64	7.78	9.71	7.46	8.00	7.51	8.72	8.52	8.51	7.14	6.88	9.94	8.33
	Raw Estimated Infiltration	4.64	2.78	4.71	2.46	3.00	2.51	3.72	3.52	3.51	2.14	1.88	4.94	3.33
	MWRA Estimated Infiltration	0.48	0.29	0.49	0.26	0.31	0.26	0.39	0.37	0.37	0.22	0.20	0.52	0.35
	Final Average Daily Flow	10.41	7.96	11.18	7.54	8.77	7.35	9.05	9.10	8.95	7.46	6.95	10.77	8.81
	Final Dry Day Average Daily Flow	9.16	7.49	9.22	7.20	7.69	7.25	8.33	8.15	8.14	6.92	6.68	9.42	7.98
	Final Estimated Infiltration	4.16	2.49	4.22	2.20	2.69	2.25	3.33	3.15	3.14	1.92	1.68	4.42	2.98
	Estimated Sanitary Flow	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Estimated Inflow	1.25	0.47	1.96	0.34	1.08	0.10	0.72	0.95	0.81	0.54	0.27	1.35	0.83
Medford	Raw Average Daily Flow	11.71	8.21	12.70	7.77	8.93	7.57	10.21	9.84	10.10	6.70	6.32	11.62	9.33
	Raw Dry Day Average Daily Flow	10.28	7.55	10.22	7.00	7.52	7.01	8.91	8.21	8.12	5.98	5.77	9.65	8.03
	Raw Estimated Infiltration	5.98	3.25	5.92	2.70	3.22	2.71	4.61	3.91	3.82	1.68	1.47	5.35	3.73
	MWRA Estimated Infiltration	0.75	0.41	0.74	0.34	0.40	0.34	0.57	0.49	0.48	0.21	0.18	0.67	0.47
	Final Average Daily Flow	10.96	7.80	11.96	7.43	8.53	7.23	9.64	9.35	9.62	6.49	6.14	10.95	8.86
	Final Dry Day Average Daily Flow	9.53	7.14	9.48	6.66	7.12	6.67	8.34	7.72	7.64	5.77	5.59	8.98	7.57
	Final Estimated Infiltration	5.23	2.84	5.18	2.36	2.82	2.37	4.04	3.42	3.34	1.47	1.29	4.68	3.27
	Estimated Sanitary Flow	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30
	Estimated Inflow	1.43	0.66	2.48	0.77	1.41	0.56	1.30	1.63	1.98	0.72	0.55	1.97	1.30
Melrose	Raw Average Daily Flow	6.36	4.63	7.32	4.08	4.96	3.94	5.08	4.32	5.18	3.20	2.94	6.45	4.88
	Raw Dry Day Average Daily Flow	5.81	4.41	5.92	3.58	3.98	3.75	4.96	3.76	4.05	2.78	2.64	5.43	4.26
	Raw Estimated Infiltration	3.91	2.51	4.02	1.68	2.08	1.85	3.06	1.86	2.15	0.88	0.74	3.53	2.36
	MWRA Estimated Infiltration	0.79	0.51	0.81	0.34	0.42	0.37	0.62	0.37	0.43	0.18	0.15	0.71	0.48
	Final Average Daily Flow	5.57	4.12	6.51	3.74	4.54	3.57	4.46	3.95	4.75	3.02	2.79	5.74	4.41
	Final Dry Day Average Daily Flow	5.02	3.90	5.11	3.24	3.56	3.38	4.34	3.39	3.62	2.60	2.49	4.72	3.79
	Final Estimated Infiltration	3.12	2.00	3.21	1.34	1.66	1.48	2.44	1.49	1.72	0.70	0.59	2.82	1.89
	Estimated Sanitary Flow	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
	Estimated Inflow	0.55	0.22	1.40	0.50	0.98	0.19	0.12	0.56	1.13	0.42	0.30	1.02	0.62

Table 4 - Estimated Community Wastewater Flow Components for 2023												5/6/2024	PAGE 8	Annual Average (MGD)
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Milton (North Only)	Average Daily Flow	0.42	0.33	0.45	0.29	0.26	0.22	0.30	0.34	0.32	0.24	0.20	0.42	0.32
	Dry Day Average Daily Flow	0.39	0.31	0.36	0.26	0.25	0.21	0.22	0.31	0.29	0.21	0.17	0.36	0.28
	Estimated Infiltration	0.24	0.16	0.21	0.11	0.10	0.06	0.07	0.16	0.14	0.06	0.02	0.21	0.13
	Estimated Sanitary Flow	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Estimated Inflow	0.03	0.02	0.09	0.03	0.01	0.01	0.08	0.03	0.03	0.03	0.03	0.06	0.04
Newton (North Only)	Average Daily Flow	9.21	7.61	10.28	6.71	7.19	6.14	7.43	8.04	7.61	6.11	5.13	9.19	7.57
	Dry Day Average Daily Flow	8.84	7.14	8.84	6.13	6.46	5.61	6.36	7.03	6.59	5.49	5.01	8.01	6.80
	Estimated Infiltration	5.14	3.44	5.14	2.43	2.76	1.91	2.66	3.33	2.89	1.79	1.31	4.31	3.10
	Estimated Sanitary Flow	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
	Estimated Inflow	0.37	0.47	1.44	0.58	0.73	0.53	1.07	1.01	1.02	0.62	0.12	1.18	0.77
Reading	Raw Average Daily Flow	3.69	3.07	4.08	2.46	2.71	2.05	2.57	2.54	2.86	2.29	2.11	3.78	2.85
	Raw Dry Day Average Daily Flow	3.47	2.68	3.51	2.22	2.45	2.00	2.53	2.21	2.45	2.02	1.93	3.37	2.57
	Raw Estimated Infiltration	2.17	1.38	2.21	0.92	1.15	0.70	1.23	0.91	1.15	0.72	0.63	2.07	1.27
	MWRA Estimated Infiltration	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
	Final Average Daily Flow	3.67	3.06	4.06	2.45	2.70	2.04	2.56	2.53	2.85	2.28	2.10	3.76	2.84
	Final Dry Day Average Daily Flow	3.45	2.67	3.49	2.21	2.44	1.99	2.52	2.20	2.44	2.01	1.92	3.35	2.56
	Final Estimated Infiltration	2.15	1.37	2.19	0.91	1.14	0.69	1.22	0.90	1.14	0.71	0.62	2.05	1.26
	Estimated Sanitary Flow	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
	Estimated Inflow	0.22	0.39	0.57	0.24	0.26	0.05	0.04	0.33	0.41	0.27	0.18	0.41	0.28
Revere	Raw Average Daily Flow	10.31	7.30	9.89	7.12	7.69	6.37	8.20	8.31	7.15	5.91	5.79	8.07	7.69
	Raw Dry Day Average Daily Flow	8.63	6.82	8.02	6.60	6.64	5.92	6.77	7.32	6.44	5.55	5.35	6.87	6.75
	Raw Estimated Infiltration	4.63	2.82	4.02	2.60	2.64	1.92	2.77	3.32	2.44	1.55	1.35	2.87	2.75
	MWRA Estimated Infiltration	0.05	0.03	0.05	0.03	0.03	0.02	0.03	0.04	0.03	0.02	0.02	0.03	0.03
	Final Average Daily Flow	10.26	7.27	9.84	7.09	7.66	6.35	8.17	8.27	7.12	5.89	5.77	8.04	7.66
	Final Dry Day Average Daily Flow	8.58	6.79	7.97	6.57	6.61	5.90	6.74	7.28	6.41	5.53	5.33	6.84	6.72
	Final Estimated Infiltration	4.58	2.79	3.97	2.57	2.61	1.90	2.74	3.28	2.41	1.53	1.33	2.84	2.72
	Estimated Sanitary Flow	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Estimated Inflow	1.68	0.48	1.87	0.52	1.05	0.45	1.43	0.99	0.71	0.36	0.44	1.20	0.94
Somerville	Raw Average Daily Flow	14.13	8.95	14.58	9.19	10.26	10.17	14.27	13.53	12.93	8.55	8.23	15.39	11.72
	Raw Dry Day Average Daily Flow	9.03	7.96	9.29	7.20	7.59	7.67	8.37	8.70	8.64	7.33	6.95	9.57	8.20
	Raw Estimated Infiltration	3.43	2.36	3.69	1.60	1.99	2.07	2.77	3.10	3.04	1.73	1.35	3.97	2.60
	MWRA Estimated Infiltration	0.08	0.06	0.09	0.04	0.05	0.05	0.07	0.07	0.07	0.04	0.03	0.09	0.06
	Final Average Daily Flow	14.05	8.89	14.49	9.15	10.21	10.12	14.20	13.46	12.86	8.51	8.20	15.30	11.66
	Final Dry Day Average Daily Flow	8.95	7.90	9.20	7.16	7.54	7.62	8.30	8.63	8.57	7.29	6.92	9.48	8.14
	Final Estimated Infiltration	3.35	2.30	3.60	1.56	1.94	2.02	2.70	3.03	2.97	1.69	1.32	3.88	2.54
	Estimated Sanitary Flow	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60
	Estimated Inflow	5.10	0.99	5.29	1.99	2.67	2.50	5.90	4.83	4.29	1.22	1.28	5.82	3.52
Stoneham	Raw Average Daily Flow	6.17	4.72	5.83	4.55	5.15	4.56	5.57	5.19	5.82	4.39	4.12	5.87	5.17
	Raw Dry Day Average Daily Flow	5.85	4.57	5.45	4.32	4.68	4.40	5.32	4.53	4.88	4.13	4.01	5.24	4.79
	Raw Estimated Infiltration	4.35	3.07	3.95	2.82	3.18	2.90	3.82	3.03	3.38	2.63	2.51	3.74	3.29
	MWRA Estimated Infiltration	0.71	0.50	0.64	0.46	0.52	0.47	0.62	0.49	0.55	0.43	0.41	0.61	0.54
	Final Average Daily Flow	5.46	4.22	5.19	4.09	4.63	4.09	4.95	4.70	5.27	3.96	3.71	5.26	4.63
	Final Dry Day Average Daily Flow	5.14	4.07	4.81	3.86	4.16	3.93	4.70	4.04	4.33	3.70	3.60	4.63	4.25
	Final Estimated Infiltration	3.64	2.57	3.31	2.36	2.66	2.43	3.20	2.54	2.83	2.20	2.10	3.13	2.75
	Estimated Sanitary Flow	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Estimated Inflow	0.32	0.15	0.38	0.23	0.47	0.16	0.25	0.66	0.94	0.26	0.11	0.63	0.38

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 9	Annual Average
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	(MGD)
Wakefield	Raw Average Daily Flow	5.78	4.46	6.34	4.07	4.52	3.69	4.58	4.01	4.61	3.33	3.00	5.34	4.48
	Raw Dry Day Average Daily Flow	5.40	3.98	5.57	3.71	4.04	3.67	4.39	3.51	3.85	3.03	2.82	4.87	4.08
	Raw Estimated Infiltration	3.90	2.48	4.07	2.21	2.54	2.17	2.89	2.01	2.35	1.53	1.32	3.37	2.58
	MWRA Estimated Infiltration	0.03	0.02	0.03	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.02
	Final Average Daily Flow	5.75	4.44	6.31	4.06	4.50	3.68	4.56	4.00	4.59	3.32	2.99	5.32	4.47
	Final Dry Day Average Daily Flow	5.37	3.96	5.54	3.70	4.02	3.66	4.37	3.50	3.83	3.02	2.81	4.85	4.06
	Final Estimated Infiltration	3.87	2.46	4.04	2.20	2.52	2.16	2.87	2.00	2.33	1.52	1.31	3.35	2.56
	Estimated Sanitary Flow	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Estimated Inflow	0.38	0.48	0.77	0.36	0.48	0.02	0.19	0.50	0.76	0.30	0.18	0.47	0.41
Waltham	Raw Average Daily Flow	11.50	8.87	12.58	8.64	9.98	7.62	9.20	9.95	10.52	8.37	7.55	12.42	9.79
	Raw Dry Day Average Daily Flow	10.61	8.31	10.63	8.00	8.57	7.48	8.26	8.31	8.96	7.70	7.41	10.82	8.77
	Raw Estimated Infiltration	5.01	2.71	5.03	2.40	2.97	1.88	2.66	2.71	3.36	2.10	1.81	5.22	3.17
	MWRA Estimated Infiltration	0.19	0.10	0.19	0.09	0.11	0.07	0.10	0.10	0.12	0.08	0.07	0.19	0.12
	Final Average Daily Flow	11.31	8.77	12.39	8.55	9.87	7.55	9.10	9.85	10.40	8.29	7.48	12.23	9.67
	Final Dry Day Average Daily Flow	10.42	8.21	10.44	7.91	8.46	7.41	8.16	8.21	8.84	7.62	7.34	10.63	8.65
	Final Estimated Infiltration	4.82	2.61	4.84	2.31	2.86	1.81	2.56	2.61	3.24	2.02	1.74	5.03	3.05
	Estimated Sanitary Flow	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60
	Estimated Inflow	0.89	0.56	1.95	0.64	1.41	0.14	0.94	1.64	1.56	0.67	0.14	1.60	1.02
Watertown	Average Daily Flow	5.18	4.05	5.25	3.87	4.13	3.50	4.59	4.56	4.93	3.97	3.59	5.35	4.42
	Dry Day Average Daily Flow	4.64	3.80	4.35	3.61	3.77	3.40	3.97	3.88	4.33	3.75	3.52	4.73	3.98
	Estimated Infiltration	2.44	1.60	2.15	1.41	1.57	1.20	1.77	1.68	2.13	1.55	1.32	2.53	1.78
	Estimated Sanitary Flow	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
	Estimated Inflow	0.54	0.25	0.90	0.26	0.36	0.10	0.62	0.68	0.60	0.22	0.07	0.62	0.44
Wilmington	Raw Average Daily Flow	1.87	1.69	2.01	1.65	1.75	1.61	1.72	2.01	2.02	1.70	1.60	1.97	1.80
	Raw Dry Day Average Daily Flow	1.80	1.65	1.85	1.60	1.61	1.54	1.67	1.75	1.82	1.68	1.60	1.90	1.71
	Raw Estimated Infiltration	1.00	0.85	1.05	0.80	0.81	0.74	0.87	0.95	1.02	0.88	0.80	1.10	0.91
	MWRA Estimated Infiltration	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Final Average Daily Flow	1.86	1.68	2.00	1.64	1.74	1.60	1.71	2.00	2.01	1.69	1.59	1.96	1.79
	Final Dry Day Average Daily Flow	1.79	1.64	1.84	1.59	1.60	1.53	1.66	1.74	1.81	1.67	1.59	1.89	1.70
	Final Estimated Infiltration	0.99	0.84	1.04	0.79	0.80	0.73	0.86	0.94	1.01	0.87	0.79	1.09	0.90
	Estimated Sanitary Flow	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
	Estimated Inflow	0.07	0.04	0.16	0.05	0.14	0.07	0.05	0.26	0.20	0.02	0.00	0.07	0.09
Winchester	Average Daily Flow	4.90	3.82	5.35	3.55	3.88	3.36	4.22	3.86	4.23	3.22	2.71	4.80	4.00
	Dry Day Average Daily Flow	4.64	3.52	4.73	3.24	3.46	3.22	4.02	3.38	3.61	2.94	2.64	4.11	3.63
	Estimated Infiltration	3.44	2.32	3.53	2.04	2.26	2.02	2.82	2.18	2.41	1.74	1.44	2.91	2.43
	Estimated Sanitary Flow	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
	Estimated Inflow	0.26	0.30	0.62	0.31	0.42	0.14	0.20	0.48	0.62	0.28	0.07	0.69	0.37
Winthrop	Average Daily Flow	2.66	2.06	2.87	2.01	2.18	2.13	2.63	2.68	2.52	2.30	2.17	2.90	2.43
	Dry Day Average Daily Flow	2.17	1.92	2.35	1.88	1.91	1.96	2.18	2.23	2.29	2.23	1.97	2.47	2.13
	Estimated Infiltration	0.97	0.72	1.15	0.68	0.71	0.76	0.98	1.03	1.09	1.03	0.77	1.27	0.93
	Estimated Sanitary Flow	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
	Estimated Inflow	0.49	0.14	0.52	0.13	0.27	0.17	0.45	0.45	0.23	0.07	0.20	0.43	0.30

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 10	Annual Average
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	(MGD)
Woburn	Raw Average Daily Flow	10.42	8.72	10.96	6.85	7.78	7.76	8.93	8.86	9.52	7.61	7.08	10.68	8.78
	Raw Dry Day Average Daily Flow	9.64	8.16	9.40	6.02	6.87	7.48	8.64	7.88	8.15	6.88	6.86	9.77	7.99
	Raw Estimated Infiltration	5.94	4.46	5.70	2.32	3.17	3.78	4.94	4.18	4.45	3.18	3.16	6.07	4.29
	MWRA Estimated Infiltration	0.49	0.37	0.47	0.19	0.26	0.31	0.41	0.35	0.37	0.26	0.26	0.50	0.35
	Final Average Daily Flow	9.93	8.35	10.49	6.66	7.52	7.45	8.52	8.51	9.15	7.35	6.82	10.18	8.42
	Final Dry Day Average Daily Flow	9.15	7.79	8.93	5.83	6.61	7.17	8.23	7.53	7.78	6.62	6.60	9.27	7.63
	Final Estimated Infiltration	5.45	4.09	5.23	2.13	2.91	3.47	4.53	3.83	4.08	2.92	2.90	5.57	3.93
	Estimated Sanitary Flow	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
	Estimated Inflow	0.78	0.56	1.56	0.83	0.91	0.28	0.29	0.98	1.37	0.73	0.22	0.91	0.79
Subtotal (Northern System)	Raw Average Daily Flow	272.46	209.75	283.61	203.51	218.23	200.74	253.34	242.77	246.12	190.71	179.66	273.41	231.63
	Raw Dry Day Average Daily Flow	228.68	196.59	227.72	183.84	188.52	181.89	202.13	197.48	206.76	174.03	167.45	220.27	198.10
	Raw Estimated Infiltration	105.18	73.09	104.22	60.34	65.02	58.39	78.63	73.98	83.26	50.78	44.20	96.77	74.64
	MWRA Estimated Infiltration	7.34	5.38	7.15	4.29	4.87	4.56	6.13	5.44	6.08	3.74	3.25	6.74	5.42
	Final Average Daily Flow	265.12	204.37	276.46	199.22	213.36	196.18	247.21	237.33	240.04	186.97	176.41	266.67	226.20
	Final Dry Day Average Daily Flow	221.34	191.21	220.57	179.55	183.65	177.33	196.00	192.04	200.68	170.29	164.20	213.53	192.68
	Final Estimated Infiltration	97.84	67.71	97.07	56.05	60.15	53.83	72.50	68.54	77.18	47.04	40.95	90.03	69.22
	Estimated Sanitary Flow	123.50	123.50	123.50	123.50	123.50	123.50	123.50	123.50	123.50	123.25	123.25	123.50	123.46
	Estimated Inflow	43.78	13.16	55.89	19.67	29.71	18.85	51.21	45.29	39.36	16.68	12.21	53.14	33.53
Total (North and South)	Raw Average Daily Flow	448.17	336.25	451.69	318.04	338.78	298.52	384.84	376.64	379.25	297.53	275.15	442.23	362.96
	Raw Dry Day Average Daily Flow	386.12	314.20	367.15	289.36	295.18	276.21	309.67	315.53	323.11	270.97	258.22	364.26	314.47
	Raw Estimated Infiltration	207.72	135.80	188.75	110.96	116.78	97.81	131.27	137.13	144.71	92.82	80.07	185.86	136.11
	MWRA Estimated Infiltration	18.11	12.27	15.70	9.93	10.62	9.27	11.83	12.11	12.94	8.32	7.05	16.76	12.10
	Final Average Daily Flow	430.06	323.98	435.99	308.11	328.16	289.25	373.01	364.53	366.31	289.21	268.10	425.47	350.86
	Final Dry Day Average Daily Flow	368.01	301.93	351.45	279.43	284.56	266.94	297.84	303.42	310.17	262.65	251.17	347.50	302.37
	Final Estimated Infiltration	189.61	123.53	173.05	101.03	106.16	88.54	119.44	125.02	131.77	84.50	73.02	169.10	124.01
	Estimated Sanitary Flow	178.40	178.40	178.40	178.40	178.40	178.40	178.40	178.40	178.40	178.15	178.15	178.40	178.36
	Estimated Inflow	62.05	22.05	84.54	28.68	43.60	22.31	75.17	61.11	56.14	26.56	16.93	77.97	48.49
North System as Reported by NPDES	Average Daily Flow	265.90	202.00	280.60	202.60	208.50	196.00	252.30	240.40	242.90	185.70	175.40	273.60	227.62
Total System as Reported by NPDES	Average Daily Flow	430.10	317.20	437.10	305.50	317.00	285.30	372.00	361.00	363.00	281.20	261.70	429.10	347.39

Table 4 - Estimated Community Wastewater Flow Components for 2023														5/6/2024 PAGE 11
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average (MGD)
Chelsea Creek	Average Daily Flow	134.58	101.52	141.74	96.31	106.92	95.29	119.01	116.14	119.88	89.95	83.08	135.69	111.90
	Dry Day Average Daily Flow	115.27	94.43	114.99	87.25	91.99	87.62	101.85	95.75	98.71	81.42	77.59	111.50	96.64
	Estimated Infiltration	67.67	46.83	67.39	39.65	44.39	40.02	54.25	48.15	51.11	33.82	29.99	63.90	49.04
	Estimated Sanitary Flow	47.60	47.60	47.60	47.60	47.60	47.60	47.60	47.60	47.60	47.60	47.60	47.60	47.60
	Estimated Inflow	19.31	7.09	26.75	9.06	14.93	7.67	17.16	20.39	21.17	8.53	5.49	24.19	15.26
Columbus Park	Average Daily Flow	38.80	28.96	38.53	29.21	29.72	29.19	40.44	36.08	36.61	26.89	27.65	38.97	33.49
	Dry Day Average Daily Flow	29.44	26.66	29.59	26.60	24.60	24.41	25.86	27.40	31.14	24.34	24.87	28.37	26.94
	Estimated Infiltration	8.99	6.21	9.14	6.15	4.15	3.96	5.41	6.95	10.69	3.89	4.42	7.92	6.49
	Estimated Sanitary Flow	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45	20.45
	Estimated Inflow	9.36	2.30	8.94	2.61	5.12	4.78	14.58	8.68	5.47	2.55	2.78	10.60	6.54
Ward Street	Average Daily Flow	73.78	61.18	77.79	59.40	61.85	58.17	71.30	69.04	69.68	57.09	52.70	75.68	65.74
	Dry Day Average Daily Flow	64.09	58.52	63.30	54.67	55.41	53.70	58.07	57.95	59.85	52.59	50.60	62.05	57.59
	Estimated Infiltration	19.74	14.17	18.95	10.32	11.06	9.35	13.72	13.60	15.50	8.49	6.50	17.70	13.28
	Estimated Sanitary Flow	44.35	44.35	44.35	44.35	44.35	44.35	44.35	44.35	44.35	44.10	44.10	44.35	44.31
	Estimated Inflow	9.69	2.66	14.49	4.73	6.44	4.47	13.23	11.09	9.83	4.50	2.10	13.63	8.15
Winthrop Terminal	Average Daily Flow	25.35	18.06	25.59	18.62	19.80	18.09	22.63	23.20	19.85	16.68	16.21	23.05	20.64
	Dry Day Average Daily Flow	19.91	17.26	20.11	16.70	16.89	15.95	17.18	18.74	17.09	15.58	14.35	18.34	17.36
	Estimated Infiltration	9.51	6.86	9.71	6.30	6.49	5.55	6.78	8.34	6.69	5.18	3.95	7.94	6.96
	Estimated Sanitary Flow	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40
	Estimated Inflow	5.44	0.80	5.48	1.92	2.91	2.14	5.45	4.46	2.76	1.10	1.86	4.71	3.28
Subtotal - Northern Headworks	Average Daily Flow	272.51	209.72	283.65	203.54	218.29	200.74	253.38	244.46	246.02	190.61	179.64	273.39	231.77
	Dry Day Average Daily Flow	228.71	196.87	227.99	185.22	188.89	181.68	202.96	199.84	206.79	173.93	167.41	220.26	198.54
	Estimated Infiltration	105.91	74.07	105.19	62.42	66.09	58.88	80.16	77.04	83.99	51.38	44.86	97.46	75.78
	Estimated Sanitary Flow	122.80	122.80	122.80	122.80	122.80	122.80	122.80	122.80	122.80	122.55	122.55	122.80	122.76
	Estimated Inflow	43.80	12.85	55.66	18.32	29.40	19.06	50.42	44.62	39.23	16.68	12.23	53.13	33.23
Headworks as Reported by NPDES	SUM of NPDES HW ADF's (below)	265.90	202.00	280.60	202.60	208.50	196.00	252.30	240.40	242.90	185.70	175.40	273.60	227.62
Chelsea Creek	Average Daily Flow	133.10	97.40	144.00	95.10	102.90	92.70	118.00	114.10	119.40	86.50	79.00	136.60	110.15
Columbus Park	Average Daily Flow	38.50	28.80	38.30	29.60	29.00	29.80	40.50	35.90	36.50	26.70	27.50	39.00	33.41
Ward Street	Average Daily Flow	72.60	60.10	75.60	58.90	60.20	57.60	70.70	68.40	68.60	56.60	53.30	74.30	64.84
Winthrop Terminal	Average Daily Flow	21.70	15.70	22.70	19.00	16.40	15.90	23.10	22.00	18.40	15.90	15.60	23.70	19.22
Total System Flow (Southern Collection System Plus Northern Headworks)	Raw Average Daily Flow	448.22	336.22	451.73	318.07	338.84	298.52	384.88	378.33	379.15	297.43	275.13	442.21	363.10
	Raw Dry Day Average Daily Flow	386.15	314.48	367.42	290.74	295.55	276.00	310.50	317.89	323.14	270.87	258.18	364.25	314.90
	Raw Estimated Infiltration	208.45	136.78	189.72	113.04	117.85	98.30	132.80	140.19	145.44	93.42	80.73	186.55	137.24
	MWRA Estimated Infiltration	10.77	6.89	8.55	5.64	5.75	4.71	5.70	6.67	6.86	4.58	3.80	10.02	6.68
	Final Average Daily Flow	437.45	329.33	443.18	312.43	333.09	293.81	379.18	371.66	372.29	292.85	271.33	432.19	356.42
	Final Dry Day Average Daily Flow	375.38	307.59	358.87	285.10	289.80	271.29	304.80	311.22	316.28	266.29	254.38	354.23	308.23
	Final Estimated Infiltration	197.68	129.89	181.17	107.40	112.10	93.59	127.10	133.52	138.58	88.84	76.93	176.53	130.57
	Estimated Sanitary Flow	177.70	177.70	177.70	177.70	177.70	177.70	177.70	177.70	177.70	177.45	177.45	177.70	177.66
	Estimated Inflow	62.07	21.74	84.31	27.33	43.29	22.52	74.38	60.44	56.01	26.56	16.95	77.96	48.20

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 12	Annual Average
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	(MGD)
Boston (Total)	Raw Average Daily Flow	118.70	90.65	118.61	88.85	92.22	88.25	113.00	105.66	107.30	84.98	80.93	117.87	100.77
	Raw Dry Day Average Daily Flow	97.66	85.08	92.39	80.89	80.09	78.02	83.53	86.19	90.95	77.46	74.61	94.32	85.14
	Raw Estimated Infiltration	39.66	27.08	34.39	22.89	22.09	20.02	25.53	28.19	32.95	19.46	16.61	36.32	27.14
	MWRA Estimated Infiltration	10.11	6.71	8.28	5.48	5.68	4.88	6.00	6.79	7.10	4.71	3.80	9.60	6.61
	Final Average Daily Flow	108.59	83.94	110.33	83.37	86.54	83.37	107.00	98.87	100.20	80.27	77.13	108.27	94.16
	Final Dry Day Average Daily Flow	87.55	78.37	84.11	75.41	74.41	73.14	77.53	79.40	83.85	72.75	70.81	84.72	78.53
	Final Estimated Infiltration	29.55	20.37	26.11	17.41	16.41	15.14	19.53	21.40	25.85	14.75	12.81	26.72	20.53
	Estimated Sanitary Flow	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00	58.00
	Estimated Inflow	21.04	5.57	26.22	7.96	12.13	10.23	29.47	19.47	16.35	7.52	6.32	23.55	15.63
Brookline (Total)	Raw Average Daily Flow	8.93	6.39	9.51	6.65	6.51	5.79	8.23	8.29	7.65	5.73	4.94	8.97	7.32
	Raw Dry Day Average Daily Flow	7.55	5.91	7.52	6.20	5.51	5.51	6.08	6.44	6.41	5.25	4.62	7.20	6.19
	Raw Estimated Infiltration	3.25	1.61	3.22	1.90	1.21	1.21	1.78	2.14	2.11	1.20	0.57	2.90	1.93
	MWRA Estimated Infiltration	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.01
	Final Average Daily Flow	8.91	6.38	9.50	6.64	6.50	5.78	8.22	8.28	7.64	5.72	4.94	8.95	7.31
	Final Dry Day Average Daily Flow	7.53	5.90	7.51	6.19	5.50	5.50	6.07	6.43	6.40	5.24	4.62	7.18	6.18
	Final Estimated Infiltration	3.23	1.60	3.21	1.89	1.20	1.20	1.77	2.13	2.10	1.19	0.57	2.88	1.92
	Estimated Sanitary Flow	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.05	4.05	4.30	4.26
	Estimated Inflow	1.38	0.48	1.99	0.45	1.00	0.28	2.15	1.85	1.24	0.48	0.32	1.77	1.13
Milton (Total)	Average Daily Flow	7.22	4.81	6.73	4.05	4.17	3.23	4.84	4.65	4.82	3.68	3.20	6.43	4.83
	Dry Day Average Daily Flow	6.33	4.48	5.50	3.56	3.65	3.08	3.54	4.20	4.17	3.30	2.92	5.38	4.18
	Estimated Infiltration	4.83	2.98	4.00	2.06	2.15	1.58	2.04	2.70	2.67	1.80	1.42	3.88	2.68
	Estimated Sanitary Flow	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Estimated Inflow	0.89	0.33	1.23	0.49	0.52	0.15	1.30	0.45	0.65	0.38	0.28	1.05	0.65
Newton (Total)	Raw Average Daily Flow	23.22	17.62	25.24	15.91	17.00	13.30	18.94	21.77	19.20	14.84	12.48	23.68	18.65
	Raw Dry Day Average Daily Flow	21.54	16.24	21.31	14.39	14.85	12.75	15.12	18.17	16.45	13.32	12.01	20.20	16.39
	Raw Estimated Infiltration	13.74	8.44	13.51	6.59	7.05	4.95	7.32	10.37	8.65	5.52	4.21	12.40	8.59
	MWRA Estimated Infiltration	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01
	Final Average Daily Flow	23.20	17.61	25.22	15.90	16.99	13.29	18.93	21.75	19.18	14.83	12.47	23.66	18.63
	Final Dry Day Average Daily Flow	21.52	16.23	21.29	14.38	14.84	12.74	15.11	18.15	16.43	13.31	12.00	20.18	16.38
	Final Estimated Infiltration	13.72	8.43	13.49	6.58	7.04	4.94	7.31	10.35	8.63	5.51	4.20	12.38	8.58
	Estimated Sanitary Flow	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80	7.80
	Estimated Inflow	1.68	1.38	3.93	1.52	2.15	0.55	3.82	3.60	2.75	1.52	0.47	3.48	2.25

Table 4 - Estimated Community Wastewater Flow Components for 2023											5/6/2024		PAGE 13	Annual Average
Community	Flow Characteristic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	(MGD)
Subtotal	Raw Average Daily Flow	132.65	100.98	133.75	102.85	107.04	106.12	136.82	126.26	124.86	97.43	94.66	134.00	116.68
Northern System CSO	Raw Dry Day Average Daily Flow	101.39	94.88	101.14	91.16	90.93	91.10	96.46	97.48	103.08	88.48	86.36	99.14	95.16
Communities Only:	Raw Estimated Infiltration	30.99	24.48	30.74	20.76	20.53	20.70	26.06	27.08	32.68	18.08	15.96	28.74	24.76
[Sum of Boston (North),	MWRA Estimated Infiltration	3.07	2.58	2.96	2.10	2.26	2.28	2.84	2.77	3.14	1.94	1.62	2.77	2.53
Cambridge, Chelsea,	Final Average Daily Flow	129.58	98.40	130.79	100.75	104.78	103.84	133.98	123.49	121.72	95.49	93.04	131.23	114.15
and Somerville]	Final Dry Day Average Daily Flow	98.32	92.30	98.18	89.06	88.67	88.82	93.62	94.71	99.94	86.54	84.74	96.37	92.63
	Final Estimated Infiltration	27.92	21.90	27.78	18.66	18.27	18.42	23.22	24.31	29.54	16.14	14.34	25.97	22.23
	Estimated Sanitary Flow	70.40	70.40	70.40	70.40	70.40	70.40	70.40	70.40	70.40	70.40	70.40	70.40	70.40
	Estimated Inflow	31.26	6.10	32.61	11.69	16.11	15.02	40.36	28.78	21.78	8.95	8.30	34.86	21.52
Subtotal	Raw Average Daily Flow	139.81	108.77	149.86	100.66	111.19	94.62	116.52	116.51	121.26	93.28	85.00	139.41	114.95
Northern System Without	Raw Dry Day Average Daily Flow	127.29	101.71	126.58	92.68	97.59	90.79	105.67	100.00	103.68	85.55	81.09	121.13	102.94
North CSO Communities:	Raw Estimated Infiltration	74.19	48.61	73.48	39.58	44.49	37.69	52.57	46.90	50.58	32.70	28.24	68.03	49.88
	MWRA Estimated Infiltration	4.27	2.80	4.19	2.19	2.61	2.28	3.29	2.67	2.94	1.80	1.63	3.97	2.89
	Final Average Daily Flow	135.54	105.97	145.67	98.47	108.58	92.34	113.23	113.84	118.32	91.48	83.37	135.44	112.05
	Final Dry Day Average Daily Flow	123.02	98.91	122.39	90.49	94.98	88.51	102.38	97.33	100.74	83.75	79.46	117.16	100.05
	Final Estimated Infiltration	69.92	45.81	69.29	37.39	41.88	35.41	49.28	44.23	47.64	30.90	26.61	64.06	46.99
	Estimated Sanitary Flow	53.10	53.10	53.10	53.10	53.10	53.10	53.10	53.10	53.10	52.85	52.85	53.10	53.06
	Estimated Inflow	12.52	7.06	23.28	7.98	13.60	3.83	10.85	16.51	17.58	7.73	3.91	18.28	12.01
Subtotal	Raw Average Daily Flow	315.52	235.27	317.94	215.19	231.74	192.40	248.02	250.38	254.39	200.10	180.49	308.23	246.28
North/South Systems Without	Raw Dry Day Average Daily Flow	284.73	219.32	266.01	198.20	204.25	185.11	213.21	218.05	220.03	182.49	171.86	265.12	219.31
North CSO Communites:	Raw Estimated Infiltration	176.73	111.32	158.01	90.20	96.25	77.11	105.21	110.05	112.03	74.74	64.11	157.12	111.35
	MWRA Estimated Infiltration	15.04	9.69	12.74	7.83	8.36	6.99	8.99	9.34	9.80	6.38	5.43	13.99	9.57
	Final Average Daily Flow	300.48	225.58	305.20	207.36	223.38	185.41	239.03	241.04	244.59	193.72	175.06	294.24	236.71
	Final Dry Day Average Daily Flow	269.69	209.63	253.27	190.37	195.89	178.12	204.22	208.71	210.23	176.11	166.43	251.13	209.74
	Final Estimated Infiltration	161.69	101.63	145.27	82.37	87.89	70.12	96.22	100.71	102.23	68.36	58.68	143.13	101.78
	Estimated Sanitary Flow	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	107.75	107.75	108.00	107.96
	Estimated Inflow	30.79	15.95	51.93	16.99	27.49	7.29	34.81	32.33	34.36	17.61	8.63	43.11	26.97