UNITED STATES DISTRICT COURT
for the
DISTRICT OF MASSACHUSETTS

UNITED STATES OF AMERICA, Plaintiff, v. METROPOLITAN DISTRICT COMMISSION, et al., Defendants.	CIVIL ACTION No. 85-0489-RGS
CONSERVATION LAW FOUNDATION OF NEW ENGLAND, INC., Plaintiff, v. METROPOLITAN DISTRICT COMMISSION, Defendants.	CIVIL ACTION No. 83-1614-RGS

THE MASSACHUSETTS WATER RESOURCES AUTHORITY'S
ANNUAL REPORT FOR CALENDAR YEAR 2025

The Massachusetts Water Resources Authority ("Authority" or "MWRA") submits the following annual report for the period from January 1, 2025 through December 31, 2025, in accordance with the Court's Order of May 13, 2026, amending Schedule Seven.

I. Background

On April 30, 2026, the Authority and the United States filed a *Joint Motion of the United States and the Massachusetts Water Resources Authority to Amend Schedule Seven* ("Joint Motion"). *See* ECF Nos. 1966 and 1966-1. On May 13, 2026, the Court allowed the Joint Motion, ECF No. 1969, amending Schedule Seven to add several milestones, including the following milestones relevant to this current filing.

First, amended Schedule Seven requires the Authority, by April 30, 2026, to submit to the U.S. Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP"), and the public for review, a Draft Updated Combined Sewer Overflow ("CSO") Control Plan with respect to the Lower Charles River/Charles Basin, Alewife Brook, and the Upper Mystic River ("Draft Updated CSO Control Plan"). *See*, ECF No. 1966-1, at p. 64 of 76. The Authority satisfied this milestone on April 30, 2026, with the submission of the Draft Updated CSO Control Plan.[1]

Next, by May 30, 2026, the Authority was required to submit a table with one column showing the 1992 Typical Year performance (activation frequencies and volumes) with Q4-2024 system conditions for all CSO outfalls using the

[1] The Draft Updated CSO Control Plan was jointly prepared by the Authority and the Cities of Cambridge and Somerville (collectively, the "Partners"). *See* Combined Sewer Overflow Control Planning Program - Joint efforts by Cambridge, MWRA, and Somerville, <https://voice.somervillema.gov/joint-cso-planning> (page last updated: 10 Jun 2026, 09:04 AM) (providing links to the Draft Updated CSO Control Plan, its appendices, and related materials).

Authority's "LTCP model"[2] and a second column showing the 1992 Typical Year performance (activation frequencies and volumes) with Q4-2024 system conditions for all CSO outfalls using the "Unified Model." *See* ECF No. 1966-1 at p. 65 of 76.[3] The Authority satisfied this Schedule Seven Milestone on May 29, 2026, with its filing with the Court of the *Massachusetts Water Resources Authority's Table Submitted Pursuant to Schedule Seven As Amended*. *See* ECF No. 1973.

Third, amended Schedule Seven requires the Authority to file a series of Annual Reports. The *CSO Annual Report for MWRA CSO Outfalls from January 1 to December 31, 2025*, June 15, 2026 (filed herewith as Exhibit A) ("Annual Report") is the first in this series of such Annual Reports,[4] which are required to contain the following information:

- estimates of CSO activations and volumes for all MWRA CSO outfalls for the prior calendar year, which shall include data from the MWRA CSO metering program and which may be supplemented by estimates generated using calibrated sewer system modeling using the Unified Model, and rainfall data associated with the CSO discharges;

- for all MWRA CSO outfalls and for community-owned outfalls BOS003, CAM401A, CAM005, and SOM001A, columns in a table showing (i) the 1992 Typical Year performance (activation frequencies and volumes) with Q4-"prior calendar year" system conditions using the Unified Model and (ii) the LTCP activation frequencies and volumes; and

[2] The "LTCP model" is the hydraulic model the Authority utilized to report the Q4-2024 conditions in the December 27, 2024, Supplement to the 2021 Final CSO Post Construction Monitoring Program and Performance Assessment Report.

[3]The "Unified Model" is the model the Authority and the Cities of Cambridge and Somerville developed in connection with the updated CSO control planning efforts.

[4] Specifically, the Annual Reports are to be filed by June 15, 2026, and then annually by May 30 of each of the years 2027, 2028, 2029, and 2030.

- compliance activities in the preceding year, including compliance activities relating to paragraphs 1 through 3 and 6 of the Joint Motion (as applicable).

  See ECF No. 1966-1 at p. 66 of 76.

II. Estimates of CSO activations and volumes for all MWRA CSO outfalls for the prior calendar year, which shall include data from the MWRA CSO metering program and which may be supplemented by estimates generated using calibrated sewer system modeling using the Unified Model, and rainfall data associated with the CSO discharges.

Table 2-2 of the Annual Report provides this information.

III. For all MWRA CSO outfalls and for community-owned outfalls BOS003, CAM401A, CAM005, and SOM001A, columns in a table showing (i) the 1992 Typical Year performance (activation frequencies and volumes) with Q4-"prior calendar year" system conditions using the Unified Model and (ii) the LTCP activation frequencies and volumes.

Table 4-1 of the Annual Report provides this information.

IV. Compliance activities for 2025, including compliance activities relating to paragraphs 1 through 3 and 6 of the Joint Motion (as applicable).[5]

a. Paragraph 1 of Joint Motion: On or before December 31, 2026, the Authority shall complete work on Contract 7985, Somerville Marginal Combined Sewer Overflow Facility New Pipe Connection.

[5] Paragraphs two and three of the Joint Motion generally concern the submittal of Draft and Final Updated CSO Control Plans by April 30, 2026, and January 31, 2027, respectively. These Schedule Seven milestones fall outside of the calendar year 2025 reporting period for the Annual Report. Nevertheless, as noted above, the Authority timely filed the Draft Updated CSO Control Plan on April 30, 2026. On May 18, 2026, the Authority submitted a request to MassDEP seeking an extension of the January 31, 2027, Final Updated CSO Control Plan submittal date to May 31, 2027, for good and various reasons. This request is pending.

For the Somerville Marginal CSO treatment facility new pipe connection project ("Project"), the Authority previously designed, bid, and procured the construction services of a contractor under MWRA Contract 7985. The contractor mobilized to the Project site in July 2025 but was delayed several times given conflicting traffic management conditions with other contractors performing work on the Massachusetts Department of Transportation's ("MassDOT") I-93 projects. As excavation for the new gate chamber progressed, issues arose with traffic management, creating traffic incidents and safety concerns in the Project area. MWRA was required to cease construction until a revised traffic management plan could be prepared and implemented, resulting in further delays to the construction schedule and limited construction progress before MassDOT's Winter Moratorium on Roadway Construction. Prior to this pause, MWRA's contractor was able to structurally line an adjacent Somerville vitrified sewer as a prerequisite for supportive excavation installation, install sheet and sheeting/piles as part of the supportive excavation, and begin excavating the chamber site.

Following the winter moratorium, the contractor resumed construction in April 2026. As of June 10, 2026, excavation to expose the MWRA Section 35 sewer, approximately 27 ft. below grade, is nearly complete. The excavation to the MWRA sewer revealed a concrete cradle under the sewer that was not shown on the record drawings. Evaluation of this cradle is underway; however, construction plans will require modification to remove or accommodate the cradle. At this time, the Authority cannot determine what impact, if any, this

modification may have on the overall construction schedule, but it may result in Project completion occurring sometime after December 31, 2026. Appendix B of the Annual Report includes photographs of the Project.

b. Paragraph 6 of Joint Motion: The Authority shall cooperate with the Boston Water and Sewer Commission ("BWSC") with respect to completion of any investigations and construction work that the BWSC is expected to perform that is predicted to result in achievement of compliance with LTCP goals at outfalls BOS070/DBC, BOS064, and BOS003.

The Authority continues to coordinate with BWSC through scheduled monthly meetings and intermittent conferences to understand BWSC's progress. The monthly meetings include updates on design and construction project status, which impact CSO discharges at BOS070/DBC, BOS064, and BOS003. As of January 2025, BWSC completed the parallel segment of relief pipe funded through a Financial Assistance Agreement with the Authority to further reduce CSO discharge volume at BOS070/DBC. In September 2025, BWSC completed the below grade work of South Boston Sewer Separation Contract 2, which brought CSO outfalls BOS070/DBC and BOS064 into compliance with the Long-Term CSO Control Plan ("LTCP") goals. Further work by BWSC included raising the weir in regulator RE070/7-2 of BOS070/DBC further reducing CSO discharge volume. BWSC continues to perform sewer separation in the South Boston Area with Contract 3, currently in progress, and Contracts 4 and 5, with construction anticipated to be complete in 2030.

The Authority and BWSC have worked together to adjust the sequencing of the sewer separation contracts planned in East Boston to accelerate work

impacting flows tributary to BOS003 and, therefore, reduce CSO discharges at BOS003 sooner.

V. Additional Activities

a. Schedule Seven

As required by amended Schedule Seven, ECF No. 1966-1 at p. 66 of 76, the Authority provided the City of Cambridge, the City of Somerville, the BWSC, and the City of Chelsea with the results of a Unified Model run for the prior calendar year to allow each of them to evaluate and/or report the model outputs for its respective CSO outfalls should any of them decide to utilize the Unified Model in its individual reporting. Accordingly, this Schedule Seven milestone is now complete.

b. Variances

The Authority continues to perform work under the Alewife Brook /Upper Mystic River Basin and Lower Charles River/Charles River Basin Variances, including: (1) the Somerville Marginal CSO Treatment Facility Rehabilitation Design (Alewife Brook /Upper Mystic River Basin Variance); and (2) CAM005 Weir Raising and Lengthening (Lower Charles River/Charles River Basin Variance).

For the Somerville Marginal CSO Treatment Facility Rehabilitation Design, a contract for design, engineering services during construction, and resident engineering and inspection services was awarded by the MWRA Board of Directors at its March 18, 2026 meeting, and a notice to proceed was issued on May 18, 2026.

With respect to CAM005, the Lower Charles River/Charles River Basin Variance requires that the Authority investigate, through internal survey, all physical dimensions in the CAM005 Regulator to determine if the CAM005 weir can be raised to reduce activations but also increased in length to minimize increases to upstream wastewater levels. The Authority completed that investigation and went further. Following the investigation, the Authority proceeded with the design for the work to raise and lengthen the weir. The Authority then procured a construction contract, which was awarded in April 2026. This was followed by a notice to proceed on May 28, 2026. Please refer to Tables 3-1 and 3-2 of the Annual Report for more detailed information about this work.

VI. Conclusion

The Authority continues to work diligently on the Updated CSO Control Plan. As noted above, the Authority, and the Cities of Cambridge and Somerville submitted the Draft Updated CSO Control Plan on April 30, 2026 pursuant to the Variances. The Draft Updated CSO Control Plan is posted to a shared website,[6] and hard copies were distributed to 72 libraries in the MWRA service area. A 5-month public review period is now underway. This review period will be supported by robust opportunity for public input. A website has been created to allow the public to provide comments, with instruction on how comments can be submitted through the online comment portal, by email, or by mail.[7] Public

[6] *See* https://voice.somervillema.gov/joint-cso-planning.

[7] *See* https://us.planengage.com/updatedcsocontrolplan/page/home.

Meeting No. 7, held on June 2, 2026, provided an overview of the Draft Updated CSO Control Plan and was followed by a question and answer session. Arrangements have been made and notifications and announcements have been given to provide six in-person and three virtual (remote) office hours to help the public review and understand the Draft Updated CSO Control Plan. In addition, schedules have been posted and arrangements have been made for two public hearings in September 2026.[8] The Partners are sharing public comments with MassDEP and EPA on a bi-monthly basis for their consideration in preparing comments on the Draft Updated CSO Control Plan expected by the end of October 2026. The Authority will continue to work diligently toward submission of a Final Updated CSO Control Plan.

Respectfully submitted,

MASSACHUSETTS WATER RESOURCES AUTHORITY

By its attorney,

ATTORNEY GENERAL
ANDREA JOY CAMPBELL

By: */s/ Jonathan M. Ettinger*

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[8] Please refer to Chapter 5 of the Draft Updated CSO Control Plan for a more detailed description of the public outreach and engagement measures.

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CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of this document, which was filed via the Court's ECF system, will be sent electronically by the ECF system to the registered participants as identified on the Notice of Electronic Filing (NEF) and electronic copies will be sent to those indicated as non-registered participants (excluding Christopher Little of Pierce Atwood, who has retired from the practice of law, and Lawrence Liebesman and Joseph McGovern, who no longer work at the U.S. Department of Justice) on June 15, 2026.

/s/ Jonathan M. Ettinger
Jonathan M. Ettinger (BBO #552136)

Exhibit A

AECOM

CSO Annual Report for MWRA CSO Outfalls from January 1 to December 31, 2025

June 15, 2026

Prepared for the:
Massachusetts Water Resources Authority

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Appendix

Tables

Figures

1. Introduction

The Massachusetts Water Resources Authority (MWRA) is required to submit an Annual Combined Sewer Overflow (CSO) Discharge Report in accordance with paragraphs 5a, 5b and 5 d of the "Joint Motion of the United States and the Massachusetts Water Resources Authority to Amend Schedule 7." (Amended Schedule 7) The Annual CSO Discharge Reports are to be submitted to the Court and the parties as presented in Table 1-1 below.

Table 1-1. Annual Reports Required by the Amended Schedule 7

Annual Report Number	Date to be Submitted
1	June 15, 2026
2	May 30, 2027
3	May 30, 2028
4	May 30, 2029
5	May 30, 2030

The requirements for the Annual Reports as described in Amended Schedule 7 are summarized as follows:

(1) Estimates of CSO activations and volumes for all MWRA CSO outfalls for the prior calendar year including rainfall associated with the CSO discharges. (Amended Schedule 7 Paragraph 5a)

(2) For all MWRA CSO outfalls and for community-owned outfalls BOS003, CAM401A, CAM005, and SOM001A provide the 1992 Typical Year performance (activation frequencies and volumes) with Q4-2025 system conditions using the Unified Model and the LTCP activation frequencies and volumes. (Amended Schedule 7 Paragraph 5b)

(3) Report on compliance activities in the preceding year. (Amended Schedule 7 Paragraph 5d)

This report is organized into the following chapters:

Chapter 1: Introduction

Chapter 2: 2025 CSO Discharges and Rainfall Events. Presents the following:

- A summary of the rainfall data collected for 2025; and
- Estimated CSO activation frequencies and discharge volumes calculated based on MWRA meter data[1] and rainfall statistics[2] for corresponding events for each of the MWRA CSO outfalls.

Chapter 3: Project Progress Report. Presents updates on the following projects:

- Somerville Marginal CSO Facility - New Connection and gate structure;
- Somerville Marginal CSO Facility Rehabilitation Design;
- CAM401A Metering and Model Calibration Update; and
- CAM005 Weir Raising and Lengthening.
- BOS003 East Boston Sewer Separation
- BOS070/DBC and BOS064 South Boston Sewer Separation
- Draft Updated CSO Control Plan

[1] Outfall discharge are estimates calculated using MWRA metered data from sensors, taking into account physical configurations and constraints.
[2] Rainfall statistics are calculated using data collected from MWRA, BWSC, and USGS rain gages.

- Final Updated CSO Control Plan

Chapter 4: 1992 Typical Year Performance for Q4-2025

- A summary of the 1992 Typical Year performance under Q4-2025 system conditions.

Appendix A: Rainfall Data Collection and Analyses January 1, 2025 to December 31, 2025. Presents the following:

- A summary of the rainfall data collected for 2025 and characterization of the return period for each storm.

Appendix B Somerville Marginal New Pipe Connection Project Photos. Presents the following:

- Construction progress photos.

2. 2025 CSO Discharges and Rainfall Events

This section presents estimates of CSO activations and volumes for the permitted CSO outfalls owned and operated by MWRA, for the period of January 1, 2025 to December 31, 2025, based on monitoring data. These CSO outfalls are listed by receiving water in Table 2-1. For each CSO event, the rainfall data associated with the CSO discharge, including the depth, duration, intensity of the rain event, and an estimate of the storm recurrence interval based on NOAA Atlas 14, Volume 10 is provided in Table 2-2.

Table 2-1. MWRA CSO Outfalls

Receiving Water	Outfall
Alewife Brook	MWR003
Upper Mystic River	SOM007A/MWR205A (Somerville Marginal CSO Treatment Facility high tide outfall)
Mystic/Chelsea Confluence	MWR205 (Somerville Marginal CSO Facility)
Upper Inner Harbor	MWR203 (Prison Point CSO Treatment Facility)
Fort Point Channel	MWR215 (Union Park CSO Treatment Facility)
Lower Charles River	MWR010
	MWR018
	MWR019
	MWR020
	MWR201 (Cottage Farm CSO Treatment Facility)
	MWR023

2.1 Rainfall Analyses

The rainfall for the period of January 1, 2025 to December 31, 2025, was analyzed to support the understanding of the metered CSO discharges for the 2025 period. The recurrence intervals for each storm event were estimated by comparing rainfall depths and intensities to intensity-duration-frequency (IDF) curves in *Atlas-14*.[3] Refer to Appendix A for the rainfall analysis including Figure A-1 with the rain gauge locations and Table A-1 for a list of the rain gauges analyzed.

Atlas 14 IDF values for Boston were extracted from NOAA's data server[4] on April 12, 2022. The Atlas 14 partial duration curves were used to assign recurrence intervals. The smallest storm that the partial duration curves address is the 1-year storm, so the partial duration IDF curves for the 3-month and 6-month frequencies were extrapolated. The storm recurrence intervals identified in the text and sections below are based on the 2019 edition of Atlas 14 referenced above.

Appendix A includes the following tables that were prepared in support of this analysis:

- Table A-4. Summary of Storm Events at Ward Street Headworks Rain Gauge (BO-DI-1) for January 1, 2025 to December 31, 2025;
- Table A-5. Frequency of Events within Selected Ranges of Total Rainfall for January 1, 2025 to December 31, 2025;
- Table A-6. Storms between January 1, 2025 to December 31, 2025, with Greater Than 2 Inches of Total Rainfall.[5]; and
- Table A-7. Storms Between January 1, 2025 to December 31, 2025, with Peak Intensities Greater than 0.40 inches/hour.[5]

[3] Atlas 14 Volume 10 report : https://www.weather.gov/media/owp/oh/hdsc/docs/Atlas14_Volume10.pdf
[4] NOAA's Data server for MA: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ma
[5] Storms greater than 2 inches total depth or greater than 0.4 inches/hour peak intensity were identified for further analysis because storms of those sizes tend to be associated with more significant CSO discharge volumes.

The findings from those tables are summarized below.

- 2025 averaged 88 storm events across the assessed rain gauges with an average annual rainfall depth of 40.08 inches (Table A-5);
- The distribution of storms by rainfall depth categories for 2025 was as follows (Table A-5):
  - 46 storms with total depths less than 0.25 inches;
  - 13 storms with total depths between 0.25 and 0.5 inches;
  - 18 storms with total depths between 0.5 and 1.0 inches;
  - 9 storms with total depths between 1.0 and 2.0 inches; and
  - 2 storms with total depths greater than 2.0 inches.
- In terms of larger storms, for the four gauges shown in Table A-6, the number of storms with greater than 2 inches of total rainfall in 2025 ranged from one to two, for an average of 1.75 storms. Two storm events were recorded to have a depth greater than 2 inches at Ward St (BO-DI-1), Columbus Park (BO-DI-2), and Chelsea Creek (CH-BO-1), and one storm recorded a depth greater than 2 inches at United States Geological Survey (USGS) Fresh Pond. For the four gauges shown in Table A-6, the largest storm in 2025 with respect to total depth was measured by the Columbus Park (BO-DI-2) gauge on May 22, 2025 with a total depth of 4.36 inches. (Table A-6).
- For the four gauges shown in Table A-7, the number of storms with peak intensities greater than 0.40 inches per hour ranged from six to ten. On October 8, 2025, the USGS Fresh Pond gauge measured a storm with a peak intensity of 0.89 inches per hour which is equivalent to a 1-year, 1-hour event. The other three gauges presented in Table A-7 had individual storms with maximum peak intensities between 0.70 and 0.72 inches per hour.

Appendix A presents the rainfall data measured during the period of January 1, 2025 to December 31, 2025. It also describes the analysis of the rainfall data used to characterize the return period of each storm event. Further detail regarding the rainfall data collection and processing can be found in Chapter 9 of the *December 2021 CSO Report*.

2.2 Estimates of CSO Discharges for MWRA CSO Outfalls for 2025

Table 2-2 below presents the volume of each CSO discharge for each of the MWRA-owned CSO outfalls based on meter data and the rainfall statistics at the nearest rain gauge for each event (Refer to Figure A-1 for rain gauge locations). These data were collected by MWRA and supplemented with monitoring data from the Boston Water and Sewer Commission (BWSC) for regulators tributary to outfall MWR023. MWRA and the CSO communities (Boston, Cambridge, Chelsea, and Somerville) have been collecting meter data used to report the CSO discharges at each of the outfalls as part of the CSO Notification Program. The MassDEP regulations set forth at *314 CMR 16.00: Notification Requirements to Promote Public Awareness of Sewage Pollution* require MWRA and CSO communities to notify the public of CSO activations within two hours and estimate volumes within five business days. CSO volumes are posted for individual storm events on MWRA's website at Combined Sewer Overflow (CSO) Notifications | MWRA.

Table 2-2. 2025 MWRA Metered CSO Discharges and Rainfall Statistics for Corresponding Events

MWRA Metered[1] CSO Discharge Estimates			Rainfall Statistics[3]					
Outfall/ Receiving Water	Date	Volume (MG)	Rain Gauge	Duration (hr)	Depth (in)	Peak Intensity (in/hr)	NOAA Atlas 14 - 1hr Recurrence Interval	NOAA Atlas 14 - 24hr Recurrence Interval
Alewife Brook								
MWR003	-	-	-	-	-	-	-	-
Total	-	-						
Upper Mystic								
SOM007A/ MWR205A (treated)[2]	3/6/2025	0.37	Somerville	20.25	1.02	0.33	3m	3m
	3/17/2025	0.05		15.25	1.43	0.55	6m	3m-6m
	5/22/2025	7.33		40.00	2.93	0.36	3m	1-2y
	10/8/2025	0.04		4.50	0.96	0.69	6m-1y	3m
	10/13/2025	0.59		60.50	1.99	0.17	<3m	6m
Total	**5**	**8.38**						
Mystic/ Chelsea Confluence								
MWR205 (Somerville-Marginal CSO Facility)	1/1/2025	0.76	Somerville	8.00	0.61	0.30	<3m	<3m
	2/16/2025	1.37		25.75	1.50	0.24	<3m	3m-6m
	3/6/2025	1.41		20.25	1.02	0.33	3m	3m
	3/17/2025	2.57		15.25	1.43	0.55	6m	3m-6m
	3/24/2025	0.27		9.00	0.74	0.22	<3m	<3m
	4/1/2025	0.39		3.75	0.70	0.43	3m	<3m
	4/22/2025	0.03		3.00	0.47	0.36	3m	<3m
	4/26/2025	0.21		11.00	0.60	0.27	<3m	<3m
	5/5/2025	0.32		41.00	0.90	0.24	<3m	<3m
	5/9/2025	1.14		23.00	1.29	0.33	3m	3m
	5/22/2025	16.33		40.00	2.93	0.36	3m	1-2y
	6/7/2025	1.04		15.00	0.87	0.44	3m-6m	<3m
	7/8/2025	0.61		11.25	1.02	0.35	3m	3m
	7/10/2025	0.25		8.25	0.87	0.18	<3m	<3m
	7/20/2025	0.32		0.75	0.32	0.32	3m	<3m
	7/31/2025	0.99		20.25	1.78	0.39	3m	6m
	8/14/2025	0.03		0.50	0.48	0.48	3m-6m	<3m
	9/6/2025	3.74		22.75	1.95	0.96	1-2y	6m
	9/7/2025	0.36		22.75	1.95	0.96	1-2y	6m
	9/18/2025	0.45		5.75	0.44	0.37	3m	<3m
	9/25/2025	1.97		38.50	1.31	0.34	3m	3m
	10/8/2025	1.71		4.50	0.96	0.69	6m-1y	3m
	10/13/2025	1.04		60.50	1.99	0.17	<3m	6m

MWRA Metered[1] CSO Discharge Estimates			Rainfall Statistics[3]					
Outfall/ Receiving Water	**Date**	**Volume (MG)**	**Rain Gauge**	**Duration (hr)**	**Depth (in)**	**Peak Intensity (in/hr)**	**NOAA Atlas 14 - 1hr Recurrence Interval**	**NOAA Atlas 14 - 24hr Recurrence Interval**
	10/20/2025	0.33		3.75	0.68	0.33	3m	<3m
	10/22/2025	0.39		4.25	0.57	0.30	<3m	<3m
	10/30/2025	0.94		20.25	0.96	0.22	<3m	3m
	12/29/2025	0.13		35.50	0.88	0.19	<3m	<3m
Total	**27**	**39.10**						
Upper Inner Harbor								
MWR203 (Prison Point Facility)	3/6/2025	4.18	Ward St.	20.00	1.04	0.37	3m	3m
	3/17/2025	7.88		17.50	1.65	0.56	6m	6m
	5/9/2025	5.44		22.75	1.29	0.31	3m	3m
	5/22/2025	57.78		21.75	3.61	0.47	3m-6m	3y
	6/7/2025	8.73		5.50	1.47	0.69	6m-1y	3m-6m
	9/6/2025	6.16		23.25	1.45	0.45	3m-6m	3m-6m
	9/25/2025	9.22		38.75	1.76	0.65	6m	3m-6m
	10/8/2025	9.80		4.75	1.03	0.66	6m	3m
	10/13/2025	12.84		57.00	3.22	0.23	<3m	1y
Total	**9**	**122.03**						
Fort Point Channel								
MWR215 (Union Park Facility)	3/17/2025	0.44	Union Park	18.00	1.71	0.55	6m	6m
	5/22/2025	16.88		21.50	4.04	0.52	3m-6m	5y
	6/7/2025	0.63		4.25	1.14	0.58	6m	3m
	7/10/2025	0.59		16.75	1.46	0.47	3m-6m	3m-6m
	9/25/2025	0.28		38.00	1.63	0.55	6m	3m-6m
	10/13/2025	2.63		56.75	3.63	0.27	<3m	1-2y
Total	**6**	**21.45**						
Lower Charles								
MWR010	-	-	-	-	-	-	-	-
Total	**-**	**-**						
MWR018	-	-	-	-	-	-	-	-
Total	**-**	**-**						
MWR019	-	-	-	-	-	-	-	-
Total	**-**	**-**						
MWR020	-	-	-	-	-	-	-	-
Total	**-**	**-**						
MWR201 (Cottage Farm) (treated)	5/22/2025	15.02	Allston	21	3.42	0.46	3m-6m	2y

MWRA Metered[1] CSO Discharge Estimates			Rainfall Statistics[3]					
Outfall/ Receiving Water	**Date**	**Volume (MG)**	**Rain Gauge**	**Duration (hr)**	**Depth (in)**	**Peak Intensity (in/hr)**	**NOAA Atlas 14 - 1hr Recurrence Interval**	**NOAA Atlas 14 - 24hr Recurrence Interval**
Total	**1**	**15.02**						
MWR023	-	-	-	-	-	-	-	-
Total	**-**	**-**						

(1) Metered data are estimates of outfall discharge calculated using data from sensors, taking into account physical configurations and constraints.
(2) The SOM007A/MWR205A volume includes a fraction of the flow treated at Somerville Marginal facility plus separate stormwater that enters the Somerville Marginal Conduit (outfall) downstream of the facility.
(3) Rainfall statistics are calculated using data collected from MWRA, BWSC, and USGS rain gages.

3. Project Progress Report

Amended Schedule 7 Paragraph 5d requires MWRA to provide a progress report on the projects listed in Tables 3-1, 3-2, 3-3, and 3-4 below.

Table 3-1. Alewife Brook/Upper Mystic River Project Progress Updates

Project Name	Potentially Impacted Outfall	Project Description	Project Progress Update
Somerville Marginal CSO Facility - New Connection and Gate Structure	MWR205 and MWR205A/SOM007A	• Design and installation of gate structure from Somerville Marginal CSO facility influent line to MWRA Section 35 to maximize flows within interceptor. • Anticipated date of completion: December 2026	• MWRA entered into a Contract with RJV Construction Corp (Contract 7985). • The construction phase Notice to Proceed was issued October 26, 2024. • RJV mobilized to the Project site in July 2025 but was delayed several times given conflicting traffic management conditions with other contractors performing work on MassDOT's I-93 projects. As excavation for the new gate chamber progressed, issues arose with traffic management, creating traffic incidents and safety concerns in the Project area. MassDOT required MWRA to cease construction until a revised traffic management plan could be prepared and implemented resulting in further delays to the construction schedule and limited construction progress before MassDOT's Winter Moratorium on Roadway Construction. Prior to this pause, MWRA's contractor was able to structurally line an adjacent Somerville vitrified sewer as a prerequisite for supportive excavation installation, installed sheet and sheeting/piles as part of the supportive excavation, and began excavating the chamber site. Given these unavoidable delays MWRA now anticipates the completion of the Project by December 31, 2026. • RJV resumed construction in April 2025. As of June 10, 2026, excavation to expose the MWRA Section 35 sewer, approximately 27 ft. below grade is nearly complete, as shown in Appendix B photos. • Challenges: Deep excavation to construct chamber within onramp to Interstate 93 (see Appendix B photos). Modifications to MassDOT permit in fall 2025 required construction to be postponed until April 2026. The excavation to the MWRA sewer revealed a concrete cradle under the sewer that was not shown on the record drawings. Evaluation of this cradle is underway. However, construction plans will require modification to remove of accommodate the cradle, which may result in schedule delays.
Somerville Marginal CSO Facility Rehabilitation Design	MWR205 and MWR205A/SOM007A	• Complete Design of Facility Rehab to ensure reliable treatment of	• A request for qualification and proposals was advertised in November 2025 to procure Professional Services to design and provide engineering services during construction (ESDC) and resident engineering and

		remaining CSO discharges. • Anticipated date of completion: February 2028	resident inspection services (REI) for the Somerville Marginal Facility Rehabilitation. • The MWRA Board of Directors awarded contract 8689 to HDR Engineering Inc. in March 2026. • A notice to proceed on Contract 8689 was issued on May 18, 2026.
CAM401A Metering and Model Calibration Update	CAM401A	• Working with the City of Cambridge, perform further system metering and hydraulic model calibration to improve CAM401A system understanding and address differences in current hydraulic models. • Date of completion: October 2024	• The metering program and model calibration are complete. • Refer to December 27, 2024, Supplement to the Post Construction Monitoring Program for additional details. https://www.mwra.com/media/file/supplementaltofinal122724

Table 3-2. Charles River Project Progress Update

Project Name	Potentially Impacted Outfall	Project Description	Project Progress Update
CAM005 Weir Raising and Lengthening	CAM005	• Further investigate through internal survey all physical dimensions in the CAM005 Regulator to determine if the CAM005 weir can be raised to reduce activations but also increased in length to minimize increases to upstream wastewater levels. • Anticipated date of completion: December 2026	• MWRA issued a Task Order to Kleinfelder to evaluate and design weir improvements within the CAM005 regulator in summer 2024. • Kleinfelder completed the internal survey in September 2024, a Preliminary Design Report in March 2025, followed by a Final Design of Construction Contract 8188 in August 2025. • Contract 8188 was bid in January 2026 and was awarded to MAS Building and Bridge in April 2026. • A notice to proceed on Contract 8188 was issued on May 28, 2026. Submittals are under review with an expected site mobilization in July 2026. Although the contract extends to January 2026, substantial completion is expected in late summer 2026.

Table 3-3. BWSC Projects Progress Update

Project Name	Potentially Impacted Outfall	Project Description/ Progress Update
Fort Point Channel and Mystic Contract No. 23-309-014	BOS070/DBC/BOS064	• BWSC South Boston Sewer Separation Contract 1 completed August 2023. • Parallel Relief Pipe Project completed in January 2025. • In September 2025, BWSC completed the below grade work of South Boston Sewer Separation Contract 2 which brought CSO outfalls BOS070/DBC and BOS064 into compliance with Long-Term Control Plan ("LTCP") goals. • BWSC South Boston Sewer Separation Contract 3 (22-309-012) NTP was October 7, 2024 and is planned to be completed March 11, 2027. • BWSC South Boston Sewer Separation Contract 4 (23-309-012) NTP was October 13, 2026 and is planned to be completed December 31, 2028. • BWSC South Boston Sewer Separation Contract 5 (24-309-012) NTP was October 12, 2027 and is planned to be completed December 31, 2030.
East Boston Sewer Separation Phase IV	BOS003	• Completion of BWSC East Boston Sewer Separation Phase 3 and the work at the BOS003 regulators reduced the volume at outfall BOS003 but not enough to meet LTCP goals. Additional separation work associated with BWSC East Boston Sewer Separation Phase 4 upstream of regulator RE003-12 is anticipated to allow this outfall to meet the LTCP goals. Phase 4 is anticipated to be completed in 2030. Phase 4 has been separated into three contracts as follows: • Contract 1 (21-309-002) NTP was September 9, 2025 and is planned to be completed by December 31, 2027. • Contract 2 (23-309-002) is planned to begin in April 2027 and be completed by the end of December 2029 • Contract 3 (26-309-002) is planned to begin in April 2028 and be completed by end of December 2030 *Note: BWSC arranged the contract order to prioritize the work needed to allow BOS003 to meet LTCP goals as soon as possible.*

Table 3-4. Updated CSO Control Plan Progress Update

Project Name	Due Date	Project Description/ Progress Update
Draft Updated CSO Control Plan	April 30, 2026	• Draft report was submitted on April 30, 2026 • Public review period is in progress.
Final Updated CSO Control Plan	January 30, 2027	• Awaiting stakeholder comments on the draft report.

4. 1992 Typical Year Performance for Q4-2025 System Conditions

Table 4-1 below presents the results of running the Q4-2025 system conditions for the 1992 rainfall in comparison to the LTCP goals, for all MWRA outfalls and community outfalls CAM401A, SOM001A, BOS003, and CAM005. Table 4-2 provides a summary of the updates made to the Q4-2024 system conditions model to create the Q4-2025 system conditions model.

Table 4-1. Unified Model 1992 TY Performance for Q4-2025 System Conditions

Outfall	Q4 2025 UM (2025fEC) 1992TY		Long Term Control Plan 1992TY	
	Activation Frequency	Volume (MG)	Activation Frequency	Volume (MG)
ALEWIFE BROOK				
MWR003	2	0.04	5	0.98
CAM401A	10	6.32	5	1.61
SOM001A	8	4.34	3	1.67
UPPER MYSTIC RIVER				
SOM007A/MWR205A	2	1.88	3	3.48
MYSTIC/CHELSEA CONFLUENCE				
MWR205 (Somerville-Marginal CSO Facility)	32	99.62	39	60.58
UPPER INNER HARBOR				
MWR203 (Prison Point Facility)	17	270.44	17	243.00
LOWER INNER HARBOR				
BOS003	9	4.78	4	2.87
CONSTITUTION BEACH				
MWR207	Closed	N/A	Closed	N/A
FORT POINT CHANNEL				
MWR215 (Union Park Facility)	9	22.67	17	71.37
UPPER CHARLES				
CAM005	1	0.19	3	0.84
LOWER CHARLES				
MWR010	0	0.00	0	0.00
MWR018	3	0.54	0	0.00
MWR019	2	0.30	0	0.00
MWR020	2	0.32	0	0.00
MWR021	Closed	N/A	Closed	N/A
MWR022	Closed	N/A	Closed	N/A
MWR201 (Cottage Farm Facility)	2	6.68	2	6.30
MWR023	3	0.08	2	0.13

Table 4-2. 2025 Annual Report Unified Model Updates

Location	Summary of Change	Supporting Information
CSO Facilities	Updated the Real Time Control (RTC) to include the storm-by-storm operation of the facilities based on facility operation data provided by MWRA and BWSC. Minor adjustments to the model RTC were implemented to better reflect MWRA operation.	This data has been provided to AECOM and RTC was updated.
BOS046, Boston Gate House #1	The model RTC was updated to reflect the actual gate conditions at Gate House #1 during the January 1, 2025 – December 31, 2025 period (the Typical Year version of the model will open the gates in accordance with BWSC's updated SOP's).	BWSC opens the gates in Gate House #1 for individual storms based on operator discretion and if the storm is predicted to exceed 80% of a 2-year recurrence interval depth.
South Boston	New Boston Main Interceptor lining phase I and II complete	Confirmed with BWSC
BOS070	South Boston Sewer Separation Phase II complete	Phase II started on 9/11/23 and was completed in September of 2025.
BOS070	RE070/7-2 weir raised	The weir at RE070/7-2 was raised 10-inches on 8/15/2025. Drawings have been provided by BWSC.
Cottage Farm	River Street Sewer Separation	Completed in 2025
SOM009 (internal regulator)	Spring Hill Sewer Separation Phase I	Completed in 2025

Appendix A
Rainfall Processing and Analyses January 1, 2025 – December 31, 2025

A.1 Rainfall Analyses

This section presents the rainfall data measured from 17 gauges within the MWRA wastewater service area during the period of January 1, 2025 to December 31, 2025. It also describes the analysis of the rainfall data used to characterize the return period of each storm event and an assessment of measured rainfall for the 2025 period.

Intensity-Duration-Frequency (IDF) curve values for Atlas 14 for Boston (x-y coordinates: 42.3590, -71.0586) were extracted from NOAA's data server on April 12, 2022. The Atlas 14 partial duration curves were used to assign the recurrence intervals. The smallest storm the partial duration curves addresses is the 1-year storm, so the partial duration IDF curves for the 3-month and 6-month frequencies were extrapolated. The storm recurrence intervals identified in the report sections above and in Appendix A are based on the 2019 edition of Atlas 14 referenced above.

A.1.1 Rainfall Data Collection and Processing

Rainfall was quantified for this analysis using 15-minute rainfall data collected at rain gauges distributed over the MWRA system. The rain gauges are listed in Table A-1 and the locations are shown in Figure A-1.

Table A-1. Rain Gauges

Gauge Code	Name	Owner	Gauge Code	Name	Owner
BO-DI-1	Ward St.	MWRA	BWSC006	Dorchester -Talbot	BWSC
BO-DI-2	Columbus Park	MWRA	Rox	Roxbury	BWSC
BWSC001	Union Park Pump Sta.	BWSC	CH-BO-1	Chelsea Ck.	MWRA
BWSC002	Roslindale	BWSC	FRESH_POND	USGS Fresh Pond	USGS
BWSC003	Dorchester Adams St.	BWSC	HF-1C	Hanscom AFB	MWRA
BWSC004	Allston	BWSC	RG-WF-1	Hayes Pump Sta.	MWRA
BWSC007	Charlestown	BWSC	SOM	Somerville Remote	MWRA
EB	East Boston	BWSC	Lex	Lexington Farm	Project (1)
BWSC008	Longwood Medical	BWSC	SP	Spot Pond	Project (1)
BWSC005	Hyde Park	BWSC	WF	Waltham Farm	Project (1)

Notes:

(1) Project gauges were removed as of July 1, 2020. For modeling purposes project gauge data has been replaced with the nearest rain gauge, following the methodology described in the December 2021 CSO Report and closest rain gauges substitution table.

The rainfall data was reviewed based on geographic location, comparing total rainfall depth and rainfall intensity values by month and for individual storm events. The shape of the rainfall hyetographs was reviewed for irregularities. Rain gauges with significantly higher or lower total rainfall depths than other gauges, and unusual hyetograph shapes, were flagged as suspect and further reviewed.

Suspect or missing rain gauge data were replaced with data from the rain gauge in closest linear proximity. If the closest gauge also had suspect data, the second closest rain gauge was used. Table A-2 identifies the two closest rain gauges to each of the rain gauges. Replacement of suspect data was recorded in Table A-3.

Additional information on the methodologies for rainfall data collection and processing can be found in Chapter 9 of the *December 2021 CSO Report.*

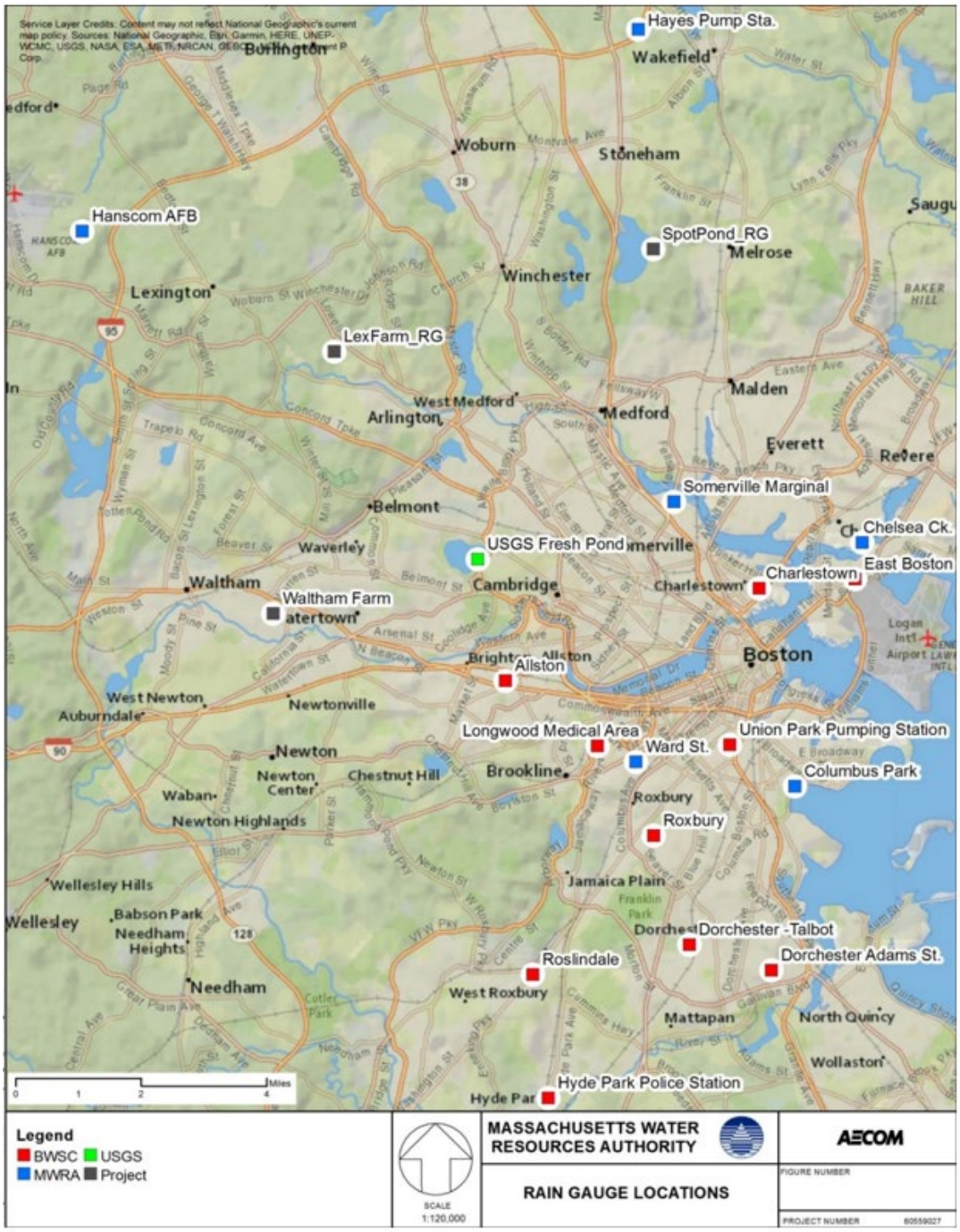

Figure A-1. Rain Gauge Location Plan

Table A-2. Closest Rain Gauges for Data Substitution

Origin Gauge		Closest Gauge		Second Closest Gauge	
Gauge Name	Gauge Code	Gauge Code	Distance (mi)	Gauge Code	Distance (mi)
Ward Street	BO-DI-1	BWSC008	0.66	Rox	1.23
Columbus Park	BO-DI-2	BWSC001	1.24	Rox	2.39
Union Park Pumping Station	BWSC001	BO-DI-2	1.24	BO-DI-1	1.52
Roslindale	BWSC002	BWSC005	2.02	BWSC006	2.54
Dorchester - Adams	BWSC003	BWSC006	1.37	Rox	2.88
Allston	BWSC004	BWSC008	1.81	FRESH_POND	2.03
Hyde Park Police Station	BWSC005	BWSC002	2.02	BWSC006	3.36
Dorchester - Talbot	BWSC006	BWSC003	1.37	Rox	1.86
Charlestown	BWSC007	EB	1.53	CH-BO-1	1.80
Longwood Medical Area	BWSC008	BO-DI-1	0.67	Roxbury	1.71
Chelsea Creek	CH-BO-1	EB	0.60	BWSC007	1.80
East Boston	EB	CH-BO-1	0.60	BWSC007	1.53
USGS Fresh Pond	FRESH_POND	BWSC004	2.21	SOM	3.26
Hanscom AFB	HF-1C	FRESH_POND	8.11	RG-WF-1	9.43
Lexington Farm	Lex	FRESH_POND	4.08	BWSC004	5.85
Hayes Pump Sta.	RG-WF-1	SOM	7.51	FRESH_POND	8.79
Roxbury	Rox	BO-DI-1	1.23	BWSC008	1.71
Somerville Remote	SOM	BWSC007	1.95	CH-BO-1	3.07
Spot Pond	SP	RG-WF-1	3.55	SOM	4.12
Waltham Farm	WF	FRESH_POND	3.37	BWSC004	3.86

Table A-3. Summary of Rainfall Data Replacement, January 1, 2025 to December 31, 2025

Rain Gauge	Replacement Data Start Time	Replacement Data End Time	Replacement Rain Gauge
Union Park Pumping Station (BWSC001)	1/19/2025 12:00	1/27/2025 23:45	Columbus Park
	2/2/2025 20:00	2/3/2025 15:00	Columbus Park
Roslindale (BWSC002) (1)	1/10/2025 0:00	3/6/2025 12:00	Dorchester-Talbot
Dorchester-Adams (BWSC003)	1/11/2025 0:00	1/17/2025 23:45	Columbus Park
	1/19/2025 12:00	1/27/2025 23:45	Columbus Park
	2/2/2025 20:00	2/3/2025 15:00	Columbus Park
Allston (BWSC004)	1/11/2025 0:00	1/17/2025 23:45	USGS Fresh Pond
	1/19/2025 12:00	1/27/2025 23:45	USGS Fresh Pond
	2/2/2025 20:00	2/3/2025 15:00	USGS Fresh Pond
Hyde Park (BWSC005)	1/11/2025 0:00	1/17/2025 23:45	Ward St.
	1/19/2025 12:00	1/27/2025 23:45	Ward St.
	2/2/2025 20:00	2/3/2025 15:00	Ward St.
Dorchester-Talbot (BWSC006) (1)	1/11/2025 0:00	1/17/2025 23:45	Ward St.
	1/19/2025 12:00	1/27/2025 23:45	Ward St.
	2/2/2025 20:00	2/3/2025 15:00	Ward St.
	10/10/2025 0:00	11/20/2025 23:45	Dorchester-Adams
Charlestown (BWSC007)	1/11/2025 0:00	1/17/2025 23:45	Somerville Remote
	1/19/2025 12:00	1/27/2025 23:45	Somerville Remote
	2/2/2025 20:00	2/3/2025 15:00	Somerville Remote
Longwood Medical Area (BWSC008)	1/11/2025 0:00	1/17/2025 23:45	Ward St.
	2/2/2025 20:00	2/3/2025 15:00	Ward St.
Chelsea Ck. (CH-BO-1)	1/11/2025 0:00	1/17/2025 23:45	Somerville Remote
	2/2/2025 20:00	2/3/2025 15:00	Somerville Remote
	8/25/2025 8:15	8/25/2025 8:15	East Boston
East Boston (EB)	1/11/2025 0:00	1/17/2025 23:45	Somerville Remote
	1/19/2025 12:00	1/27/2025 23:45	Somerville Remote
	2/2/2025 20:00	2/3/2025 15:00	Somerville Remote
USGS fresh pond (FRESH_POND) (2)	4/5/2025 19:30	4/26/2025 4:00	Allston
	5/5/2025 12:00	5/21/2025 12:00	Allston
	7/21/2025 10:15	7/21/2025 11:00	Allston
	08/28/25 15:00:00	08/28/25 15:00:00	Allston
Hanscom AFB (HF-1C) (2)	1/1/2025 0:00	12/31/2025 23:45	USGS Fresh Pond
Lex-Farm (Lex) (2)	1/1/2025 0:00	12/31/2025 23:45	USGS Fresh Pond
Hayes Pump Station (RG-WF-1) (3)	1/11/2025 0:00	1/17/2025 23:45	Somerville Remote
	1/19/2025 12:00	1/27/2025 23:45	Somerville Remote
	2/2/2025 20:00	2/3/2025 15:00	Somerville Remote
	7/25/2025 8:15	7/25/2025 8:15	Somerville Remote
	8/25/2025 16:30	8/25/2025 16:45	Somerville Remote
Roxbury (Rox)	1/11/2025 0:00	1/17/2025 23:45	Ward St.
	1/19/2025 12:00	1/27/2025 23:45	Ward St.

Table A-3. Summary of Rainfall Data Replacement, January 1, 2025 to December 31, 2025

Rain Gauge	Replacement Data Start Time	Replacement Data End Time	Replacement Rain Gauge
	2/2/2025 20:00	2/3/2025 15:00	Ward St.
Somerville Remote (SOM)	12/23/2025 0:00	12/31/2025 22:45	Charlestown
Spot Pond (SP) [3]	1/1/2025 0:00	12/31/2025 23:45	RG-WF
Waltham Farm (WF) [2]	1/1/2025 0:00	12/31/2025 23:45	USGS Fresh Pond

Notes:
(1) Dorchester–Talbot was replaced with Ward St before Roslindale was replaced with Dorchester–Talbot
(2) USGS Fresh Pond was replaced with Allston before Hanscom AFB, Lex Farm, and Waltham Farm were replaced with USGS Fresh Pond
(3) Hayes Pump Station was replaced with Somerville Remote before Spot Pond was replaced with Hayes Pump Station

A.1.2 Monitored Storms

For the period of January 1, 2025 to December 31, 2025, the rainfall data at each rain gauge were analyzed and summarized, providing the date and time, duration, volume, average intensity, peak 1-hour, 24-hour, and 48-hour intensities and storm recurrence intervals for each storm. An inter-event time of 12-hours between storm events was used for this analysis. The storm recurrence intervals were assigned values of less than 3 months, 3 months, 3-6 months, 6 months, 1 year, 1-2 year, or the nearest 6-month interval for recurrence intervals greater than 2-year, based on comparison to the IDF values from Atlas 14. Table A-4 presents the summary of storm events for Ward Street Headworks for the period of January 1, 2025 to December 31, 2025. These data show that 92 storm events occurred in the year long period at the Ward Street Headworks rain gauge (BO-DI-1). The majority of events had a less than 3-month recurrence interval at 1-hour, 24-hour or 48-hour durations.

Table A-4. Summary of Storm Events at Ward Street Headworks Rain Gauge (BO-DI-1) for January 1, 2025 to December 31, 2025

Event	Date & Start Time	Duration (hr)	Volume (in)	Average Intensity (in/hr)	Peak 1hr Intensity (in/hr)	Peak 24hr Intensity (in/hr)	Peak 48hr Intensity (in/hr)	Atlas-14 Recurrence Interval[1]		
								1-hr	24-hr	48-hr
1	1/1/25 1:30	8.75	0.62	0.07	0.29	0.03	0.01	<3m	<3m	N/A
2	1/11/25 7:15	8.75	0.08	0.01	0.03	0.00	0.00	<3m	<3m	N/A
3	1/18/25 17:00	5.00	0.27	0.05	0.10	0.01	0.01	<3m	<3m	N/A
4	1/19/25 17:45	12.25	0.41	0.03	0.08	0.02	0.01	<3m	<3m	N/A
5	1/29/25 3:15	7.00	0.03	0.00	0.01	0.00	0.00	<3m	<3m	N/A
6	1/31/25 12:00	16.75	0.79	0.05	0.16	0.03	0.02	<3m	<3m	N/A
7	2/2/25 22:45	5.75	0.14	0.02	0.06	0.01	0.00	<3m	<3m	N/A
8	2/6/25 9:30	6.00	0.19	0.03	0.06	0.01	0.00	<3m	<3m	N/A
9	2/7/25 9:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
10	2/9/25 0:30	17.25	0.39	0.02	0.05	0.02	0.01	<3m	<3m	N/A
11	2/13/25 2:00	11.50	0.46	0.04	0.11	0.02	0.01	<3m	<3m	N/A
12	2/15/25 19:15	25.00	1.90	0.08	0.27	0.08	0.04	<3m	6m	6m
13	2/27/25 5:45	4.25	0.06	0.01	0.03	0.00	0.00	<3m	<3m	N/A
14	3/1/25 16:45	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
15	3/5/25 8:45	20.00	1.04	0.05	0.37	0.04	0.02	3m	3m	N/A
16	3/6/25 17:00	11.75	0.28	0.02	0.13	0.01	0.01	<3m	<3m	N/A
17	3/16/25 23:15	17.50	1.65	0.09	0.56	0.07	0.03	6m	6m	N/A
18	3/20/25 5:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
19	3/21/25 0:45	7.25	0.41	0.06	0.12	0.02	0.01	<3m	<3m	N/A
20	3/24/25 9:15	8.75	0.84	0.10	0.28	0.03	0.02	<3m	<3m	N/A
21	3/25/25 9:45	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A

Table A-4. Summary of Storm Events at Ward Street Headworks Rain Gauge (BO-DI-1) for January 1, 2025 to December 31, 2025

Event	Date & Start Time	Duration (hr)	Volume (in)	Average Intensity (in/hr)	Peak 1hr Intensity (in/hr)	Peak 24hr Intensity (in/hr)	Peak 48hr Intensity (in/hr)	Atlas-14 Recurrence Interval[1]		
								1-hr	24-hr	48-hr
22	3/29/25 3:15	12.50	0.05	0.00	0.03	0.00	0.00	<3m	<3m	N/A
23	3/31/25 4:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
24	3/31/25 22:45	4.25	0.63	0.15	0.36	0.03	0.01	3m	<3m	N/A
25	4/2/25 21:30	13.00	0.26	0.02	0.08	0.01	0.01	<3m	<3m	N/A
26	4/5/25 13:00	22.25	0.79	0.04	0.15	0.03	0.02	<3m	<3m	N/A
27	4/7/25 4:45	30.75	0.18	0.01	0.04	0.01	0.00	<3m	<3m	<3m
28	4/11/25 1:15	4.50	0.14	0.03	0.04	0.01	0.00	<3m	<3m	N/A
29	4/11/25 20:45	14.00	0.48	0.03	0.11	0.02	0.01	<3m	<3m	N/A
30	4/13/25 16:45	2.00	0.03	0.01	0.02	0.00	0.00	<3m	<3m	N/A
31	4/15/25 7:45	10.25	0.13	0.01	0.10	0.01	0.00	<3m	<3m	N/A
32	4/22/25 1:45	2.75	0.30	0.11	0.22	0.01	0.01	<3m	<3m	N/A
33	4/25/25 7:15	2.50	0.08	0.03	0.04	0.00	0.00	<3m	<3m	N/A
34	4/26/25 6:00	11.25	0.62	0.06	0.26	0.03	0.01	<3m	<3m	N/A
35	5/2/25 3:45	1.25	0.21	0.17	0.19	0.01	0.00	<3m	<3m	N/A
36	5/3/25 19:15	0.50	0.05	0.10	0.05	0.00	0.00	<3m	<3m	N/A
37	5/4/25 18:45	51.50	0.90	0.02	0.21	0.02	0.02	<3m	<3m	3m
38	5/7/25 13:45	0.25	0.02	0.08	0.02	0.00	0.00	<3m	<3m	N/A
39	5/8/25 19:45	2.00	0.03	0.01	0.02	0.00	0.00	<3m	<3m	N/A
40	5/9/25 13:15	22.75	1.29	0.06	0.31	0.05	0.03	3m	3m	N/A
41	5/15/25 5:30	8.50	0.52	0.06	0.29	0.02	0.01	<3m	<3m	N/A
42	5/22/25 6:15	21.75	3.61	0.17	0.47	0.15	0.08	3m-6m	3y	N/A
43	5/23/25 16:45	20.00	0.15	0.01	0.04	0.01	0.00	<3m	<3m	N/A
44	5/29/25 1:00	3.00	0.05	0.02	0.03	0.00	0.00	<3m	<3m	N/A
45	5/30/25 12:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
46	5/31/25 3:15	18.75	0.22	0.01	0.11	0.01	0.00	<3m	<3m	N/A
47	6/6/25 2:45	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
48	6/7/25 12:00	5.50	1.47	0.27	0.69	0.06	0.03	6m-1y	3m-6m	N/A
49	6/10/25 3:15	9.25	0.12	0.01	0.09	0.00	0.00	<3m	<3m	N/A
50	6/14/25 11:00	1.25	0.02	0.02	0.01	0.00	0.00	<3m	<3m	N/A
51	6/17/25 16:00	1.00	0.03	0.03	0.03	0.00	0.00	<3m	<3m	N/A
52	6/22/25 6:00	5.25	0.03	0.01	0.02	0.00	0.00	<3m	<3m	N/A
53	6/28/25 7:15	2.00	0.04	0.02	0.03	0.00	0.00	<3m	<3m	N/A
54	7/1/25 19:15	2.75	0.24	0.09	0.17	0.01	0.00	<3m	<3m	N/A
55	7/8/25 21:15	10.75	0.79	0.07	0.27	0.03	0.02	<3m	<3m	N/A
56	7/9/25 21:15	14.25	1.39	0.10	0.36	0.06	0.03	3m	3m-6m	N/A
57	7/15/25 5:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
58	7/20/25 18:15	0.75	0.53	0.71	0.53	0.02	0.01	3m-6m	<3m	N/A
59	7/25/25 13:45	3.25	0.12	0.04	0.08	0.00	0.00	<3m	<3m	N/A
60	7/27/25 10:00	2.00	0.08	0.04	0.04	0.00	0.00	<3m	<3m	N/A
61	7/31/25 9:45	21.50	1.33	0.06	0.30	0.06	0.03	<3m	3m-6m	N/A
62	8/14/25 17:15	1.00	0.71	0.71	0.71	0.03	0.01	6m-1y	<3m	N/A
63	8/17/25 16:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
64	8/20/25 8:00	15.25	0.37	0.02	0.10	0.02	0.01	<3m	<3m	N/A
65	8/27/25 13:45	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
66	8/29/25 6:00	8.50	0.23	0.03	0.17	0.01	0.00	<3m	<3m	N/A
67	9/5/25 3:00	1.75	0.10	0.06	0.08	0.00	0.00	<3m	<3m	N/A
68	9/6/25 16:30	23.25	1.45	0.06	0.45	0.06	0.03	3m-6m	3m-6m	N/A
69	9/18/25 0:00	6.50	0.40	0.06	0.29	0.02	0.01	<3m	<3m	N/A
70	9/24/25 2:00	38.75	1.76	0.05	0.65	0.07	0.04	6m	3m-6m	6m

Table A-4. Summary of Storm Events at Ward Street Headworks Rain Gauge (BO-DI-1) for January 1, 2025 to December 31, 2025

Event	Date & Start Time	Duration (hr)	Volume (in)	Average Intensity (in/hr)	Peak 1hr Intensity (in/hr)	Peak 24hr Intensity (in/hr)	Peak 48hr Intensity (in/hr)	Atlas-14 Recurrence Interval[1]		
								1-hr	24-hr	48-hr
71	10/8/25 7:00	4.75	1.03	0.22	0.66	0.04	0.02	6m	3m	N/A
72	10/12/25 14:30	57.00	3.22	0.06	0.23	0.10	0.07	<3m	1y	1-2y
73	10/20/25 9:15	6.00	0.71	0.12	0.33	0.03	0.01	3m	<3m	N/A
74	10/22/25 5:45	4.25	0.60	0.14	0.26	0.02	0.01	<3m	<3m	N/A
75	10/30/25 4:30	21.50	0.97	0.05	0.22	0.04	0.02	<3m	3m	N/A
76	11/3/25 21:30	1.00	0.06	0.06	0.06	0.00	0.00	<3m	<3m	N/A
77	11/4/25 11:30	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
78	11/5/25 20:45	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
79	11/7/25 22:30	9.00	0.09	0.01	0.03	0.00	0.00	<3m	<3m	N/A
80	11/9/25 17:00	36.25	0.38	0.01	0.07	0.01	0.01	<3m	<3m	<3m
81	11/13/25 16:45	0.25	0.01	0.04	0.01	0.00	0.00	<3m	<3m	N/A
82	11/15/25 21:15	6.75	0.64	0.09	0.17	0.03	0.01	<3m	<3m	N/A
83	11/22/25 7:15	3.00	0.11	0.04	0.06	0.00	0.00	<3m	<3m	N/A
84	11/25/25 20:15	14.00	0.23	0.02	0.06	0.01	0.00	<3m	<3m	N/A
85	11/30/25 13:00	7.75	0.25	0.03	0.10	0.01	0.01	<3m	<3m	N/A
86	12/2/25 11:45	14.50	0.71	0.05	0.11	0.03	0.01	<3m	<3m	N/A
87	12/10/25 18:45	3.00	0.05	0.02	0.03	0.00	0.00	<3m	<3m	N/A
88	12/14/25 7:15	4.50	0.06	0.01	0.02	0.00	0.00	<3m	<3m	N/A
89	12/19/25 3:45	16.50	0.50	0.03	0.13	0.02	0.01	<3m	<3m	N/A
90	12/23/25 18:30	6.50	0.20	0.03	0.07	0.01	0.00	<3m	<3m	N/A
91	12/27/25 1:00	11.75	0.11	0.01	0.05	0.00	0.00	<3m	<3m	N/A
92	12/28/25 10:15	42.25	0.83	0.02	0.21	0.03	0.02	<3m	<3m	3m

Notes:

(1) Recurrence intervals given in ranges of less than 3 months (<3m), 3-months, (3m), 3-6 months (3-6m), 6 months (6m), 6 months - 1 year (6m-1y), 1 year (1y), 1 to 2 year (1y-2y) or the nearest 6-month interval for recurrence intervals >2 year, based on Atlas 14.

The total rainfall and number of storms at each rain gauge were identified for the period from January 1, 2025 to December 31, 2025, and the number of storms were categorized by depth. Table A-5 presents this comparison. As indicated in Table A-5, during 2025 the rain gauges measured an average total rainfall volume of 40.08 inches.

Table A-5. Frequency of Events within Selected Ranges of Total Rainfall for January 1, 2025 to December 31, 2025

Rain Gauge	Total Rainfall (inches)	Total Number of Storms	Number of Storms by Depth				
			Depth < 0.25 inches	Depth 0.25 to 0.5 inches	Depth 0.5 to 1.0 inches	Depth 1.0 to 2.0 inches	Depth ≥2.0 inches
January - December 2025							
Average of Rain Gauges							
Average	40.08	88	46	13	18	9	2
MWRA Rain Gauges							
Ward Street	42.39	92	50	13	17	10	2
Columbus Park	41.35	84	45	14	15	8	2
Chelsea Creek	38.18	91	52	13	15	9	2
Hanscom AFB	35.91	90	49	12	20	8	1
Somerville Remote	37.69	85	43	16	16	9	1
Hayes PS	34.90	89	51	13	15	9	1
BWSC Rain Gauges							
Allston	39.64	85	43	10	21	9	2
Charlestown	38.00	83	41	15	16	9	2
Dorch-Adams	43.18	88	45	16	17	6	4
Dorch-Talbot	46.13	95	50	16	18	7	4
Hyde Park	46.10	87	44	11	20	8	4
East Boston	39.94	83	43	14	16	8	2
Longwood	41.20	81	39	11	17	12	2
Roslindale	48.24	90	43	15	19	10	3
Roxbury	43.99	86	46	10	19	8	3
Union Park	42.04	85	42	17	15	9	2
USGS Rain Gauge							
Fresh Pond	35.91	90	49	12	20	8	1
MWRA Project Gauges (Removed)[1]							
Lexington Farm	35.91	90	49	12	20	8	1
Spot Pond	34.90	89	51	13	15	9	1
Waltham Farm	35.91	90	49	12	20	8	1

Notes:

(1) Project gauges were removed as of July 1, 2020. Project gauge data has been replaced with the nearest rain gauge, following the QA/QC procedures and closest rain gauges substitution table.

Historical data shows that storms with depths greater than 2 inches are of importance because higher depth storms are more likely to cause CSO activations and larger volumes compared to lower depth storms. Storms with greater than 2 inches of total rainfall at the Ward Street, Columbus Park, Chelsea Creek Headworks, and USGS Fresh Pond rain gauges were identified in Table A-6 for the 2025 time period.

Table A-6. Storms Between January 1, 2025 to December 31, 2025, with Greater Than 2 Inches of Total Rainfall

Rain gauge	Date	Duration (hr)	Total Rainfall (inches)	Average Intensity (in/hr)	Peak Intensity (in/hr)	Storm Recurrence Interval (24-hr)(1)
January - December 2025 Rain Gauge Data						
Ward Street Headworks (BO-DI-1)	5/22/2025	21.75	3.61	0.17	0.47	3y
	10/12/2025	57.00	3.22	0.06	0.23	1y
Columbus Park Headworks (BO-DI-2)	5/22/2025	21.50	4.36	0.20	0.58	5y
	10/12/2025	62.00	4.29	0.07	0.31	2y
Chelsea Creek Headworks (CH-BO-1)	5/22/2025	21.75	3.31	0.15	0.40	2y
	10/12/2025	56.25	2.03	0.04	0.16	6m
Fresh Pond (USGS)	5/22/2025	18.25	2.44	0.13	0.40	6m-1y

Notes:

(1) Recurrence intervals given in ranges of less than 3 months (<3m), 3-months, (3m), 3-6 months (3-6m), 6 months (6m), 6 months - 1 year (6m-1y), 1 year (1y), 1 to 2 year (1y-2y) or the nearest 6-month interval for recurrence intervals >2 year, based on Atlas 14.

The storm with the largest depth over the 2025 period was recorded at Columbus Park Headworks (BO-DI-2) on May 22, 2025, with 4.36 inches of rainfall over 21.50 hours, which equates to a 5-year 24-hour duration recurrence interval.

Storms with intensities greater than 0.40 in/hr are of importance because higher intensity storms are more likely to cause CSO activations and volumes compared to lower intensity storms. For the four gauges shown in Table A-7, the number of storms with peak intensities greater than 0.40 in/hr ranged from six to ten. The maximum return interval was recorded at the Fresh Pond gauge which recorded a 1-year return interval for the 1-hour duration on October 8, 2025. The number of storms with peak intensities greater than 0.75 in/hr ranged from 0 to 2 storms across the four gages in Table A-7.

For storms with peak rainfall intensities greater than 0.4 in/hr at Ward Street Headworks, Columbus Park Headworks, and Chelsea Creek Headworks rain gauges, hyetographs were developed. These hyetographs show the 15-minute rainfall intensities and the distribution of rainfall during the storm. Rainfall distribution during a storm can impact the behavior of system hydraulics due to soil saturation. For example, a storm where the peak rainfall occurs towards the end of the event will generally create more CSO than a storm with similar total rainfall and peak intensity, where the peak occurs at the beginning of the storm. An example hyetograph for the May 22, 2025, storm at the Ward Street gauge is shown in Figure A-2. This hyetograph is an example of a large storm event in which the beginning of the storm resulted in saturated soil conditions. This could result in inflow sources that are not present in smaller storms, contributing runoff to the combined sewer collection system which could compound the impact of this event (3.61 inches total of rainfall at the Ward Street gauge) on CSO volumes.

Table A-7. Storms Between January 1, 2025 to December 31, 2025, with Peak Intensities Greater than 0.40 inches/hour

Rain gauge	Date	Duration (hr)	Total Rainfall (inches)	Average Intensity (in/hr)	Peak Intensity (in/hr)	Storm Recurrence Interval (1-hr)(1)
January - December 2025 Rain Gauge Data						
Ward Street Headworks (BO-DI-1)	3/16/2025	17.50	1.65	0.09	0.56	6m
	5/22/2025	21.75	3.61	0.17	0.47	3m-6m
	6/7/2025	5.50	1.47	0.27	0.69	6m-1y
	7/20/2025	0.75	0.53	0.71	0.53	3m-6m
	8/14/2025	1.00	0.71	0.71	0.71	6m-1y
	9/6/2025	23.25	1.45	0.06	0.45	3m-6m
	9/24/2025	38.75	1.76	0.05	0.65	6m
	10/8/2025	4.75	1.03	0.22	0.66	6m
Columbus Park Headworks (BO-DI-2)	3/16/2025	17.75	1.70	0.10	0.48	3m-6m
	5/2/2025	1.75	0.50	0.29	0.46	3m-6m
	5/22/2025	21.50	4.36	0.20	0.58	6m
	6/7/2025	4.25	1.05	0.25	0.44	3m-6m
	7/9/2025	22.75	1.82	0.08	0.54	6m
	7/20/2025	0.75	0.45	0.60	0.45	3m-6m
	8/14/2025	0.75	0.72	0.96	0.72	6m-1y
	9/6/2025	23.25	1.56	0.07	0.60	6m
	9/24/2025	39.25	1.62	0.04	0.50	3m-6m
	10/8/2025	4.50	0.81	0.18	0.55	6m
Chelsea Creek Headworks (CH-BO-1)	3/17/2025	16.50	1.47	0.09	0.51	3m-6m
	7/20/2025	0.75	0.45	0.60	0.45	3m-6m
	7/25/2025	0.50	0.41	0.82	0.41	3m
	9/6/2025	22.25	1.51	0.07	0.54	6m
	9/24/2025	38.75	1.69	0.04	0.59	6m
	10/8/2025	4.50	1.13	0.25	0.70	6m-1y
Fresh Pond (USGS)	3/17/2025	15.25	1.28	0.08	0.55	6m
	5/22/2025	18.25	2.44	0.13	0.40	3m
	7/20/2025	0.50	0.42	0.84	0.42	3m
	7/31/2025	21.25	1.65	0.08	0.43	3m
	8/14/2025	0.75	0.63	0.84	0.63	6m
	8/29/2025	10.00	0.53	0.05	0.40	3m
	9/6/2025	20.00	1.79	0.09	0.85	1y
	10/8/2025	4.50	1.12	0.25	0.89	1y
	10/20/2025	4.00	0.75	0.19	0.45	3m-6m

Notes:

(1) Recurrence intervals given in ranges of less than 3 months (<3m), 3-months, (3m), 3-6 months (3-6m), 6 months (6m), 6 months-1 year (6m-1y), 1 year (1y), 1 to 2 year (1y-2y) or the nearest 6-month interval for recurrence intervals >2 year, based on Atlas 14.

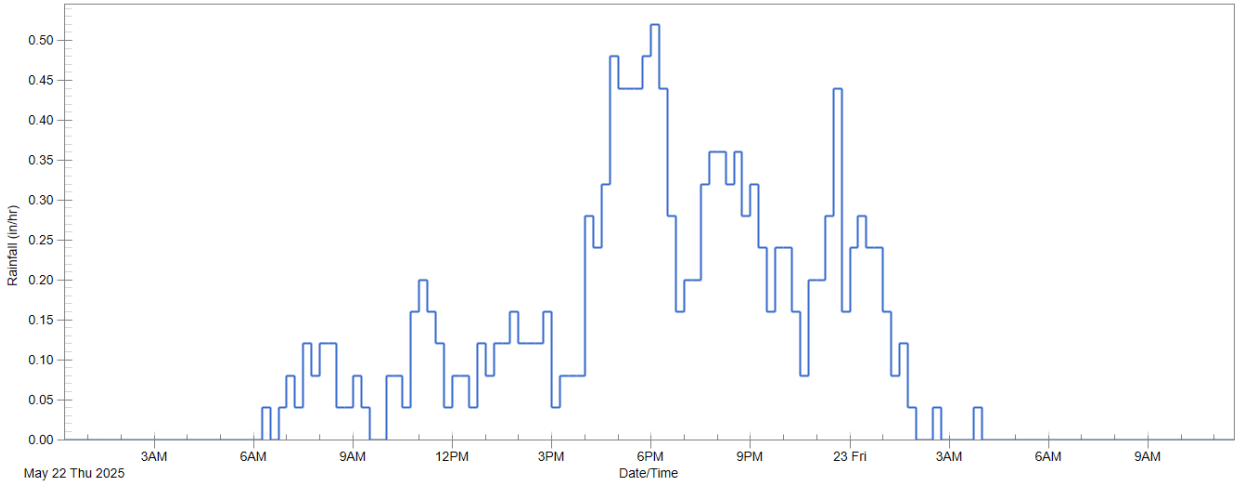

Figure A-2. Hyetograph from the BO-DI-1 Gauge for May 22-23, 2025

The following is a summary of the rainfall from January 1, 2025 to December 31, 2025:

- 2025 averaged 88 storm events across the rain gauges assessed, with an average annual rainfall depth of 40.08 inches (Table A-5);
- The distribution of storms by rainfall depth categories for 2025 was as follows:
  - 46 storms with total depths less than 0.25 inches;
  - 13 storms with total depths between 0.25 and 0.5 inches;
  - 18 storms with total depths between 0.5 and 1.0 inches;
  - 9 storms with total depths between 1.0 and 2.0 inches; and
  - 2 storms with total depths greater than 2.0 inches (Table A-5).
- In terms of larger storms, for the four gauges shown in Table A-6, the number of storms with greater than 2 inches of total rainfall in 2025 ranged from one to two, for an average of 1.75 storms. Two storm events were recorded to have a depth greater than 2 inches at Ward St (BO-DI-1), Columbus Park (BO-DI-2), and Chelsea Creek (CH-BO-1), and one storm recorded a depth greater than 2 inches at USGS Fresh Pond. For the four gauges shown in Table A-6, the largest storm in 2025 with respect to total depth was measured by the Columbus Park (BO-DI-2) gauge on May 22, 2025 with a total depth of 4.36 inches. (Table A-6).
- For the four gauges shown in Table A-7, the number of storms with peak intensities greater than 0.40 inches per hour ranged from six to ten. On October 8, 2025, the USGS Fresh Pond gauge measured a storm with a peak intensity of 0.89 inches per hour which is equivalent to a 1-year, 1-hour event. The other three gauges presented in Table A-7 had individual storms with maximum peak intensities between 0.70 and 0.72 inches per hour.

Appendix B Somerville Marginal New Pipe Connection – Project Photos

Figure B-1. Excavator at FULL Extension

Figure B-2. Night Work Showing the Depth of the Excavation and the Construction Support Vehicles.

Figure B-3. Existing Slab under Section 35 to be Removed and Replaced. ***(Drawings for this portion of pipe were not available. Relocated pipe was shown on a hand drawn sketch.)***

Figure B-4. Site Location Within Congested City Streets (Ramp to 93 South and Mystic Ave.)