



MASSACHUSETTS WATER RESOURCES AUTHORITY

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MWRA 7572

Updated CSO Control Plan - Draft Scope of Work and Schedule

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1. Background

- 1.1. Present summary of projects implemented and CSO reduction achieved to date in Variance waters, as documented in the December 2021 Final CSO Post Construction Monitoring Program and Performance Assessment Report.
- 1.2. Summarize regulatory framework for updated CSO control plans
 - 1.2.1. 2019 Variance Requirements
 - 1.2.2. EPA CSO Policy - demonstration approach
 - 1.2.3. DEP 1997 Guidance for Abatement of Pollution from CSO Discharges
 - 1.2.4. Relationship to Second Stipulation requirements

2. Characterization, Monitoring and Modeling of the CSO System, Existing Level of CSO Control

- 2.1. Reference Task 6 Report to document characterization, monitoring and modeling to support Post Construction Monitoring Program and Performance Assessment
- 2.2. Typical Year/climate change analysis
 - 2.2.1. In coordination with Cambridge and Somerville, develop proposed updated typical year and design storms to be used in the development of updated CSO control plans in Variance waters
 - 2.2.2. Typical Year Update:
 - A. Select one representative rain gauge to serve as the initial basis for a review of recent historical rainfall data.
 - B. Develop rainfall statistics at the selected gage, including total rainfall, total number of storms, and number of storms within various "bins" of storm total accumulation and peak intensity over an agreed to historic period.
 - Develop the statistics for the full historical period being assessed, and for the past 10 years, to see if more recent statistics are substantially different.
 - Provide comparison of current Typical Year to updated Typical Year.
 - C. Review the historical period to identify a recent year that provides a reasonable match to the historical average statistics for the selected representative gauge
 - D. If necessary, add historical storms to (and/or subtract existing storms from) the selected year to improve the match to the historical average statistics. To the extent practical, add new storms in on the actual days that they occurred. If an existing



storm overlaps with a new storm to be added, shift one or the other to a different day or days within the same general season.

E. Evaluate the use of multiple rain gauges to distribute the rainfall spatially throughout the collection system.

F. Review existing projections of sea level rise and assess sensitivity of collection system performance to sea level rise. Consider adjustment of tidal elevations associated with selected Typical Year if appropriate.

2.2.3. Design Storm Update

A. For assessing levels of control greater than the Typical Year, design storms will be identified using current publications to support the development of alternatives.

2.2.4. Review the updated Typical Year and design storms with DEP/EPA and other stakeholders.

2.3. CSO elimination

2.3.1. Coordinate with Cambridge and Somerville to define the criteria for CSO elimination (e.g., controlling CSOs in a specific large design storm, closing all CSOs, or other). Coordinate with DEP/EPA on criteria for CSO elimination.

2.4. In coordination with Cambridge and Somerville, establish system conditions to be used as a baseline for subsequent evaluations of CSO control

2.4.1. Identify existing and planned projects to be included in the Baseline Conditions (this approach is analogous to the "Future Planned Conditions" baseline established for the 1997 CSO Facilities Plan and Environmental Impact Report).

2.4.2. Establish basis for dry weather flows and planning horizon

2.5. In coordination with Cambridge and Somerville, establish a unified collection system model to be used for subsequent evaluations of CSO control

2.6. Using the unified model, the defined Baseline Conditions and the revised Typical Year, establish the new Baseline CSO activation frequency and volume for the CSO outfalls to the Variance waters

2.7. If the new Baseline CSO, stormwater, and/or boundary loadings are substantially different from the loadings documented in the 2021 Final CSO Post Construction Monitoring Program and Performance Assessment Report, run the water quality models for the Variance waters to assess attainment with water quality criteria.

3. Nine Minimum Controls (NMC)

3.1. Document compliance with NMC for MWRA outfalls.

3.1.1. Proper operation and regular maintenance programs for the sewer system and CSO outfalls

3.1.2. Maximum use of the collection system for storage

3.1.3. Review and modification of pretreatment requirements to ensure that CSO impacts are minimized

3.1.4. Maximization of flow to the POTW for treatment



- 3.1.5. Elimination of CSOs during dry weather
- 3.1.6. Control of solid and floatable materials in CSOs
- 3.1.7. Pollution prevention programs to reduce contaminants in CSOs
- 3.1.8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts
- 3.1.9. Monitoring to effectively characterize CSO impacts and efficacy of CSO controls

4. Alternative Development and Evaluation

4.1. Charles River outfalls (MWR010, MWR018, MWR019, MWR020, MWR023, and Cottage Farm)

- 4.1.1. Identify Sensitive Use Areas as defined in EPA CSO Policy
- 4.1.2. Identify Environmental Justice Communities within the watershed
- 4.1.3. Develop Alternatives to attain additional levels of CSO control including elimination
 - A. MWR010
 - B. MWR018/MWR019/MWR020
 - C. MWR023
 - D. MWR201 (Cottage Farm CSO Facility)
 - Coordinate with Cambridge on alternatives being considered by Cambridge at CAM005 and CAM007

4.1.4. Evaluate Alternatives

- A. Develop estimated project costs
 - capital cost, annual O&M cost, and net present value
- B. Assess CSO reduction performance using the unified collection system model described in task 2.4 and the updated typical year and larger design storms described in task 2.2.
- C. Assess Water Quality Impacts
- D. Run water quality model only if loading conditions are substantially different from conditions presented in the 2021 Final CSO Post Construction Monitoring Program and Performance Assessment Report.
- E. Assess Potential Implementation Issues
 - Identify and qualitatively assess potential implementation issues such as siting limitations, utility conflicts, property acquisition needs, potential permitting requirements, impacts to Environmental Justice communities, etc.

4.2. Alewife/Mystic River Outfalls (MWR003 and MWR205A)

- 4.2.1. Identify Sensitive Use Areas as defined in EPA CSO Policy
- 4.2.2. Identify Environmental Justice Communities within the watershed
- 4.2.3. Develop Alternatives to attain additional levels of CSO control including elimination
 - A. MWR003
 - Coordinate with Cambridge on potential impact of alternatives being considered by Cambridge and Somerville at the other Alewife Brook CSO outfalls
 - B. MWR205A



- C. Regional Alternative (MWR003 and other Alewife Outfalls) to be developed in coordination with Cambridge and Somerville
- 4.2.4. Evaluate Alternatives
- A. Develop estimated project costs
 - capital cost, annual O&M cost, and net present value
 - B. Assess CSO reduction performance using the unified collection system model described in task 2.4 and the updated typical year and larger design storms described in task 2.2.
 - C. Assess Water Quality Impacts
 - Run water quality model only if loading conditions are substantially different from conditions presented in the 2021 Final CSO Post Construction Monitoring Program and Performance Assessment Report.
 - D. Assess Potential Implementation Issues
 - Identify and qualitatively assess potential implementation issues such as siting limitations, utility conflicts, property acquisition needs, potential permitting requirements, impacts to Environmental Justice communities etc.

5. Public Participation

5.1. Charles River

- 5.1.1. Public Meeting No. 1 - meeting to be held to discuss updated Typical Year, large event analysis, hydraulic model updates (*Same meeting as in task 5.2.1*)
 - This public meeting will be a joint meeting with Cambridge and Somerville
- 5.1.2. Public Meeting No. 2 meeting to be held during the development of alternatives
 - This public meeting will be a joint meeting with Cambridge
- 5.1.3. Public Meeting No. 3 – meeting to be held after the submittal of the Draft Updated CSO Control Plan, to present the proposed recommended plan and to hear public comments on the plan
 - This public meeting will be a joint meeting with Cambridge
- 5.1.4. Prepare responses to comments. Comments received at Meeting Nos. 1 & 2 to be incorporated in the Draft Updated CSO Control plan and comments received at meeting No. 3 to be incorporated in in the Final Updated CSO Control Plan.

5.2. Alewife Brook/Mystic River

- 5.2.1. Public Meeting No. 1 - meeting to be held to discuss updated Typical Year, large event analysis, hydraulic model updates (*Same meeting as in Task 5.1.1*)
 - This public meeting will be a joint meeting with Cambridge and Somerville
- 5.2.2. Public Meeting No. 2 - meeting to be held during the development of alternatives
 - This public meeting will be a joint meeting with Cambridge and Somerville
- 5.2.3. Public Meeting No. 3 – meeting to be held after the submittal of the Draft Updated CSO Control Plan, to present the proposed recommended plan and to hear public comments on the plan
 - This public meeting will be a joint meeting with Cambridge and Somerville



5.2.4. Prepare responses to comments. Comments received at Meeting Nos. 1 & 2 to be incorporated in the Draft Updated CSO Control plan and comments received at meeting No. 3 to be incorporated in the Final Updated CSO Control Plan.

5.3. Conduct ad hoc meetings with watershed groups and other stake holders

6. Affordability Analysis

Prepare an affordability analysis consistent with EPA's November 24, 2014 *Memorandum on Financial Capability Assessment Framework for Municipal Clean Water Act Requirements*.

6.1. Collect and review relevant data

6.2. Confirm service area and households served

6.3. Confirm current and projected CWA program Costs for the MWRA

6.4. Develop residential indicator

6.5. Obtain and organize financial capability indicator information for MWRA and for each service area community

6.6. Develop financial capability matrix score

6.7. Conduct supplemental analyses

6.8. Prepare Draft Financial Capability Assessment

6.9. Prepare Final Financial Capability Assessment

7. Recommended Plan and Schedule

7.1. Based on cost/performance evaluations, implementation considerations, impacts to sensitive areas and Environmental Justice communities and public comments, select a recommended plan for MWRA-owned outfalls in Alewife Brook/Upper Mystic River and the Charles River

7.2. Summarize Recommended Plan Components, Performance, Cost and potential implementation issues

7.3. Prepare an Implementation Schedule based on projects included in Recommended Plan
- Coordinate implementation schedule for MWR outfalls with implementation schedules developed by Cambridge and Somerville for CSO outfalls to the Variance waters

7.4. Develop an Operation and Maintenance Plan to minimize CSO impacts from recommended control facilities where CSOs will not be eliminated.



7.5. Develop a Post Construction Compliance Monitoring Program

8. Prepare Updated CSO Control Plan

- 8.1. Document the findings from Tasks 1 to 7 in a draft Updated CSO Control Plan for Alewife Brook/Upper Mystic River and Charles River for submittal to EPA/DEP
- Updated CSO Control Plan will address MWRA-owned outfalls to Alewife Brook/Upper Mystic River and Charles River. CSOs to the Variance waters owned by Cambridge and Somerville will only be addressed in the context of regional alternatives, if such alternatives have been evaluated, or if alternatives proposed by Cambridge and/or Somerville would affect the performance of MWRA-owned outfalls.
- 8.2. Address comments received on the draft Updated CSO Control Plan for Alewife Brook/Upper Mystic River and Charles River, and submit Final Plan to EPA/DEP

Updated CSO Control Plan Schedule:

- Draft Recommended Plan to be submitted to EPA/DEP by June 30, 2023
- Final Recommended Plan to be submitted to EPA/DEP by December 31, 2023