CHAPTER FOUR
OVERVIEW OF RE-EVALUATION

This chapter presents a summary of the scope of the re-evaluation of the CSO control plan for Alewife Brook, followed by a summary of the results of the re-evaluation.

INTRODUCTION

One of the conditions of the Variance for CSO Discharges to the Alewife Brook/Upper Mystic Basin was that MWRA implement "any and all CSO control actions related to the Alewife/Upper Mystic Basin as described in the MWRA's Combined Sewer Overflow Final Facilities Plan/Environmental Impact Report..." As noted above, in the course of implementing the recommended plan, significantly changed conditions were encountered in the combined sewer system configuration. Because of the significant impact of these changed conditions on estimated project cost and estimated CSO discharges, the MWRA could no longer be certain that the current plan represented the most cost-effective and appropriate level of CSO control for Alewife Brook. Accordingly, the MWRA undertook a re-evaluation of the recommended CSO control plan for Alewife Brook based on the updated system information, but following the same general methodology as used in the 1994 CSO Conceptual Plan, from which the original plan for Alewife Brook was derived.

SUMMARY OF SCOPE OF RE-ASSESSMENT

The scope of the re-assessment included the following major elements (details of these elements are presented in Chapters Five, Six and Seven):

- Updating and recalibrating the SWMM model in the Alewife area based on the new field information and recent flow metering, and re-establishing baseline flows and loads. Details of the SWMM model update and recalibration are presented in Appendix B.
- Developing CSO control alternatives from the list of potentially feasible CSO control technologies identified in the 1994 CSO Conceptual Plan for Alewife Brook. The

alternatives were sized for a range of CSO control levels (0, 2, 4 overflows per year), based on the updated baseline flows. Concept-level cost estimates were developed for each alternative, using in most cases non-site-specific cost curves.

- Conducting a technology-based assessment of the feasible alternatives, focussing on pollutant removal performance and cost-effectiveness.

- Conducting a water quality-based assessment of the feasible alternatives using an updated version of the RIV1 receiving water model for Alewife Brook and the Upper Mystic River.

From the technology-based and water quality-based assessments, a revised recommended plan was developed for Alewife Brook. It should be noted that the revised recommended plan must itself be re-assessed at the completion of the variance period, in light of the monitoring data accumulated during the variance period in accordance with the conditions of the variance. The water quality determination for Alewife Brook will be conducted by DEP at the end of the variance period, based on the final report on baseline conditions and CSO control alternatives for the Alewife to be submitted by MWRA at that time. While it is the MWRA's position that the revised recommended plan presented in this NPC represents the appropriate level of CSO control for Alewife Brook, ***MEPA approval of this NPC does not determine the water quality standard for Alewife Brook***. The variance for CSO discharges will remain in effect until March 2002. At that time, DEP will make the determination of Class B versus Class B_{cso}, and if the determination is for Class B_{cso}, DEP will determine the appropriate level of CSO control within the Class B_{cso} designation.

SUMMARY OF RESULTS OF RE-EVALUATION

The CSO control alternatives considered for Alewife Brook included consolidation/storage conduits, consolidation conduits to downstream storage or treatment facilities, complete sewer separation, targeted sewer separation with system optimization, and combinations of targeted sewer separation with consolidation/storage/treatment alternatives (see Chapter Five). The scope and cost of the alternatives included elements of the previously-recommended plan that have already been completed or for which costs have already been committed. From the technology-based assessment, the most cost-effective alternative was a targeted sewer separation alternative that included the following elements:

- Separation of the areas upstream of outfalls CAM004 and CAM400
- Relief of the interceptor connections at the regulators associated with outfalls CAM002, CAM401B and SOM01A
- Relief of the siphon between the ABBS and ABC downstream of the Rindge Avenue combined sewer
- Installation of a hydraulic relief gate at outfall MWR003

The water quality-based assessment indicated that providing a level of CSO control higher than the targeted sewer separation alternative described above would not result in a measurable change in attainment of Class B water quality criteria, despite significant additional cost. Receiving water modeling of the recommended plan indicated that based on pollutant loads from CSO only, Alewife Brook would be in compliance with the boating standard for bacteria 99 percent of the time, and with the swimming standard 98.5 percent of the time. For these reasons, this targeted sewer separation alternative was presented as the revised recommended CSO control plan for Alewife Brook.

Significantly, it is noted that the revised recommended plan would not preclude, and in fact would be consistent with, providing a higher level of CSO control in the future, should the relative impact of non-CSO sources be reduced to the point that additional CSO control would become appropriate.

Chapters Five through Seven present the details of the re-assessment of the CSO control plan for Alewife Brook. Chapter Eight provides more specifics on the revised recommended plan including impacts and mitigation.