Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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December 16, 2016

Mark Young
Executive Director
Lowell Regional Wastewater Utility
First Street Boulevard (Route 110)
Lowell, MA 01850

Re: **Lowell**
Phase 2 CSO Control Plan

Dear Mr. Young:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the Lowell August 2014 Phase 2 Long-Term Combined Sewer Overflow Control Plan (LTCP) submitted on behalf of the Greater Lawrence Sanitary District (GLSD) by Camp, Dresser, & McKee (CDM). MassDEP has reviewed the LTCP and provides the following comments.

Background

The LTCP submittal follows a long history of actions in regard to combined sewer overflows (CSO) permitted to the Lowell Regional Wastewater Utility (LRWWU). The City of Lowell initially entered into a Consent Order Judgment on November 10, 1988, which required the City to implement a program to address CSO discharges. Since that time, the Environmental Protection Agency (EPA) has issued a number of Administrative Orders, most recently on September 30, 2010, requiring the City to move forward with the planning, design, and construction of CSO abatement facilities.

LRWWU has completed its Phase I CSO control program, which has resulted in reduced activations and volumes of CSO from LRWWU's nine CSO outfalls. The Phase I CSO Control Program included approximately $120 million in work, including sewer separation of more than 1,000 acres of combined sewer areas; $50 million in improvements to LRWWU's wastewater treatment facility; improvements at the CSO diversion structures; and implementation of a high flow management to maximize flows to the treatment plant. While this work has served to substantially reduce average annual CSO volumes, significant CSO discharges remain, with the LTCP estimating that LRWWU discharges 171 million gallons with up to 20 CSO activations during a typical year to Beaver Brook, the Concord River, and the Merrimack River. Downstream communities of Tewksbury, Lawrence, Methuen, and Andover continue to use the

Merrimack River as a source of drinking water, and on a broader scale the Merrimack River downstream continues to be used for many recreational purposes. LRWWU is one of five permitted CSO dischargers on the Merrimack River: other CSO permittees are the Greater Lawrence Sanitary District (GLSD); the City of Haverhill; the City of Nashua, NH; and the City of Manchester, NH. The present water quality classification for the Massachusetts CSO-impacted segment of the Merrimack River is Class B, which establishes fishable/swimmable uses and associated water quality criteria. Untreated CSO discharges violate this water quality standard.

MassDEP and EPA met with officials from the City of Lowell and LRWWU staff on November 9, 2016. The meeting was held to discuss the current status of Lowell's CSO abatement activities, the City's other ongoing wastewater/stormwater needs, and regulatory requirements in moving forward. Establishing a schedule for compliance with the requirements of the Clean Water Act and state water quality standards will be the subject of further negotiation with the City. Resolution of issues related to the LTCP will be of critical importance. In that regard, LRWWU and the City will need address the comments which follow.

LTCP General Comments

Both EPA and MassDEP CSO control policies require CSO permittees to assess a range of CSO control alternatives, up to and including elimination of CSO's. The LTCP fails to evaluate the costs or feasibility of elimination of CSO discharges. This information must be included in the final LTCP. The LTCP also did not include a financial capability assessment, or any detailed information on the CSO benefits to be achieved by implementation of the projects included in the recommended plan. All of these analyses are necessary to fully support the final recommended plan, and to document compliance with regulatory requirements.

During the meeting on November 9, the City agreed that these technical issues would need to be addressed, either separately through development of a revised LTCP, or as an element of an Integrated Plan. The scope of work for completing the LTCP component should build on the information included in the August 2014 LTCP, and must address the following issues:

1. Full Range of CSO Alternatives Analysis: the costs and feasibility of CSO elimination (i.e. sewer separation) must be included in the LTCP. LRWWU should also assess the costs of eliminating individual CSO's through complete or partial separation of combined sewers in the CSO subareas, and where this is not feasible, evaluate a range of CSO controls based on design storms, as required under the EPA CSO Policy;

2. System Characterization: many elements of the recommended plan involve proposals for re-routing combined sewer flows, partial sewer separation, or CSO storage facilities. However, in nearly all cases, the recommendations are conditioned upon gathering additional information, since the system characterization and associated sewer modeling is not sufficient to understand the benefits of these strategies, or the potential for adverse impacts in other segments of the system. The final recommended plan must include and rely on a more thorough system characterization.

3. Financial Capability Analysis: per EPA guidance, LRWWU must include a financial capability analysis in the LTCP. LRWWU may wish to elaborate on the other clean water act/water quality standards compliance needs, as well as other environmental costs which the City deems important in establishing the City's financial capacity;

4. Cost-effectiveness Analysis: the principle of cost-effectiveness is a very important element of both the EPA and MassDEP CSO policies. The LTCP must include an assessment of the cost and reduction in CSO activations and volumes expected from the range of CSO alternatives. Some measure of the predicting this benefit must be included in the LTCP for any projects which fall short of CSO elimination, so that the level of CSO control can be predicted. LRWWU has expressed concern over use of the sewer system model. However, the use of a sewer system model remains an effective approach to estimating CSO benefits, and the model should be updated and calibrated for this purpose, or the City must propose an alternative predictive tool for this task; and

5. MEPA Compliance: the City must satisfy the requirements of the Massachusetts Environmental Policy Act, and the regulations at 301 CMR 11.00. In that regard, the City should confer with staff at the MEPA office, so that the LTCP public participation program includes the steps necessary to complete the MEPA process and reflects proper public review.

Water Quality Objectives

Section 5 of the LTCP includes a discussion of the Federal and State CSO Control Policies. MassDEP reiterates that the LTCP must include an assessment which documents whether elimination of CSO discharges through sewer separation is feasible, or if not, must support the recommended CSO control plan as the highest feasible level of control, based on costs, financial impacts, cost-effectiveness, and water quality benefits. Where CSO's will not be eliminated, regulatory actions will need to be taken to integrate the long-term control plan into the state water quality standards. These actions may include a Use Attainability Analysis, and associated modification of the water quality standard, or alternatively, a temporary CSO Variance for the CSO-impacted segments of the receiving water.

Section 5 of the LTCP also presents information on the modeled water quality impacts of the various CSO control alternatives for the CSO communities collectively in the Merrimack River watershed. MassDEP understands that control of stormwater pollution will be a critical element of any strategy to improve water quality in the Merrimack River, but affirms that the level of public health risks and the pollutant concentrations from CSO discharges are significantly higher than that of stormwater. Both CSO, and stormwater will need to be managed to achieve and sustain water quality improvements. As such, MassDEP considers there to be significant incremental benefits from reducing CSO discharges, though the principle of cost-effectiveness is important in rendering regulatory determinations. The Merrimack River Watershed Assessment completed collectively by the CSO communities espoused the water quality benefits of a 20% non-point source pollution reduction, but little information on implementation of such projects has materialized since the study. Through the upcoming renewal of the Municipal Separate Storm Sewer System (MS4) permit, MassDEP anticipates that

improvements in stormwater quality will ensue, as most, if not all, communities in the Merrimack River watershed will be required to undertake stormwater management work.

Scope for Completion of LTCP and/or Integrated Plan

The City is contemplating the development of an Integrated Plan so that a broader range of needs can be considered in finalizing the scope and schedule for implementation of the CSO control plan. While such an approach may be preferable to establish the final long-term implementation schedule, as noted at the recent regulatory meeting, the City must commit to implementing further CSO control work concurrent with the development of the Integrated Plan. In that regard, the scope and schedule for the future work must include provisions for implementing additional cost-effective CSO control projects while the Integrated Plan is in development. The City has agreed to submit a scope for the Integrated Plan and further CSO control work in early 2017. This scope should include design and construction schedules for that work.

MassDEP looks forward to working with the City to resolve issues related to the Long-Term CSO Control Plan, and to establish a schedule for further CSO abatement work. If you have any questions regarding these comments, please contact Kevin Brander, Wastewater Section Chief, at (978) 694-3236.

Sincerely,

Rachel Freed

Rachel Freed
Deputy Regional Director
Bureau of Water Resources

Cc: Andrew Goldberg, Assistant Attorney General, AGO/EPD
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