November 14, 2016
W-P Project No. 13109A

Mr. Robert Moore
Environmental Health Technican
4 Summer Street
Haverhill, MA 01830

Subject: Kenoza Lake Water Treatment Plan Comprehensive Upgrades
Response to Conservation Commission Comments

Dear Mr. Moore and Members of the Commission:

On behalf of the City of Haverhill Water Department, Wright-Pierce is pleased to provide the following response to Conservation Commission comments for the Kenoza Lake Water Treatment Plan Comprehensive Upgrades from an email dated October 27, 2016. A revised set of drawings and Stormwater Management Plan are attached for your review.

a. In my opinion, current stormwater contributions to the lake are unacceptable and this project does not take the opportunity to substantially improve upon this condition. Stormwater in this area should be managed in full compliance with the stormwater standards regardless of the project's redevelopment status. The current design continues to send parking lot runoff down the boat ramp and into the lake. The design continues to use one catch basin to collect runoff from a loading and dumpster area and send it to an inaccessible outfall along the edge of the lake. While the swale is an improvement, much more should be done in this regard.

   The design has been revised to include a bituminous berm at the top of the boat ramp and regrading of the paved area to allow stormwater to sheet flow to either side of the boat ramp. Stone level spreaders and a grass filter swale has been designed to provide stormwater quality improvements before the stormwater discharges to the lake.
   The existing catch basin has been replaced with a new catch basin and the new outlet pipe will discharge to the stone level spreader and grass filter swale.

b. Additional information should be provided to detail the functions of the DMHs (and related piping) SE of the Water Maintenance Building.
   The existing structures south east of the Water Maintenance Building will not be impacted or altered as part of this project and will remain as is.

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c. A maintainable sump should be considered below the new drainage outfall near Sta. 11+75L. The watershed for this outfall is primarily paved parking and materials storage areas – both likely to produce measurable sediment.
The design has been revised to include stone level spreaders and grass filter swales on either side of the boat ramp to improve water quality.

d. There appears to be more than sufficient area on the N side of the access drive to attenuate flows from the new access drive. Additional alternatives should be reviewed to possibly eliminate CB-1 and the reliance on Tilton's Swamp to address this site's drainage increases.
The design has been revised to remove the proposed catch basin on the south side of the new driveway. The new driveway has been regraded to convey stormwater runoff to the north side of the new driveway. A grassed berm has been added to keep collected water in this area to reduce impacts to Tilton's. Swamp.

e. Catch basin sumps should be a minimum of 4' deep.
The detail has been revised to include a 4' sump and oil and debris hood.

f. Catch basins should be equipped with gas traps.
See e. above

g. The OMP should be updated with a final design.
See attached revised OMP.

h. A Long-Term Pollution Prevention Plan has not been provided. One should be provided to address the entire site operation, not just areas of improvement.
See attached LTPPP.

i. A basic Construction Period Pollution Prevention and Erosion & Sedimentation Control Plan is provided. I suggest conditioning the submittal of a final Plan prior to the commencement of work, once a site contractor is involved with the project.
No response necessary.

Sincerely,
WRIGHT-PIERCE

Brian J. Montejunas, P.E.
Project Engineer
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Enclosures