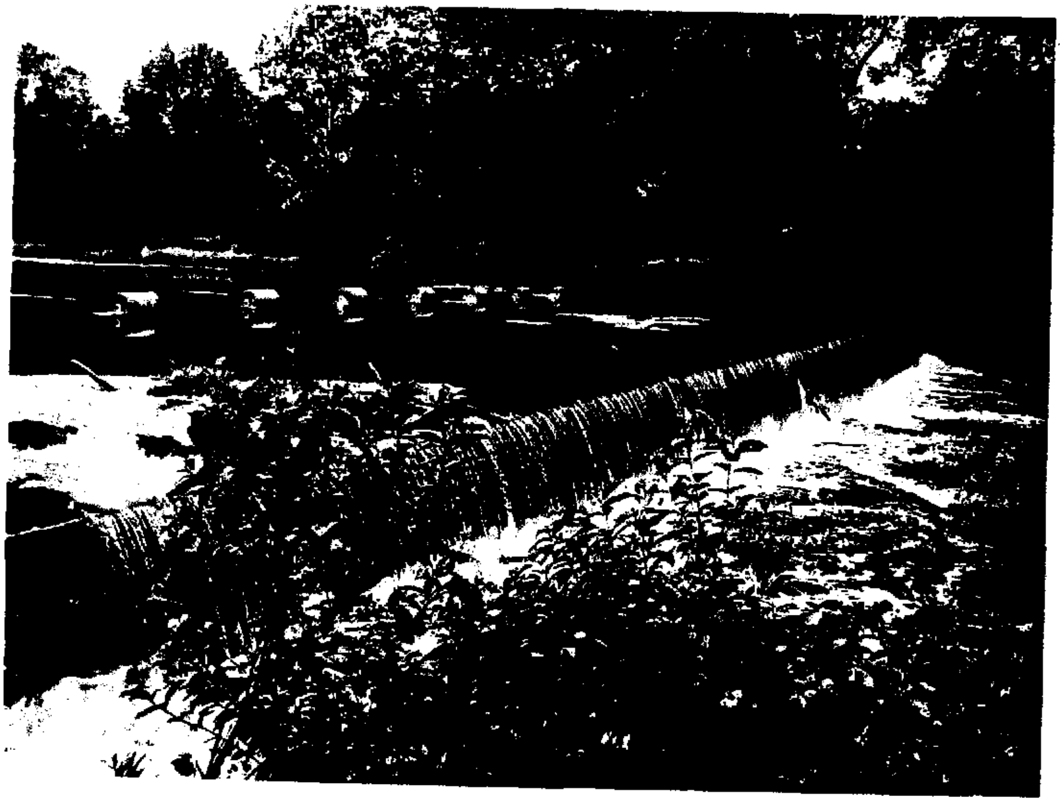
Exhibit 13

CDM

Assabet River Sediment and Dam Removal Study

Modeling Report



Prepared for:

U.S. Army Corps of Engineers

New England District

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Executive Summary

Phosphorus concentrations in the Assabet River, located approximately 20 miles west of Boston, MA, are causing excessive production of floating and rooted aquatic macrophytes. Phosphorus loadings originate from both non-point sources and point sources such as Wastewater Treatment Facilities (WWTFs). The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) approved a Total Maximum Daily Load (TMDL) that requires reductions of phosphorous loadings from the WWTFs that discharge to the river and a 90 percent reduction in sediment phosphorous load in order to achieve water quality compliance.

The purpose of the Assabet River Sediment and Dam Removal study is to achieve water quality compliance and a sustainable and restored aquatic ecosystem. The study involves identifying and assessing alternatives for reducing internal phosphorus recycling from sediments through sediment removal, sediment treatment, or dam removal. Six dams were evaluated for sediment and/or dam removal in this study.

USACE contracted with CDM to perform data collection and modeling tasks in order to assess alternatives such as sediment removal and dam removal. The modeling efforts included evaluating changes in water surface, downstream movement of sediment behind the dam, and changes in water quality due to changes in sediment phosphorus release rates and hydraulic changes for various sediment and dam removal alternatives.

Results of this study suggest that the most beneficial water quality improvements to the Assabet River can be achieved through planned WWTF improvements, dam removal, and consideration of lower winter effluent limits than currently planned. Study findings are summarized as follows.

- Expect reduction of 60% of sediment phosphorus flux from planned WWTF improvements (Phosphorus discharge limit of 0.1 mg/l summer and 1.0 mg/l winter).
- Remove Ben Smith dam and if possible, Gleasondale and Hudson/Rt 85 dams. Remove sediment behind dams as part of dam removal to prevent sediment from moving downstream subsequent to dam removal.
- Lower winter WWTP Phosphorus discharge below 1.0 mg/l
- Results suggest that dredging or sediment removal is not effective in reducing sediment flux. Dredging/sediment removal is proposed in conjunction with dam removal to prevent the redistribution of accumulated sediment.
- Nonpoint source reductions, including Phase II stormwater management and enhanced golf course management, should be considered.

- An adaptive strategy would have advantages, since the response of the river to above alternatives is anticipated to occur within a few years. The planned WWTF improvements should proceed, and impacts should be measured concurrently with the process of planning and design for dam removal. It may also be beneficial to test the impacts of lower winter effluent phosphorus limits in the near term, since this study suggests this winter limits significantly impact sediment phosphorus flux rates in the following growing seasons.

Of the alternatives evaluated in this study, no alternative or combination of alternatives is projected to result in a 90 percent reduction in phosphorus flux. It should be noted, however, that several of the alternatives would contribute to water quality and environmental restoration goals for the Assabet River.

6.5 Additional Considerations

During the TMDL study, and even during the outset of this study, the sediment phosphorus flux process was not well understood for the river. This study helped gain an understanding of the dynamic nature of sediment phosphorus flux in the Assabet River. Further efforts should be undertaken to better understand the nature of the sediment-water interface, and the influence of sediment phosphorus flux rates on instream water quality.

Both the sediment phosphorus flux field data collected, as well as the mass balance model of sediment flux, led to better understanding of the seasonality associated with sediment phosphorus flux. Results of the study indicate that the sediment response to a change in overlying water phosphorus concentration is fairly short (several seasons). This suggests that incremental improvements in either point or nonpoint sources should yield benefits in the river in a time frame of several years, rather than a longer period of time as initially hypothesized.

This realization suggests that an adaptive approach would be advantageous. That is, the planned improvements at the WWTFs could be instituted and their impacts measured within a few years to see how extensive further improvements may need to be. This can be concurrent to the feasibility studies for dam removal. Study findings suggest further efforts should focus on the influence of nonpoint sources in this watershed, and the potential associated improvements in sediment phosphorus flux and water quality associated with nonpoint source reductions.

This study also resulted in significant findings regarding the seasonality of sediment phosphorus flux. An additional consideration to meet the TMDL target of 90% reduction in sediment phosphorus flux is winter phosphorus discharge limits for at WWTFs. Based on results of this modeling effort, it was concluded that winter limits for the WWTFs, below the current planned limit of 1 mg/l would contribute significantly to the reduction in sediment phosphorus flux.

If no other improvements were implemented, further reductions in summer P discharge limits, below 0.1 mg/L, would not contribute significantly to further reduction in sediment phosphorus flux. This is because the winter instream phosphorus concentration has such a strong effect on the P flux the following summer. Therefore, if the summer P discharge limits were decreased below 0.1 mg/L without any further reduction in winter limits, the P flux in the summer would still be "controlled" by the winter instream phosphorus concentration.