



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1 - NEW ENGLAND
1 CONGRESS STREET, BOSTON, MA 02114

Jane Sherman
Eugenia Marks
Woonasquatucket River Watershed Council
27 Sims Avenue
Providence, RI 02909

Superfund Records Center
SITE: Centredale
BREAK: 4-1
OTHER: 449069



SDMS DocID 449069

June 19, 2008

Dear Jane and Eugenia,

Thank you for your letter dated May 9, 2008 expressing the WRWC's concerns on the Hydrodynamic Analysis modeling done by the Potentially Responsible Parties (PRPs) as part of the remedial alternatives evaluations for the Centredale Manor Restoration Project Superfund Site. EPA acknowledges your concerns and wishes to clarify certain issues and possible misunderstandings regarding the Hydrodynamic Analysis of Remedial Alternatives.

The purpose of the on-going feasibility study (FS) is to evaluate a range of alternatives (e.g., capping, removal) for remediation and to provide sufficient information to decide on the sediment clean-up option. The FS evaluation will address stability of contaminated sediment in Allendale and Lyman Mill Ponds and the alternatives evaluated will be designed to prevent future downstream migration of contaminated sediment, one of the remedial action objectives for the site. The main objective of this latest hydrodynamic study was to develop a model that could be used as a tool to evaluate the hydrodynamic effects of dam removal or replacement with lower weir structures in the study area. This study was not meant to address all of the issues related to dam removal or replacement, but it is the necessary first step in evaluating the efficacy of this potential remedial alternative. If dam removal or replacement is not practical from a hydrodynamic point of view, then such alternatives would not be carried forward for consideration.

Additional studies investigating other issues (e.g., sediment transport effects) and potential controls to minimize such impacts may be needed at the design stage should an alternative removing or replacing the dams be selected as a remedial plan. The concerns regarding the river system sedimentation and watershed management raised in your letter would be taken into consideration in the design of the replacement structure or the river channel design.

The following information is provided in response to the three specific concerns raised in your letter:

- 1) As you correctly note, the modeling study indeed focused on the reach of the river extending from the USGS gauging station at Centerville/Route 44 to Manton Dam. An

analysis was conducted to determine if extending the hydrodynamic modeling analysis downstream of Manton Dam was necessary. The results of that analysis demonstrated that the effects of dam removal on river flow during floods in the region downstream of Manton Dam would be minimal. Thus, it is not necessary to extend the modeling study to the downstream region.

- 2) With regard to the average flow, the modeling study is not based solely on average flows in the Woonasquatucket River. The hydrodynamic simulations investigated a wide range of flow rates in the river. Specifically, simulations were conducted for these four flow conditions: 1) low flow (7Q10); 2) average flow; 3) 2-year flood; and 4) 100-year flood. On the related concern of potential impacts of global warming, these impacts on future hydrologic conditions in the Woonasquatucket River watershed (either with or without dams in place) were not evaluated because no published scientific studies on those potential effects have been conducted yet. Thus, any attempt to incorporate those potential effects into the hydrodynamic modeling study would be speculative and highly uncertain. The selected alternative is anticipated to be conservatively engineered to withstand 100-year storms.

With respect to the 2005 flood, the U.S. Geological Survey (USGS) identified a peak discharge rate of 1,530 cubic feet per second on October 15, 2005 at the Woonasquatucket River Station located in Centredale (http://nwis.waterdata.usgs.gov/nwis/peak?site_no=01114500&agency_cd=USGS&format=html). This high-flow event is one of the largest magnitude floods recorded at the Centredale gauging station since 1943. While the October 2005 flood was a rare event, the peak flow during this event is within the range of flow rates evaluated in the hydrodynamic model to analyze sediment stability at the Allendale and Lyman Mill Ponds (QEA, 2006). Thus, findings and conclusions from the sediment stability study predicted by the model, such as potential areas and depths of bed scour, are applicable to the October 2005 high-flow event. While the sediment stability study was limited to Allendale and Lyman Mill Ponds, a larger, river-wide study is not necessary at this stage to support the FS, as discussed above.

- 3) To clarify, the hydrodynamic analysis of the Woonasquatucket River did not include sedimentation modeling for any of the sediment alternatives (i.e., with dams in place, dams removed, or dams replaced with smaller structures) because this is not needed to evaluate and select a sediment clean-up alternative for the site. Likewise, a river-wide analysis of sediment transport, evaluation of impacts such as future development in the watershed, or analysis of on-going storm drain are not necessary to conduct the FS, but can be identified as issues to be taken into consideration during the design of the selected alternative.

EPA understands that the WRWC focus is on the river in its entirety and we are making an effort to evaluate how this Superfund Project fits into the entire system, be that the extent of sediment contamination or the river flows. We have worked cooperatively with the Council and other

stakeholders to allow removal or modifications of the lowest dams of the River. It is our belief that extensive studies done for this Superfund site contribute to the understanding of the conditions of this river and the Council's overall goals.

I am looking forward to our meeting with your new Director. If you have any questions or need additional information please call me at (617) 918-1232.

Sincerely,

A handwritten signature in black ink, appearing to read "Anna Krasko", with a stylized flourish at the end.

Anna F. Krasko
Senior Regional Project Manager

Enclosure