



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

October 23, 2009

Secretary Ian A. Bowles
Executive Office of Energy and Environmental Affairs
Attention: Anne Canaday, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Subject: EOEEA #14197, Framingham Birch Road Wellfield Redevelopment and Water Treatment Plant FEIR

Dear Secretary Bowles:

EPA provides the following comments on the Final Environmental Impact Report (FEIR) for the Framingham Birch Road Well Project.

On August 11, 2009 the National Park Service (NPS) wrote to EPA and detailed several concerns raised through its evaluation of the Draft Environmental Impact Report (DEIR). NPS asked that EPA work cooperatively with them in a review of the Final Environmental Impact Report (FEIR), to ensure that the project does not pose a direct and adverse impact to the federally designated Wild and Scenic Sudbury River. EPA and the National Park Service have worked together to review the FEIR.

After completing its review, NPS advised EPA in a letter dated October 20, 2009 that "as currently defined, the proposed project poses an unacceptable risk of direct and adverse impact to the Sudbury Wild and Scenic River." The NPS letter cites concerns similar to those raised by a number of state and federal agencies.

In an August 27, 2009 letter to MEPA, the Massachusetts Department of Conservation and Recreation (DCR), the Massachusetts Department of Environmental Protection (DEP), and the Water Resources Commission, EPA expressed its own reservations about the water quality impacts of a reduction in flows in the Sudbury River and reduced water levels at Lake Cochituate which may result from operation of the Birch Road wells. As DCR stated in its July 31, 2009 comment letter on the DEIR, recent research by the United States Geological Survey (USGS), in cooperation with DCR, indicates that the Upper Sudbury is already "highly depleted in summer months." As many agencies have stated in their comments on this project, groundwater pumping could aggravate that problem.

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In order to address those concerns, the August 7, 2009 MEPA Certificate stated that “the FEIR should include revised groundwater modeling” to “assess impacts on Lake Cochituate and the Sudbury River.” The certificate also required that the FEIR assess the time delay of pumping alterations on streamflow. State agencies, including DCR and the Water Resources Commission, highlighted the need for such modeling and analysis in their comments on the DEIR.

The need for such modeling and analysis has been reinforced by discussions EPA and NPS have held with USGS, which has conducted simulations of the effects of the proposed wells on the Sudbury River and Lake Cochituate. EPA and NPS met with USGS in early October to discuss the results of those simulations. Among other points, the USGS stated that a properly developed and calibrated groundwater model could help determine the sources of water to the pumped wells, as well as the lag effects of changing pump rates on surface-water features such as the Sudbury River and Lake Cochituate. Without such a model, the federal and state agencies are ill-equipped to fully evaluate the impact of the proposed project.

However, instead of a revised groundwater model, or any additional technical analysis of the impacts of the proposed wells on surface water resources, the FEIR proposes a reduced pumping rate and a mitigation plan with phased reductions at various calendar dates and flow levels in the Sudbury River. The proposed baseline pumping is 3.17 MGD or 4.9 cfs. (The original rate proposed was 4.3 MGD or 6.6 cfs.) The FEIR asserts that this reduction alone will mitigate impacts to surrounding water resources. The DEIR and FEIR contain little or no discussion of the effects of the proposed pumping on water quality or habitat issues, yet conclude, without additional documentation, that impacts to water resources are mitigated.

The Massachusetts DEP noted the absence of groundwater modeling in its October 22, 2009 comments on the FEIR, and stated its belief that the FEIR does not comply with the MEPA Certificate. The Water Resources Commission states, in its October 23, 2009 comment letter on the FEIR, that the FEIR does not demonstrate how the new proposal will protect flow in the Sudbury River or water levels in Lake Cochituate. EPA agrees with the concerns expressed by these agencies. The FEIR states that the proposed mitigation plan “includes conservative streamflow thresholds designed to protect the river under various transit time scenarios” (FEIR p.10) The FEIR, however, does not explain the rationale for the dates chosen to reduce flows, nor does it discuss the effects of the mitigation plan on aquatic resources or low flow conditions. It does not explain why the plan should be considered conservative. Without the modeling work which both federal and state agencies have called for, it is impossible to determine whether the mitigation plan will in fact protect water quality and aquatic resources.

Effects on 7Q10 flows

EPA issues wastewater discharge permits under the Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) to dischargers downstream of the proposed well project, including wastewater treatment plants in Wayland, Concord and Billerica.

Permits for these plants contain effluent limits that are based on calculations of expected effluent dilution under low flow conditions.

As stated by DCR in its July 31, 2009 comments on the DEIR, the proposed wells are likely to divert water from the Sudbury River – a river which is already in a depleted state as a result of upstream water withdrawals. DCR notes that decreases in streamflow will have the greatest impact during periods of low rainfall, high evapotranspiration, and low natural streamflow. If the proposed well project reduces flow in the Sudbury River during periods of low natural flow, that reduction is likely to alter the dilution assumptions on which NPDES effluent limits for the above referenced permits are based, leading to the need for more stringent permit limits to ensure compliance with water quality standards. Such limits could have significant capital or operational cost implications.

EPA reviewed 20 years of actual flow data (1989 - 2008) from the Saxonville gage and analyzed the potential impacts of the proposed pumping plan on the 7Q10 stream flow. The 7Q10 flow is the critical low flow under which water quality criteria must be met, and is therefore the flow that forms the basis for calculating NPDES discharge limits that will ensure compliance with water quality criteria. It is important to recognize that the natural 7Q10 flow at the Saxonville gage has already been reduced by one third (according to USGS estimates), from 9 cfs to 6 cfs, as a result of the current level of development in the watershed.

EPA's analysis indicated that there were seven low flow events in this 20-year period during which the 7-day average flow was less than 10 cfs.¹ For six of the seven low flow events, under the proposed mitigation plan, pumping would have continued at rates ranging from 0.7 cfs to 3.9 cfs. For several of these events, the pumping rate in the days leading up to the low flow event would have been even higher than the pumping rate during the low flow event itself. For the single event during which pumping would have ceased under the proposed mitigation plan, the plan would have allowed pumping as recently as ten days prior to the low flow event.

This analysis strongly suggests that even with the proposed mitigation plan, this project could result in an unacceptable lowering of the current 7Q10 flow.

Effects on Aquatic Resources

As noted earlier, the modeling required by the MEPA certificate on the DEIR has not been conducted. Instead, the FEIR assumes that reviewers will analyze the proposed mitigation plan against historic streamflow data and determine, without an adequate model, the effects of the project on water resources.

As discussed above, EPA agrees with the state and other federal agencies that have concluded that a groundwater model is needed to fully evaluate the impacts of this

¹ Three of these low flow events had a seven day average flow equal to or less than the current 7Q10 flow of 6.0 cfs.

proposed project. In the absence of such a model, EPA reviewed the proposed mitigation plan against the Massachusetts DCR's 2008 Index Streamflows. These flow data provide natural flow regimes that can be used to set the standard for streamflows used to trigger summer water use restrictions, and other protective conditions. The DCR document includes an analysis of gage data using the US Fish and Wildlife Service's Aquatic Base Flow (ABF) method. According to DCR, "ABF flows from an appropriate index gage could be used to establish monthly instream recommendations. An important ecological underpinning of the ABF method is that the natural hydrological system serves as a baseline or reference condition suitable for the protection and propagation of aquatic life." These target hydrographs are based upon median monthly flows (Q50), surrounded by an interquartile range (Q25 - Q75), for index gages throughout the state. In its comments on the FEIR, DEP notes the absence of ABF from the mitigation plan, and suggests consideration of ABF as a more environmentally protective trigger for reduced pumping. This should be taken into consideration in any future analysis.

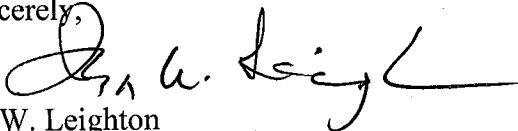
As one example of the potential of this project to exacerbate low-flow conditions, EPA reviewed historic daily streamflow data at the USGS Saxonville gage for the month of June (1980 - 2008) and compared it to the median monthly June flow (Q50) for the appropriate DCR index gage for this area (Branch River index gage). The proposed mitigation plan calls for no reduction in pumping in June, despite the fact that streamflow can drop dramatically during that month. Under the proposed mitigation plan, pumping would have occurred when actual streamflow was below the index gage June Q50 for many days in June 1980, 1981, 1987, 1993 -1995, 1997 and 1999, and for parts of June 1983 -1986, 1990, 1996, 2001, 2004 and 2008.

In summary, EPA agrees with the conclusions expressed by other agencies that the proposed pumping may have unacceptable effects on water quality and aquatic resources. Moreover, EPA also does not believe that the FEIR adequately complies with the conditions of the MEPA certificate on the DEIR, and we request that you require the preparation of a Supplemental EIR.

As noted earlier, NPS has concluded that this project poses an unacceptable risk of direct and adverse impact to the Sudbury Wild and Scenic River. Based on the information in the present record, EPA believes that the project does not fulfill the requirements of Section 7 of the Wild and Scenic Rivers Act. We will notify MA DEP of this conclusion, and request that DEP exercise their responsibilities under their grant agreement with EPA and ensure that the requirements of the Wild and Scenic Rivers Act are appropriately applied to this project.

Finally, in our letter of August 27, 2009, EPA expressed concern about the project's eligibility for SRF funding. This issue has not yet been resolved, and we expect to follow up with further conversations with the appropriate state agencies.

Sincerely,

A handwritten signature in black ink, appearing to read "Ira W. Leighton". The signature is fluid and cursive, with a long horizontal stroke at the end.

Ira W. Leighton
Acting Regional Administrator

cc: James Fosburgh, NPS
Glenn Haas, MA DEP
Kathleen Baskin, EOEEA
Richard Sullivan, DCR
Town of Framingham
Town of Wayland
Town of Concord
Town of Billerica