



DIVISION OF ECOLOGICAL RESTORATION

Tim Purinton, Acting Director

July 23, 2009

Secretary Ian A. Bowles
EOEA, Attn: MEPA Office
Anne Canaday, EOEA No. 14197
100 Cambridge St, Suite 900
Boston, MA 02114

RECEIVED

JUL 23 2009

MEPA

Dear Ms. Canaday,

The mission of the Division of Ecological Restoration¹ is to restore and protect the health and integrity of the Commonwealth's rivers, wetlands and watersheds for the benefit of people, fish and wildlife. In this capacity, the Division would like to submit the following comments on the DEIR for Framingham's proposed Birch Rd wellfield redevelopment and water treatment plant (EOEA # 14197).

The City of Framingham is proposing to withdraw 4.3 million gallons per day (mgd, equivalent to 6.65 cubic feet per second (cfs)) from the Birch Rd well field in Framingham and to build a new water treatment plant. The resulting wastewater will be discharged out-of-basin to the Deer Island Treatment Plant in Boston Harbor.

Our comments are provided to help outline in greater detail the environmental impacts and the sustainability/viability of the proposed wellfield redevelopment.

Sudbury River Resources

The Sudbury River watershed hosts a variety of significant aquatic resources including waterfowl habitat, trout streams, recreational fisheries and extensive wetland complexes. Fisheries surveys have yielded 19 species and the river is annually stocked in the spring with brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*) and/or tiger trout (*Salmo trutta x Salvelinus fontinalis*). Stocked trout waters are highly susceptible to changes in water quality and/or quantity such as siltation, water level fluctuations, loss of riparian habitat and alterations of the temperature regime.

These ecological assets have been recognized in several state and federal designations along the Sudbury River, including:

¹ The Division of Ecological Restoration in the Department of Fish and Game was created July 1st 2009 with the merger of the Riverways and Wetland Restoration Programs

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- The Cedar Swamp Area of Critical Environmental Concern in Westborough, which hosts a rare Atlantic White Cedar Swamp,
- The Great Meadows National Wildlife Refuge in Wayland and Sudbury,
- Portions of the river federally designated as “Wild and Scenic”, and
- 9 Coldwater Fishery Resources.

Existing impacts on streamflow patterns of the Sudbury River have caused degradation of many of these aquatic and riparian resources. In 1999 the Sudbury River ran dry at Fruit St in Hopkinton, several miles upstream of the project site. At the Saxonville USGS streamflow gage just downstream of the project site, streamflow has dropped below 10 cubic feet per second (cfs) during nine of the last twenty years.



Sudbury River dry at Fruit St, Hopkinton in 1999

The Division of Fisheries and Wildlife’s recent statewide target fish community report² lists the greater Concord River Watershed (i.e. the Concord, Sudbury and Assabet Rivers) fish community in “Poor” status due to an under-abundance of fluvial (river-oriented) species and a lack of several species that were expected to be present.

The proposed withdrawal of 4.3 million gallons per day (mgd) is equivalent to 6.65 cubic feet per second (cfs). This is 93% of the 7Q10 calculated low flow in the Sudbury River at Pod Meadow, near the project location, and 22% of the August median flow³.

Environmental Impact Management Options

² Kashiwagi, Michael and Todd Richards. 2009. “Development of Target Fish Community Models for Massachusetts Mainstem Rivers, Technical Report”. Commonwealth of Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife.

³ From USGS Streamstats program: <http://water.usgs.gov/osw/streamstats/massachusetts.html>

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The final plan for management of streamflow affects not only the Water Management Program's statutory obligations, but also:

- Recreational fisheries in Lake Cochituate,
- Water quality in Lake Cochituate, which is on the state's impaired waters list for organic enrichment and low dissolved oxygen, both of which will likely be exacerbated by lower water levels and a lack of flow through the impoundments during the summer and fall,
- Stream flow in the Sudbury River, which already experiences streamflow depletion and fisheries impacts,
- Riparian and wetland water levels in the Great Meadows National Wildlife Refuge, which supports extensive waterfowl activity, and
- Water quality downstream in the Concord River, where freshwater from the Sudbury River currently helps to dilute inflowing Assabet River water during low flow periods when it is dominated by wastewater effluent. The Concord River is on the state's list of impaired waters for metals, nutrients and pathogens.

Because of the broad impact of any management plan developed, we request that additional information be required and that it describe options for alleviating the impact of this water withdrawal on each of the indicators listed above. In particular, this information should quantify the time period, amount of reduction in withdrawal and any management needs at the outflow of Lake Cochituate necessary to maintain current or improved conditions during low flow periods.

For each withdrawal management alternative proposed we suggest that more information be provided that quantifies impacts on:

- 1) Ability of the lake to support salmonids throughout summer months, including any changes to temperature and dissolved oxygen profiles,
- 2) Dissolved oxygen levels and outflows from Lake Cochituate,
- 3) Monthly median and 7Q10 flows in the Sudbury River near Pod Meadow and in the federally designated Wild and Scenic segment of the Sudbury River,
- 4) Water levels downstream in the Great Meadows National Wildlife Refuge, and
- 5) Dilution of wastewater-derived pollutant loads downstream in the Concord River.

The United States Geological Survey is currently finalizing a hydrologic model for the Sudbury River watershed that incorporates cumulative water withdrawals, wastewater returns and exports, and stormwater recharge that could help to assess management options. If possible, this model should be used to test the anticipated impact of any proposed reduction in water withdrawals or management scenarios.

Numerical Model

In addition to information about proposed withdrawal management scenarios, we would like to ask for several clarifications and adjustments to the numerical model.

First, the time period used, 1979-2008, does not include the drought of record in the 1960's. The resulting statistics are therefore not comparable to statistics derived from longer time periods, such as those cited from the MA Water Resource Commission's Index Flow report or other

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USGS longterm streamflow gaging station statistics. The model should be updated to run over a time period including the drought of record so that the results are comparable to other statistics presented and enable an evaluation of impacts during drought periods.

In addition, the model used the length of the spillway at Lake Cochituate as a calibration parameter, using a length of 100 feet instead of the actual spillway length of 80 feet. This is likely to introduce a high degree of error in lake level results. The model should be rerun with the actual spillway length using the weir coefficient term alone for calibration. The resulting lake levels and goodness of fit statistics should be reported.

Cochituate Lake is a significant recreational fishery that supports both cold and warmwater fish species. The lake's ability to hold-over salmonid species in the warmer months makes it relatively unique amongst Massachusetts waters. Additionally, the lake is annually stocked in the spring and fall with brook trout, brown trout and/or rainbow trout and has historically received stockings of broodstock Atlantic salmon (*Salmo salar*), northern pike and tiger muskellunge (*Esox lucius x Esox masquinongy*). The numerical model should include an assessment of the impact of the withdrawal on boating access at the boat ramp for recreational fishing

Cumulative Impacts to the Sudbury River

Cumulative impacts to the Sudbury River mainstem were assessed using the MA Water Resource's Commission's Index Flow methodology. Monthly median flows from an Index (i.e. least impacted) Gage were compared to existing flows at the Saxonville USGS gage and the magnitude of the proposed withdrawal. However, different time periods were used to calculate the statistics presented. The time period for the Index Gage statistics (1960-2004) included the drought of record while the time period for the existing conditions at the Saxonville gage (1979-2008) did not, resulting in statistics that are not comparable. Inclusion of the drought of record is important because this is when aquatic organisms are most stressed by natural low water conditions and most vulnerable to additional withdrawals. We know from observations that the Sudbury River already runs dry in low flow years at Fruit St in Hopkinton as a result of upstream activities and are concerned that this proposed withdrawal could significantly exacerbate the low flow problems in the Sudbury River mainstem.

We request that the Sudbury River analysis be re-run with concurrent time periods that include the drought of record. We also request that a drought analysis of the monthly impact of the withdrawal on stream flow in the Sudbury River during drought years alone be presented so that the worst case scenario may be evaluated and used to help craft management options that minimize environmental impacts during low flow periods.

The USGS' ongoing hydrologic model of the Sudbury River, which already quantifies both the natural streamflow regime and existing water withdrawal, wastewater return and stormwater runoff, is ideally suited to evaluate this question and also quantifies the expected "natural flows" in the Sudbury River. We request that every effort be made to work with the USGS to include operation of the proposed well in their analysis.

Mitigation

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The proponent proposes stormwater recharge and inflow/infiltration elimination projects as mitigation for the impact of the proposed withdrawal. It was unclear which measures are being proposed and will be completed as mitigation for the new well and which measures are part of ongoing operations and legal requirements. We request that the proponent clearly identify which specific projects will be completed as mitigation, provide an anticipated timeline for these and quantify the amounts of stormwater recharge gained and inflow/infiltration eliminated. A longterm streamflow gaging station on Cochituate Brook at the outflow of Lake Cochituate is also proposed as mitigation. We request that the longterm funding source for this gage be identified.

Given the need for additional information and the importance of maintaining a fully engaged public process we suggest that these questions be addressed in a FEIR. We appreciate the opportunity to comment on this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tim Purinton', with a horizontal line underneath.

Tim Purinton
Acting Director

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