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January 8, 2016

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Re: Comments on Water Management Act Permit Application by Town of Hopkinton

Dick Lawrence
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Dear Ms. McCann,

Don Burn
Westborough

Thank you for the opportunity to comment on the application by the Town of Hopkinton for a permit under the Water Management Act. OARS is the watershed organization for the Concord basin, comprising the Sudbury, Assabet and Concord Rivers in a 400-square mile area west of Boston. A non-profit organization founded in 1986, OARS works primarily through science-based advocacy and education to develop a scientific understanding of the causes of river degradation and works with communities to seek effective solutions. OARS conducts water quality and flow monitoring of all three rivers and several tributaries.

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The Sudbury, Assabet and Concord Rivers are federally-designated Wild & Scenic Rivers and abut two national wildlife refuges. These rivers are popular destinations for boaters and anglers, yet suffer from very low seasonal flows. Low base flows also result in inadequate dilution of effluent from wastewater treatment plants and pollution from stormwater. Several tributaries to these rivers regularly run dry. Segments of the upper Sudbury River itself has run dry in Hopkinton and Ashland in past droughts (see photos, below); Hopkinton is part of the headwaters of this river.

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We have one overall comment on the comment process, and others specific to the town of Hopkinton's application. Overall, it is very difficult to make meaningful comments on the applications within the Concord Basin because they contain discrete metrics but no overall narrative that describes the water supply system, proposed or actual pumping regimens specific to each source, system constraints or alternatives. We are more familiar with a few municipal systems due to having worked on them through SWMI grants, so we are fully aware of the complexity of most municipal systems. With at least 18 applications to review in 30 days, unless this contextual information is included with the application it is very difficult to make meaningful comments. As a result, we are only able to comment on a few applications, which should not be interpreted to mean that all the others could not benefit from review and comment. We are simply constrained by time and resources. We look forward to reviewing and commenting on the draft permits with more complete documentation at hand.

Lisa Vernegaard
Maynard

Below are our specific comments on Hopkinton's application:

1. **Request exceeds current authorization, baseline and Water Needs Forecast (WNF):** In our view, there is no question that the upper Sudbury watershed cannot withstand additional water withdrawals. The subbasin containing three of Hopkinton’s permitted sources (#12025), is already at the maximum groundwater depletion level—Category 5, with an August Net Groundwater Depletion of 62%. One permitted (GP#6) and three registered (GP#1-3) wells are at Fruit St. on a tributary feeding Whitehall Brook, a tributary to the Sudbury River (see photos of low flow conditions in the Sudbury River downstream from Whitehall Brook at Fruit Street, below). According to the 2014 ASR, all but one (GP#3) of the Fruit St. wells are in use, with maximum pumping during the low flow months (GP#1: 6/28/14, GP#2: 8/12/14, GP#6: 8/1/14). The maximum single day pumped volume for permitted well GP#6 was 475,000 gallons, a large amount of water. The other permitted sources in that subbasin (GP#4 & #5) are on Whitehall Reservoir, which also feeds Whitehall Brook. The impact of the pumping of all these wells on Whitehall Brook and the Sudbury River flow must be assessed. The repeated very low flows in the Ashland and Hopkinton segments of the river are clear evidence of the groundwater depletion in this subbasin, particularly in the summer/fall.



Sudbury River at Fruit Street, 1999 (Photo: Freddie Gillespie)



Sudbury River at Fruit Street, Sept. 28, 2015 (Photo: Don Burn)

The town's application shows a jump in water withdrawals from 1.03 MGD in 2014 to an anticipated 1.21 MGD in 2015, followed by steady increases up to 1.45 MGD. An explanation of this sudden and significant increase in demand is needed. If Hopkinton can prove that they need water volumes in excess of their baseline or WNF, we strongly recommend that the alternative of an interconnection to access the MWRA water supply be selected. This would be the only course of action that would adequately protect the water resources. We note that the UAW as revised by consultant study in 2014 was high at 16.17%, which should be addressed as a priority.

2. **Seasonal water use:** Based on available information, there is a very high winter/summer water use ratio. We calculate, based on the town's 2014 ASR, it was 1.58, in winter (Jan.-Mar.) over summer (July-Aug.) use. The state's target ratio is 1.2. Since the peak use is during the summer when streamflow is most stressed, the town should take concrete steps to significantly reduce summer water use. We recognize that the town has made some efforts to address this, but results are needed.
3. **Non-essential outdoor water use restrictions trigger:** Hopkinton's non-essential outdoor water use restrictions have a calendar trigger. We do not know whether a significant reduction in spill over the Whitehall Reservoir dam triggers a switch to alternate sources. The seasonal flows into Whitehall Brook should be evaluated and reported and used as a trigger to decrease pumping at the wells adjacent to the Reservoir and also to increase water use restrictions. The lag time between ceasing well pumping and the rebound of reservoir level and stream flows, as well as the impact of demand management on pumping volumes, should be presented.
4. **Interconnection to Ashland:** Currently 0.5 MGD of Hopkinton's water is supplied by groundwater withdrawals by Ashland. There is no narrative or documentation regarding this intermunicipal arrangement. The town should provide justification of increased requests for water from Ashland, if any.
5. **Demand management:** Biannual billing of water use fails to provide any conservation incentives or feedback to users (Water Conservation Questionnaire). All users should receive at least quarterly bills, with an indication of past usage for comparison. While residential users are the largest category, industrial/commercial users in Hopkinton should also be pressed to maximize water use efficiency and conservation. The seasonality of water use, as noted in #2 above, is a concern. Pricing is an important tool to use to manage demand. The residential rate structure used by the town does not encourage seasonal conservation as it charges the same rate year-round. It also makes no differentiation in use for up to 1,000 cf (we assume that the \$24.18 is a flat rate). We would like to see an analysis of the effectiveness of the current water use restrictions, since seasonal water use is still high. We ask that the town reexamine the pricing and add increasing seasonal-based rates (e.g., May-September) to help reduce non-essential water use in the summer. This should be paired with requirements for water-saving irrigation systems (with sensors, etc.) and additional regulation/enforcement of private irrigation wells, as needed, to avoid freeriders on the groundwater resources.
6. **Public Education:** The public education materials provided in on the town's website, while good in general, could be updated with specific data about Hopkinton's water use to illustrate the need for residents to conserve water.
7. **Private wells:** The bylaw for private wells for outdoor use that was indicated in the application was not attached. We are aware of a growing number of private wells being used for lawn irrigation throughout the Concord basin. We do not have any data for the town of Hopkinton in this regard, but it would be very useful to know to what degree the public water supply is used for non-farm irrigation, and what the trends for new private wells is. The town has clearly made some efforts to promote responsible irrigation use. While the addition of private wells may reduce stress on the municipal system, it results in more unregulated irrigation and consumptive water withdrawals from the watershed, as well as contradicting the conservation message. Although this may have the

advantage of dispersing withdrawals both in depth and geographical extent, the overall impact may be to undermine efforts to protect depleted sub-basins, conserve water, educate the public about the value of water conservation, and improve irrigation efficiency. Hopkinton should report whether their bylaws bring private wells into conformity with municipal irrigation use, especially when seasonal outdoor use restrictions are in effect, and describe enforcement efforts.

8. **Other withdrawals:** There are several other withdrawals in the upper Sudbury watershed in Hopkinton that should be carefully assessed, so that the burden of minimizing water withdrawals does not rest entirely on the town of Hopkinton. These include Hopkinton Country Club, Weston Nurseries and several condo developments.

Reliable water supplies and healthy streams are essential for our quality of life and local economy. In addition, the anticipated impacts of climate change on our water resources need to be taken into account in order to protect and build resiliency in these systems. Thank you for the opportunity to comment and please don't hesitate to contact me if you have any questions.

Yours sincerely,



Alison Field-Juma
Executive Director

Cc: John Westerling, Hopkinton Department of Public Works
Sudbury-Assabet-Concord Wild and Scenic River Stewardship Council