



BOARD OF DIRECTORS

January 8, 2016

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Boston, MA 02108

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

Dick Lawrence  
*Clerk*  
Hudson

Dear Ms. McCann,

Don Burn  
Westborough

Thank you for the opportunity to comment on the application by the Town of Concord 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.

Robert Donelan  
Concord

Allan Fierce  
Stow

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; during the summer the Assabet is up to 90% effluent. Several tributaries to these rivers regularly run dry, and Nashoba Brook, a tributary to the Assabet River is classified as a stressed subbasin. Two of Concord's source sub-basins have streams designated as Coldwater Fishery Resources (CFRs)—Second Division Brook in Concord and Nagog Brook in Acton which is upstream and downstream of Nagog Pond, the town's sole surface water source.

Paul Goldman  
Marlborough

Dave Griffin  
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Brian Kilcoyne  
Concord

We have one overall comment on the comment process, and others specific to the town of Concord'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, 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.

Martin Moran  
Hudson

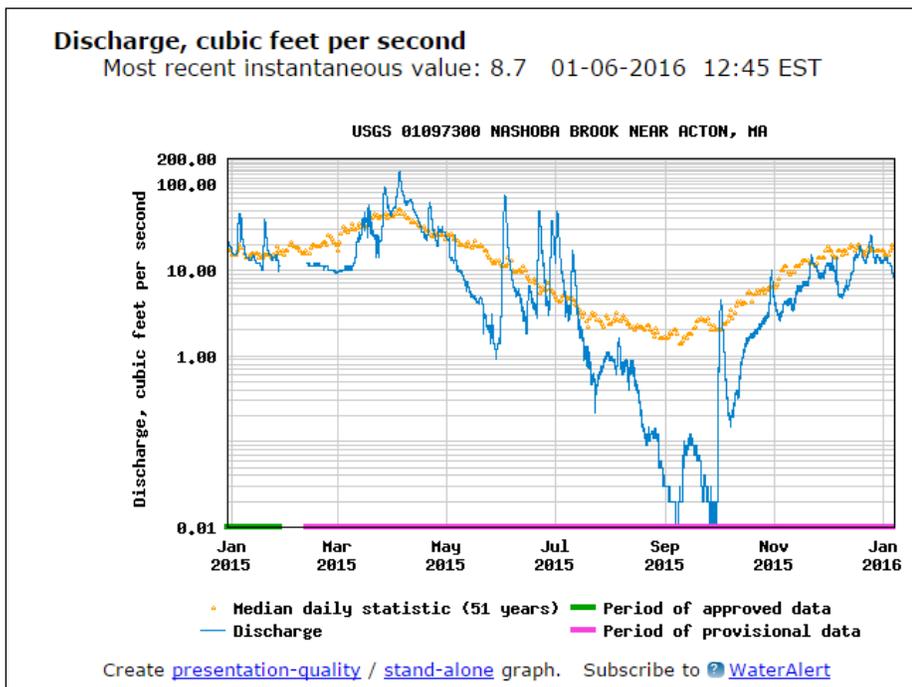
Pam Rockwell  
Concord

Peter Shanahan  
Acton

Lisa Vernegaard  
Maynard

Below are our specific comments on Concord's application:

1. **Incomplete application:** Clearly the application is not complete since critical information is missing, namely the volume of water requested. We request that once the application is complete it be provided to the public for another 30-day comment period.
2. **Seasonal water use:** Based on available information, there is a very high winter: summer water use ratio. We calculate that in 2013 and 2014 there was a 75 and 73% increase, in summer (July-Aug.) over winter (Jan.-Mar.) use, respectively. There seems to have been no improvement since the 2007 ratio of 1.6 shown on the town's website; the state's target ratio is 1.2. Since it appears that peak use may be a problem in Concord, and that peak 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 efforts to address this, and the In-ground Irrigation System Restrictions contained in the town's Water Use Restriction Bylaw, Section 11, are a good element, but results are needed. The town's website states that approximately 30% of residential water use is outside the home, primarily for lawn watering, but these data may also be out of date.
3. **Nonessential outdoor water use restrictions trigger:** Concord's Seasonal Water Demand Management Plan shows that the town relies on the state declaration of a drought as the trigger for non-essential outdoor use restrictions, or at the discretion of the DPW Commissioners that "a shortage of water exists..." This is far from ideal and considers only the safety of the drinking water supply but not of the environment. This is illustrated by this last summer's low streamflow conditions which continue even to today, but for which there was no state drought declaration. Concord should switch to using a stream flow trigger based on the USGS gage on Nashoba Brook, downstream of Nagog Brook, to reflect local conditions. The figure below (USGS gage at Nashoba Brook) illustrates the point that withdrawals, particularly surface withdrawals, should have been minimized from July-September 2015 through the use of stringent outdoor use restrictions:



4. **Impact on CFRS:** Two CFRs are within source subbasins: Nagog Brook (12052) and Second Division Brook (12069). It should be noted that subbasin 12052 has a GWC of 3, but that the Concord surface withdrawal at Nagog Pond may affect streamflow and baseflow downstream in Nagog Brook. This should be considered when calculating possible changes in GWC category due to withdrawals. The water treatment plant at Nagog Pond is currently going through the permitting

process to upgrade the treatment, with no change in plant capacity. However the ENF for the project states that the upgraded plant will see year-round use instead of just seasonal (summer) use. Without more background information provided in the permit application about pumping regimens for this source, it is difficult to comment on the likely impact on the CFR immediately downstream. Clearly the 1.5 MGD design capacity far exceeds the ability of the source to provide that volume without serious impacts on the CFR. We request that complete information regarding both the intended use of this source and the impacts on streamflow be provided. As noted, Second Division Brook is also a CFR. We ask that DEP ensure that detailed information on the impacts of planned water withdrawals on these two streams be provided, and that optimization and a Minimization Plan be developed in full consultation with DFG and OARS.

5. **Demand management:** Concord appears to have a good system in place to fully fund the public water supply, including current metering technology. Using pricing to manage demand is a key tool in this system. The residential rate structure used by the town to encourage seasonal conservation (May-Oct.) seems appropriate in terms of the first ascending block (a 50% increase). However the step between that block and the next block (>4,800 cu ft/mo) at 20%, is relatively small (“2015 Proposed Water Rates Schedule,” on town website). We suggest the town reexamine this pricing and increase the maximum block as part of reducing non-essential water use in the summer. This should be paired with additional regulation of private wells to avoid freeriders on the groundwater resources.
6. **Public Education:** Concord’s web pages on water conservation are quite good, but the data used have not been updated since 2007. It would be useful to show the most recent data. Also, a discussion of the impacts of private irrigation wells should be added, including the reasons why private well owners should observe the public use restrictions on outdoor use.
7. **Private wells/mitigation:** We are aware of a growing number of private wells being used for lawn irrigation. While this may reduce stress on the municipal system, it has resulted in more unregulated irrigation and consumptive water withdrawals from the watershed, as well as undermined the conservation message. While 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. Concord should evaluate further local regulation to bring private wells into conformity with municipal irrigation rules, especially when seasonal outdoor use restrictions are in effect.

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: Alan Cathcart, Concord Water & Sewer Division