



MASSACHUSETTS Rivers Alliance

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July 8, 2016

Rebecca Weidman
Director, Division of Watershed Management
Bureau of Resource Protection
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02108

Subject: Comments on Scituate's Draft WMA Permit Renewal #9P4421264.02 and Draft Fact Sheet issued by MassDEP.

Dear Ms. Weidman:

The Massachusetts Rivers Alliance is a statewide organization with 63 member groups, and support from over 600 individuals, families, and businesses. Our mission is to protect and restore rivers and streams in the Commonwealth. Protecting and restoring stream flow in the state's rivers is therefore a critical goal for us and for our members.

Our staff has reviewed the above-referenced draft permit and fact sheet, issued May 2016 by MassDEP and prepared comments on the Draft Permit's minimization and mitigation requirements and the contents of the Draft Fact Sheet.

We would like to express our appreciation and admiration for the ongoing work of the Town of Scituate, the North and South Rivers Watershed Association, and the MA Division of Ecological Restoration to restore herring runs to First Herring Brook.

A) Draft Permit & Fact Sheet Special Condition #11 – Mitigation of Impacts for Withdrawals that Exceed Baseline Withdrawals

The Draft Permit and Fact Sheet state that Scituate will need to mitigate the impacts of increased withdrawals above its baseline of either 0.050 mgd or 0.170 mgd. The withdrawal volume to be mitigated will depend on whether or not the Town decides to supply the neighborhood of Humarock, which currently gets its water from the Town of Marshfield. After adjustments for wastewater discharges to local groundwater, Scituate will be required to mitigate 0.0245 mgd (24,500 gpd) without Humarock, and 0.0867 mgd (86,700 gpd) with Humarock.

The Draft Permit proposes a mitigation credit of 0.25 mgd (250,000 gpd) for **daily** releases of 0.25 mgd from Old Oaken Bucket Pond. The Draft Fact Sheet describes this release on page 7 as “Scituate’s minimum targeted release from Old Oaken Bucket Pond, outlined in the *First Herring Brook Operation Plan* = 0.25 mgd.” Because the mitigation credit is based on 365 days of 0.25 mgd releases, instead of the Operation Plan’s 90-day June-August Bioperiod during which 0.25 mgd (actually 0.39 cfs) is recommended as the interim streamflow guideline, Scituate would receive a surplus mitigation credit of either 0.2255 mgd (225,500 gpd) without Humarock, or 0.1667 mgd (167,700 gpd) with Humarock. This is clearly erroneous, as discussed below.

Comments:

1) The Draft Permit grants Scituate a large surplus mitigation credit of either 0.2255 mgd (225,500 gpd) without Humarock, or 0.1667 mgd (166,700 gpd) with Humarock, and the draft fact sheet suggests that this “surplus” can be used as long as the Town is implementing the *First Herring Brook Operation Plan*. According to the Draft Fact Sheet at p. 6:

“Scituate’s First Herring Brook Operation Plan, prepared in conjunction with the North and South Rivers Watershed Association and the MA Division of Ecological Restoration, targets minimum releases from Old Oaken Bucket Pond of 0.25 mgd to support anadromous fisheries in First Herring Brook. The Plan is currently in effect, and ***mitigation credit for surface water releases of 0.25 mgd will be given to Scituate as long as the plan continues to be implemented.***” (emphasis added)

While Scituate should receive some mitigation credit for actual flow releases from Old Oaken Bucket Pond, this volume should be determined based on 90 days per the Operation Plan, not 365 days. There is no rational basis for additional mitigation credit above this amount, and if in fact the target 0.25 mgd is not released every day of the three-month period, the credit should be reduced based on actual releases. Given the current near record low flows this summer and predicted future droughts with climate change, it is likely that there will be numerous days in which this release is not possible. 310 CMR 36. 22 provides that,

- (6) Mitigation Plan for Tier 2: A tier 2 applicant shall submit a plan to mitigate the withdrawal above baseline that must be offset, as determined at 310 CMR 36.21(3)(b) or (4)(b), to the greatest extent feasible, as follows:
 - (a) First, the applicant shall evaluate ***direct mitigation activities that can be volumetrically quantified*** and compared to the applicant's mitigation volume including, but not limited to:
 - 1. releases from any surface water impoundments that enhance downstream flows; . . .

310 CMR 36.22 (6)(a)1 (emphasis added). The regulations clearly state that releases that can be “volumetrically quantified” will be eligible for direct mitigation credit. Accordingly, MassDEP may only credit the volume actually released.

2) If MassDEP were erroneously to decide to credit a full year of daily releases of 0.25mgd, nothing in the Draft Fact Sheet and Permit explains whether Scituate can “bank” this surplus mitigation credit against future increased withdrawals. To the extent that MassDEP seems to imply that Scituate could use it in the future provided it is implementing the *First Herring Brook Operation Plan*, we do not believe that this conforms with the letter or the intent of the regulations. MassDEP should make it clear in the Fact Sheet and Permit that this credit applies to this Permit’s volume(s) only and will not be considered mitigation credit for future increased withdrawal volumes above baseline.

3) Importantly, the Fact Sheet and Permit should be clear and specific about which *First Herring Brook Operation Plan* it is referencing in the Draft Fact Sheet and Permit. According to the *First Herring Brook Interim Operational Plan*, dated August 23, 2011, prepared by M. Kearns, there is a *Final Operational Plan*. We note that the Draft Fact Sheet and Permit seem to be based on the *Interim Operational Plan*, not the *Final Operational Plan*.

4) In addition, the *First Herring Brook Interim Operational Plan* uses cubic feet per second (cfs), not million gallons per day (mgd) as the flow unit, and uses the term “Interim Streamflow Guidelines” instead of the term “minimum releases”. It appears that the minimum release of 0.25 mgd described in the Draft Fact Sheet and Permit is in fact the 0.39 cfs interim streamflow guideline in the *First Herring Brook Interim Operational Plan* for the June-August Bioperiod (See Table 1, page 3, 0.25 mgd = 0.386 cfs). The flow units and terminology used in the *Interim (or Final?) Operational Plan* and the Fact Sheet and Permit should be the same. At a minimum, MassDEP should explain the differences in these units and terms and make the relationship between the *Interim Operational Plan* and the Permit completely transparent in order to avoid confusion.

5) We note that a Google search generates links to information about the restoration work on First Herring Brook, but not to the *Interim Operational Plan* itself. A document that supports such an important part of the permit should be explicitly incorporated into the permit, attached as an exhibit/appendix and also publicly available on line.

6) Scituate has not evaluated any other direct mitigation measures. Given that all but one of Scituate’s wells are located in a subbasin that is **94.3% August net groundwater depleted**, Scituate should be required to identify other potential direct mitigation through stormwater recharge, discharge of treated wastewater to the ground, and I/I removal.

B) Special Condition #10 – Minimization of Groundwater Impacts in Stressed Subbasins

The WMA Regulations require that, “A groundwater applicant with a withdrawal point in a subbasin having August net groundwater depletion of 25% or greater **shall submit a plan** (emphasis added) to minimize the impacts of the withdrawals to the greatest extent feasible...” See 3010 CMR 36.22(5) (a)-(d). The Town is required to develop a minimization plan pursuant to the regulations. No minimization plan was submitted.

Instead, Draft Permit Special Condition #10 references four actions that MassDEP considers Scituate’s minimization effort:

- Withdrawing water from well #18B located in subbasin 22091 to the extent practicable while still protecting the capacity and water quality of the source.
- Implementing the *First Herring Brook Operation Plan* to improve streamflow and fisheries habitat.
- Implementing Seasonal Limits on Non Essential Outdoor Water Use as described in Special Condition 8.
- Implementing the water conservation program as outline in the *Board of Water Commissioners and Water Committee Draft Water Conservation Plan, March 2014*.

On page 6 of the draft fact sheet, MassDEP asserts only that “Scituate is currently meeting all other requirements for minimizing their impacts on the subbasin (22132)” and specifically, that Scituate’s limits on nonessential outdoor water use and water conservation measures “go beyond standard Water Management permit requirements.” When triggered, a minimization plan is townwide. The lack of information in the draft fact sheet and permit make it impossible to determine whether or not Scituate’s nonessential outdoor water use restrictions and water conservation measures as described in their *Board of Water Commissioners and Water Committee Draft Water Conservation Plan, March 2014* (which seems to have been updated in 2016 and can be found on the web page of Scituate’s Water Resources Committee but not on the Water Division page) are in fact more stringent than those required by standard WMA permit requirements. The basis for MassDEP’s assertion that town conservation measures exceed the standard conditions should be explained in the fact sheet.

1) We believe that Scituate's nonessential outdoor water use limits probably do not exceed the standard WMA permit requirements; however, because these restrictions apply only to one segment of its population, a comparison is difficult. While Scituate restricts the use of all existing in-ground irrigation systems to one day per week during the period May 1 - Sept. 30, and this has reduced summertime water use by an impressive 30%, there are no nonessential water use restrictions for everyone else, except when water levels in the reservoir drop to 36 feet, which triggers a total town water ban. Nevertheless, the WMA regulations require that nonessential water use restrictions be imposed during the period May 1 - Sept. 30, and MassDEP’s WMA guidance requires that communities with greater than 25% August net groundwater depletion and a RGPCD below 65, restrict outdoor watering to 2 days a week outside the hours of 9am to 5pm. (Scituate last year had a RGPCD below 65). The bottom line is that Scituate does not restrict non-essential outdoor water use unless the customer has an in-ground irrigation system tied to the municipal water supply network.

2) Minimization plans must include water conservation measures that are more stringent than the Massachusetts Water Resources Commission's 2012 Water Conservation Standards #2-10, excepting #8, which encompass the standards for water audits and leak detection, metering, pricing, residential and public sector conservation, industrial/commercial conservation, lawn/landscape conservation, and education/outreach. (See 310 CMR 36.28(4) (c) 1., 2, and 3.) We tried systematically to compare Scituate's current water conservation plan, *Scituate Water Resources Committee Conservation Plan, October 2016* with these WRC water conservation standards to see if Scituate's actions met or exceeded them. But it was a difficult exercise due to the way that the Scituate 2016 Plan is written and organized. Still, our findings are presented below.

WRC Water Conservation Standards #2-10, except 8, updated 2012:

- **#2 - System Water Audits and Leak Detection** - The Scituate Plan does not have a separate section for this standard, but provides information about it under Standard #3 Metering.
- **#3 - Metering** - The Scituate Plan suggests that the town is meeting, but not exceeding, WRC Standard #3. This section also documents that the town is not meeting the UAW performance standard of 10%, which is part of WRC Water Conservation Standard #2 - System Water Audits and Leak Detection. The most recent data reported in the plan, shows that Scituate had 17% UAW in 2014. MA DEP's draft WMA permit fact sheet documented 19% UAW in 2015.
- **#4 - Pricing** - The Scituate Plan suggests that town is meeting, but not exceeding, the standard.
- **#5 - Residential** - The Scituate Plan documents that the town exceeds the performance standard of 65 rgpcd, which is part of MWRC Standard #5. The Scituate Plan reported a rgpcd of 60 in 2013. MA DEP's draft WMA permit fact sheet documented a rgpcd of 58 for 2015. This section of the Scituate Plan also includes information about compliance with MWRC Standard #9 Lawn and Landscape. (The Scituate Plan does not have a separate section for Standard #9.) This is where Scituate's in-ground irrigation restrictions are described, along with the trigger for enacting a total outdoor watering ban. Given that Scituate only restricts nonessential outdoor watering by people and businesses with in-ground irrigation systems, it is difficult to determine if Scituate is meeting, not meeting, or exceeding MWRC Standards #5 and #9. This section of the plan also describes the ban that Scituate has imposed on new hook-ups of in-ground sprinklers to the municipal water supply.
- **#6 - Public Sector** - The Scituate Plan suggests that town is meeting the standard with regard to the watering and management of public and recreational fields, but notes that there are many old buildings in town that should be retrofitted with water conserving low-flow fixtures. It's unclear whether or not Scituate is meeting this standard.
- **#7 - Industrial/Commercial** - The Scituate Plan suggests that little if anything is being done to reduce water use by the Industrial and commercial sector because this sector uses only 6.9% of municipal water annually. The Scituate Plan

explains that DEP has told the town to focus on reducing seasonal water use by residential water users, who use 83% of the water.

- **#9 - Lawn and Landscape** - The Scituate Plan does not have a separate section for this. See #5 Residential.
- **#10 - Public Education and Outreach** - The Scituate Plan indicates that the town has met this standard. Can't determine whether or not this standard has been exceeded.

3) As with the *First Herring Brook Operational Plan*, MassDEP should be precise about which version of Scituate's Conservation Plan it is using as the basis of the draft fact sheet and permit. We could not find a copy of the *Board of Water Commissioners and Water Committee Draft Water Conservation Plan, March 2014* that is referenced in the draft permit. If the Town's Plan is one of the bases for minimization, it should be incorporated into the permit and attached to it.

C. Draft Fact Sheet

1) The Draft Fact Sheet is missing some critical information about the Draft Permit. The draft fact sheet should identify which Permit Tier MassDEP has assigned to Scituate's renewal application. It appears to be Tier 2. It should also identify the Biological Category and Ground Water Categories of all subbasins impacted by the Draft Permit withdrawals and the presence or absence of cold water fisheries.

Thank you for considering our comments.

Sincerely,



Julia Blatt
Executive Director

Cc: Duane Levangie, Water Management Act Section Chief
Beth McCann, Permit Writer
Samantha Woods, North and South Rivers Watershed Association



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

Dick Lawrence
Clerk
Hudson

Dear Ms. McCann,

Don Burn
Westborough

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

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Paul Goldman
Marlborough

Dave Griffin
Maynard

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.

Brian Kilcoyne
Concord

Martin Moran
Hudson

Pam Rockwell
Concord

Peter Shanahan
Acton

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

Lisa Vernegaard
Maynard

Below are our specific comments on Ashland's application:

1. **Request far 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 the permitted Howe St. sources (#12029), is already at the maximum groundwater depletion level—Category 5, with an extremely high August Net Groundwater Depletion of 235.8%. The three registered High St. wells in subbasin #12030 are right along the Sudbury River; it is not clear to what degree these wells are used. Although they are all Registered sources, this subbasin is also Category 5 and efforts should be made to minimize the withdrawals in this subbasin as well. The use of these three wells may have a direct and deleterious impact on the base flow of the Sudbury River. The repeated very low flows in the Ashland and Hopkinton segments of the river are clear evidence of the groundwater depletion in these two subbasins, particularly in the summer/fall. Since, according to the application, 85% of Ashland's withdrawal will be discharged via the MWRA wastewater system, this is a significant interbasin transfer of water. An increase in this transfer out of the Concord basin would further damage the water balance in the headwaters of the Sudbury River. The town's application shows a remarkable jump in water withdrawals from 1.9 MGD in 2014 to an anticipated 2.77 MGD in 2016. An explanation is needed. If Ashland can prove that they need water volumes in excess of their baseline or WNF, we strongly recommend that the alternative of connecting to 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 in 2014 was high, at 16%.
2. **Seasonal water use:** Based on available information, there is a very high winter: summer water use ratio. According to the town's 2014 ASR it was 1.56, 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:** Ashland's non-essential outdoor water use restrictions (that are in addition to the Permanent Outdoor Water Use Restrictions) are triggered by a fall in the Hopkinton Reservoir surface water level between June 1 and August 31. This triggers a reduction in the use of two wells. We ask that this trigger be assessed for its adequacy in maintaining the flow in Indian Brook, a tributary to the Sudbury River. It could be compared with a streamflow trigger based on the USGS Saxonville gage or other comparable flow gage to determine which is the better predictor of low flow conditions in local streams and the Sudbury River. The lag time between ceasing well pumping and the rebound of reservoir level and river and stream flows, as well as the impact of demand management on pumping volumes, should be presented. Since September can also be a low flow month, this trigger should include the month of September as is customary in calendar-based restrictions.
4. **Interconnection to Hopkinton:** Currently 0.5 MGD of Ashland's water withdrawals are supplied to Hopkinton. There is no narrative or documentation regarding this intermunicipal arrangement. It is not clear how much of the requested volumes are anticipated to be supplied to Hopkinton. Our concerns regarding justification of increased withdrawals are the same for this use.
5. **Demand management:** Ashland states that it uses odd/even watering dates for its permanent outdoor irrigation restriction, although the recent amendment to the town's bylaw (Attachment 6) appears to change that to permitting only 2x per week watering. We support the town's efforts to put in place a year-round restriction, limit watering to twice per week, and the restricted hours of watering. The RPGCD at 55 gallons is to be commended. However the seasonality of water use, as noted in #2 above, remains a concern. Using pricing to manage demand is an important tool. The residential rate structure used by the town does not encourage seasonal conservation as it charges the same rate year-round. We would like to see an analysis of the effectiveness of the current restrictions, since seasonal water use is still high. We suggest 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 additional regulation of private wells to avoid freeriders on the groundwater resources.

6. **Public Education:** The public education materials provided in the application, while quite thorough in general, appear to be from around 2007; these should be updated. We could find little educational material on the town's website. It would be useful to provide current and complete educational materials on the website for public access. Also, a conservation outreach program to the owners 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 throughout the Concord basin. We do not have any data for the town of Ashland 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. Ashland 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: David Manugian, Ashland Department of Public Works
Sudbury-Assabet-Concord Wild and Scenic River Stewardship Council



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

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Brian Kilcoyne
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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