To: Madbury Planning Board
From: Liz Durfee, Contract Planner
Date: August 15, 2019

Subject: Amendment Options for the Aquifer and Wellhead Protection Overlay District

The primary purpose of this memo is to provide recommendations on options to modify the strict regulations of Section 6. The intent is not to remove groundwater protections or allow development that may threaten drinking water supplies, but to amend the ordinance to be more consistent with state standards and create fair and enforceable regulations.

Summary

Article IX-A protects drinking water supplies by restricting development and activities in certain areas, including:

A) Lands above stratified drift aquifers (Section 3(A)). This is based on a mapped aquifer.
B) Lands designated by the State a public water supply wellhead protection lands (Section 3(A)). This is based on the area identified by NHDES as the area under which groundwater flows to a producing well. This data is available through NHDES as a GIS layer and updated from time to time.
C) Lands above the stratified drift aquifers where they [stratified drift aquifers] have not been mapped but may be identified as part of a site plan or subdivision plan review or other process (Section 3(B)). This would be information shown on a site plan or subdivision plan.
D) The area within 400 feet of an identified public water supply wellhead, designated a primary wellhead protection area (Section 6)(A)). This is an extra protective layer that is identified by creating a 400 ft buffer around public water supply wellhead.

These areas are not mutually exclusive.

Article IX-A Section 5 contains provisions for permitted, prohibited, and limited and regulated uses. Section 5 applies to all of the areas (A-D) identified above. Section 5 is generally consistent with or more stringent than the NHDES model ordinance for groundwater protection. I commented on the differences in regulation of permitted, prohibited, and conditional uses in Madbury's Ordinance and the state model ordinance on May 19, 2019. If the Planning Board wishes to make Article IX-A more consistent with the state model, I can discuss these differences further and/or incorporate suggested amendments in this area of the ordinance.

Article IX-A Section 6 Wellhead Protection Area

Section 6 designates a protective buffer of 400 feet around public water supply wellhead and imposes strict limitations on the uses permitted within this area. A couple issues have surfaced related to this buffer.

Issue 1: Madbury's protective wellhead radius is a fixed 400 feet, while the sanitary protective area that NHDES enforces for public water supplies varies based on water withdrawn. This inconsistency can cause confusion and likely results in over regulation of the land around wells that do not withdraw large quantities of water.

NHDES rules (Env Dw 302.10) identify a sanitary protective area around public water supply wells that is based on the permitted production volume (gallons in a 24-hour period). A protective radius is established around the well depending on volume of water that could be withdrawn daily. The radius ranges from 150 feet for withdrawals of less than 14,400 gallons/24 hr period to 400 feet for wells that are permitted to withdraw greater than 144,000 gallons/24 hr period. A 400-foot radius is consistent with regulations for large community wells for new wells, but larger than the required radius for small community wells and non-community wells, which are types of community wells. Within the protective area radius, the area shall be maintained in a natural state at all times except that limited clearing, terrain alteration, and activities are allowed in order to construct and maintain the well. Table 302-1 from the rules is pasted below.

Table 302-1 Sanitary Protective Area Radii

Permitted Production Volume (gallons in a 24-hour period)	Radius (feet)
less than 14,400	150
14,401 to 28,800	175
28,801 to 57,599	200
57,600 to 86,400	250
86,401 to 115,200	300
115,201 to 144,000	350
greater than 144,000	400

Issue 2: While NHDES requires that the entire protective radius of new wells fit within the boundaries of the lot the well is located on or obtain an easement from adjacent lots, a number of community water supply wells that predate modern regulations may not comply with this. This can impact the use of adjacent lots.

Potential Options for Modifying Section 6

Option 1: Update the list of public water supply wells but make no change to the regulations or buffer.

Option 2: Amend Section 6 so that the protective buffer matches that which is required by NHDES based on the amount of water withdrawn. This would require tracking the permitted withdrawal and requesting that surveyors add the location of the well and buffer to their plans and/or relying on GIS data, which is not as accurate as a survey. This way of regulating could be confusing to the public. Further, NHDES already imposes regulations on the protective radius that is appropriate for the size of the well, so local regulation could be redundant.

Option 3: Rely on NHDES's protective radius to strictly protect the immediate buffer around public water systems and continue to enforce the regulations of Section 5 for a broader area.

Option 4: Option 3 and regulate the geographic area identified in Section 6 (the 400 ft buffer) with the standards of Section 5 instead of 6. This would be a way to protect the wellhead buffer of current and future active public water supply wells that neither have an NHDES designated a wellhead protection area nor lie above stratified drift aquifer, but in a less restrictive way that uses standards instead of prohibiting most activity.

Option 5: Establish an extra layer of protection similar to the current regulations of Section 6 for municipal wells only, as opposed to all public water supply wells.

For all the above options, it is recommended that the map identifying stratified drift and state designated wellhead protection area is updated regularly. The language in Section 5 that references the wellhead protection data should refer to the most current data. If the Town continues to enforce a protective wellhead radius of any distance, it is recommended that the Town maintain a list of active wells, the permitted withdrawal volume of those wells, and a map of wells and their buffers.

Map

A map is attached with the location of stratified drift aquifer and NHDES's current wellhead protection areas. Please note that per NHDES, the well locations should not be made publicly available. The official overlay map would display the wellhead protection areas and stratified drift aquifer as one color if Option 3 is chosen.

Terms:

Wellhead protection area: The surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield. *Note that this is not necessarily a circular buffer and is often an irregular shape that varies in size based on the site of the well.*

Public water system: A system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Classifications of Public Water Systems

- Community Water System: Dwellings, units, or other structures served by the system are suitable for year-round occupancy; public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.
- Non-Community Water System: Public water system that is not a community water system, regularly serves 25 or more people per day for 60 or more days per year.
- Transient, Non-Community Water System: Serves fewer than 25 people reside at the location for greater than or equal to 6 month per year
- Non-transient, Non-community water system: A system that is not a community water system and which serves the same 25 people, or more, over 6 months per year.