
Article IX-A

Aquifer and Wellhead Protection Overlay District

Section 1. Authority

The Town of Madbury hereby adopts this ordinance pursuant to the authority granted under RSA 674:16, in particular RSA 674:16, II and 674: 21 relative to innovative land use controls.

Section 2. Purpose

The purpose of this article is to implement the adopted Town of Madbury Master Plan priority objective to: "Protect water resources in Madbury from contamination, depletion and disfigurement using watershed management principles. Act as stewards for municipal and regional water supplies located within the Oyster River, Bellamy River, and Little Bay watersheds."

Clean and abundant water from Madbury's ground water aquifers is necessary for the health, welfare, safety and prosperity of the Town and its surrounding area. Wells serving public water systems are critical resources. This article provides protections for these essential resources from risks associated with adverse land use and development.

Section 3. District Boundaries

- A. The Aquifer and Wellhead Protection Overlay District includes all lands above stratified drift aquifers, and lands designated by the State as public water supply wellhead protection lands identified as follows:
1. Lands above stratified drift aquifers are identified on the "US Geological Survey, Geohydrology and Water Quality of Stratified-Drift Aquifers in the Bellamy, Cocheco, and Salmon Falls River Basins, Southeastern New Hampshire Plates 2, 4 and 6 dated 1992."
 2. Lands for wellhead protection are identified on the State of New Hampshire, Department of Environmental Services, Wellhead Protection Areas Data Layer, as may be updated. These lands are depicted on the map entitled "Town of Madbury Master Plan, Water Resources" dated June 14, 2005 as amended, and the Town of Madbury Zoning Map as may be amended. These maps shall be on file at the Town Office.
- B. In addition the District includes all lands above the stratified drift aquifers where they have not been mapped, but may be identified as part of a site plan or subdivision plan review or other process.
- C. If an Aquifer and Wellhead Protection Overlay District boundary is uncertain or contested, the boundary in question shall be determined by a New Hampshire licensed Professional Engineer, hydrologist, geologist, or soil scientist acceptable to the Planning Board. The owner of the property where the boundary is in question shall bear the costs of such determination.

Section 4. Applicability

- A. The Aquifer and Wellhead Protection Overlay District is an overlay district. The requirements of this article are in addition to those of the underlying zoning district. If requirements of this District and other applicable Districts are in conflict as applied to a specific plot, the more restrictive requirement shall apply.
- B. The provisions of this article shall apply to all land uses within the District Boundaries.
1. Some uses are specifically permitted. These are uses that create little or no risk to wellhead areas.

Comment [ED1]: Recommend mapping this and including with an updated map with the wellhead protection areas.

Comment [ED2]: Recommend updating this map with most current wellhead protection areas (NHDES data)

2. Some uses are limited or permitted only with Town oversight. These are uses that involve some risks. These risks can be minimized through site and facility design and careful use.
3. Some uses are prohibited because they create unacceptable risks.

C. Site design and development requirements and performance standards in this article shall apply to all land use activities and development including additions and modifications to a site or structure within the District Boundaries, not just those requiring subdivision plan, or site plan approval, or building permits.

Section 5. Permitted, Prohibited and Limited and Regulated Uses

A. Permitted Uses.

The following land uses are permitted in the Aquifer and Wellhead Protection Overlay District subject to the restrictions of the underlying district:

1. All land uses permitted in the applicable underlying zoning district, provided that they are:
 - a. not expressly prohibited in sub-section B below or
 - b. allowed as a Limited and Regulated Use as per subsection C below.
2. Town Transfer Station and associated operations on Pudding Hill Road.
3. Storage of less than 550 gallons of heating oil for on-premises use.
4. Any storage designed for, and containing, any liquid that is gaseous at atmospheric temperatures and pressures (example: propane).

B. Prohibited Uses.

The following land uses are prohibited in the Aquifer and Wellhead Protection Overlay District:

1. The development or operation of a hazardous waste disposal facility as defined under RSA 147-A.
2. Disposal or storage of solid waste, construction materials, vegetative debris except as part of the process of improving the subject parcel.
3. The development or operation of a solid waste landfill under RSA 149:M-9.
4. The development or operation of a wastewater or seepage lagoon.
5. Open liquid waste pond.
6. Application of wastewater residuals as defined by NH DES Rules Wq Env-800-811.
7. The development or operation of a junkyard or waste salvage yard.
8. Motor vehicle service or repair shops, except as a customary uses designed to provide routine service to vehicles operated by the principal user.
9. The outdoor unenclosed storage of road salt or other deicing chemicals in bulk.
10. The development or operation of a snow dump.
11. The development or operation of a petroleum bulk plant or terminal.
12. The development or operation of gasoline stations.
13. Commercial animal feedlots.
14. Commercial storage of manure, fertilizers, herbicides, or other leachables, except for the temporary storage of such material when it is incidental to the principal use and stored in a manner that avoids leaching and runoff.

C. Limited and Regulated Uses.

1. The following land uses are allowed in the Aquifer and Wellhead Protection Overlay District, subject to restrictions in the underlying district, if the Planning Board approves a Conditional Use Permit. in accordance with Article IV, Section 9 of this Ordinance.

Comment [ED3]: The model ordinance has a list of exempted uses or uses that do not need to comply with all performance standards.

Comment [ED4]: Items 3, 4, 7, 9, 10, 11, 12 are prohibited uses in the generic NHDES model ordinance. Appendix C of the model ordinance lists additional uses that may be prohibited. NHDES recommends that the list be expanded if no inspection program is planned and implemented. These uses include fertilizer, manure, hazardous waste facilities, which Madbury has listed as a prohibited use, as well as a couple additional uses that are not in this list.

Storage of regulated substances in greater than household quantities (i.e. five gallons), unless in a free-standing container in a building or above ground with secondary containment adequate to contain 110 percent of the container's total storage capacity.

Comment [ED5]: This is a little confusing. Is this exempting homeowners who fix their own cars at their residences?

Comment [ED6]: Conditional uses in the model ordinance include:

A. Storage, handling, and use of regulated substances in quantities exceeding 55 gallons or 660 pounds dry weight at any one time, provided that an adequate spill prevention, control and countermeasure (SPCC) plan, in accordance with Article VII, is approved by the [local Fire Department, Health officer or Emergency Management officer];

B. Any use that will render impervious more than 15 percent or 2,500 square feet of any lot, whichever is greater.

C. Any activities that involve blasting of bedrock.

- a. Storage, handling, and use of regulated substances in quantities exceeding 100 gallons or 800 pounds dry weight at any one time or exceeding reportable quantities under listed under 40 CFR 302, 7-1-05 edition or as amended.
 - b. Any use that will render impervious more than 15 percent of any lot that is 0.38 acres or larger or 2,500 square feet of any lot that is less than 0.38 acres.¹
 - c. Any activities that involve blasting of bedrock.
 - d. General service and repair shops, including but not limited to: furniture stripping, painting, and refinishing; photographic processing; printing; appliance and small engine repair; boat repair, service and refinishing; refrigeration, heating, ventilating and air conditioning shops.
 - e. Metalworking shops, including, but not limited to: machine shops; metal plating shops; heat treating shops; smelting shops; and jewelry making shops.
 - f. Manufacturing facilities, including but not limited to: electronics and chemical manufacturing, processing, and reclamation; paper, leather, plastic, fiberglass, rubber, silicon and glass making; pharmaceutical production; pesticide manufacturing; and chemical preservation of wood and wood products.
 - g. Receipt, processing and storage of ferrous and non-ferrous metals and related byproducts produced in the recycling of vehicles, appliances and other predominately metal items.
 - h. Laboratories and professional medical offices, including but not limited to: medical, dental, and veterinary offices; and research and analytical laboratories.
 - i. Cleaning services, including but not limited to: dry cleaner; laundromats; and car washes.
 - j. Storage of petroleum or related products in quantities greater than 550 gallons for on-premises use.
2. In granting a Conditional Use Permit the Planning Board must first determine:
 - a. The applicant has demonstrated the proposed use and design are consistent with the purpose of this Article:
 - b. That the proposed use is not a prohibited use (as listed in Section 5 B of this Article): and
 - c. Will be in compliance with the Performance Standards in Section 7 of this Article as well as all applicable local, state and federal requirements and the criteria of Article 4, Section 9, D of this ordinance.
 3. The Planning Board, at its discretion, may require a performance guarantee or bond, in an amount and with surety conditions satisfactory to the Board, to be posted to ensure completion of construction of any facilities and the future monitoring and/or periodic inspection of same required for compliance with the Performance Standards. Additionally, The Planning Board, at its discretion, may require routine monitoring and inspection activities to assure, confirm and document compliance with Performance Standards and other applicable provisions of this Article IX-A.

Section 6. Primary Wellhead Protection Area

- A. The area within 400 feet of an identified public water supply wellhead is hereby designated as a Primary Wellhead Protection Area.
- B. Land use in this area is strictly limited to protect this critical water resource. The provisions of this section apply to these areas in addition to those for the Aquifer and Wellhead Protection Overlay District.

¹ Revised March 2019

Comment [ED7]: The quantity in Madbury's ordinance that triggers a CUP and the need to prepare a SPCC is greater than the Pipeline and Hazardous Materials Safety Administration's Emergency Response Guidebook's definition of a large spill. This guide establishes that large spills are considered to involve volumes greater than 55 US gallons (208 liters) for liquids and those exceeding 660 pounds (300 kilograms) for solids with regard to initial isolation and protection action distances.

Aside from this item, Madbury's ordinance requires a CUP for more uses than the model.

Recommendation: use the threshold that the model uses.

Comment [ED8]: This text from section 3 includes the wellhead protection overlay district:

"The Aquifer and Wellhead Protection Overlay District includes all lands above stratified drift aquifers, and lands designated by the State as public water supply wellhead protection lands identified as follows..." So wellhead protection areas are already subject to all the regulations in the article, as well as NHDES regulations.

Discussion item for the planning board: Madbury's regulations are in general equal or more stringent than the state's model ordinance. Madbury identifies more prohibited uses and more uses that require a CUP than the state.
 -Do certain public water supply wells (such as municipally owned wells) require greater protection than other public water supply wells?
 -Is an added layer of protection needed for public water supply wells than areas over aquifers?

The regulation effectively takes away reasonable use of property of adjacent lots. The Town's attorney may want to weigh in on this, but I would say it's too restrictive.

- C. The following land uses are permitted in the Primary Wellhead Protection Area. All other land uses are prohibited in these areas.
1. Construction, operation, and maintenance of wells, dams and water conservation apparatus.
 2. Conservation, education and recreational activities that do not cause erosion or necessitate the application of chemicals.
 3. Maintenance and repair of any existing structure, provided that there is no increase in the area of impermeable surfaces.
 4. Town Transfer Station and operations on Pudding Hill Road.

Section 7. Performance Standards

- A. All uses within the Aquifer and Wellhead Protection Overlay District shall conform to the standards and practices delineated in the following documents on file with the Planning Board, unless this Ordinance specifies more strict standards:
1. Manual of Best Management Practices for Agriculture in New Hampshire, NH Dept. of Agriculture, June 2011, or as amended.
 2. Best Management Practices to Control Nonpoint Source Pollution--A Guide for Citizens and Town Officials, NH DES, WD-03-42, January, 2004, or as amended.
 3. Best Management Practices, New Hampshire Code of Administrative Rules, Env-Wq 401, or as amended.
 4. State of New Hampshire Septage Management Rules, New Hampshire Code of Administrative Rules, Env-Wq 1600, or as amended
 5. State of New Hampshire Sludge Management Rules, New Hampshire Code of Administrative Rules, Env-Wq 800, or as amended.
 6. Best Management Practices for Forestry: Protecting New Hampshire's Water Quality, University of New Hampshire Cooperative Extension, 2005, or as amended.
 7. Pesticide Management Guidelines for Groundwater Protection, UNH Cooperative Extension, November 1992, or as amended.
 8. Manual of Best Management Practices--Biosolids, UNH Cooperative Extension, 1995, or as amended.
- B. For any use that will render impervious more than 15 percent of any lot that is 0.38 acres or larger or more than 2,500 square feet of any lot smaller than 0.38 acres, a stormwater management plan shall be prepared. The stormwater management plan shall comply with New Hampshire Stormwater Manual Volumes 1-3, December 2008 (or as amended), NH Department of Environmental Services. Such plan shall address control of parking lot pollutants including but not limited to petroleum product residue.²
- C. Design shall accommodate equipment failures and operational errors without environmental impact, including:
1. Below ground level--removal and replacement of leaking parts, a leak detection system with monitoring, and an overfill protection system.
 2. Above ground level--liquid and leaching monitoring of primary containment systems, the replacement or repair and cleanup and/or repair of the impervious containment surface.
- D. All underground storage facilities shall conform to the requirements of DES Rules Env-Wm-1401 as revised.
- E. All regulated substances stored in containers with a capacity of five gallons or more must:
1. be stored in product-tight containers on an impervious surface designed and maintained to prevent flow to exposed soils, floor drains, and outside drains; and
 2. secured against unauthorized entry by means of a door and/or gate that is locked when

² Revised March 2019

authorized personnel are not present and must be inspected weekly by the facility owner.

- F. Outdoor storage areas for regulated substances, associated material or waste must be protected from exposure to precipitation and must be located at least 50 feet from surface water or storm drains, at least 75 feet from private wells, and outside the sanitary protective radius of wells used by public water systems.
- G. Secondary containment must be provided for outdoor storage of regulated substances in regulated containers and the containment structure must include a cover to minimize accumulation of water in the containment area and contact between precipitation and storage container(s).
- H. Containers in which regulated substances are stored must be clearly and visibly labeled and must be kept closed and sealed when material is not being transferred from one container to another.
- I. Prior to any land disturbing activities, all inactive wells on the property, not in use or properly maintained at the time the plan is submitted, shall be considered abandoned and must be sealed in accordance with We 604 of the New Hampshire Water Well Board Rules.
- J. Blasting activities shall be planned and conducted to minimize groundwater contamination. Excavation activities should be planned and conducted to minimize adverse impacts to hydrology and the dewatering of nearby drinking water supply wells.
- K. All Limited and Regulated Uses as defined in Section 5 C of this Article shall also be subject to the following:
 - 1. Submission of an Environmental Protection Plan prepared by an appropriately licensed expert that:
 - a. Demonstrates conformance to DES rule ENV-Wq-401 "Best Management Practices for Groundwater Source Protection".
 - b. Specifies the amount and composition of any industrial or commercial waste that will be generated on-site and details the method for disposal of such waste outside of the Aquifer and Wellhead Protection Overlay District.
 - c. Provides description of a routine inspection and monitoring program.
 - 2. Submission of a Spill Prevention, Control and Countermeasure (SPCC) Plan when using regulated substances to the Madbury Fire Chief and the Madbury Planning Board. The Fire Chief shall determine whether the plan will prevent, contain, and minimize releases from ordinary or catastrophic events such as spills, floods or fires that may cause large releases of regulated substances. It shall include:
 - a. Information consistent with *Developing Your Stormwater Pollution Prevention Plan: A Guide for Industrial Operators* (US EPA, Feb 2009 or as amended). The plan shall demonstrate that the use will:
 - (1) Meet minimum stormwater discharge setbacks between water supply wells and constructed stormwater practices as found within *the Innovative Land Use Planning Techniques: A Handbook for Sustainable Development, Section 2.1 Permanent (Post-Construction) Stormwater Management, (DES,2008 or later edition)*; and
 - (2) Maintain a minimum of four feet vertical separation between the bottom of a stormwater practice that infiltrates or filters stormwater and the average seasonal high water table as determined by a licensed hydrogeologist, soil scientist, engineer or other qualified professional as determined by the Planning Board.
 - b. A description of the physical layout and a facility diagram, including all surrounding surface waters and wellhead protection areas.
 - c. Contact list and phone numbers for the facility response coordinator, cleanup contractors, and all appropriate federal, state, and local agencies who must be contacted in case of a release to the environment.

Comment [ED9]: The model requires the SPCC for storage, handling, and use of regulated substances in quantities exceeding 55 gallons or 660 pounds, but not for all limited and regulated uses.

Recommendation: do not require a SPCC for all conditional uses (jewelry making, etc.)

- d. A list, including amounts, of all regulated substances in use and locations of use and storage;
- e. A prediction of the direction, rate of flow, and total quantity of regulated substance that could be released where experience indicates a potential for equipment failure.
- f. A description of containment and/or diversionary structures or equipment to prevent regulated substances from infiltrating into the ground.
- g. Flood control:
 - (1) For all underground facilities including, but not limited to, a monitoring system and secondary standpipe above the 100-year flood control level, for monitoring and recovery.
 - (2) For above ground facilities, an impervious containment dike, above the 100-year flood level, capable of containing 100 percent of the primary containment facility with an overflow recovery catchment area (sump).
- h. Fire control plans shall include:
 - (1) A safe fire fighting procedure.
 - (2) A fire retarding system.
 - (3) Provision for dealing safely with any other health and technical hazards that may be encountered by disaster control personnel in combating fire. Hazards to be considered are pipes, liquids, chemicals, or open flames in the immediate vicinity.
- 3. Documentation that the applicant has addressed any recommendations provided by the Madbury Water Resources Board, Madbury Conservation Commission and Madbury Fire Department.
- 4. The Planning Board may require additional independent hydrogeological study or other technical review and analysis of sites and applications. The costs of all such review and analysis shall be borne by the applicant.

Section 8. Administration

- A. Routine monitoring and inspection activities required by the Conditional Use Permit shall be performed by the Selectmen's delegate at reasonable times with prior notice to the landowner. Spill Response Plans must be reviewed annually by the Selectmen's delegate. All properties within the Aquifer and Wellhead Protection Overlay District using or storing regulated substances in containers with a capacity of five or more gallons not subject to a Conditional Use Permit shall be subject to inspection under this Article.
- B. Annually the operator of a sand and gravel extraction operation shall prepare a report for the Town documenting compliance with the requirements of this Article. Pursuant to NH RSA 155-E:11, II the requirements of this section may be waived if the applicant demonstrates that such excavation will not adversely affect water quality and that written notice of such exception shall be recorded in the Registry of Deeds, and one copy filed with the NH Department of Environmental Services.
- C. The Building Inspector or Selectmen's delegate may require changes to facility designs and environmental protection plans to correct deficiencies in aquifer and wellhead protection.
- D. The Selectmen may revoke a Conditional Use Permit if they find risks to an aquifer or wellhead unacceptable.
- E. The owner and/or operator of a facility operating under a Conditional Use Permit shall report all incidents involving liquid or chemical material release to the Building Inspector or Selectmen's delegate.
- F. The Building Inspector or Selectmen's delegate will receive reports of spills, leaks or containment failures and investigate and make referrals as appropriate.
- G. For Conditional Use Permits requiring periodic monitoring or inspection, a narrative description of these requirements shall be recorded at the Registry of Deeds for Strafford

County. The description shall comply with the requirements of NH RSA 478:4-a.