

5. Management/Protection Program – Land Use Controls

As described in the Introduction section of this Plan under Step 3, Management and Protection, there are a number of tools available to municipalities to protect groundwater including zoning, land acquisition, public education, state reclassification, BMPs and inspections. Basically these tools have been grouped under five protection strategies in this Plan: Education/Public Participation; Land Use Controls, Health Ordinance / Reclassification, BMP Management and Land Conservation. The five protection strategies are also referenced in the chart in Figure 1. Several of these strategies require the adoption of local regulations (zoning, site plan, health ordinance, etc.) while others are entirely non-regulatory (such as education and land conservation).

All of these techniques are described in *The DES Guide to Groundwater Protection*, available from NH DES's Drinking Water Source Protection Program at (603) 271-7061. In deciding the best way to use these management/protection techniques, this section of the Plan includes a review of the Town's existing master plan, zoning and site plan regulations. This review will be helpful in identifying and assessing existing gaps in protection and include, as necessary, recommendations and specific ordinance revisions and language for improving the Town's regulations

Review of Master Plan and Water Resources Management Plan

Before adopting or amending regulations, a municipality should address the need for groundwater and aquifer protection in its master plan, typically within the natural resources section of the plan. Groundwater protection can also be addressed in a document (generally incorporated by reference in the master plan) referred to as the *Water Resources Management and Protection Plan*. This document typically provides an inventory of local water resources (i.e., wetlands, rivers, and aquifers) and addresses a wide range of water resources management issues.

Currently, the New Boston *Master Plan* provides an updated summary of the Town's ground water resources; this information is provided within Section 7.10. Within this section, the *Master Plan* acknowledges the importance of protecting groundwater as well as known and potential drinking water aquifers within the community. It also recognizes the importance of aquifer protection and the difficulties in protecting these resources; often due to the lack of public knowledge regarding existing threats to aquifers. Some of the threats to water supplies identified include:

- Underground petroleum tanks
- The Town transfer station

- Winter salting
- Agricultural activities

In 1989, the Town adopted a *Water Resource Management and Protection Plan*. This plan was used to “identify and evaluate the adequacy of existing and potential water resources to meet the current and future needs of the community”. The plan was also essential in developing New Boston’s existing Groundwater Resource Conservation District (GRCD) which is currently part of the Town’s zoning ordinance. In addition, the plan identified a number of effective recommendations and tactics to reduce the potential for drinking water pollution within the community. Some of these suggested approaches include:

1. Prohibit new, and remove existing, underground oil and gas tanks near aquifers
2. Monitor salt-leaching from the combined state and local highway shed, or remove the shed entirely
3. Extend the monitoring of leachate from the solid waste landfill closer to the aquifer
4. Calibrate salt spreaders more frequently on state and town snowplows
5. Minimize runoff from fertilizers, herbicides, and pesticides applied to home gardens and farm cropland
6. Update the *Water Resource Management Plan* every three years

Many of these recommendations are now being practiced in New Boston. This Plan works well in concert with both the Town’s *Master Plan* and *Water Resource Management Plan* because all three strive to protect drinking water sources, recognizing them as a vulnerable resource. As a result, it is important that this Plan, at a minimum be included and/or adopted by reference as part of the Town’s existing master plan.

Review of Groundwater Resource Conservation District

The Town of New Boston currently has a Groundwater Resource Conservation District (GRCD), which serves to protect and maintain existing, as well as potential, drinking water supplies and recharge areas within the community. The GRCD is an overlay district that is superimposed over the existing (underlying) zoning districts. The ordinance protects groundwater by regulating land use, prohibiting certain risky land uses from locating over aquifers, and allowing some land uses only by special exception through the Zoning Board of Adjustment (ZBA).

The jurisdiction of New Boston’s GRCD applies only to those aquifers that have a high or medium level of potential for yielding groundwater. This can be seen in better detail as shown on the New Boston Groundwater Resources Conservation District Map which is located at Town Hall. This map is based upon geologic

studies conducted by USGS in the 1970's and as such this map needs to be updated as stated in the *Master Plan*.

New Boston's GRCD, similar to the NH DES model groundwater protection ordinance, also prohibits certain land uses that have a high risk of polluting the ground water. Some of these prohibited uses include, but are not limited to: subsurface storage of petroleum, disposal of liquid or leachable waste, outdoor uncovered or unenclosed road salt, commercial animal feed lots, junk and salvage yards, and bulk storage of toxic materials. If a land use is permitted in the underlying district then it is permitted in the groundwater conservation district. However the following limitations exist:

1. No more than 30 percent of any lot shall be rendered impervious by building and pavement
2. Petroleum products, chemicals, road salt, and other materials which have the potential for contaminating groundwater shall be stored within a fully enclosed structure designed to contain any spill within the structure
3. Storm drainage facilities are designed so that normal infiltration to groundwater is retained.

Disturbance of the land and deep excavation is also not permitted unless in strict accordance with the New Boston Sand and Gravel Ordinance and RSA 155-E. Excavation and removal can not be carried out within four vertical feet of the seasonal high water table.

Certain types of land use fall under special exception and can be allowed in high and medium groundwater yield areas. These special exceptions are permitted if they meet the following standards stated in the Town's zoning ordinance:

1. The proposed use will not have detrimental effect on the quality of the groundwater contained in the aquifer by directly contributing to pollution or by increasing the long-term susceptibility of the aquifer to potential pollutants
2. The proposed use will not cause a significant reduction on the long-term volume of water contained in the aquifer, or in the storage capacity of the aquifer
3. The proposed use will discharge no wastewater on site other than that which is permitted under the provisions of the Article
4. The proposed use complies with all other applicable sections in the Article

While New Boston's GRCD regulates those land uses that could contribute pollutants to the Town's present and future public water system, the GRCD needs to be compared to the updated NH DES Model Groundwater Protection Ordinance in order to identify weaknesses and areas where the ordinance can be improved as well as identify other protection measures that could be implemented by the Town to ensure a high level of protection.

Recommendations:

1. The New Boston Groundwater Resource Conservation District map needs to be updated, as it is out dated from 1977. A copy of this map is only available through the Town offices. The Southern New Hampshire Planning Commission can readily provide the Town with a new GWCD map that is based upon the most recent USGS mapped aquifers for New Boston as provided through GRANIT.
2. New Boston's existing GRCD covers only those areas which have been designated as having high and medium potential to yield groundwater as shown on the map identified above. The application of the GRCD could apply to all aquifers as shown on the most recent USGS mapped aquifers for New Boston and should at a minimum include and specify that all Wellhead Protection Areas for public water system wells as defined in the ordinance be shown on the updated map to accompany the ordinance. This can be accomplished by referencing this Plan or referencing the latest WHPA delineations accepted or on record at NH DES for community water systems.
3. New Boston's GRCD requires that no more than 30 percent of any lot be rendered impervious by building and pavement. This requirement could be clarified such that it applies only to those lots or portions of lots located within the GRCD boundaries. In addition, this requirement could be amended as recommended by the NH DES Model Groundwater Protection Ordinance to require that a stormwater management plan be required for any use which renders impervious more than 15 percent or more than 10,000 square feet of any lot, whichever is greater. Currently, New Boston's GRCD does not require a stormwater management plan. This weakness needs to be addressed.
4. Under prohibited uses, New Boston's GRCD includes all the recommended uses prohibited under the NH DES model ordinance, except for the development and operation of a solid waste landfill which should be included in the Town's ordinance. Additionally, New Boston's GRCD should also prohibit all the same uses from locating within delineated wellhead protection areas.
5. To supplement allowing certain special exceptions under New Boston's GRCD, the New Boston Planning Board should also consider utilizing the conditional use permit process as recommended by the NH DES model ordinance. Under the NH DES model ordinance, the Planning Board may grant a Conditional Use Permit (CUP) for any use involved in either storing, handling and using regulated substances exceeding quantities of 100 gallons or more at any one time which is required to have an adequate *Spill Prevention, Control And Countermeasure (SPCC) Plan* approved by the Town Health Officer or for any use that would render

impervious more than 15 percent or 2,500 square feet of any lot, whichever is greater.

6. In addition to these suggestions, New Boston's GRCD should also include exemptions to the ordinance similar to those included in the NH DES model ordinance. For example, any private residence is exempt from all the performance standards as well as any business or facility where regulated substances are stored in containers with a capacity of 5 gallons or less. Also, storage of heating fuels for on-site use or fuels for emergency electric generation, etc. should be exempt from the ordinance.

Summary

New Boston's Groundwater Resource Conservation District (GRCD) ordinance contains much of the NH DES model ordinance provisions, particularly with respect to prohibited uses. However, a number of improvements can be made to the ordinance specifically related to the need for a new or updated aquifer map; the expansion of the Town's GRCD to include all mapped stratified-drift aquifers and delineated wellhead protection areas within the community; and the addition of performance requirements for stormwater management, impervious surface coverage, an Spill Prevention, Control And Countermeasure (SPCC) Plan, and the Conditional Use Permit process.

Review of Site Plan Regulations

The New Boston Planning Board has adopted non-residential site plan review regulations under the provisions of RSA 674:43 and 44. These regulations empower the Planning Board to review and approve or disapprove site plans for the development or change or expansion of use of tracts for non-residential uses, or multi-family dwelling units (defined as three units or more) whether or not such development includes the subdivision or resubdivision of the site.

In reviewing the Planning Board's site plan regulations, there are a number of improvements that could be made which would improve groundwater and aquifer protection within the community. The goal of these improvements should be to raise awareness about the need for resource protection amongst municipal officials, planning board members, property owners, developers and the public. There are simple but necessary steps and actions which can be taken to promote groundwater and drinking water protection within the community.

In justifying the need for amending the Planning Board's site plan regulations, it must be restated that New Boston relies entirely upon public or private wells for drinking water and thus the Town has a vested interest to protect contributing groundwater to these water resources for the greater good. In addition, it cannot be assumed that the Town's GRCD alone will protect the groundwater and local aquifers. Local officials often assume that an applicant and his/her engineer have carefully considered and evaluated all environmental concerns during the

zoning or site design process. However, this is not always the case and contamination is more common than most officials realize.

The first step the Planning Board should take during the site plan review process is to require the applicant or developer to provide information describing the environmental status of the site.¹² Have any releases occurred on the site? Is the site listed with NH DES or US EPA as a hazardous waste site? Have hazardous materials or storage tanks been maintained on the site? These basic questions should be asked and adopted as standard requirements for all site plan applications and they can be easily incorporated into either the site plan application or submittal requirements of any municipality.

Information about existing contamination is not difficult to obtain. Both NH DES and US EPA maintain lists of potential hazardous waste sites on their websites. It is not difficult for municipal officials or an applicant to review these records as part of the site plan review process to confirm that a site or an abutting parcel is not a listed hazardous waste site or generator of hazardous waste.

In addition, this Plan can be used to help identify both Known and Potential Contamination Sources as well as the location of active community water systems and designated Wellhead Protection Areas.

Recommendations

1. Add a submittal requirement under Section 2¹³ to have all site plans identify existing aquifers, designated Wellhead Protection Areas for public water systems, as well as Known and Potential Contamination Sources. Much of this information is available from this Plan as well as NH DES and US EPA websites.
2. Add a new Groundwater Protection section which would be applicable for all land uses requiring site plan approval which store or use regulated substances in containers with a capacity of 5 gallons or more within a delineated Wellhead Protection Area. This new section would require:
 - A map of natural resources on and near the site, including an assessment of groundwater vulnerability;
 - A listing of the types and quantities of regulated and hazardous substances and pollutants which may be used on the site;
 - A map and/or diagram of facilities on the site related to groundwater protection, including secondary containment structures, loading/unloading areas, drinking water wells, septic systems, underground storage tanks and storm drain inlets;

¹² Todd H. Dresser, "Using the Site Plan Review Process to Promote Aquifer Protection", Cuoco & Cormier Engineering Associates, Inc., Nashua, NH

¹³ Town of New Boston Site Plan Regulations

- A listing of all state and federal regulatory requirements for the proposed use and a requirement that all approved plans state specific rules related to groundwater protection on the plan if they apply to regulated substances (Env-Wq. 401), groundwater discharge (Env-Wq. 402), and stormwater management (Env-Wq. 1500, AOT);
 - Identification and provision for adequate security of all groundwater protection BMPs proposed for the use within designated Wellhead Protection Areas;
 - Restrictions against discharges to groundwater including direct and indirect discharges, without required state and federal permits and approvals;
 - Requirements that all general purpose floor drains be connected to an on-site holding tank; or a system authorized through a state subsurface disposal permit;
 - Requirement that the design of all stormwater management and drainage facilities shall not increase flooding or the potential for pollution of surface or groundwater, on-site and off-site; and
 - Requirement of an SPCC Plan to be submitted to the Fire Chief and Emergency Management Director addressing the following elements:
 - disclosure statements describing the types, quantities, and storage locations of all regulated substances that will be part of the proposed use or activity;
 - owner and spill response manager's contact information;
 - location of all surface waters and drainage patterns;
 - a narrative describing the spill prevention practices to be employed when normally using regulated substances;
 - containment controls, both structural and non-structural;
 - spill reporting procedures, including a list of municipal personnel or agencies that will be contacted to assist in containing the spill;
 - name of a commercial vendor who may be contacted by the municipality after a reported spill; and
 - list of clean up equipment with instructions available for use on-site and contact information for employees with adequate training to respond to a release and implement containment and clean up.
3. To further assist in protecting groundwater, the regulations should be updated so that they require developers to include low impact development practices and techniques within their proposed site plans. These low impact development practices aid in better stormwater management and treatment. Treatment helps remove pollutants from

stormwater before it recharges into the ground. Low impact development practices include vegetated retention ponds, swales, and low or no curbing to reduce the amount of run off traveling down paved surfaces.

4. Add the following requirements under Section 4:

Proposed Use: Any application for site plan review which involves the proposed receiving, handling, storing or processing of any regulated substance (as defined by RSA 339-A:2) shall disclose this information as part of the application submission. Copies of all appropriate state permits as required by the NH DES for the proposed use shall be submitted to the Town of New Boston Health Officer and New Boston Fire Department.

Prior/Existing Use: Site plan or subdivision applications which involve property contaminated by hazardous or toxic materials (as defined by RSA 339-A: 2) shall disclose such information as part of the application. If the Board finds that a potential health risk or an environmental threat exists from a previous or existing use of the site, then the Planning Board shall require that any environmental assessment that has been completed and submitted to NH DES shall be submitted to and reviewed by the Town Health Officer (or third party consultant of the Planning Board's choice) prior to any Planning Board action.

Review of Subdivision Regulations

The New Boston Planning Board has also adopted Subdivision Regulations under the provisions of RSA 674:35. These regulations enable the Planning Board to review and approve or disapprove plans for the subdivision or resubdivision of property.

In the review of the Planning Board's Subdivision Regulations, there are currently no specific provisions or requirements which provide for the protection of groundwater or local aquifers, except for the requirements for an Environmental Impact Analysis. However, these provisions currently do not address groundwater or aquifer protection. This could be accomplished by expanding the purpose statement of the subdivision regulations to focus on maintaining recharge on site as well as adding the words "groundwater" and "aquifers" under Subsection (A) of the Environmental Impact Analysis requirements.

Recommendations

1. It is recommended that the Planning Board update its stormwater management regulations. This could be addressed as part of the subdivision regulations or as a separate overall stormwater management ordinance which would apply to all land development, including both site plans and subdivisions within the Town.

2. Comprehensive stormwater management regulations should be developed to include groundwater protection improvements, including both treatment and source control BMPS for groundwater protection.
3. Low Impact Development techniques and practices should be included which encourage natural drainage solutions such as grass swales and retention ponds so that stormwater running off roads and parking lots can be naturally treated and cleaned before it soaks back into the ground.
4. Finally, maintaining existing natural vegetation should be required as a low impact development feature because it aids in cleaning stormwater run off. These primary steps will help to stop groundwater contamination before it starts.

Review of Excavation and Reclamation Regulations

The Town of New Boston has also adopted excavation and reclamation regulations under Chapter 155-E to safeguard the public health and welfare, preserve natural assets of soil, water, forests and wildlife; to maintain aesthetic features of the environment; to prevent land and water pollution; to protect groundwater resources; and to promote soil stabilization and to return the disturbed area to a suitable use after reclamation. The Ordinance to Regulate Removal of Earth Products is administered by the Board of Selectmen according to the Town's Zoning Ordinance.

This ordinance provides for groundwater protection by requiring that aquifer locations and limits be identified by the U.S. Geologic Survey and other acceptable sources as part of the application for a permit. The regulations also aim to prevent excavation projects from damaging a known aquifer, mapped by the U.S.G.S. by prohibiting excavation to take place within four feet of any known high water table. However, an exception to this standard can be granted by the Board of Selectmen provided the applicant can demonstrate that the excavation will not adversely affect water quality.

Recommended Actions

Having a strong groundwater protection ordinance, site plan and subdivision regulations, and earth excavation ordinance is necessary to ensure groundwater and local aquifer protection in New Boston. Considering that there are a number of identified wellhead protection areas (see maps in the Appendix of this Plan) concentrated in various locations throughout the community, including the Village Center, the threats and risks associated with the Known and Potential Contamination Sources existing within these areas, the extent of the Town's aquifers, and the Town's existing regulations, it is recommended that the Planning Board consider the following steps in providing a higher level of groundwater and aquifer protection within the community.

- Step One: Adopt this Source Water Protection Plan as part of the Town's Master Plan and amend the Plan on a regular basis.
- Step Two: Amend the Town's existing Groundwater Resource Conservation District to address the weaknesses identified in this Plan.
- Step Three: Amend the Planning Board's Site Plan and Subdivision Regulations to include the improvements and recommendations identified in this Plan.
- Step Four: Adopt a municipal BMP Survey Program.

Because the Town of New Boston is currently responsible for BMP inspections under the Town's existing subdivision (stormwater management) regulations, all that would be needed in order to expand this responsibility for BMP inspections under Env.-Wq. 401 is support from the Board of Selectmen to allow the Town's Health Officer and Code Enforcement Officer to participate in ongoing training opportunities provided through NH DES. BMPs under Env.-Wq. 401 are not enforceable by local health and code enforcement officers unless specifically adopted through a local ordinance or regulation.

A number of BMP Surveys were conducted in New Boston as part of the development of this Plan. Surveys were completed for the New Boston Town Garage, New Boston Transfer Station, and the New Boston Air Force Station. While some BMP issues were identified, no violations were discovered. The Town of New Boston should conduct BMP surveys of town-owned facilities in the future to ensure compliance with state rules, specifically Env.-Wq. 401. In addition, the Town should consider conducting BMP surveys in wellhead protection areas located within the Village Center for all active community water systems owners to ensure that BMPs are being followed.

The Planning Board can during the review of development projects – both site plan and subdivision impose – fees to cover the costs of BMP inspections as well as require adequate performance surety for the installation, operation and maintenance of necessary BMPs which will ensure adequate groundwater and aquifer protection within the community.

- Step Five: Private Well Testing

The Town of New Boston should continue to discuss and address the issue of private well testing. While the State of New Hampshire currently has no mandatory well testing requirements, some municipalities such as New Boston require basic potable water testing to be performed and results submitted to the Town Health Officer prior to the issuance of a Certificate of Occupancy.

This or similar requirements should continue to be maintained and enforced by the Town. While this requirement primarily addresses new development, some

form of private well testing will be needed in the future to address well water quality as a result of real estate transfers. More information on private well testing can be found on NH DES's website¹⁴. This issue remains yet to be resolved by the state for local government.

Step Six: Education and Guidance

In the future the Town of New Boston should strive to include guidance and further education to town officials and community leaders. Education should include topics that are directly related to protecting groundwater, i.e. land conservation and land use management, Best Management Practices.

¹⁴ NH DES Private Well Testing Program;
http://des.nh.gov/organization/divisions/water/dwgb/well_testing/index.htm