



Massachusetts Department of Environmental Protection  
Source Water Assessment and Protection (SWAP) Report  
for  
**Hinsdale Water Department**

### What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- inventory land uses within the recharge areas of all public water supply sources;
- assess the susceptibility of drinking water sources to contamination from these land uses; and
- publicize the results to provide support for improved protection.

### Susceptibility and Water Quality

Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area.

A source's susceptibility to contamination does *not* imply poor water quality.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, disinfecting, filtering, or treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Actual water quality is best reflected by the results of regular water tests. To learn more about your water quality, refer to your water supplier's annual Consumer Confidence Reports.

**Table 1: Public Water System Information**

<i>PWS Name</i>	Hinsdale Water Department
<i>PWS Address</i>	P.O. Box 65
<i>City/Town</i>	Hinsdale
<i>PWS ID Number</i>	1132000
<i>Local Contact</i>	Mr. Francis Flanagan
<i>Phone Number</i>	413-655-2307

### Introduction

We are all concerned about the quality of the water we drink. Drinking water wells and reservoirs may be threatened by many potential contaminant sources, including stormwater runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

#### **Purpose of this report:**

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures.

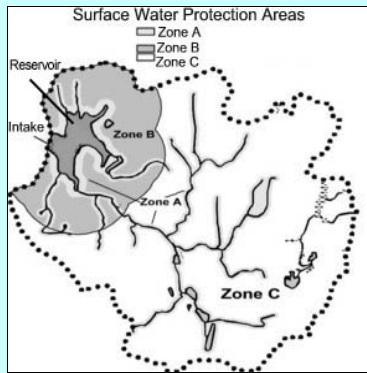
Refer to Table 3 for Recommendations to address potential sources of contamination. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

#### **This report includes the following sections:**

1. Description of the Water System
2. Land Uses within Protection Areas
3. Source Water Protection
4. Appendices

## What is a Watershed?

A watershed is the land area that catches and drains rainwater down-slope into a river, lake or reservoir. As water travels down from the watershed area it may carry contaminants from the watershed to the drinking water supply source. For protection purposes, watersheds are divided into protection Zones A, B and C.



## Section 1: Description of the Water System

*System Susceptibility*

*High*

*Source Name*

*Source ID*

*Susceptibility*

Belmont Reservoir

1132000-01S

Moderate

Hinsdale is a small rural, community in western Massachusetts in the Berkshire hills. The Town was originally settled with farming and lumber/sawmills as the primary industry. The textile industry developed during the late 1800's. Hinsdale is currently, a residential, recreational and bedroom community with few commercial and industrial businesses. The Hinsdale Water Department utilizes one reservoir, Belmont Reservoir, for their drinking water source. Belmont Reservoir has two feeder brooks but appears to be primarily spring fed. Most of the watershed is within the Hinsdale Flats Watershed Resource Area, designated as an Area of Critical Environmental Concern. The Appalachian Trail transects the headwaters of the watershed. The Hinsdale Water Department owns approximately 22 acres of land (8%) of the watershed. The Water Department's land borders the reservoir, although it does not include the entire Zone A of the reservoir or the feeder brooks. The U.S. National Park Service owns approximately 50% of the watershed with the remaining land in the watershed privately held, but taxed under Chapter 61. There is also a telephone utility right-of-way through the southern side of the watershed.

The entire watershed is either forest or water, with the exception of a small area used for the water treatment plant. The regional geology of the reservoir watershed is mapped as part of the Berkshire Massif (primarily gneiss) and the metasedimentary cover rocks (quartzite and metaquartzite). The overburden is comprised of a relatively thin layer of

glacial till. Please refer to the attached map to view the boundaries of the protective zones and refer to the Source Water Protection Plan for other references to deeds.

Water from the reservoir flows to a slow sand filter bed treatment plant. At the treatment plant, the water is filtered, the pH is adjusted and stabilized for corrosion control then disinfected prior to distribution. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report.

## Section 2: Land Uses in the Protection Areas

There are few activities that pose significant anthropogenic threats to the reservoir. However, due to the relatively small size of the reservoir and the nature of surface water supplies, this source is considered highly vulnerable to potential contamination. Land uses and activities that are considered potential sources of contamination are listed in Table 2.

### Key Land Uses and Protection Issues include:

1. Zone A activities
2. Forest/Watershed management
3. Protection Planning

## Glossary Protection Zones

**Zone A:** is the most critical for protection efforts. It is the area 400 feet from the edge of the reservoir and 200 feet from the edge of the tributaries (rivers and/or streams) draining into it.

**Zone B:** is the area one-half mile from the edge of the reservoir but does not go beyond the outer edge of the watershed.

**Zone C:** is the remaining area in the watershed not designated as Zones A or B.

The attached map shows Zone A and your watershed boundary.

The overall ranking of susceptibility to contamination for the system is moderate based on the presence of at least one moderate threat land use or activity within the water supply protection areas, as seen in Table 2.

**1. Zone A Activities** - The Zone A for surface water supplies includes all land within 400 feet from the high water line around each reservoir and within 200 feet from either side of all streams that flow into the reservoir. Massachusetts General Laws and regulations control some of the activities that may occur within the Zone A because land use activities within a Zone A may have an impact on surface water quality.

The Hinsdale water treatment plant is immediately adjacent to the Belmont Reservoir. An earthen berm was constructed between the plant and the reservoir and the access road to the facility. Stormwater from the facility has been designed to drain away from the reservoir. The access road and parking areas are not paved. The Water Department must carefully maintain the access road and the drainage around the treatment plant to ensure that erosion and activities conducted at the plant do not impact the reservoir water quality.

Evidence of access to the dam and reservoir has been noted in the past and the Appalachian Trail crosses through the watershed in the headwaters of the reservoir feeder brooks. The Water Department has a gated access road and signs prohibiting access to the reservoir. There is only pass through foot traffic along the AT as there are no shelters along the AT in the watershed.

Wild animals, farm/recreational animals and domestic pets can be carriers of waterborne diseases such as Giardia, Cryptosporidium, Salmonella, etc., while stormwater runoff from roadways can carry other contaminants. There are few incidents of beaver activity in the reservoir.

**Zone A Recommendations:**

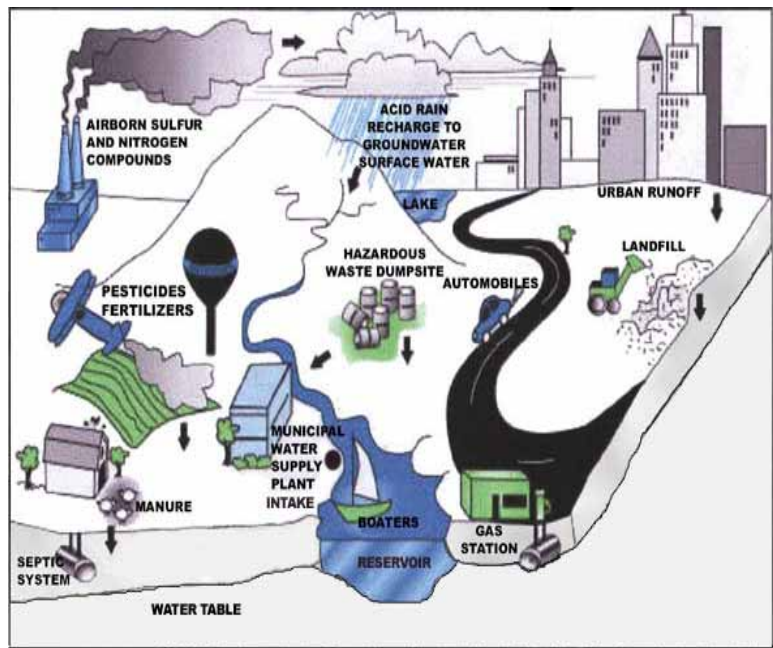
- ✓ Acquire ownership or control of additional land within the Zone A. Land acquisition or placing Conservation Restrictions on watershed land should be part of the long term planning goals for the Department.
- ✓ Conduct inspections of Belmont Reservoir and continue to monitor activities in the Zone A; prohibit new activities in the Zone A.
- ✓ Continue current efforts to inform and educate residents near the reservoir that access to the reservoir is prohibited. Continue use of local police and implement a ticketing/fine procedure if current efforts are not successful in the future.
- ✓ Periodically monitor stormwater flow at the water treatment plant and monitor activities to protect the water supply. Closely monitor activities associated with chemical delivery, wastewater management and heavy equipment used in and around the facility.

### Benefits of Source Protection

Source Protection helps protect public health and is also good for fiscal fitness:

- Protects drinking water quality at the source
- Reduces monitoring costs through the DEP Waiver Program
- Treatment can be reduced or avoided entirely, saving treatment costs
- Prevents costly contamination clean-up
- Preventing contamination saves costs on water purchases, and expensive new source development

Contact your regional DEP office for more information on Source Protection and the Waiver Program.



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Figure 1: Sample watershed with examples of potential sources of contamination

- ✓ Conduct wildlife management in the reservoir as necessary to protect public health and safety, and the infrastructure of the water supply.
- ✓ Agreement options until land is available for outright purchase or through a land taking include obtaining a Memorandum of Understanding or a Right of First Refusal.

A Memorandum of Understanding (MOU) is an agreement between the landowner and public water supplier in which the landowner agrees not to engage in specific threatening activities. The MOU should be specific to the land use or activity. For instance, if the land is residential with a septic system the owner could agree not to place chemicals, petroleum products, or other hazardous or toxic substances, including septic system cleaners, into the septic system, and agree that the system will be pumped at a specific frequency. Understanding how an activity threatens drinking water quality is an important component of developing an effective MOU. An MOU should be recorded on the property deed.

A Right of First Refusal is a legal document that gives the water supplier the first chance to purchase land when it becomes available. See Right of First Refusal in the Appendices.

- ✓ Work with local emergency response teams to ensure effective management of potential spills.
- ✓ Post signs and enforce no trespassing policy.

**3. Forestry/Watershed management** – The Hinsdale Water Department watershed protection plan does not include a discussion of forest management. Logging in a watershed forest without a well-designed plan may result in poor water quality and an unhealthy forest. However, with the use of a properly designed watershed forest management plan and the enforced use of BMPs, forest management may enhance the water production and quality of the raw water. Higher quality raw water can result in reduced treatment cost. Unmanaged forests may result in an even-aged forest that is susceptible to fires and disease. Good forest management throughout the watershed, including private lands, can beneficially impact water quality and the health of the watershed forests. Although Hinsdale does not have significant land holdings in

the watershed, the Water Department should maintain good communication with land owners and discuss any plans for forestry management.

**Forestry/Watershed Management Recommendations:**

- ✓ Encourage and support active forest management for water supply protection by private land owners.

**3. Protection Planning** – The Hinsdale Water Department’s reservoir watershed does not have a Source Water Protection Plan. These types of protection plans coordinate community efforts, identify protection strategies, establish a timeframe for implementation, and provide a forum for public education and outreach. Hinsdale does not have a Watershed Protection District or protective bylaws.

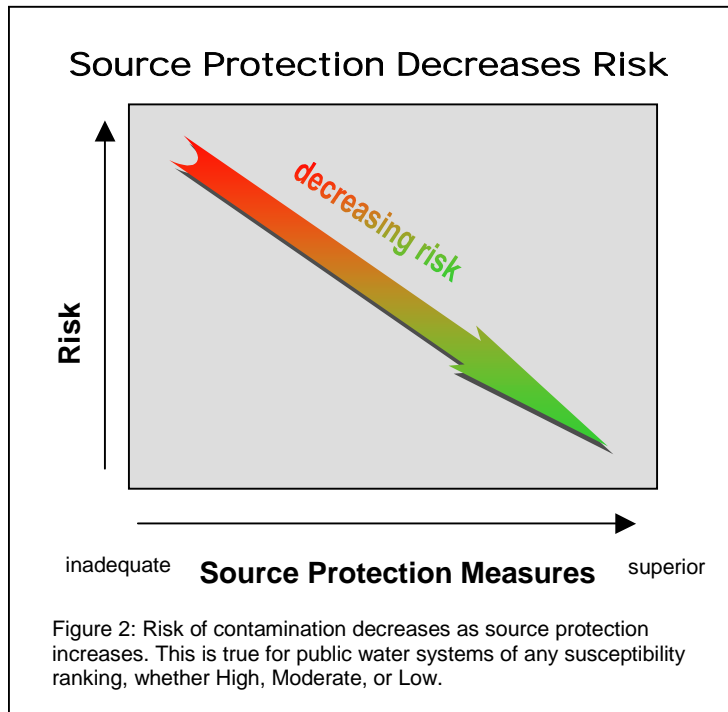
**Protection Planning Recommendations:**

- ✓ When funding becomes available consider developing a plan. Until a full plan can be prepared, address components of a plan. Prioritize issues related to source protection.



**What are "BMPs?"**

Best Management Practices (BMPs) are measures that are used to protect and improve surface water and groundwater quality. BMPs can be structural, such as oil & grease trap catch basins, nonstructural, such as hazardous waste collection days or managerial, such as employee training on proper disposal procedures.



## Potential Source of Contamination vs. Actual Contamination

The activities listed in Table 2 are those that typically use, produce, or store contaminants of concern, which, if managed improperly, are potential sources of contamination (PSC).

It is important to understand that a release may never occur from the potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking identified in Table 2. Many potential sources of contamination are regulated at the federal, state and/or local levels, to further reduce the risk.

**Table 2: Land Use in the Watershed**

For more information, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area

Land Uses	Quantity	Threat	Potential Sources of Contamination*
<b>Miscellaneous</b>			
Water Treatment Plant	1	M	Management of treatment chemicals, heavy equipment used at the facility. Vehicles used for delivery and access.
Forestry	Little	L/M	Runoff; mismanaged petroleum products; accidental spills, leaks.
Aquatic Wildlife	Periodic	M/H	Microbial contaminants
Transmission Line Rights-of-Way -Type: telephone	1	M/H	Request that any maintenance done on the ROW be conducted by mechanical means.

**Notes:**

1. When specific potential contaminants are not known, typical potential contaminants or activities for that type of land use are listed. Facilities within the watershed may not contain all of these potential contaminant sources, may contain other potential contaminant sources, or may use Best Management Practices to prevent contaminants from reaching drinking water supplies.
2. For more information on regulated facilities, refer to Appendix B: Regulated Facilities within the Water Supply Protection Area information about these potential sources of contamination.
3. For information about Oil or Hazardous Materials Sites in your protection areas, refer to Appendix C: Tier Classified Oil and/or Hazardous Material Sites.

\* **THREAT RANKING** - The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

- ✓ A priority for the Water Department should be additional land acquisition or control of additional land within the watershed. Refer to the Agreement options listed under item 1 of this section that details a Right of First refusal and an MOU.
- ✓ Coordinate efforts with Hinsdale officials to adopt watershed protection controls in compliance with current MA Watershed Protection Regulations 310 CMR 22.21(2). For more information on DEP land use controls, see <http://mass.gov/dep/brp/dws/protect.htm>.
- ✓ Purchase the Zone A or acquire control of the Zone A.

Land uses and activities within the watershed that are potential sources of contamination are included in Table 2. Identifying potential sources of contamination is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination. Once potential sources of contamination are identified, specific

recommendations like those below should be used to better protect your water supply.

### Section 3: Source Water Protection Conclusions and Recommendations

#### Current Land Uses and Source Protection:

Hinsdale's Belmont Reservoir water supply is naturally fairly well protected by the remoteness of the source and the percentage of the watershed land owned by the Town and National Parks Service. Almost the entire watershed is protected at this time from development. However, much of the land within the Zone B of the reservoir is protected only through Chapter 61 tax status. Over time, the owner may change the status or sell the land, thereby increasing the potential for development within the watershed. The Water Department should consider long term planning to acquire the land through ownership, Conservation Restrictions or an MOU. Implementing source protection measures reduces the risk of actual contamination. The water supplier is commended for taking an active role in promoting source protection measures in the Water Supply Protection Area through:

- Ownership of most of the Zone A bordering the reservoir,
- Actively communicating with residents to control unauthorized access to the watershed.

#### Conclusions:

These recommendations are only part of your ongoing local drinking water source protection efforts. Additional source protection recommendations are listed in Table 3, the Key Issues, above and in Appendix A.

#### Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Acquire ownership or control of additional Zone A land.
- ✓ Work with private land owners for long term protection of the watershed.
- ✓ Inspect the Zone A protection areas regularly.

#### Additional Information

To help with source protection efforts, more information is available by request or online at [www.state.ma.us/dep/brp/dws](http://www.state.ma.us/dep/brp/dws) including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Contact Catherine V. Skiba in DEP's Springfield Office at (413) 755-2119 for more information and assistance on improving current protection measures.

Copies of this report have been provided to the public water supplier, board of health, and the town.

#### Top 5 Reasons to Develop a Local Surface Water Protection Plan

- ➊ Reduces Risk to Human Health
- ➋ Cost Effective! Reduces or Eliminates Costs Associated With:
  - ♦ Increased monitoring and treatment
  - ♦ Water supply clean up and remediation
  - ♦ Replacing a water supply
  - ♦ Purchasing water
- ➌ Supports municipal bylaws, making them less likely to be challenged
- ➍ Ensures clean drinking water supplies for future generations
- ➎ Enhances real estate values - clean drinking water is a local amenity. A community known for its great drinking water is a place people want to live and businesses want to locate.

- ✓ Educate residents on ways they can help you to protect drinking water sources.
- ✓ Continue cooperation and communication with emergency response teams to ensure that they are aware of the boundaries of the watershed for notification of spills or accidents.
- ✓ Evaluate stormwater drainage along the access roadway and at the treatment facility.
- ✓ Develop a plan to control unauthorized access to the watershed.
- ✓ Work with landowners in your protection areas to make them aware of your water supply and to encourage the use of best management practices for recreation and forest management and any potential future residential development.
- ✓ Develop and implement a Forest Management Plan for water supply protection.
- ✓ Work with emergency response teams to ensure that they are aware of the boundaries of your watershed and to cooperate on responding to spills or accidents.

#### ➤ Provide Outreach to the Community:

Public education and community outreach can help to ensure the long-term protection of drinking water supplies. Awareness often generates community cooperation and support. Residents

are more likely to change their behavior if they know where the source protection areas are located, what types of land uses and activities pose threats, and how their efforts can enhance protection.

➤ **Plan for the Future:**

One of the most effective means of protecting water supplies is local planning, including adoption of local controls to protect land use and regulations related to watershed protection. These controls may include health regulations, discharge prohibitions, general ordinances, and zoning bylaws/ordinances that prohibit or control potential sources of contamination within the protection areas. The most effective means of protection is through ownership of the land or the development rights.

➤ **Other Funding Sources:**

Grants and loans are available through the Drinking Water State Revolving Loan Fund, the Clean Water State Revolving Fund, and other sources. For more information on grants and loans, visit the Bureau of Resource Protection's Municipal Services web site at: <http://mass.gov/dep/brp/mf/mfpubs.htm>. The USDA also has various funding sources for government agencies, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site <http://search.sc.egov.usda.gov/nrcs.asp?qu=eqip&ct=NRCS>. One program in particular, the Environmental Quality Incentives Program (EQIP), may be utilized to fund a variety of projects such as DPW stormwater management and farm nutrient management designed to protect surface and groundwater. Review the fact sheet available online and call the local office (Amherst 413-253-4350) of the NRCS for assistance <http://www.nrcs.usda.gov/programs/farbill/2002/pdf/EQIPFct.pdf>. The Department's Source Protection Grant Program provides funds to assist public water suppliers and their partners to address water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under this grant program. If funds are available, DEP posts a new Request for Response for the grant program (RFR) in the spring. Visit the DEP <http://www.state.ma.us/dep/brp/mf/othergrt.htm> and <http://www.state.ma.us/dep/brp/dws/grants.htm> for information about available funds.

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection.

The assessment and protection recommendations in this SWAP report are provided as tools to encourage community discussion, support ongoing source protection efforts, and help establish local drinking water protection priorities. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures. The water supplier should supplement this SWAP report with local information on potential sources of contamination and land uses. Local information should be maintained and updated periodically to reflect land use changes in the Zone II. Use this information to establish priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

## **Section 4: Appendices**

### **A. Protection Recommendations**

**Table 3: Current Protection and Recommendations**

<b>Protection Measures</b>	<b>Status</b>	<b>Recommendations</b>
<b>Zone A</b>		
Does the Public Water Supplier (PWS) own or control the Zone As?	<b>NO</b>	The Department recommends acquisition of ownership or development rights for the Zone A. Exercise the Town’s Right of First Refusal if the tax status changes in the future.
Is the Zone A posted with “Public Drinking Water Supply” Signs?	<b>YES</b>	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is the Zone A regularly inspected?	<b>NO</b>	Establish an inspection program of drinking water protection areas. Develop an access management strategy.
Are water supply-related activities the only activities within the Zone A?	<b>Partially</b>	Recreational access to the Zone A in the headwaters of the watershed pose minimal threat as currently conducted. Access to the reservoir and dam must be control. Continue current efforts and consider enforcement if necessary. Continue monitoring non-water supply activities in Zone As.
<b>Municipal Controls</b> (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Surface Water Protection Controls that meet 310 CMR 22.20C?	<b>NO</b>	Presently over 90% of the watershed is protected through ownership or tax status. Refer to <a href="http://www.state.ma.us/dep/brp/dws/">www.state.ma.us/dep/brp/dws/</a> for model bylaws, health regulations, and current regulations adopt protection for all in town water supplies.
Do neighboring communities protect the water supply protection areas extending into their communities?	<b>N/A</b>	
<b>Planning</b>		
Does the PWS have a local surface water supply protection plan?	<b>NO</b>	Prepare a Source Water Protection Plan.
Does the PWS have a formal “Emergency Response Plan” to deal with spills or other emergencies?	<b>Partial</b>	Augment plan by developing a joint emergency response plan with Fire Department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a watershed protection committee?	<b>YES</b>	Continue the committee to provide protection for watershed areas.
Does the Board of Health conduct inspections of commercial and industrial activities?	<b>N/A</b>	Hinsdale Water Department should continue careful management of activities at the treatment plant.
Does the PWS provide watershed protection education?	<b>NO</b>	Aim additional efforts at residents within the watershed.