

A handwritten signature in black ink, appearing to be 'Bl' with a flourish, and the date '07' written below it.

Notice of Public Meeting

Tuesday, August 21, 2007

6:00 p.m., Hinsdale Town Hall.

The Committee working on a Source Water Protection Plan will meet with Rebekah McDermott from the Rural Water Association to continue the planning process.

7/31/07

Review Annually and Update Every 3 Years

Date Reviewed	Reviewer	Changes or Comments

ACKNOWLEDGEMENTS	4
SOURCE WATER PROTECTION PLAN STEERING COMMITTEE.....	4
PRIMARY CONTACTS	5
INTRODUCTION	6
Source Water Protection Plan.....	6
Source Water Assessment and Protection Reports	7
Goals and Objectives of the Hinsdale SWPP Steering Committee	7
ACTION PLAN	8
Municipal Land Use Improvements.....	8
DESCRIPTION OF WATER SUPPLY	9
Watershed Characteristics.....	9
INVENTORY OF POTENTIAL SOURCES OF CONTAMINATION.....	11
INVENTORY OF POTENTIAL SOURCES OF CONTAMINATION.....	12
Land Uses and Impacts to the Protection Areas.....	12
Zone A Activities	15
Water Treatment Facility.....	15
Forestry/Watershed Management	16
Transmission Lines.....	19
WILDLIFE IMPACTS AND MANAGEMENT	19
Beaver.....	19
PUBLIC ACCESS/RECREATION IMPACTS AND CONTROL	20
IN-LAKE PROBLEMS AND MANAGEMENT	20
WATERSHED SAMPLING PLAN AND CONTROL.....	21

PROTECTED OPEN SPACE	23
ZONING.....	26
REGULATORY /NON-REGULATORY PROTECTION STRATEGIES	27
Water Supply Protection District.....	27
Land Protection Strategies	27
EMERGENCY RESPONSE/ CONTINGENCY PLANNING.....	32
Current Plans.....	32
Plunkett Lake/ Emergency Source.....	33
STAFFING	34
PUBLIC EDUCATION AND OUTREACH	34
REFERENCES	35
APPENDICES.....	36
Appendix A: Proposed and Existing Bylaws.....	36
APPENDIX B: EMERGENCY RESPONSE PLAN	48
RESOURCES	49

Acknowledgements

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MassRWA wishes to thank all the individuals and organizations that contributed to this effort. Local officials and concerned citizens cheerfully attended monthly meetings to help formulate this plan and expertly presented their water protection goals and methods at the Source Water Protection Workshop in February 2008.

The Source Water Assessment and Protection Report (SWAP) prepared by the Massachusetts Department of Environmental Protection (western division) provided an excellent resource for beginning this planning process.

Source Water Protection Plan Steering Committee

The Source Water Protection Plan Steering Committee provided background information about Hinsdale's water supply and its watershed, and assisted in the development of protection strategies. Members of the Advisory Committee include:

Raymond Bolduc – Back-up Water Operator/ Emergency Management Director
Mike Frederick – Chair, Conservation Commission
Edward Goddard – Board of Health
Casey Stengal – Planning Board
Fran Flanagan – Sewer and Water Administrator

Research and Writing:

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Belmont Reservoir, Hinsdale, MA.

Introduction

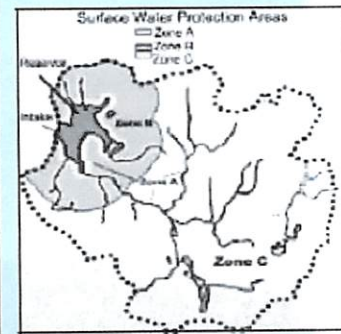
Source Water Protection Plan

A Source Water Protection Plan (SWPP) identifies water system vulnerabilities to contamination and describes techniques to manage potentially contaminating land uses. The Hinsdale Source Water Protection Plan has been developed by the Hinsdale Source Water Protection Steering Committee and MassRWA to aid in the protection of the public water system (PWS) for Belmont Reservoir Watershed.

Public water suppliers around the state of Massachusetts and across the nation are increasingly finding that proactive planning and prevention are essential to both the long-term integrity of their water systems and limitation of their costs and liabilities. Despite our best efforts, accidental spills of hazardous chemicals are all too common and bacterial outbreaks still occur unexpectedly, sometimes with dangerous consequences. These types of events may result in costly treatment, remediation and/or litigation, and in worst-case scenario could permanently destroy a water source or injure/kill a water customer.

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.



According to the National Center for Small Communities (2000), successful planning and prevention requires six basic steps:

1. Source protection area (SPA) delineation;
2. Identification of sources of contamination within Source Protection Area's;
3. Assessment of the risks to drinking water posed by contaminant sources;
4. Publication of the risk assessment results;
5. Implementation of measures to manage contaminant sources; and
6. Contingency planning for response to contamination incidents.

Source protection planning has numerous benefits including:

- Increasing consumer confidence that their drinking water source will continue to be protected and reliable;
- Reducing the likelihood that contamination incidents will occur with costly and/or potentially harmful results;
- Relationships with regulatory agencies, employees and the public are often enhanced through source protection
- Source Protection Plan's provide strong support to requests for financial assistance.

Source Water Assessment and Protection Reports

As a first step toward drinking water protection planning on a statewide basis, the Massachusetts Department of Environmental Protection (MA DEP) completed Source Water Assessment Program (SWAP) reports for most of Massachusetts Public Water Systems (PWSs).



Belmont Reservoir Pump House, Hinsdale, MA.

The SWAP reports include descriptions of SPA delineation and land uses which may potentially contaminate water sources, as well as recommendations for managing those land uses. Consequently, the reports provide water supplier with an important tool for initiating or improving source water protection in their area. (Please see the **Resources** section for a copy of the Hinsdale Water Department SWAP report.)

Hinsdale Water Department SWAP Report

The SWAP report for the Hinsdale Water Department determined that the overall ranking of source susceptibility for the Hinsdale Reservoir System is “**High**” based land uses in the associated Source Protection Area (SPA). The Key issues identified by the SWAP report include:

1. **Zone A Activities**
2. **Forest/ Watershed Management**
3. **Protection Planning**

Goals and Objectives of the Hinsdale SWPP Steering Committee

The Hinsdale SWPP Committee determined that the following goals and objectives were important to the success of the Hinsdale Source Water Protection Plan:

1. A plan for the implementation of a **Water Supply Protection District (WSPD) Bylaw** for Hinsdale’s watershed and reservoirs.
2. To encourage the practice sound forest management in the watersheds of the reservoirs both with the state and private land owners.
3. To ensure that future development in the Town of Hinsdale is contingent on the ability to provide adequate water supplies.
4. A letter to the Town of Pittsfield inviting them to the public Source Water Protection Workshop and to participate in securing WSPD zoning overlay to help protect their reservoirs located in the Town on Hinsdale.
5. Update and implement a new Emergency Response Plan.
6. Pursue monetary funding to update and replace aging infrastructure and technology at the water treatment plant.

Action Plan

ACTION	WHO	WHEN
Implement a Water Supply Protection (overlay) District (WSPD) to protect the Hinsdale Reservoirs and their watersheds from future contamination events.	Hinsdale Source Water Protection Committee (HSWPC), Planning Board (PB), Board of Health (BOH), Conservation Commission (CC), Select Board (SB)	2008
Adopt "Right of first refusal" bylaws in order to purchase Zone A lands. Encourage Conservation Restrictions if this is not feasible.	HSWPC, PB, Conservation Commission (CC)	2008
Acquire available funds for land purchase and all other implementation strategies using the Hinsdale Source Water Protection Plan as water resource management tool required by the Commonwealth Capital funding process.	HSWPC, PB, SB	When available.
Work with the City of Pittsfield to protect regional water supplies.	HSWPC	2008
Update and implement a new Emergency Response Plan.	Emergency Management Agency, HSWPC	2008
Seek USDA or other funding for infrastructure improvements.	HSWPC, SB	2008

Municipal Land Use Improvements

The Hinsdale Water Department is planning the following infrastructure and municipal land use improvements:

1. **A priority is to secure assistance funding to replace outdated valves at the treatment plant and upgrade the Turbidity Detection System.**
2. **New meters are another assistance funding priority.**
3. **The Water Department is planning to clean their 500,000 gallon water storage tank in 2008.**
4. **Conduct annual leak detection and hydrant flushing.**

Description of Water Supply

Watershed Characteristics

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. 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.

There is 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.

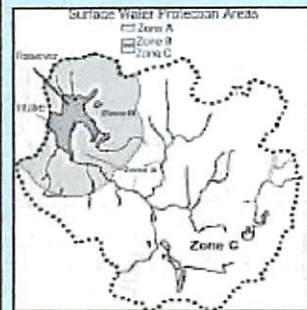
Table 1: Hinsdale Water Department Water Sources

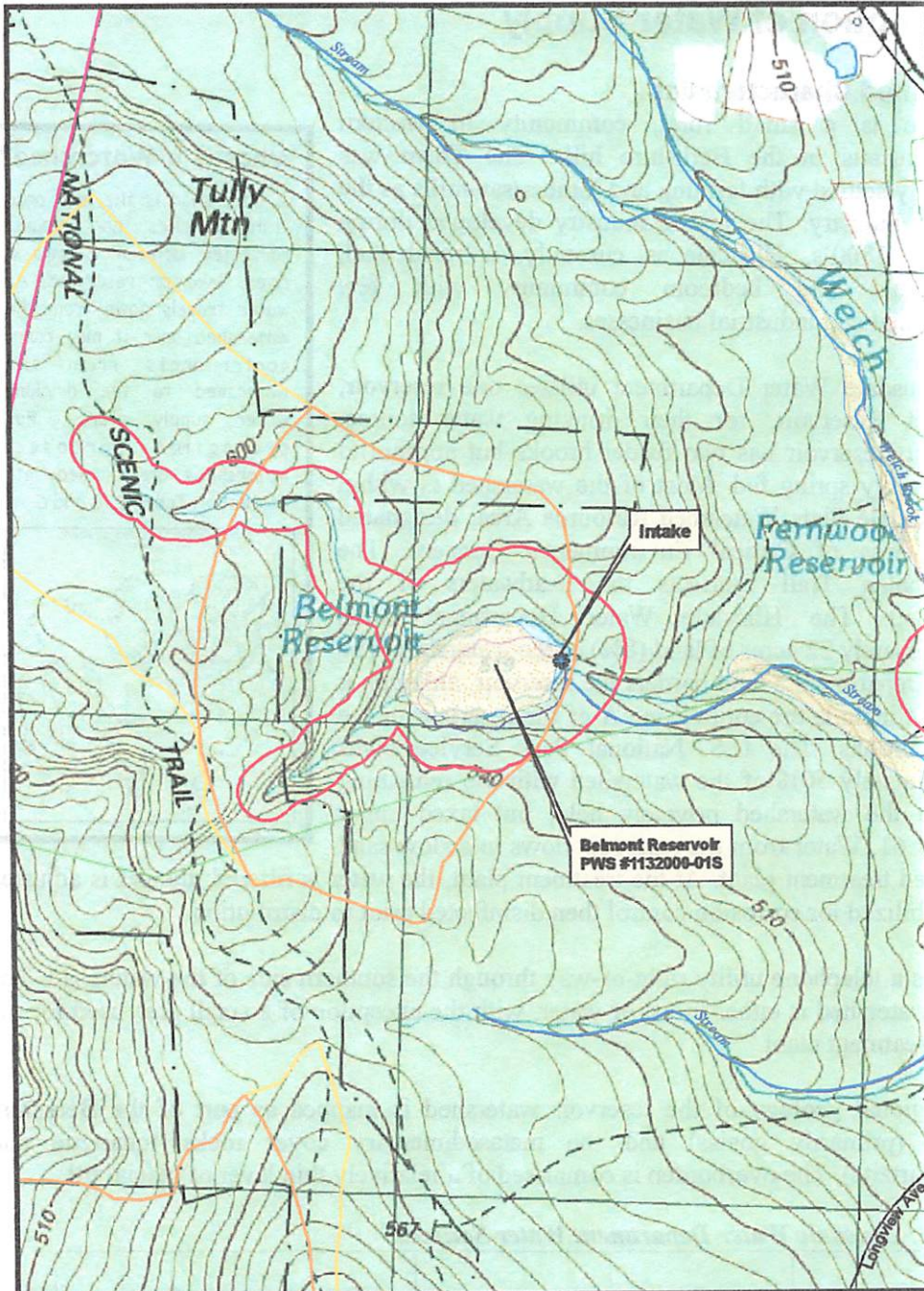
<i>Source Name</i>	<i>DEP Source ID#</i>	<i>Source Type</i>	<i>System Susceptibility</i>	<i>Source Location</i>
Belmont Reservoir	1132000-01S	Surface water	High	Hinsdale, MA

Source: Massachusetts DEP SWAP Report, June 16, 2003

What is a Watershed?

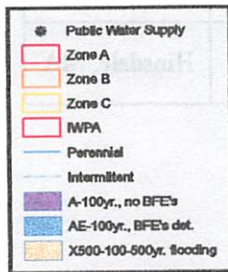
A watershed is the land area that catches and drains rainwater down-slope into a river, lake or reservoir. As water travels down from the watershed area it may carry contaminants from the watershed to the drinking water supply source. For protection purposes, watersheds are divided into protection Zones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



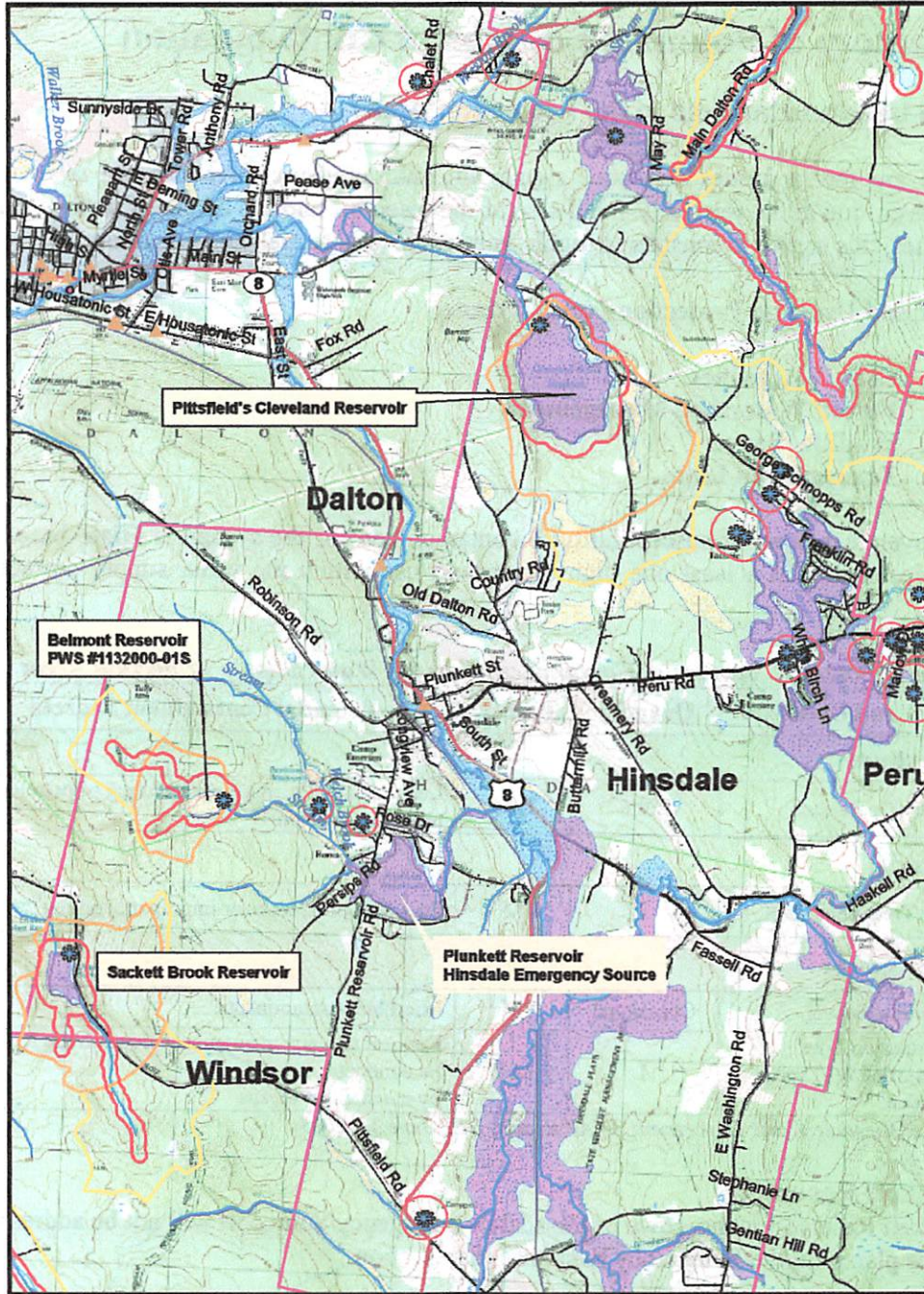


Scale - 1:12,000

Map 1: Belmont Reservoir and Watershed

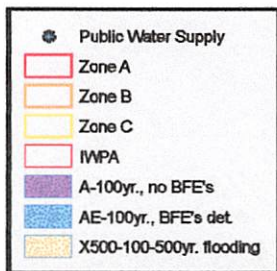


Source(s): MASSGIS Datalayers - Author: RJM Date: 10/07



Scale - 1:50,000

Map 1: Topographical Map of Regional Water Supplies



Source(s): MASSGIS Datalayers -
 Author: RJM Date: 10/07



Inventory of Potential Sources of Contamination

Land Uses and Impacts to the Protection Areas

There are few activities that pose significant anthropogenic threats to the reservoirs. 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.

Key Land Uses and Protection Issues include:

1. Zone A Activities
2. Forest/ Watershed Management
3. Wildlife/ Beaver
4. Transmission Lines

The overall ranking of susceptibility to contamination for the system is **High**, based on the presence of at a least one high threat land use within the water supply protection areas.

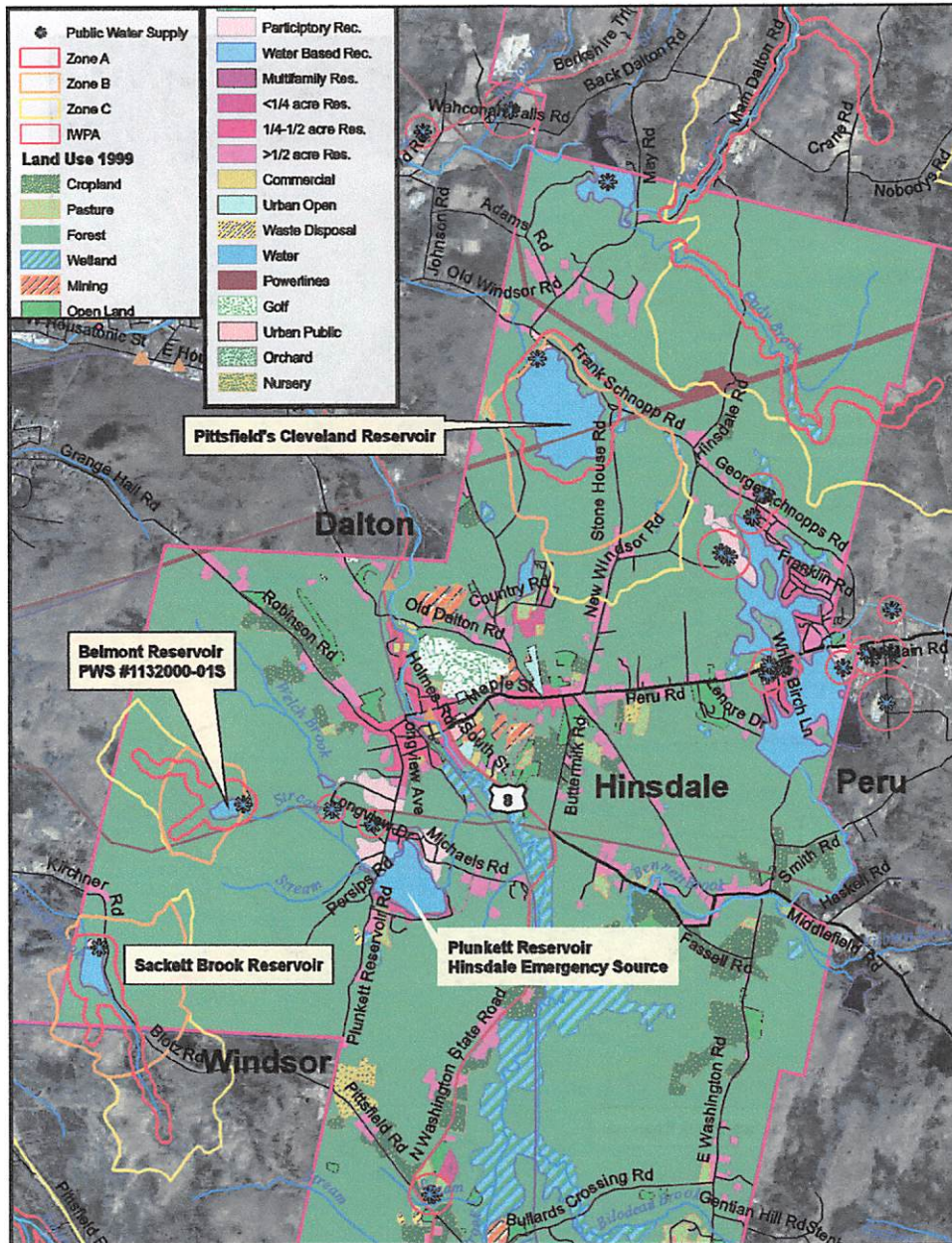
Table 2: Potential Sources of Contamination in the Water Supply Protection Areas.

Land Uses	Quantity	Threat*	Potential Contaminant Sources
Agriculture			
Forestry Operations	Little	L/M	Leaks and spills, improper handling of petroleum products. Erosion.
Industrial			
Water Treatment Plant	1	M	Fuel oil: spills, leaks or improper handling
Miscellaneous			
Occasional beaver	Occasional	M	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.

Source: Hinsdale Water Department SWAP Report, DEP June 16, 2003

Plunkett Reservoir

Plunkett Reservoir is the Town of Hinsdale's emergency Source. It will not be addressed in this plan until the Emergency Response Plan section.



Scale -1:55,000

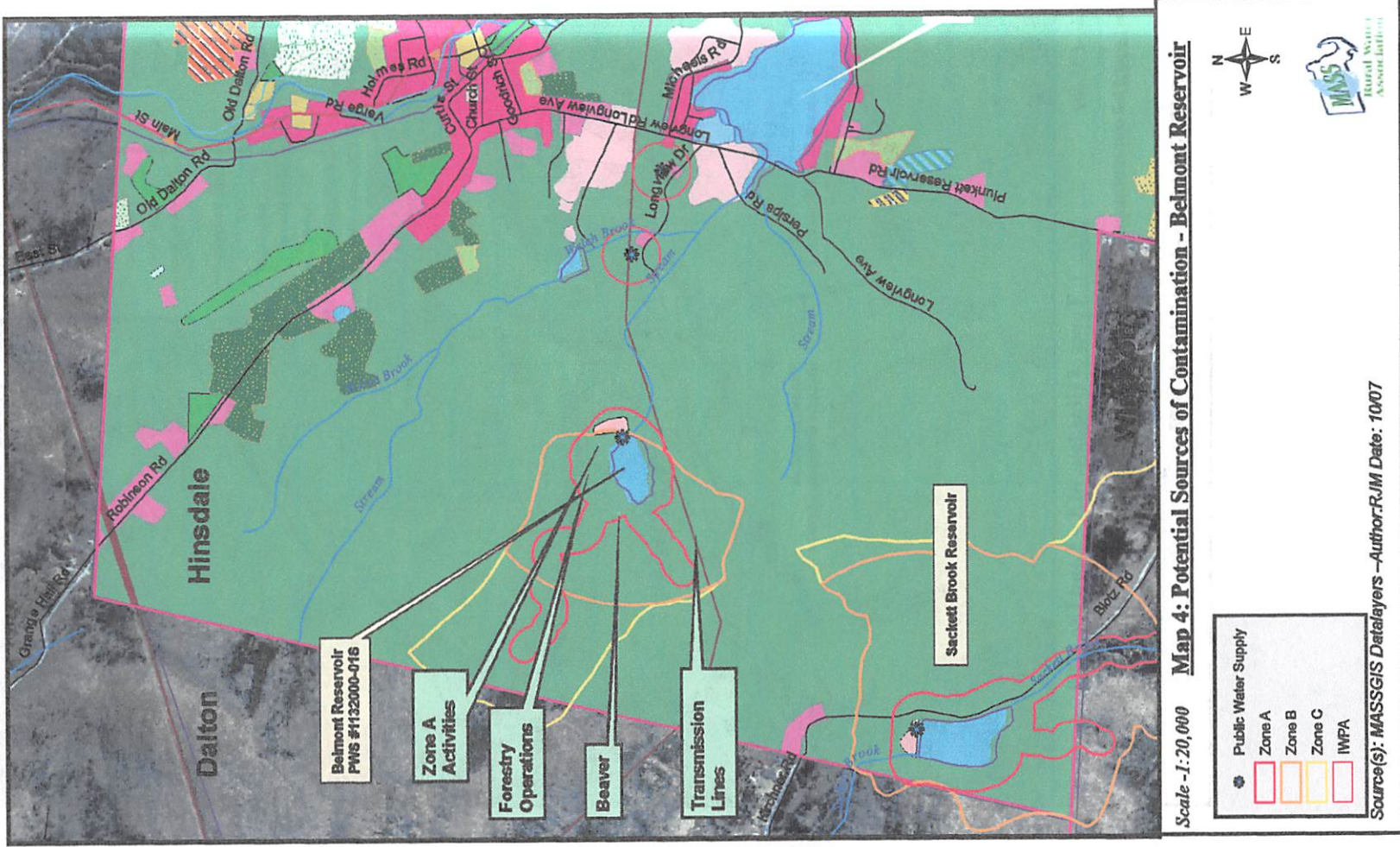
Map 3: Town of Hinsdale, MA - Land Use 1999

(See Legend left corner of map)



Source(s): MASSGIS Datalayers - Author: RJM Date: 10/07





Zone A Activities

Activities in Zone A

The Zone A for a reservoir includes all areas within 400 feet of the reservoir shoreline and within 200 feet of either side of all streams and feeder ponds that flow into the reservoir. The Zone A is the area closest to the reservoir and its tributaries. Therefore, land uses within the Zone A are of particular concern. Activities that could potentially threaten water quality if improperly managed are restricted by 310 CMR 22.20B. Activities that store, use, or dispose of hazardous materials can be potential sources of contamination if improperly managed.



Signage at the Belmont Reservoir earthen berm.

Water Treatment Facility

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.

Water Treatment Facility Recommendations:

1. Ensure that the water treatment facility is operated and maintained according to DEP requirements.
2. Ensure that stormwater drains and the drainage system around the treatment plant do drain outside of the watershed. Maintain stormwater system and catchbasins as necessary.
3. Continue current use of best management practices for proper handling of materials and in containing spills and leaks.
4. Update emergency plans as necessary.

Zone A Recommendations:

1. 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 Hinsdale Water Department.
2. Conduct inspections of Belmont Reservoir and continue to monitor activities in the Zone A; prohibit new activities in the Zone A.
3. Continue current efforts to inform and educate residents near the reservoir that access to the reservoir is prohibited.
4. Continue use of local police and implement a ticketing/fine procedure if current efforts are not successful in the future.
5. Periodically monitor stormwater flow at the water treatment plant and monitor activities to protect the water supply.
6. Closely monitor activities associated with chemical delivery, wastewater management and heavy equipment used in and around the facility.
7. Conduct wildlife management in the reservoir as necessary to protect public health and safety, and the infrastructure of the water supply.
8. 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.
9. 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.

Forestry/Watershed Management

Timber Operations

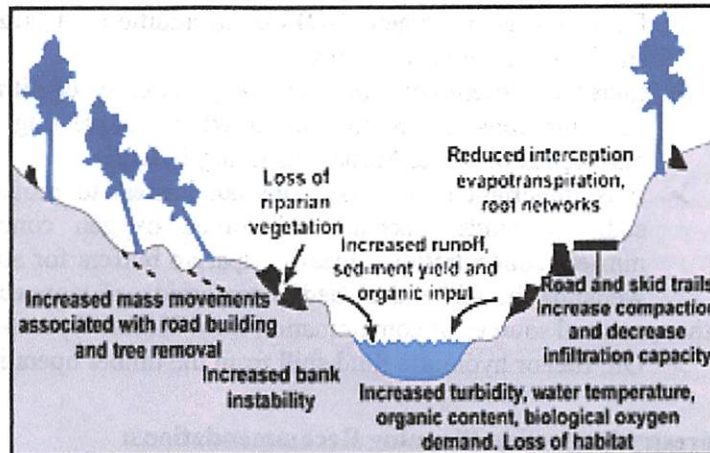
The majority of the watershed is not currently logged, but there is a potential for this practice to occur in the future. There is no watershed/forest management plan at this time. Surface water sources are considered highly vulnerable to contamination from timber and forestry activities conducted within their watersheds. Recent studies have shown that activities that cause significant disturbance to the land surface, such as logging, can have negative impacts by increasing the turbidity in the surface water. Feeder streams to reservoirs are especially vulnerable to contamination from logging or other earth moving/excavation activities.

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.

Soil Erosion/Turbidity

All timber operations involve some level of risk in regards to soil erosion. For example, road construction and road use typically account for 90% of the total sediment runoff from forestry operations. Roads, ditches, cutbanks, slope failures, debris flows, stream bank erosion and channel scour, and the diversions of streams at road crossings



Generalized view of watershed impacts associated with logging.

all are potential sources of fine sediment. Erosion control mechanisms are necessary on skid roads, haul roads, and landings. Proper construction and maintenance are critical in order to prevent the filling of wetlands and stream channels by sediments.

Removing vegetation adjacent to streams and tributaries can destabilize banks, resulting in sedimentation. Increased sediments in streams can lead to turbidity problems associated with surface water supplies. For example, increased turbidity has the potential to damage water treatment pumps, reduce reservoir volume, and increase treatment costs. Harvesting trees along a stream bank also reduces shading which helps to regulate streamwater temperatures and oxygen levels for cold water fisheries.

Pathogens

The effects of increased sediment loads are various. Increased turbidity levels pose a significant risk to public health. Turbid water conditions can mask the presence of pathogens such as *Cryptosporidium*. *Cryptosporidium* (Crypto) is a parasite commonly found in surface waters such as lakes and rivers, especially where animal wastes and sewage are in contact with water resources. Crypto is resistant to chlorine disinfection, causes intestinal disorders in healthy people, and can result in death for immunosuppressed people. Wildlife is a potential source of Crypto. Even a well-operated water treatment system cannot ensure that drinking water will be completely free of this microorganism.

Notable crypto outbreaks occurred in Milwaukee, WI in 1993, and Las Vegas, NV, in 1994. During the Milwaukee outbreak over 400,000 people were effected. No specific source of the cryptosporidium was ever identified in the Milwaukee outbreak, but runoff from abnormally heavy spring rains most likely carried the crypto to the lake from a variety of sources.

Effects of Timber Harvesting

Timber harvesting can have the following effects on tributaries:

- Deplete stream oxygen (DO) due to additions of large amounts of fine litter to small low-turbulence streams
- Increase nutrient concentrations (e.g. increases of nitrate following harvest, high concentrations of nitrate observed in harvesting experiments in northern hardwoods of White Mountains (3 mg-N/L)).
- It is important to maintain riparian buffers to protect streams from increased sediment loads, decreased dissolved oxygen concentrations, and increased nutrient concentrations. Ideally, riparian buffers for all stream classifications and wetlands should be identified, inventoried, and mapped.

Other potential sources of contamination from Timber Operations include:

- Oil, fuel or hydraulic fluid spill from the timber operation machinery.

Forestry Protection Planning Recommendations:

1. Establish active watershed protection planning and forest management for water supply protection in a comprehensive watershed plan. Prepare a comprehensive watershed and forest management plan specifically designed for a water supply watershed. Contact DCR to discuss a comprehensive plan that will incorporate active management of recreational activities in the immediate vicinity of the reservoirs and Zone A. Implement the plan and include BMPs for wetlands and stream crossings and in compliance with forestry regulations as appropriate.
2. Encourage and support efforts by private land owners to actively manage forests for water supply protection, as appropriate.
3. Continue to monitor all activities on Town, state and privately held land within the watershed.
4. Land uses and activities within the watershed that are potential sources of contamination are included. Identifying potential sources of contamination is an important initial step toward 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.

Transmission Lines

Herbicide Spraying

It is recommended that the Hinsdale Water Department work with the Hinsdale Conservation Commission in approving the Yearly Operating Plans (YOP) for maintaining the utility corridor that passes through the Belmont Reservoir watershed. A map depicting Hinsdale's Zone A, B and C locations will indicate where the utility must comply with low spraying applications of herbicides.

This plan strongly recommends that no herbicide spraying take place in the Belmont Reservoir watershed.

Wildlife Impacts and Management

Concerns about Water Quality and Wildlife

Wild animals, farm animals and domestic pets can be carriers of waterborne diseases such as *Giardia*, *Cryptosporidium*, *Salmonella*, etc. It is reported that beavers periodically populate the Hinsdale watershed. The presence of beavers or muskrats near public water supply sources may pose a threat to the protection of public health. Both animals have commonly been identified as carriers of *Giardia Lamblia* and *Cryptosporidium*—pathogens identified within the Surface Water Treatment Rule and Enhanced Surface Water Treatment Rule respectively as posing an unacceptable risk to drinking water.

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. Horses have specifically been prohibited from accessing Belmont Reservoir by using signage and a gate at the entrance of the access road.

An amendment to the State's trapping laws charge DEP with determining when a threat to human health and safety exists as a result of the presence of beavers and muskrats in and around public water supply sources and pump stations. A DEP determination that a threat exists may be used by an applicant to petition the local Board of Health for an emergency permit to eliminate the threat.

Beaver

Beavers are often associated with concerns about the quality of drinking water. Water exiting a beaver pond is high in organic chemicals and may be a cause for concern if beaver ponds are located near public water supplies. Giardiasis, an intestinal ailment caused by a *Giardia* parasite, is referred to by some as "beaver fever" because beaver are known to carry the organism. Although beavers do carry the *Giardia* parasite, so do many other animals that are found around lakes and reservoirs. Despite this, beavers will continue to be the primary focus for concern because they spend so much time swimming in our drinking water.

The Hinsdale Water Department monitors for the evidence of beaver year round and takes appropriate measures to ensure that the animal does not impact the water supply. In 2006 and 2007, two separate beaver populations were trapped out of the watershed. Residents within the Water Supply Protection District are encouraged to contact the Water Department if they notice heightened beaver activity in the area.



See the **Resources** section for the Massachusetts Department of Environmental Protection (MA DEP) Procedures for Beaver Control or visit their website for guidance at <http://www.state.ma.us/dep/brp/dws/protect.htm>.

The Belmont Reservoir Watershed does not have a resident geese population.

Residents are encouraged to report any new beaver activity within the Water Supply Protection District.

Public Access/Recreation Impacts and Control

Uncontrolled access may result in erosion that poses a significant threat to water quality in areas that are proximal to feeder streams and the reservoirs, potentially resulting in additional water treatment costs if they continue unchecked. Uncontrolled erosion contributes sediment, various contaminants and pathogens into the contributing waters and reservoirs. Evidence of access to the dam and reservoir has been noted in the past and the Appalachian Trail (AT) 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. Unmanaged access may result in vandalism, illegal dumping and access to the reservoir resulting in water quality impairment. Please see the Protected Parcels portion of this plan for the location of the Appalachian Trail in relation to Belmont Reservoirs Zone A.

There is very little public access or recreation impacts in the Belmont Reservoir watershed, though there has been past evidence of horse riding along the impoundment berm. There are no horses allowed in near the intake along the berm and the access road is now posted and fenced.

In-lake Problems and Management

Belmont Reservoir

Hinsdale's Belmont Reservoir is a primarily spring fed impoundment with a small watershed and few feeder streams. The Ph of the water is very low and acidic. Belmont Reservoir does not support a resident fish population. The raw water is treated with sodium hydroxide and bicarbonate soda to buffer the sodium hydroxide.

Belmont Reservoir experiences annual turbidity in the spring when the ice melts and the feeder streams are in melt and runoff conditions. The filtration plant turbidity meters were recently upgraded and no recent turbidity amounts were above acceptable levels.



Tree and brush removal begins in December 2007 around Belmont Reservoir. The removal is scheduled to be completed during the spring and summer of 2008.

The Hinsdale Water Department is in the process of conducting an extensive removal of overhanging tree limbs and brush around Belmont Reservoir. This will significantly reduce the amount of organic material entering the reservoir. This organic material clearing helps to prevent debris from reaching the intake and reduces the amount of secondary contaminants created through the chlorination process. The tree and brush removal is scheduled to be finished by the fall of 2008.

Watershed Sampling Plan and Control

Raw water pH, turbidity, conductivity and color are monitored daily. Iron, manganese, and total dissolved solids are checked weekly. Coliform bacteria and alkalinity are checked monthly. All samples are taken from a tap on the influent line at the Hinsdale Water Plant by Berkshire Environmental of Lee. The Hinsdale Water Department is satisfied with this sampling location as an indication of the overall success of watershed protection efforts.

Watershed Control

The Hinsdale Water Department regularly inspects the watershed and reservoirs for spills and activity that could contaminate or compromise the water sources.

Upon the completion of the *Hinsdale Source Water Protection Plan*, the Hinsdale Water Department will update the plan annually and implement its recommendations over the next few years.

Capacity/Yield

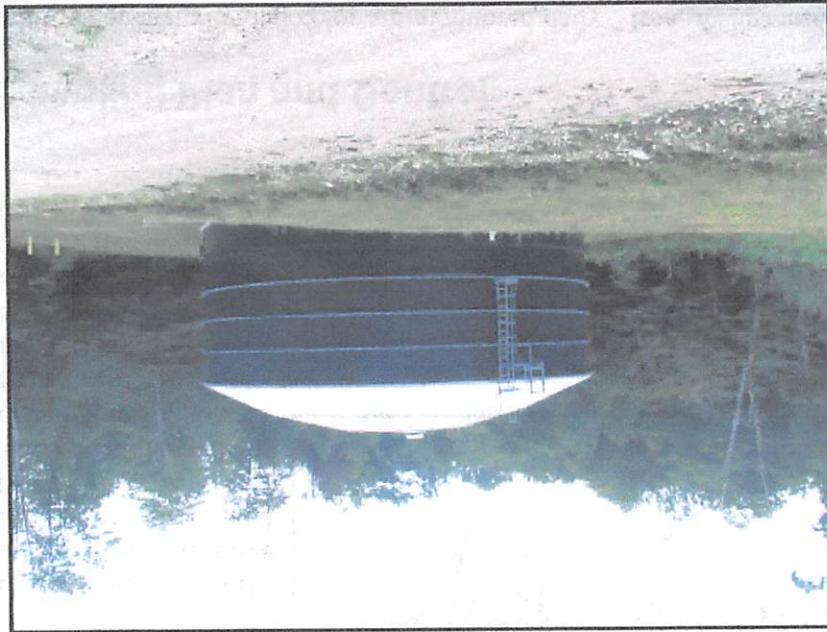
The Town of Hinsdale supplies 15 million gallons annually to its customers. The Belmont Reservoir has not been recently impacted by drought conditions, possibly due to the nature of the springs that supply the impoundment.

Water Quality

Please see the **2006 Hinsdale Water Department Consumer Confidence Report** in the **Resources** section of this plan.



Belmont Reservoir's water storage tank and gated entrance road.



Storage Capacity
The storage tank capacity for the Hinsdale Water Department is 500,000 gallons. During the drought period of August 2007 the Belmont Reservoir was noticeably lower, but the Hinsdale Water Department did not require their Water Conservation Ban to go into effect. The Belmont Reservoir retains near normal water levels during drought years due to the nature of the springs that supply the impoundment.

Protected Open Space

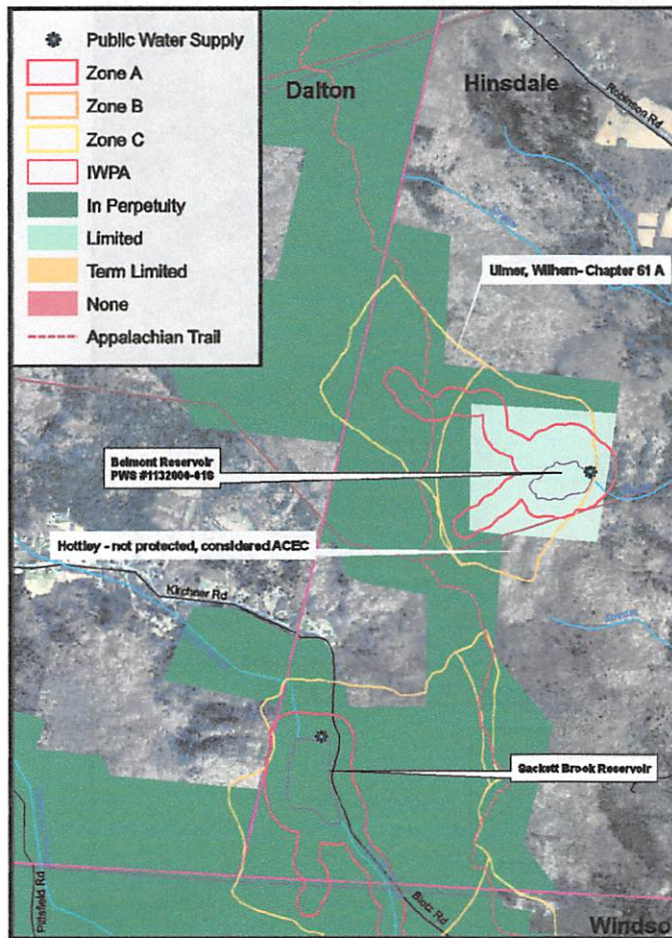
Hinsdale's Belmont Reservoir water supply is naturally fairly well protected by the remoteness of the source and the percentage of the watershed land owned by the Town and National Parks Service. Almost the entire watershed is protected at this time from development. However, much of the land within 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.

Priority Parcels

The need to protect priority parcels was discussed by the Hinsdale Source Water Protection Committee. There are portions of two parcels that are not permanently protected in Belmont Reservoirs Zone B and C.



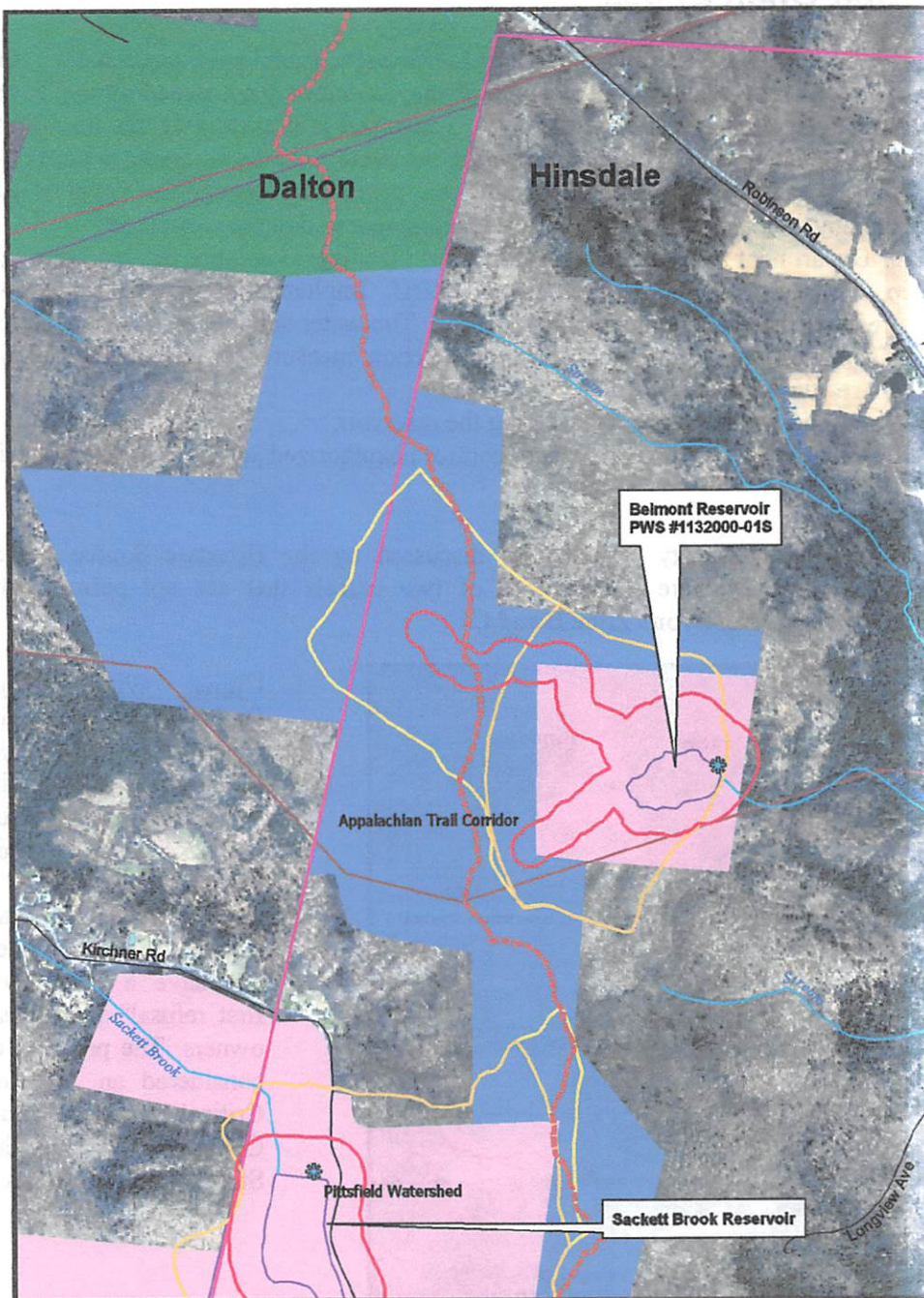
1. Ulmer, Wilhem and Paula – 441 acres in Chapter 61A. The Town of Hinsdale has “Right of first refusal” for purchasing this property.
2. Hottley – 348 acres. The Town of Hinsdale does not have a “Right of first refusal” with these owners. The property is considered an Area of Critical Environmental Concern (ACEC) by the State of Massachusetts.

Scale -1:20,000

Map 5: Belmont Reservoir Priority Parcels



Source(s): MASSGIS Datalayers –Author:RJM



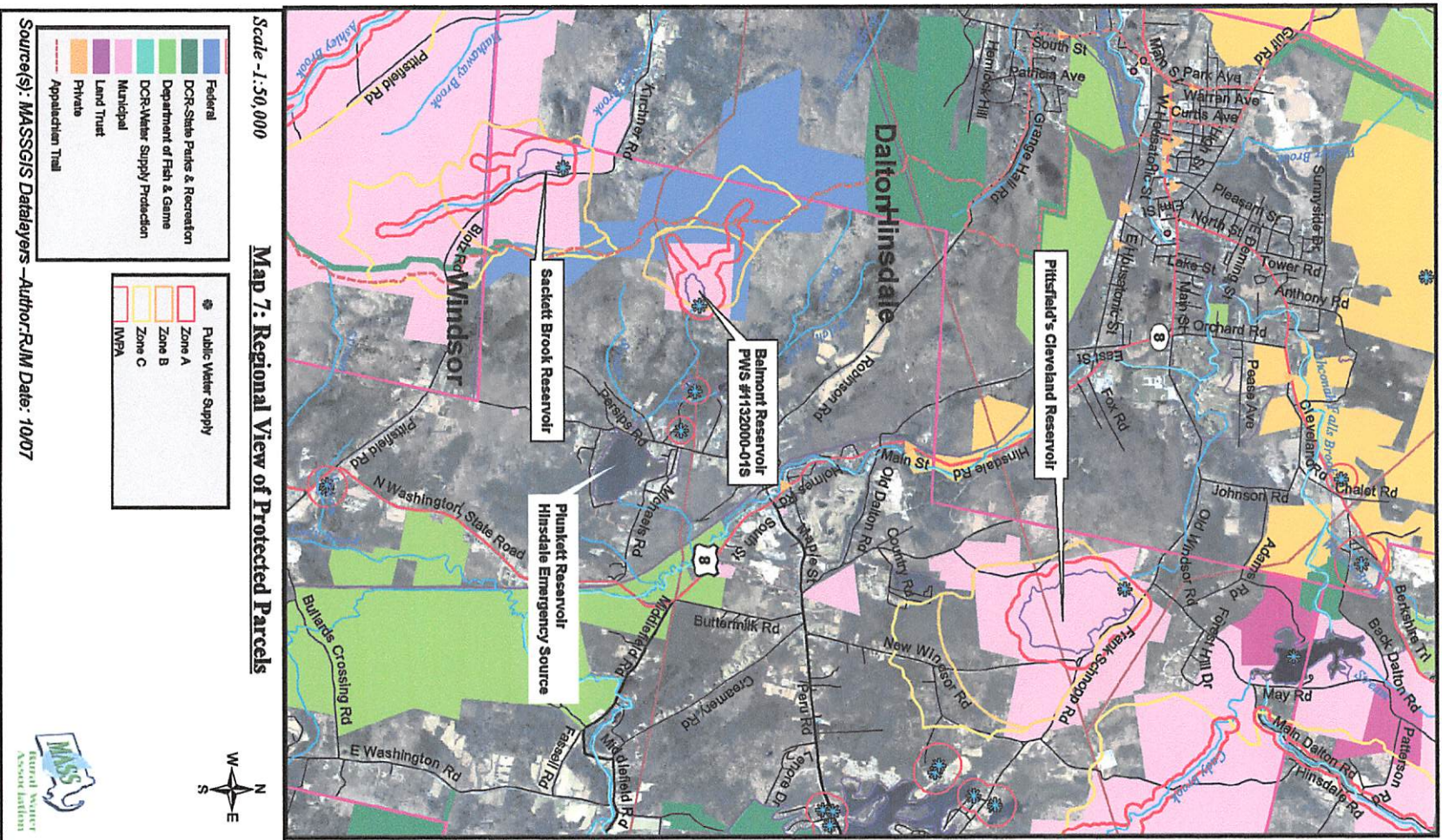
Scale - 1:20,000

Map 6: Belmont Reservoir Protected Parcels

	Federal
	DCR-State Parks & Recreation
	Department of Fish & Game
	DCR-Water Supply Protection
	Municipal
	Land Trust
	Privats
	Appalachian Trail

	Public Water Supply
	Zone A
	Zone B
	Zone C
	IWPA



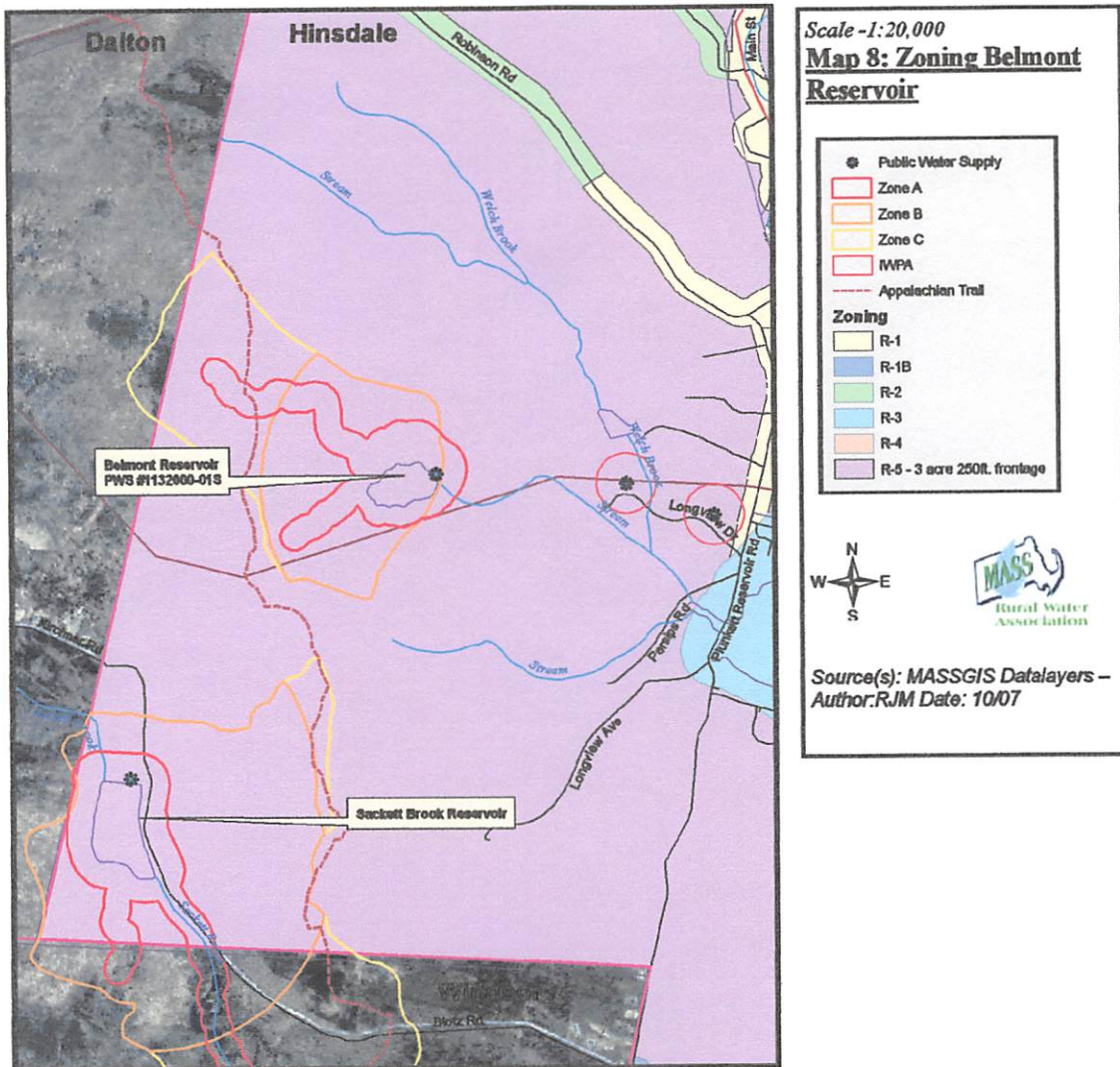


Zoning

Current Zoning and Future Impact to Protection Zones

The recharge areas or protection zones (Zones A, B, and C) for Hinsdale Reservoir is zoned R5 – 3 acre, 250 feet of frontage. The portion of Zone C that is located in the Town of Dalton is a part of the federal trail system and a permanently protected parcel.

The future impact to water supply allowed by current zoning is low, though it is important to protect existing water supplies with Water Supply Protection Overlay zoning.



Regulatory /Non-Regulatory Protection Strategies

Water Supply Protection District

Hinsdale is proposing to adopt a Water Supply Protection District (WSPD) Bylaw for the Belmont Reservoir watershed that supplies the Town with its water. A primary goal is to pass the Water Supply Protection District bylaw. Once the WSPD bylaw is in place Hinsdale's public drinking water supply will benefit from greater protection from contamination threats. See Appendix A: Proposed Bylaws.

Land Protection Strategies

Residential and commercial developments, with all of its associated land uses, are the biggest threats to a drinking water supply. Their contamination is slow and insidious, often overlooked until a crisis is thrust upon the community, usually requiring a lot of money that no one has to fix. Residents of Hinsdale value the areas of their town that are rural. Rural landscape provides many benefits including wildlife habitat, aquifer/surface water recharge, farmland, and aesthetic beauty. It is critically important that town officials discuss alternatives to development with landowners to preserve open space in Hinsdale.

CHAPTER 61 "Chapter Lands"

This is a tax relief program that is designed to give favorable treatment to land owners that are willing to manage their land for:

- Timber products: Chapter 61, lands taxed at only 5% of fair market value.
- Agriculture or Horticulture: Chapter 61A, for working or family farms. Tax rate determined by the Farmland Valuation Advisory Committee.
- Natural Resources and Recreation: Chapter 61B, lands taxed at 25% of fair market value.

There is a minimum acreage requirement for each program. Land must be registered each year at the Assessors office and you must agree to leave the land in the program for a certain number of years. There are financial penalties for sudden withdrawal from the program, but no penalties for allowing this tax status to expire. Chapter lands are not permanently protected.

AGRICULTURAL PRESERVATION RESTRICTION (APR)

This is a state funded program used to protect the states prime and important agricultural lands.

It provides permanent protection to working farms and orchards. It is a voluntary program, but the application process is slow and requires a patient land owner. The state pays the difference between the fair market value and the agricultural value of the land. The landowner agrees to a permanent deed restriction that protects the land from uses that would have a negative impact on its use for agricultural purposes.

LAND PRESERVATION AGREEMENT

Also known as a Conservation Easement (CE, CR)

Although a little complex, this is a powerful tool for all land owners who wish to permanently protect all or part of their property. The terms of the agreement are determined by the landowner.

- It is a voluntary agreement in which a landowner limits uses (e.g. development) while retaining private ownership.
- Landowners use land preservation agreements to protect a property's natural and scenic features.
- Significant federal income and estate tax benefits as well as local real estate tax benefits can result from granting a land preservation agreement.
- A qualified appraisal must be done on the land to determine the amount of the deduction and the value of the agreement.
- Land owners can sell or give away the property after the agreement has been placed on the land.
- All future owners are bound by the terms of the agreement.
- Every agreement is unique, tailored to a particular land owner's goals and land.
- Land preservation agreements can be donated or sold to a non-profit entity such as a local land trust, conservation commission, or a federally recognized charity under IRS Code Section 501(c)(3).
- The recipient who accepts the agreement is legally bound by to enforce the terms of the restriction in perpetuity. In order for the owner to qualify for a tax deduction, the agreement must be perpetual.
- The public does not automatically have access to property protected by a land preservation agreement.
- The agreement holder monitors the property, generally once a year, to assure that the terms are being upheld. Some agreement holders may request an endowment be made to ensure long-term monitoring and enforcement of the restriction.
- To accomplish the donation or sale of a land preservation agreement, the landowner needs to work closely with the organization or government entity that will hold the agreement. That may include:
 - Consulting with legal and tax counsel
 - Tour of the property to evaluate and discuss the easement
 - Approval from the holder's Board of Directors
 - Preparing baseline documentation of the property for monitoring purposes
 - Title search
 - Obtaining a mortgage subordination from the lender if there is an existing lien
 - Negotiating the agreement and drafting the document
 - Obtaining a qualified appraisal
 - Signing and recording the final restriction and legal documents

Community Preservation Act

Community Preservation Act (M.G.L. Ch. 44B) provides Massachusetts cities and towns with a mechanism to protect open space, preserve historic buildings and sites, and create affordable housing. Towns may establish by local referendum a property tax surcharge of up to 3% to help fund these activities. Funds raised locally through the Community Preservation Act (CPA) will be supplemented by state matching funds. At least 10% of CPA funds must be spent on each of the following three activities: open space protection, historic preservation and affordable housing. The remaining 70% may be used for any one or more of these three purposes in accordance with the community's priorities.

Hinsdale should consider adopting the CPA to provide a steady source of income for open space protection, historic preservation and affordable housing activities. There are two methods available to Hinsdale to adopt the CPA. First, Town Meeting can vote to place the question of adopting the CPA before the voters as a referendum. Second, if Town Meeting does not adopt the CPA language at least 90 days before a regular town election or 120 days before a state election, then a petition signed by 5% of the registered voters in Hinsdale can be filed to place the question on the ballot.

The CPA will be adopted if the referendum passes by a majority vote. If Hinsdale adopts the CPA, the Town may choose to exempt \$100,000 of value for each taxable parcel and/or the full value of residential property owned by low income persons or low and moderate income senior citizens. In addition, the CPA does not affect any other real estate tax exemptions or abatements authorized under M.G.L. Ch. 59 or any other state law. Upon adoption of the CPA, a community must appoint a Community Preservation Committee consisting of between five and nine members, including one member from each of the following: Conservation Commission, Historic Commission, Planning Board, Board of Park Commissioners, and Housing Authority. The Committee makes recommendations to Town Meeting for the use of money in the local Community Preservation Fund. In addition, communities may issue bonds in anticipation of Community Preservation Fund receipts. These funds may be used for:

Open Space: Community Preservation funds may be used to purchase land, easements or restrictions to protect existing and future water supply areas, agricultural and forest land, coastal lands, frontage to inland water bodies, wildlife habitat, nature preserves, and scenic vistas. If the community is only spending 10% of its funds on open space, the open space cannot be purchased for recreational use.

Recreation: Land can also be purchased for active and passive recreational uses including land for community gardens, trails, non-commercial youth and adult sports, and parks, playgrounds or athletic fields.

Historic Preservation: Funds may be used to purchase, restore and rehabilitate historic structures and landscapes that have been determined by the local Historical Commission to be significant in the history, archeology, architecture or culture of a city or town, or that are listed or eligible for listing on the State Register of Historic Places.

Affordable Housing: Funds may be used to create and preserve housing for low and moderate income individuals and families, including low and moderate income senior housing. The Act requires the Committee to recommend, wherever possible, the adaptive reuse of existing buildings or construction of new buildings on previously developed sites.

- Recommendations:**
1. Conduct outreach to landowners about options for protecting open space within the WSPD.
 2. Town may take proactive steps to acquire land through the adoption of the Community Preservation Act.
 3. Acquire available funds for land purchase through the Commonwealth Capital funding process.

Table 3: Strategies for Protecting Open Space

	CHAPTER 61	CHAPTER 61A	CHAPTER 61B
PURPOSE	Tax incentive for long-term management of woodland for wood production.	Tax incentive for active agricultural or horticultural uses.	Tax incentive for land in natural, wild, open or landscaped use; or an approved recreational use.
ELIGIBILITY	Minimum of 10 contiguous acres. A continuous commitment to improving the quality and quantity of timber crops on woodlands. Forest management plan approved by state forester.	Minimum of 5 acres "actively devoted" to agricultural and/or horticultural uses at least 2 years prior to classification. Minimum annual gross sales of \$500. Additional contiguous land may also qualify.	Minimum of 5 acres in open space or recreational uses.
TAX ASSESSMENT	Assessed at 5% fair market value, at commercial rate, plus 8% stumpage value of products harvested in prior year.	Assessed at agricultural/horticultural "use" value, at commercial rate. Values assigned by Board of Assessors and may change annually.	Assessed at maximum value of 25% fair market value, at commercial rate.
HOW TO ENROLL	Application package filed with State Forester by June 30. Approved application submitted to Board of Assessors by August 31. Application good for 10 years.	Annual application filed with Board of Assessors by October 1.	
ENROLLMENT PERIOD	Enrolled until withdrawn from classification and withdrawal penalty paid. Forest management plan updated every 10 years.	Enrolled until sold for or converted to another use, and either conveyance tax or roll-back tax paid. Annual filing with Board of Assessors. "productive woodlands".	Enrolled until sold for or converted to another use, and either conveyance tax or roll-back tax paid. Annual filing with Board of Assessors.
WITHDRAWAL OR CHANGE OF USE PENALTY	Penalty payment depends on number of years in the program, and is difference between taxes paid under Chapter 61 and what would have been paid if not classified, plus interest. Annual forest products tax credit may or may not be applied to withdrawal penalty.	Conveyance or roll-back tax imposed, but not both. Conveyance tax rate applied when land sold for a non-qualifying use, and is 10% for first five years of ownership and 5% for second 5 years. Roll-back tax is difference between taxes paid under Chapter 61B and what would have been paid if not classified, plus interest. Roll-back tax imposed for 10 prior years.	Conveyance or roll-back tax imposed, but not both. Conveyance tax rate applied when land sold for a non-qualifying use, and is 10% for first five years of ownership and 5% for second 5 years. Roll-back tax is difference between taxes paid under Chapter 61A and what would have been paid if not classified, plus interest. Roll-back tax imposed for 10 prior years.
TOWN'S RIGHT OF FIRST REFUSAL			Town has first right of refusal when land sold or converted to residential, commercial, or industrial use. Option lasts for 120 days unless waived. Exception allowed for residential use by family member.

	CONSERVATION EASEMENT	AGRICULTURAL PRESERVATION RESTRICTION	ESTATE PLANNING
PURPOSE	To limit the use of land in order to protect specified conservation values including the natural, scenic, or open condition of the land.	To permanently protect farmland by paying landowners the difference between "fair market value" and the "agricultural value" of their land in exchange for a permanent deed restriction which precludes any use of the land that will have a negative impact on its agricultural viability.	To protect your land in a way that makes good financial sense for you and your family.
ELIGIBILITY	Conservation Restriction must demonstrate public benefit	Farm must be at least five acres in size; devoted to agriculture for the two immediately preceding tax years; at least \$500 gross sales per year; soil suitability for agriculture; degree of threat to the continuation of agriculture; potential economic viability of agriculture at that site; and, proximity to other APR lands.	Decisions to protect land require careful consideration of the special features of your property, your land conservation goals, your financial situation, and your family's needs and wishes.
TAX ASSESSMENT	Tax assessment varies by town and by the type of restriction. Call the Town Assessor for details on tax abatement.	The land is eligible for farmland tax assessment under Chapter 61A, and under the APR program, it will continue to be eligible as long as it is "actively devoted" to agriculture. The landowner should apply to the local assessor each year prior to October 1 and the tax will be based on the current farm use. Dwellings and their lots and farm buildings will continue to be taxed as other real estate.	Federal estate taxes can be as high as 55% of a property's fair market value. The following options provide tax relief: outright land donation, donation of undivided partial interests, donation of land by will, donation of remainder interest in land with reserved life estate, bargain sale of land to a land trust or conservation agency, lease, and mutual covenant. Conservation restrictions are also appropriate estate planning tools.
HOW TO ENROLL	Conservation restrictions must be submitted according to the written procedures of and approved by the Secretary of Environmental Affairs.	Once a completed application is received by the Dept. of Food and Agriculture, it is reviewed and a field inspection is completed within 1 to 2 months. Applications reviewed on a rolling basis. Priorities are established based upon above eligibility requirements. Timing of acquisition depends on availability of funds.	Because land conservation is a technical area of the law and because your decisions can have significant consequences, it is important to seek out advisors who are experienced in this field. Consult one of the listed resources below, a local land trust, tax accountant, or lawyer with appropriate experience.
ENROLLMENT PERIOD	Allowed for a period of years written into the restriction or in perpetuity. Less than perpetual restrictions will be approved only where demonstrated critical public interest exists.	In perpetuity	N/A
WITHDRAWAL OR CHANGE OF USE PENALTY	Withdrawal or change of use is very difficult. Conservation Restrictions should only be considered if they are to be in perpetuity or for a designated term written into the easement. There can be serious tax penalties for withdrawal from a conservation restriction.	Releasing an APR is very difficult and requires three steps: the Commissioner of the Dept. of Food and Agriculture must determine the land is no longer fit for agriculture, a 2/3 vote of the state legislature must approve the release (MGL Article 97), and landowner must reimburse the State for the value of the APR at today's value. A change in use other than stated in the APR also requires a 2/3 vote of the state legislature.	N/A
TOWN'S RIGHT OF FIRST REFUSAL	N/A	N/A	N/A
FOR MORE INFORMATION	MA Executive Office of Environmental Affairs Division of Conservation Services 617-626-1012	MA Dept. of Food and Agriculture 617-626-1700	Valley Land Fund 413-585-8513; Preserving Family Lands by Stephen J. Small available from Landowner Planning Center, PO Box 4508, Boston, MA 02101-4508

Emergency Response/ Contingency Planning

Current Plans

The Hinsdale Water Department has recently updated its Emergency Response Plan. The Emergency Response Plan, required by the MA DEP prepares the Town of Hinsdale for immediate action in the case of a hazardous spill or other activity that could potentially contaminate or harm the public drinking water supply. Immediate response and concerted efforts to contain hazardous material by the Hinsdale Water, Fire and Police Departments, and the Department of Environmental Protections Spill Response Team, is the objective of the Emergency Response Plan.

Alternative Supply/ Contingency Planning Evaluation

In the event of a water supply emergency, alternative supplies need to be established in order to provide the community with adequate water. The alternative supply sources that were evaluated include emergency interconnections, bottled water and civil defense water provisions.

Potential emergencies include mechanical failure of the distribution system or contamination at the water supply source. The Town has 500,000 gallon water storage tank, which in the case of an emergency could supply customers for approximately 3 days under current delivery conditions.

In the event of an emergency the Water Department will use media contacts to notify the public that water conservation is a priority and notify the water users that the Water Restriction Bylaw is in full effect.

The Hinsdale Water Department should consider a mutual agreement with the City of Pittsfield to supply water in the case of an emergency. However, if the emergency were extended, additional measures would be required to meet system demands. These measures include either purchasing bottled water and distributing to consumers accordingly or contacting the civil defense for the utilization of water wagons. Poland Springs, a local water supplier will be contacted for additional resources if needed.

The Emergency Management Director, Ray Bolduc, would also contact the Massachusetts Emergency Management Authority (MEMA) if necessary. MEMA can notify the National Guard or give names of other bulk water suppliers. The National Guard has potable water bladder units that could be transported to the site.

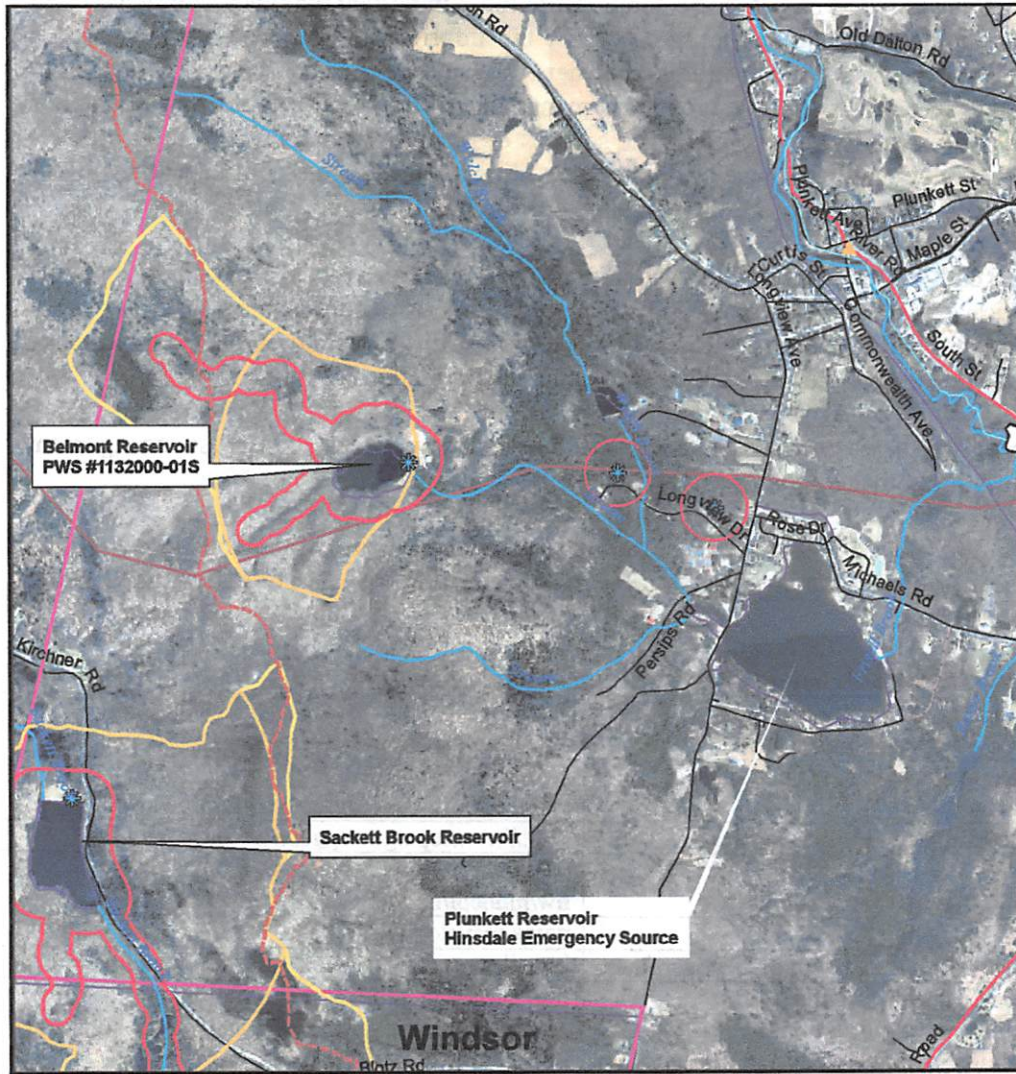
Please see **Appendix B: Emergency Response Plan** for a complete copy of the ERP Plan.

Drought and Emergency Procedures/Planning

Please see **Appendix A: Proposed and Existing Bylaws for the Water Conservation Bylaw**.

Plunkett Lake/ Emergency Source

Plunkett Lake is the Town of Hinsdale's Emergency Source. This body of water has a densely populated residential population that utilizes the town sewer system. Plunkett Lake does have a resident geese population and swimming was banned during the summer of 2007 due to a high coliform concentration. The Hinsdale Water Department does not presently sample and test water from this source, though the Board of Health does sample the water to maintain minimum beach standards. In order to use this source in the event of an emergency the water would have to be pumped from the lake and proper treatment applied to the raw water. This plan recommends determining another back-up source other than Plunkett Lake. This may be accomplished through mutual aid source sharing agreements with the City of Pittsfield who have two reservoirs, Cleveland and Sackett Brook, located in the Town of Hinsdale.



Scale -1:55,000 **Map 7: Location Plunkett Lake/Hinsdale's Emergency Source**

Source(s): MASSGIS Datalayers -Author:RJM Date: 10/07



Staffing

The Hinsdale Water Department has two full time operators, Bernie St. Martin and Carl Dewkitt. The Hinsdale Water Department is sufficiently staffed at the present. In the case of an emergency and both operators were unable to report to work, the Hinsdale Water Department has an arrangement with the Town of Pittsfield's operator, Matt Inhelder to fill in on an emergency basis.

Public Education and Outreach

Public education and outreach are some of the most important actions a community can take to protect their water supply. Much of the information presented throughout this report is not simply known by all homeowners. This information needs to be passed on to the public so that they can engage in best management practices for protecting Hinsdale's public and private water supplies. The sources of potential contamination to Hinsdale's drinking water supplies, as well as public education and outreach recommendations, were presented at a Source Protection Workshop during February 2007.

Mass Rural Water Association recommends the Hinsdale Water Department conduct educational outreach to the local public schools. It is recommended that the Water Department visit the 4th grade each year to educate Hinsdale children on the importance of protection their water supply from potential contamination.

Table 5 lists some websites that contain further information about best management practices for homeowners.

Please also note the attached educational materials to use while conducting public education and outreach in the Resources Materials section of the Hinsdale Source Water Protection Plan.

Table 5: Internet Reference Sites for Educational Material

State of Massachusetts Community Recycling Information-Earth 911	http://massachusetts.earth911.org
Household Hazardous Waste Links Massachusetts	www.state.ma.us/dep/recycle/hazards/hhwhome.htm
EPA Recycling and Waste Homepage	http://www.epa.gov/epaoswer/osw/
Hazardous Waste Publications	http://www.epa.gov/epaoswer/non-hw/muncl/hhwpubs.htm
Car Oil Recycling	www.recycleoil.org
Disposal and Management of Leftover Paint	http://www.paint.org/con_info/leftover.cfm
Non-Toxic Cleaning in the Home	http://www.ns-products.com/nontox.htm
Recycling Grass Clippings and Composting	http://www.mass.gov/dep/recycle/reduce/compos01.htm
Non-Point Source Information for Kids	http://www.epa.gov/owowwtr1/NPS/kids/whatwrng.htm

References

Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program. 2002. *Source Water Assessment and Protection (SWAP) Report for Hinsdale Water Department*

Massachusetts Department of Environmental Protection, Drinking Water Program, Updated May 2000 *Developing a Local Surface Water Supply Protection Plan*

Massachusetts Geographic Information System. Assessed 2005-2006. Executive Office of Environmental Affairs, Commonwealth of Massachusetts.

Appendices

Appendix A: Proposed and Existing Bylaws

Proposed Water Supply Protection District

1.1 Water Supply Protection District for the Town of Hinsdale

1.10 Purpose of District

The purpose of this Water Supply Protection District is to:

- A.** Promote the health, safety, and general welfare of the community by ensuring an adequate quality and quantity of drinking water for the residents, institutions, and businesses of the Town of Hinsdale.
- B.** Preserve, maintain and protect existing and potential sources of drinking water supplies for the public health and safety.
- C.** Protect, preserve and maintain the existing and potential Surface Water supply and Surface Water recharge areas within the town.
- D.** Reduce erosion of topsoil and the subsequent sedimentation of surface water bodies.
- E.** Conserve the natural resources of the Town of Hinsdale.
- F.** Prevent temporary and permanent contamination of the environment.

1.11 Scope of Authority

The Water Supply Protection District is an overlay district superimposed on the zoning districts. This overlay district shall apply to all new construction, reconstruction, or expansion of existing buildings and new or expanded uses. Applicable activities/uses in a portion of one of the underlying zoning districts, which fall within the Water Supply Protection District, must additionally comply with the requirements of this district. Uses prohibited in the underlying zoning districts shall not be permitted in the Water Supply Protection District.

1.12 Definitions

For the purposes of this section, the following terms are defined below:

Development: Any construction, external repair, land disturbing activity, grading, road building, pipe laying, or other activity resulting in a change in the physical character of any parcel of land.

Disposal: The deposit, injection, dumping, spilling, leaking, incineration, discharge, or placing of any material into or on any land or surface water or groundwater so that such material or any constituents thereof may enter the environment or be emitted into the air or discharge into any waters subject to this ordinance.

Impervious Surface: Material or structure on, above, or below the ground that does not allow precipitation or surface water to penetrate directly into the soil.

Leachable wastes: Waste materials including solid wastes, sludge, sewage, pesticide and fertilizer wastes capable of releasing waterborne contaminants to the environment.

Mining: The removal or relocation of geological materials such as topsoil, sand, gravel, metallic ores, or bedrock.

Potential Contaminating Activity: Activities identified as having the potential to discharge contaminants to surface or ground waters.

Potential Drinking Water Sources: Areas, which could provide significant potable water in the future.

Recharge areas: Areas that collect precipitation or surface water and carry it to reservoirs and aquifers. Recharge areas may include areas designated as Zone A, Zone B, or Zone C.

Reservoir: Any impoundment of surface water designed to provide drinking water to the public.

Surface Water: All water that is open to the atmosphere and subject to surface runoff.

Surface Water Source: Any lake, pond, reservoir, river, stream or impoundment designated as a public water supply in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00.

Toxic or Hazardous Material: Any substance or mixture of physical, chemical, or infectious characteristics posing a significant, actual or potential hazard to water supplies or other hazards to human health if such substance or mixture were discharged to land or water in the Town of Hinsdale. Toxic or hazardous materials include, without limitation; synthetic organic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalis, and all substances defined as Toxic or Hazardous under Massachusetts General Laws (M.G.L.) Chapter (c.) 21C and 21E and 310 CMR 30.00, and also include such products as solvents and thinners in quantities greater than normal household use.

Tributary Stream: Any perennial or intermittent stream, including any lake, pond, wetland or other body of water formed there from, flowing either directly or indirectly into any reservoir. Any body of running, or intermittently running, water which moves in a definite channel, naturally or artificially created, in the ground due to a hydraulic gradient, and which ultimately flows to a Class A surface water source, as defined in 314 CMR 4.05 (3) (a).

Watershed: Land area bounded by a ridgeline of higher elevation, or drainage divide, from which surface runoff and groundwater flow down gradient into streams, ponds, reservoirs, wetlands, and aquifers.

Water supply drainage basin: An area within which all-overland and subsurface water flows to a common body of water associated with a water supply or a potential water supply.

Water Supply Protection District: The zoning district defined to overlay other zoning districts in the Town of Hinsdale. The Water Supply Protection District includes the specifically designated recharge areas for Horse Pond Reservoir: Zone A, Zone B, and Zone C.

1.13 Watershed Zones

The watershed zones are generally defined by the direction of the flow of water. These zones are specifically shown on the delineation map identified in the Map Section of this ordinance entitled "Water Supply Protection District, Town of Hinsdale". The watershed zones are described as follows:

Watershed Zones:

- 1.131 Zone A:** a. The land between the surface water source and the upper boundary of the bank;
 b. the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05 (3) (a); and
 c. the land area within a 200-foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.
- 1.132 Zone B:** The land area within one-half mile of the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05 (3) (a), or edge of the watershed, whichever is less. However, Zone B shall always include the land area within a 400-foot lateral distance from the upper boundary of the bank of the Class A surface water source.
- 1.133 Zone C:** The land area not designated as Zone A or Zone B within the watershed of a Class A water source as defined in 314 CMR 4.05 (3) (a).

1.14 Establishment and Delineation of the Water Supply Protection District

The Water Supply Protection District (WSPD) is defined as all lands within water supply drainage basin in the Town of Hinsdale lying within the primary (Zone A) and secondary recharge areas (Zone B and C) of Surface Water Reservoirs and watershed areas (Zone A, B, and C) which provide public water supply.

This bylaw establishes with the Town of Hinsdale certain water resource protection zones, consisting of the Zones A, B, and C for the Horse Pond Reservoir. These areas are designated as the "Hinsdale Water Supply Protection District," as depicted on the map entitled "Water Supply Protection District," prepared for the Hinsdale Planning Board, and on file in the Planning Board office. The Water Supply Protection District is hereby incorporated as part of the "Zoning Map of Hinsdale, Massachusetts dated when applicable and is on file in the Town Clerk's office.

1.141 Disputed Designated Boundaries

When the actual Water Supply Protection Overlay District boundary or the Zone A as delineated are in doubt or in dispute, the burden of proof shall be upon the owner of, or other party interested in, the land in question to show where they should properly be located. The landowner shall consult a professional geologist, hydrologist, or other professional to determine more accurately the boundary of the Water Supply Protection Overlay District or Zone A.

It is the obligation of the landowner to prove that they are not in an area of the watershed that contributes to the public water supply. The qualified hydro geologist or Registered Professional Engineer will determine more accurately the precise location of the water supply district boundary and shall charge the owner(s) for the cost of such analysis.

In the case that the disputed Water Supply Protection Overlay District boundary or the Zone A is determined to be located where the landowner originally claimed in the dispute, the burden of the cost of the qualified analysis shall be charged to the Town. Therefore, the party in the right shall not be required to pay for the study.

The Planning Board will make the final decision as to whether the disputed property is in the Water Supply Protection Overlay District, Zone A or not.

1.15 Water Supply Protection Use Regulations

1.150 Whenever the requirements of this article differ from those prescribed in other laws, ordinances and codes, the stricter requirements designated to protect water supplies will take precedence.

1.151 Allowed Uses

The following uses are permitted within the Water Supply Protection District, provided that all necessary permits, orders, or approvals required by local, state, or federal law are also obtained:

- a. Residential building uses permitted in the underlying district R-66. Residential building must conform to the Special Permit Buffer Requirements/ Zone A if sited in the Zone A and require a Special Permit if sited in the Zone A.
- b. Conservation of soil, water, plants, and wildlife.
- c. Outdoor recreation - except where posted, nature study, boating, fishing, and hunting where otherwise legally permitted, subject to sections "Prohibited Uses" and "Special Permitted Uses".
- d. Landings, foot, bicycle and bridges where otherwise legally permitted.
- e. Normal operation and maintenance of existing water bodies and dams, splash boards, and other water control, supply and conservation devices.
- f. Maintenance, repair, and enlargement of any existing structure provided there is no increase in impermeable areas and subject to Sections "Prohibited Uses" and Section "Special Permitted Uses".

- g. Residential development, subject to Sections "Prohibited Uses" and Section "Special Permitted Uses".**
- h. Agricultural uses, farming, gardening, nursery, conservation, harvesting, and grazing, provided that fertilizers, herbicides and other leachable materials are not stored outdoors and subject to Sections "Prohibited Uses" and Section "Special Permitted Uses".**
- i. Construction, maintenance, repair, and enlargement of drinking water supply related facilities such as, but not limited to wells, pipelines, aqueducts, tunnels and all other necessary public utilities and facilities designed so as to prevent contamination of surface water, subject to Sections "Prohibited Uses" and Section "Special Permitted Uses".**

Note: Where the application of fertilizers, pesticides, herbicides or other potential contaminants is being made, Surface Water quality monitoring test wells may be installed and periodically sampled and tested by the Town. An agent of the Board of Health will conduct such installation and sampling. The handling, management and application of such material shall be in accordance with 333 CMR.

The landowner applying fertilizers, pesticides, herbicides or other potential contaminants shall be required to maintain application records and submit them to the Hinsdale Water Department upon request.

1.16 Prohibited Uses

The following uses are prohibited within the Water Supply Protection District.

- a. All underground storage tanks.**
- b. Landfills and open dumps as defined in 310 CMR 19.006.**
- c. Automobile graveyards and junkyards, as defined in M.G.L. c. 140B Sec.1.**
- d. Treatment or disposal works subject to 314 CMR 3.00 or 5.00, except the following:**
 - 1. The replacement or repair of an existing treatment or disposal works that will not result in a design capacity greater than the design capacity of the existing treatment or disposal works;**
 - 2. Treatment or disposal works for sanitary sewage if necessary to treat existing sanitary sewage discharges in non-compliance with Title 5, 310 CMR 15.00, provided the facility owner demonstrates to the Department's satisfaction that there are no feasible siting locations outside of the Zone A.**

Any such facility shall be permitted in accordance with 314 CMR 5.00 and shall be required to disinfect the effluent. The Department may also require the facility to provide a higher level of treatment prior to discharge;

3. Treatment works approved by the Department designed for the treatment of contaminated ground or surface waters and operated in compliance with 314 CMR 5.05(3) or 5.05 (13).

4. Discharge by public water system of waters incidental to water treatment processes.

- e. All on-site subsurface sewage disposal systems, as defined in 310 CMR 15.000 (Title 5), within Zones A, B, and C, shall be in compliance with the requirements of 310 CMR 15.000.
- f. Facilities that generate, treat, store, or dispose of hazardous waste that are subject to M.G.L. c. 21C and 310 CMR 30.00, except for the following:
 - 1. Very small quantity generators as defined under 310 CMR 30.000.
 - 2. Water remediation treatment works approved by DEP for the treatment of contaminated ground or surface waters.
- g. No stabling, hitching, standing, feeding or grazing of livestock or other domestic animals shall be located, constructed, or maintained within 100 feet of the bank of a surface water source or tributary thereto. Owners and operators of agricultural operations should consult the Massachusetts Department of Food and Agriculture's "On-Farm Strategies to Protect Water Quality - An Assessment & Planning Tool for Best Management Practices" (December 1996) for information about technical and financial assistance programs related to erosion and sediment control and nutrient, pest, pesticide, manure, waste, grazing, and irrigation management.
- h. Cemeteries (human and animal) and mausoleums. No burial shall be made, except by permission in writing by the Board of Water Commissioners or like body having jurisdiction over such source of supply, in any cemetery or other place within 100 feet of the high water mark of a source of public water supply or tributary thereto. No lands not under the control of cemetery authorities and used for cemetery purposes, from which lands the natural drainage flows into said source of water supply or tributary thereto, shall be taken or used for cemetery purposes until a plan and sufficient description of the lands is presented to the Department and until such taking or use is expressly approved in writing by the Department.
- i. No person shall swim, wade or bathe in any public surface water source and no person shall, unless permitted by written permit by the Board of Water Commissioners or like body having jurisdiction over such source, fish in; enter or go in any boat, seaplane, or other vehicle; enter upon the ice for any purpose, including the cutting or taking of ice; or cause or

allow any animal to go into, or upon, any surface water source or tributary thereto.

- j. Petroleum, fuel oils, and heating oil bulk stations and terminals including, but not limited to, those listed under Standard Industrial Classification (SIC) Codes 5171 and 5983. SIC Codes are established by the US Office of Management and Budget and may be determined by referring to the publication, Standard Industrial Classification Manual, and other subsequent amendments.
- k. No person shall apply herbicides to any surface water body including but not limited to any reservoir and their tributaries, which serve as a source of public water supply without a permit issued by the Massachusetts Department of Environmental Protection pursuant to M.G.L. c. 111, § 5E. This requirement does not apply to the application of algacides containing copper by the public water system. However, the public water system shall notify the Department in writing prior to the application of such algacides.
- l. On and after January 1, 2001, a public water system shall prohibit the following new or expanded land uses within the Zone A of its surface water sources.

(a) All underground storage tanks,

(b) Above-ground storage of liquid hazardous material as defined in M.G.L. c.21E, or liquid propane or liquid petroleum products, except as follows:

1. The storage is incidental to:

- a. normal household use, outdoor maintenance, or the heating of a structure;
- b. use of emergency generators;
- c. a response action conducted or performed in accordance with M.G.L. c.21E and 310 CMR 40.000 and which is exempt from a ground water discharge permit pursuant to 314 CMR 5.05(14); and

2. The storage is either in container(s) or above-ground tank(s) within a building, or outdoors in covered container(s) or above-ground tank(s) in an area that has a containment system designed and operated to hold either 10% of the total possible storage capacity of all containers, or 110% of the largest container's storage capacity, whichever is greater. However, these storage requirements do not apply to the replacement of existing tanks or systems for the keeping, dispensing or storing of gasoline provided the replacement is performed in accordance with applicable state and local requirements;

- m. Storage of sludge and septage, unless such storage is in compliance with 310 CMR 32.30 and 310 CMR 32.31.**
- n. Storage of deicing chemicals and treated sand unless such storage, including loading areas, is within a structure designed to prevent the generation and escape of contaminated runoff or leachate.**
- o. Storage of animal manure in the Zone A, unless covered or contained in accordance with the specifications of the Natural Resource Conservation Service.**
- p. Earth removal in Zone A, consisting of the removal of soil, loam, sand, gravel, or any other earth material (including mining activities) of more than 50 cubic yards, except for excavations for building foundations, roads, or utility works. All other earth removal in the WSPD (Zones B and C) shall comply with the Town Earth Removal Bylaw. No new sand or gravel operations are allowed in the Zone A.**
- r. Stockpiling and disposal of snow, treated sand and ice removed from highways and streets that contain sodium chloride, chemically treated abrasives or other chemicals used for deicing roads of snow and ice.**
- s. Uncovered or uncontained storage of fertilizers. Storage of commercial fertilizers, as defined in MGL Chapter 128, Sec. 64, unless such storage is within a structure designated to prevent the generation and escape of contaminated runoff or leachate.**
- t. The operation of recreational vehicles (ATVs, snowmobiles, etc.) is prohibited within the WSPD. Property owners within the WSPD are exempt from this prohibition.**
- u. Any floor drainage systems in existing facilities, in industrial or commercial process areas or hazardous material and/or hazardous waste storage areas, which discharge to the ground without a DEP permit or authorization. Any existing facility with such a drainage system shall be required to either seal the floor drain (in accordance with the state plumbing code, 248 CMR 2.00), connect the drain to a municipal sewer system (with all appropriate permits and pre-treatment), or connect the drain to a holding tank meeting the requirements of all appropriate DEP regulations and policies.**
- v. Motor vehicle repair operations.**
- w. Solid waste combustion facilities or handling facilities as defined at 310 CMR 16.00.**

- x. Land uses that result in the rendering impervious of more than 15%, or more than 20% with artificial recharge, or 2500 square feet of any lot, whichever is greater.
- y. Commercial outdoor washing of vehicles, commercial car washes.
- z. No water shall be diverted out of the Water Supply Protection District.

1.17 Enforcement

Written notice of any violations of this bylaw shall be given by the Building Inspector or Zoning Enforcement Officer to the responsible person as soon as possible after detection of a violation or a continuing violation. Notice to the assessed owner of the property shall be deemed notice to the responsible person. Such notice shall specify the requirement or restriction violated and the nature of the violation, and may also identify the actions necessary to remove or remedy the violations and preventive measures required for avoiding future violations and a schedule of compliance. A copy of such notice shall be submitted to the Planning Board, Building Inspector, the Board of Health, Highway Department, Select Board, Conservation Commission, and the Board of Water Commissioners. The cost of containment, clean up or other action of compliance shall be borne by the owner and operator of the premises.

1.18 Severability

A determination that any portion of provision of this overlay protection district is invalid shall not invalidate any other portion or provision thereof, nor shall it invalidate any special permit previously issued there under.

Proposed Water Use Restriction Bylaw

Section 1 Authority

This Bylaw is adopted by the Town under its police powers to protect public health and welfare and its powers under M.G.L. c.40, §§21 *et seq.*, and implements the Town's authority to regulate water use pursuant to M.G.L. c.41, §69B. This bylaw also implements the Town's authority under M.G.L. c. 40, §41A, conditioned upon a declaration of water supply emergency issued by the Department of Environmental Protection.

Section 2 Purpose

The purpose of this bylaw is to protect, preserve and maintain the public health, safety and welfare whenever there is in force a State of Water Supply Conservation or State of Water Supply Emergency by providing for enforcement of any duly imposed restrictions, requirements, provisions or conditions imposed by the Town or by the Department of Environmental Protection.

Section 3 Definitions

Person shall mean any individual, corporation trust, partnership or association, or other entity.

State of Water Supply Emergency shall mean a State of Water Supply Emergency declared by the Department of Environmental Protection under M.G.L. c.21G, § 15-17.

State of Water Supply Conservation shall mean a State of Water Supply Conservation declared by the Town pursuant to section 4 of this bylaw.

Water Users or Water Consumers shall mean all public and private users of the Town's public water system, irrespective of any person's responsibility for billing purposes for water used at any particular facility.

Section 4 Declaration of a State of Water Supply Conservation

The Town, through its Board of Water Commissioners, may declare a State of Water Supply Conservation upon a determination by a majority vote of the Board that a shortage of water exists and conservation measures are appropriate to ensure an adequate supply of water to all water consumers. Public notice of a State of Water Conservation shall be given under section 6 of this bylaw before it may be enforced.

Section 5 **Restricted Water Uses**

A declaration of a State of Water Conservation shall include one or more of the following restrictions, conditions, or requirements limiting the use of water as necessary to protect the water supply. The applicable restrictions, conditions or requirements shall be included in the public notice required under section 6.

- a) **Odd/Even Day Outdoor Watering:** Outdoor watering by water users with odd numbered addresses is restricted to odd numbered days. Outdoor watering by water users with even numbered addresses is restricted to even numbered days. Premises with both odd and even numbering shall observe the restriction at all times within the portion of the premises having the applicable number.
- b) **Outdoor Water Ban:** Outdoor watering is prohibited.
- c) **Outdoor Watering Hours:** Outdoor watering is permitted only during daily periods of low demand, to be specified in the declaration of a State Water Supply Conservation and public notice thereof.
- d) **Filling Swimming Pools:** Filling of swimming pools is prohibited.
- e) **Automatic Sprinkler Use:** The use of automatic sprinkler systems is prohibited.

Section 6 **Public Notification of a State of Water Supply Conservation: Notification of DEP**

Notification of any provision, restriction, requirement or condition imposed by the Town as part of a State of Water Supply Conservation shall be posted at the Hinsdale Town Hall, the Hinsdale Post Office, and one other location deemed by the Commissioners to be frequented by the public, and shall be published in a newspaper of general circulation within the Town, or by such other means reasonably calculated to reach and inform all users of water of the State of Water Supply Conservation. Any restriction imposed under section 5 shall not be effective until such notification is provided. Notification of the State of Water Supply Conservation shall also be simultaneously provided to the Massachusetts Department of Environmental Protection.

Section 7 **Termination of a State of Water Supply Conservation: Notice**

A State of Water Supply Conservation may be terminated by a majority vote of the Board of Water Commissioners, upon a determination that the water supply shortage no longer exists. Public notification of the termination of a State of Water Supply Conservation shall be given in the same manner required by section 6.

Section 8 **State of Water Supply Emergency: Compliance with DEP Orders**

Upon notification to the public that a declaration of a State of Water Supply Emergency has been issued by the Department of Environmental Protection, no person shall violate any provision, restriction, requirement, condition of any order approved or issued by the Department intended to bring about an end to the State of Emergency.

Section 9 **Penalties**

Any person violating this bylaw shall be liable to the Town in the amount of \$50.00 for the first violation and \$100 for each subsequent violation which shall inure to the Town for such uses as the Board of Water Commissioners may direct. Fines shall be recovered by indictment, or on complaint before the District Court, or by non-criminal disposition in accordance with section 21D of Chapter 40 of the General Laws. Each day of violation shall constitute a separate offense.

Section 10 **Severability**

The invalidity of any portion or provision of this bylaw shall not invalidate any other portion or provision thereof.

Appendix B: Emergency Response Plan

Page 2 of 10

Resources

with various programs and equipment.