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

Dalton Fire District

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

PWS Name	Dalton Fire District
PWS Address	20 Flansburg Avenue
City/Town	Dalton
PWS ID Number	107000
Local Contact	Mr. Gilbert Rudd, Jr.
Phone Number	413-684-6124

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including storm 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

Glossary

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material (i.e. clay) that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

A well or surface water supply's water supply protection area is the land area contributing water to the source where protection activities should be focused.

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. This area should be owned or controlled by the water supplier and limited to water supply activities.

Zone II: The primary recharge area for the aquifer defined by hydrogeologic studies that must be approved by DEP. For wells that have not had a scientifically delineated Zone II, an Interim Wellhead Protection Area (IWPA) is designated.

The IWPA is the larger area that is likely to contribute water to the well. In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

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.

Section 1: Description of the Water System

Groundwater Source

Well Name	*Source ID*	*Susceptibility*
Mobile Home Park Well	1070000-01G	Moderate

Surface Water Sources

Source Name	*Source ID*	*Susceptibility*
Egypt Brook Reservoir	1070000-02S	Moderate
Windsor Reservoir	1070000-03S	High

Dalton is a small, rural community in western Massachusetts. The Dalton Fire District maintains three surface water sources (Windsor, Egypt, and Anthony Reservoirs) and one groundwater source (Trailer Park Well) for drinking water purposes. Additionally, Dalton receives 46 million gallons of water per month from the Pittsfield Water Department which diverts water from the Windsor Brook watershed.

The Windsor Reservoir, the main source of water for Dalton, is located just over the Dalton municipal boundary in Hinsdale and Windsor. Its watershed is within these towns and partially in the town of Peru. The Anthony and Egypt Reservoirs and their respective watersheds are located entirely within Dalton. The Anthony Brook headwall is maintained as an emergency source only and is not addressed further in this report. Water from the Windsor and Egypt brook Reservoirs is treated through a conventional filtration plant at the district's Reservoir Road Water Treatment Plant. The plant, capable of treating water from either or both reservoirs, utilizes a sedimentation basin followed by two slow sand filter beds. Following filtration the water is chlorinate for disinfection and the pH adjusted for corrosion control.

The well (1070000-01G) is located south of Route 9, where it was constructed in 1993 to serve a mobile home park nearby. The mobile home park is located so that treated reservoir water could not easily be supplied to the park, therefore a well was installed to supply the area. The trailer park well is a bedrock well, drilled to a depth of 440 feet, and has an approved safe yield of 15 gpm. The Zone I for the well is 300 feet, and the Interim Wellhead Protection Area (IWPA) is 880 feet, based on the approved safe yield rate. The well is drilled into the carbonate rocks of the Stockbridge Formation and water from the well is chlorinated prior to distribution.

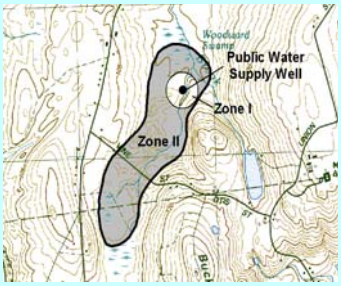
For current information on water quality monitoring results and treatment processes, please refer questions to the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report.

Section 2: Land Uses in the Protection Areas

The land uses within the watershed of the Winsor Reservoir and the IWPA of the well are a mixture of agricultural, residential, and forests; there are numerous roads throughout. The watershed for Egypt Reservoir has only forested land with a utility right-of way. The most significant threat to the surface water supplies is from sediment and microbial threats from erosion, stormwater and

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and a Zone II or IWPA protection area.



aquatic wildlife. Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the Tables of Regulated Facilities and Underground Storage Tanks attached in Appendix B.

Key Land Uses and Protection Issues include:

1. Nonconforming Zone A
2. Residential land uses
3. Transportation corridors
4. Hazardous materials storage and use
5. Protection Planning
6. Agricultural activities
7. Utility Right-of-way
8. Presence of Beavers in Surface Water Sources

The overall ranking of susceptibility to contamination for the system is high, based on the presence of at least one high threat land use within the main source, Windsor Reservoir water supply protection areas, as seen in Table 2. However, the sources (Egypt Reservoir and the Trailer park Well) have individual susceptibility rankings of moderate.

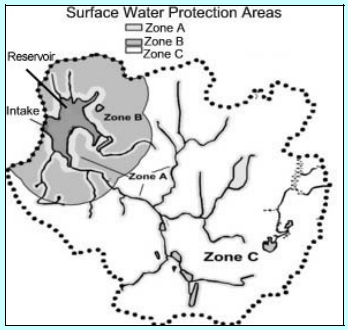
1. Nonconforming Zone A – The Zone I for the well is a 300-foot radius around the wellhead. The water supplier owns or controls all of Zone I. There is haying conducted in the Zone I however, pesticides, fertilizers or manure may not be used on the field. The Zone A for reservoirs is 400 feet from the shoreline and 200 feet on either side of all feeder streams. Massachusetts drinking water regulations (310 CMR 22.00 Drinking Water) requires public water suppliers to own the Zone I/Zone A, or control the Zone I/Zone A through a mechanism such as a conservation restriction. Local roads run throughout the Zone A of Windsor Reservoir and the District does not own any of the land around Egypt Brook Reservoir. Only water supply activities are allowed in the Zone I/Zone A. However, many public water supplies were developed prior to the Department's regulations and contain non-water supply activities such as homes and public roads.

Zone A Recommendations:

- ✓ Prepare a watershed/wellhead protection plan for all of the systems sources. Prioritize lands to protect within the Zone A, watershed and IWPA.
- ✓ Obtain a Right of First Refusal for acquiring land critical to protecting water supply within the Zone A.
- ✓ Consider purchasing the land or acquiring a conservation restriction on the land not owned by the District to minimize potential threats.
- ✓ Encourage the use of BMPs for the storage, use, and disposal of household hazardous materials and road runoff.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone A.
- ✓ Contact the property owners and the appropriate municipalities to be sure they are aware they are within the Zone A. Provide information and refer them to DEP if they require assistance implementing BMPs.
- ✓ Prepare a public access control plan including management, patrolling and monitoring.

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.



2. Residential Land Uses – Approximately 13% of the IWPA consists of a high density residential areas. About 3% of the watershed of Windsor Reservoir has residential land use, including areas within the Zone A. None of the areas have public sewers; all use septic systems. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- **Septic Systems** – Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the groundwater because septic systems provide a direct discharge to the ground. In addition, if septic systems fail or are not properly maintained they can be a potential source of microbial contamination.

- **Lawn Care and Landscaping** - Lawn care products can pose a significant threat to water supplies by leaching nutrients and pesticides into groundwater and surface water.
- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil Storage** - If managed improperly, Underground and Aboveground Storage Tanks (UST and AST) can be potential sources of contamination due to leaks or spills of the fuel oil they store.

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.

Residential Recommendations - Septic systems:

✓ **System Care** - Educate residents on private septic systems about using cleaning compounds that are safe for the septic system, on proper disposal practices, i.e. only sanitary waste in the septic system. Information on septic systems can be found at Massachusetts Department of Environmental Protections website http://www.state.ma.us/dep/brp/files/yoursyst.htm.

✓ **Proper Disposal** - Residents should dispose of used oil, antifreeze, paints, and other household chemicals properly - not in septic systems.

Residential Recommendations - Lawn Care and Landscaping:

✓ **Environmentally Sound Lawn Care** - Provide educational materials to residents about the proper application of pesticides or fertilizers. Landscape with native grasses, native flowering plants and trees and shrubs. Once established native plants require less water and may not require fertilizer, herbicides or pesticides use. Encourage the use of native plants and landscaping by establishing a demonstration area at a town facility. Information on environmentally sound lawn care practices can be obtained from the Massachusetts Department of Food and Agriculture Pesticide Bureau's website at http://www.massdfa.org.

Residential Recommendations - Household Hazardous Waste:

✓ **Proper Disposal -** Educate residents on the problem of disposing of hazardous materials in landfills, septic systems, wastewater treatment plants, storm drains, and on the ground. Encourage residents to use the Town of Dalton's Household Hazardous Waste Collection opportunities. Consider working with the host communities and Berkshire Planning Commission to coordinate Household Hazardous Waste Collection days.

✓ **Alternative Products** - Provide residents with information on options that are available to substitute less hazardous substances for many products used in the home.

Residential Recommendations - Heating Oil Tanks:

✓ **Inventory Tanks -** Work with host communities to inventory USTs. If there are significant numbers of tanks consider options for financial incentives to replace the tanks with ASTs.

✓ **Underground Storage Tanks -** Target homeowners with underground storage tanks for education and outreach.

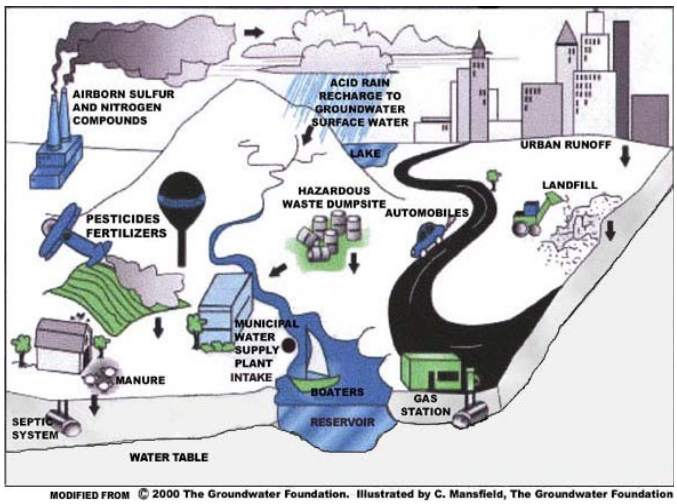


Figure 1: Sample watershed with examples of potential sources of contamination

✓ **Aboveground Storage Tanks** - Provide educational materials to residents regarding the proper storage of liquidpetroleum products in aboveground storage tanks. The Department recommends zoning and non-zoning controls to prohibit the siting of liquid petroleum products storage in protection areas unless such storage is aboveground, on an impervious surface and either in a container or in an aboveground tank within a building, or in an area that has a containment system designed and operated to hold either 10 percent of the total possible storage capacity of all containers, or 110% of the largest container storage capacity whichever is greater. Consult with the local fire department for any additional local code requirements regarding aboveground storage tanks. A fact sheet on basement or outside oil tank can be obtained from the http://www.state.ma.us/dep/bwsc/files/HSFS.pdf

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	IWPA	Watershed	Potential Contaminant Sources*
Agricultural					
Forestry Operation	Numerous	L	—	Windsor Egypt	Herbicides or pesticides, equipment maintenance materials: leaks, spills, or improper handling; road building
Livestock Operations	1	M	—	Windsor	Manure (microbial contaminants): improper handling
Pesticide Storage or Use	1	H	—	Windsor (Egypt)	Pesticides: leaks, spills, improper handling, or over-application , (Right of Way areas only)
Commercial					
Gas Stations	2	H	—	Windsor	Automotive fluids and fuels: spills, leaks, or improper handling or storage
Residential					
Fuel Oil Storage (at residences)	Numerous	M	Yes	Windsor	Fuel oil: spills, leaks, or improper handling. May be AST or UST
Lawn Care / Gardening	Numerous	M	Yes	Windsor	Pesticides: over-application or improper storage and disposal
Septic Systems / Cesspools	Numerous	M	Yes	Windsor	Hazardous chemicals: microbial contaminants, and improper disposal
Miscellaneous					
Aquatic Wildlife	Periodic	L	—	Windsor	Microbial contaminants
Clandestine Dumping	Periodic	H	—	Windsor	Debris containing hazardous materials or wastes
Composting Facilities	1	L	—	—	Organic material, animal waste, and runoff: storage and improper handling
Transmission Line Rights-of-Way - Type: Electric	1	L	—	Egypt	Corridor maintenance pesticides: over-application or improper handling; construction
Transportation Corridors	Numerous	M	Yes	Windsor	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling

Land Uses	Quantity	Threat	IWPA	Watershed	Potential Contaminant Sources*
Underground Storage Tanks	1	H		Windsor	Stored materials: spills, leaks, or improper handling
Utility Substation Transformers	1	L		Windsor	Chemicals and other materials including PCBs: spills, leaks, or improper handling
Very Small Quantity Hazardous Waste Generator		L		Windsor	Hazardous materials and waste: spills, leaks, or improper handling or storage

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 trans-

3. Transportation Corridors - Route 9 runs through the IWPA and the watershed of Windsor Reservoir, and local roads are common throughout the protection areas. Route 9 is a heavily traveled State road, and therefore poses a greater threat to those supplies that are in close proximity to it; however, it is equally important to use best management practices in any area with transportation corridors within the protection areas. Roadway construction, maintenance, and typical highway use can all be potential sources of contamination. Accidents can lead to spills of gasoline and other potentially dangerous transported chemicals. Roadways are frequent sites for illegal dumping of hazardous or other potentially harmful wastes. De-icing salt, automotive chemicals and other debris on roads are picked up by stormwater and wash in to catch basins.

Transportation Corridor Recommendations:
- ✓ Work with local emergency response teams to ensure that any spills within the Zone II can be effectively contained.
- ✓ If storm drainage maps are available, review the maps with emergency response teams. If maps aren't yet available, work with town officials to investigate mapping options such as the upcoming Phase II Stormwater Rule requiring some communities to complete stormwater mapping.
- ✓ Work with local emergency response teams to ensure that any spills within the watershed can be effectively contained and that those teams are aware of the boundaries of your watersheds and IWPA.

Stormwater Catch Basins Recommendations:
- ✓ **Inspect, Maintain, and Clean -** Work with the Town and State to have catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in runoff. Note: Catch basin cleanings are classified as solid waste by DEP and must be handled and disposed in accordance with all regulations, policies, and guidance. In the absence of written approval from DEP, catch basin cleanings must be taken to a facility permitted by DEP to accept solid waste. For information on DEP's Nonpoint Competitive Grants Program Upcoming Funding Opportunity refer to: http://www.state.ma.us/dep/brp/mf/mfpubs.htm#wpa.
- ✓ **Best Management Practices** - Work with the Towns to develop Best Management Practices that are the most effective, practical means of preventing or reducing pollution from nonpoint sources. Information is available at http://www.epa.gov/OWOW/NPS/roads.html.
- ✓ **Local Controls** - Encourage and assist officials to develop a local stormwater ordinance. For more information see http://www.epa.gov/owow/nps/ordinance/stormwater.htm.
- ✓ **Storm Drain Stenciling Program** - Work with local watershed groups to institute a Storm Drain Stenciling

Program. For more information on how to develop a storm drain stenciling program go to http://www.earthwater-stencils.com

- ✓ **Stormwater Planning -** Encourage local officials to become familiar with and begin to implement a stormwater management program to meet DEP's Phase II Storm Water Regulations. For additional information, refer to the Stormwater Management Information at http://www.state.ma.us/dep/brp/ww/wwpubs.htm#storm.

4. Hazardous Materials Storage and Use – A very small percentage (<1%) of the land area within Windsor Reservoir's watershed is commercial land use. Many small businesses use hazardous materials, produce hazardous waste products, and/or store large quantities of hazardous materials in UST/AST. If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be disposed of to a septic system or floor drain leading directly to the ground.

Hazardous Materials Storage and Use Recommendations:

- ✓ Educate local businesses on best management practices for protecting water supplies. Distribute the fact sheet "Businesses Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMP's for common business issues.
- ✓ Work with local businesses to register those facilities that are unregistered generators of hazardous waste or waste oil. Partnerships between businesses, water suppliers, and communities enhance successful public drinking water protection practices.
- ✓ Educate local businesses on Massachusetts floordrain requirements. See brochure "Industrial Floor Drains" for more information.

5. Protection Planning – Forested land covers 59% of the IWPA, 87% of the Windsor Reservoir watershed, and more than 95% of the Egypt Brook Reservoir watershed. Protected open space within the IWPA and watershed is noted on the Land Uses section of the map, the greatest of which is within the Egypt Reservoir's watershed. Currently, Dalton has not passed any bylaws to comply with water supply protection control regulations 310 CMR 22.21(2), which should include floor drain prohibitions.

Top 5 Reasons to Develop a Local Wellhead and Surface Water Protection Plan

❶ Reduces Risk to Human Health

❷ Cost Effective! Reduces or Eliminates Costs Associated With:

- Increased monitoring and treatment
- Water supply clean up and remediation
- Replacing a water supply
- Purchasing water

❸ Supports municipal bylaws, making them less likely to be challenged

❹ Ensures clean drinking water supplies for future generations

❺ Enhances real estate values – clean drinking water is a local amenity. A community known for its great drinking water in a place people want to live and businesses want to locate.

Dalton has sold Conservation Restrictions (CR) to the MA DEM to allow public access to the watershed. Although the CR limits allowable activities, it does not specify control measures other then a 500 foot setback from the reservoir.

Wellhead Protection Plan and a Watershed Protection Plan coordinate community efforts, identifies protection strategies, establishes a timeframe for implementation, and provides a forum for public education and outreach, and can help to pass a bylaw for control regulations. The development of successful Plans are outlined in five steps in DEP's "Developing a Local Wellhead Protection Plan" and in "Developing a Local Watershed Protection Plan" (see Appendix A for the full report) as:

- Establish a protection committee or team
- Define the Water Source Protection Areas
- Identify potential sources of contamination
- Protect and manage the source protection areas
- Conduct ongoing public education and outreach
- An access control and monitoring plan should be an integral part of a watershed protection plan. The assessment of potential impacts of public access to the watershed are critical in protecting the water supply and for long and short term planning for the Water District.
- Since both Pittsfield and Dalton utilize the Windsor and Cady Brook watersheds, consider consulting with Pittsfield to develop a watershed protection strategy.

Please use the guidance booklets included in the appendix to help create your plan. Compile the information supplied in the Zone II reports, this and other reports; include copies of maps outlining the protection areas (Zone I, IWPA, Zone

A, Zone B, and Zone C) and detail the protection measures in place. Outline a plan with a time line for completion of the various plan components. Submit your written report to the DEP Regional office and/or Boston office for approval.

Protection Planning Recommendations:

- ✓ Create and formalize a Wellhead Protection Plan and a Watershed Protection Plan. Refer to http://mass.gov/dep/brp/dws/protect.htm for a copy of DEP's guidance, "Developing a Local Wellhead Protection Plan" (see Appendix A).
- ✓ Work with the other host communities (Peru, Windsor, Hinsdale) to adopt protective bylaws and regulations for the Windsor Reservoir watershed. The Department will be instrumental in assisting Dalton in this effort.

6. Agricultural Activites – Crop and pasture lands make up about 22% of the land use in the IWPA, 4% in the watershed of Windsor Reservoir. Pesticides and fertilizers have the potential to contaminate a drinking water source if improperly stored, applied, or disposed. If not contained or applied properly, animal waste from barnyards, manure pits compost facilities and field application are potential sources of contamination to ground and surface water. The Egypt Brook reservoir watershed is not owned by the District although the property is protected from development by Agriculture Restrictions. The entire watershed is forested and actively logged. The owner demonstrates apparent good stewardship of the land, however the access points to the forestry activities are within the Zone A of the reservoir and feeder brook posing a serious potential threat to the source from accidental petroleum release.

Agricultural Activities Recommendation:

- ✓ Work with farmers in your protection areas to make them aware of your water supply and to encourage the use of a US Natural Resources Conservation Service farm plan to protect water supplies.
- ✓ Current land owners are predominantly excellent land stewards employing BMPs.
- ✓ Work with the landowner to identify alternative access for forestry operations. If that is not feasible, encourage the requirement that contractors working on the property inspect their vehicles and have sufficient absorbent materials to contain an accidental release.
- ✓ Consider purchase of Conservation Restrictions on large tracts especially within the Zone A.

7. Electric Utility Right-of-Way – Western Massachusetts Electric Company maintains power line Right-of-Way areas which transect the watershed of both surface water supplies, and run directly over brooks or rivers that are upstream from the intakes. Normal maintenance of an electricity line right-of-way can introduce contaminants to a water supply through herbicide application for vegetation control. The over-application or improper handling of herbicides on a right-of-way is a potential source of contamination. Leaks or spills of transported maintenance chemicals are also potential sources of contamination to the water supply.

Electric Right of Way Recommendations:

- ✓ Review the electric right-of-way Yearly Operating Plan to ensure Best Management Practices are implemented with regard to vegetation control in the watershed but especially within the Zone A, and that the utility has accurate information regarding the locations of the wells and the Zone I and Zone A. Meet with the utility and review the maps the utility uses and, if necessary, supply them with updated copies.
- ✓ Work with your local fire department to review

What is a Zone III?

A Zone III (the secondary recharge area) is the land beyond the Zone II from which surface and ground water drain to the Zone II and is often coincident with the watershed boundary.

The Zone III is defined as a secondary recharge area for one or both of the following reasons:

1. The low permeability of underground water bearing materials in this area significantly reduces the rate of groundwater and potential contaminant flow to the Zone II .

2. The groundwater in this area probably discharges to surface water feature such as a river rather than discharging directly into the aquifer.

Land uses within the Zone III were not assessed for this report.

For More Information

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, town boards, and the local media.

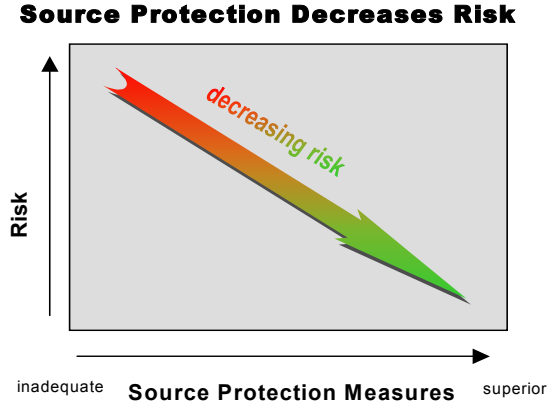


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

emergency response plans. Updates to this plan should include the electric rights-of-way including coordination with the owner/operator of the company or companies using the right-of-way. Request emergency response teams to coordinate Emergency Response Drills and practice containment of potential contaminants from accidents within the watershed, which should attempt to include representatives from the owner/operator of the utility company utilizing the right-of-way.

8. Presence of Aquatic mammals in Surface Water Watershed – There is past history of aquatic mammals (beavers and muskrats) living in and near the surface water supplies, specifically Windsor Reservoir. Aquatic mammals pose a potential threat of microbial contamination of the source from *Giardia Lamblia* and *Cryptosporidium*, pathogens that are identified in the Surface Water Treatment Rule and Enhanced Surface Water Treatment Rule as posing an unacceptable risk to drinking water.

Presence of Beavers in Surface Water Sources Recommendations:

- ✓ Monitor the watershed and reservoirs for the presence of aquatic mammals and their proximity to the intake.
- ✓ Monitor raw water quality and assess potential impacts.

Additional Documents:

To help with source protection efforts, more information is available by request or online at 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

Other land uses and activities within the watersheds and IWPA that have potential for contamination are listed in Table 2. Refer to Table 2 and Appendix 2 for more information about these land uses.

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 listed above and below should be used to better protect your water supply.

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

As with many water supply protection areas, the system source water areas contain potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. The water supplier is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas through:

- Keeping good relations with land owners in the IWAP and the watersheds especially the Zone As for better protection of the water supply.

Source Protection Recommendations:

To better protect the sources for the future:

- ✓ Develop a Watershed Protection Plan with emphasis on public access control and management. Include assessment of funding mechanisms to manage watershed inspections and management as required. Evaluate and assess current activities and their potential or existing impacts to water quality and source vulnerability.
- ✓ Inspect the Zone I/Zone A regularly, and when feasible, remove any non-water supply activities.
- ✓ Continue to educate residents on ways they can help you to protect drinking water sources.
- ✓ Work with emergency response teams in watershed host communities to ensure that they are aware of the stormwater drainage in your IWPA and watersheds when responding to spills or accidents. Include MA Highway Department and the communities of Windsor, Hinsdale, and Peru.
- ✓ Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- ✓ Continue working with farmers and land owners in your protection areas to make them aware of your water supply and to support the use of a NRCS farm plan to protect water supplies and BMPs for all activities.

Resources for Drinking Water Source Protection:

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

DEP staff, informational documents, and resources are available to help you build on this SWAP report as you continue to improve drinking water protection in your community. The Department's Wellhead Protection Grant Program and Source Protection Grant Program provide funds to assist public water suppliers in addressing water supply source protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the Grant Program. Please note: each spring DEP posts a new Request for Response for the grant program (RFR).

Other 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.

Conclusions:
The assessment and protection recommendations in this SWAP report are provided as a tool to encourage community discussion, support ongoing source protection efforts, and help set local drinking water protection priorities. Citizens and community officials should use this SWAP report to spur 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 water supply protection areas. Use this information to set priorities, target inspections, focus education efforts, and to develop a long-term drinking water source protection plan.

Section 4: Appendices

A. Protection Recommendations
B. Regulated Facilities within the Water Supply Protection Area
C. Map of the Protection Areas

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I		
Does the Public Water Supplier (PWS) own or control the entire Zone I/Zone A?	**YES Zone I** **NO Zone A**	Follow Best Management Practices (BMPs) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials. Investigate purchasing, or obtaining Right of First Refusal of the Zone A land.
Is the Zone I/Zone A posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is the Zone I/Zone A regularly inspected?	**YES**	Continue daily inspections of drinking water protection areas.
Are water supply related activities the only activities within the Zone I/Zone A?	**NO**	Continue monitoring non-water supply activities in Zone I and Zone As.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does the municipality have Surface Water Protection Controls that meet 310 CMR 22.20 C or Wellhead Protection Controls that meet 310 CMR 22.21 (2)?	**NO**	The Town does not meet DEP's best efforts for surface water or wellhead protection. However, the District does monitor activities in the hay field to ensure that no fertilizers, manure or pesticides are used near the wellhead.
Do neighboring communities protect the areas of the watershed extending into their communities?	**NO**	Work with neighboring municipalities to include surface water protection areas in their water supply protection controls. Continue to work with DEM on management of State Forest Lands within the watershed.
Planning		
Does the PWS have a Wellhead Protection Plan or Local Surface Water Protection Plan?	**NO**	Develop a water supply protection plan or plans to incorporate the surface water supplies and the well. Follow "Developing a Local Wellhead Protection Plan" and other guidance available at: www.state.ma.us/dep/brp/dws. Develop an access plan to control public access to the watershed. The cost of management must be incorporated into long term planning.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**NO**	Create 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 water supply protection committee?	**NO**	Establish committee; include representatives from citizens' groups, neighboring communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities?	**NO**	For more guidance, see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc.
Does the PWS provide water supply protection education?	**NO**	Aim education at schools and commercial, industrial, and municipal uses within the watershed. Extend these education practices into the host communities of the surface water supplies.