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

Northampton Water Department

What is SWAP?

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

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

Susceptibility and Water Quality

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

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

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

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

Table 1: Public Water System Information

PWS Name	Northampton Water Department
PWS Address	237 Prospect Street
City/Town	Northampton, Massachusetts 01060
PWS ID Number	1214000
Local Contact	Mr. Charles Borowski
Phone Number	(413) 587-1098 x301

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

Section 1: Description of the Water System

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.

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. This area is defined by hydrogeologic studies that must be approved by DEP. Refer to the attached map to determine the land within your Zone II.

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

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

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

The attached map shows Zone A and your watershed boundary.

Groundwater Sources

Zone II - MA DEP GIS # 109 ***Source ID#***

Well Name	*Susceptibility:* High
GP Well #1	1214000-01G
GP Well #2	1214000-02G

Surface Water Sources

Source Name	*Susceptibility:* High
Mountain Street Reservoir	1214000-01S
Ryan Reservoir	1214000-03S
West Whately Reservoir	1214000-04S

Northampton is a medium sized community in central western Massachusetts with a diverse economic base of education, retail, commercial and industry. The Northampton Water Department maintains and operates two wells and three reservoirs. The two wells for the Northampton Water Department are located within the same unconfined, sand and gravel aquifer, in the central area of Northampton. Both wells are located within the same Zone II protection area and each well has a Zone I radius of 400 feet. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of a hydrogeologic barrier (i.e. confining clay layer) that can prevent contaminant migration from the ground surface. Please refer to the attached map of the Zone II area.

The Mountain Street Reservoir and its watershed are located on the border of Williamsburg, Whately and Hatfield. The Ryan and West Whately Reservoirs are located in the northwest corner of Whately. The watershed areas for the Ryan Reservoir extend into Williamsburg, Conway and Whately, and the watershed areas for West Whately Reservoir extend into Williamsburg. Water from the Ryan and West Whatley Reservoirs can be directed into the Mountain Street Reservoir or directly into the distribution main.

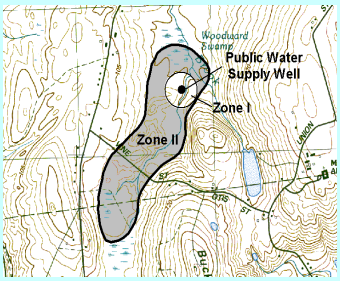
Water from the wells is not treated prior to distribution; water from the reservoirs is disinfected with chlorine and the pH is adjusted with sodium hydroxide and zinc orthophosphate is added for corrosion control prior to distribution. For current information on monitoring results and treatment, please call 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 Zone II and watersheds for Northampton are primarily forested, with smaller portions consisting of agriculture, residential, and commercial/industrial land uses (refer to the attached map for details). Land uses and activities that are potential sources of contamination are listed in Table 2, with further detail provided in the Table of Regulated Facilities and Table of Underground Storage Tanks in Appendix B.

What is an Aquifer 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 protection area.



Key Land Uses and Protection Issues include:

1. Activities in Zone I - 400 foot radius around wells
2. Activities in Zone A - 400 feet from reservoir's edge and 200 feet along either side of the reservoir feeder brooks.
3. Residential Land Uses
4. Transportation Corridors
5. Hazardous Materials Storage and Use
6. Comprehensive Wellhead Protection Planning

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 water supply protection areas, as seen in Table 2.

1. Activities in Zone I Wellhead Protection Area– The Zone I for each of the wells is a 400 foot radius around each of the wellheads. Massachusetts drinking water regulations (310 CMR 22.00 Drinking Water) requires public water suppliers to own the Zone I, or control the Zone I through a conservation restriction. Northampton does not own the entire Zone I, however, local zoning ordinances limit activities within the Zone I. Many public water supplies were developed prior to the Department's regulations and contain non-water supply activities such as homes and public roads. The following non-water supply activities occur in the Zone Is of the system wells:

Well 01G - There is a local road and one home within the Zone I.

Well 02G - There are two homes and an electrical transformer station on the edge of the Zone I.

Zone I Recommendations:

- ✓ To the extent possible, remove all non-water supply activities from each Zone I to comply with regulatory requirements.
- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as household hazardous chemicals.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Keep any new non-water supply activities out of the Zone I.

2. Activities in Zone A of the reservoirs - The Zone A for the reservoirs includes all areas within 400 feet around each of the reservoirs and within 200 feet of either side of all streams that flow into the reservoirs. Land use activities within a Zone A may have an impact on surface water sources. Wild animals, farm animals and domestic pets can be carriers of waterborne diseases such as Giardia, Cryptosporidium, Salmonella, etc. while road run off can carry other contaminants. There are local roads and small parking areas in the Zone As of the system's reservoirs.

Zone A Recommendations:

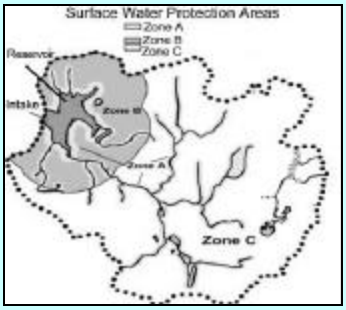
- ✓ Continue to monitor and protect the Zone As and keep any new prohibited activities out of the Zone A.

3. Residential Land Uses – Approximately 50% of the Zone II land area and approximately 2% of the total watershed lands consist of residential areas. Although most of the Zone II area is served by municipal sewer, some areas are not and the reservoir watersheds are not served by sewer. All areas not served by sewers, rely on 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 lead to the ground. If septic systems fail or are not

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.



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 and town and City boards.

properly maintained they can be a potential source of microbial contamination.

- **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 (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil they store.
- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and contaminants from automotive leaks, maintenance, washing or accidents.

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 Land Use Recommendations:

- ✓ Make available for distribution the fact sheet "Residents Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- ✓ Work with planners in the city and in all host communities to managed development in the water supply protection areas.
- ✓ Continue current efforts to purchase land, conservation restrictions and pursue Right of First Refusal as necessary to further protect the water supplies.

4. Transportation Corridors - Local roads run through the protection areas for all of the sources. Roadway construction, maintenance, and typical use can all be potential sources of contamination. Accidents can lead to spills of gasoline and other potentially dangerous transported chemicals. Roadways may be sites for illegal dumping of hazardous or other potentially harmful wastes. Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include contaminants from automotive leaks, maintenance, washing, or accidents.

There are numerous unpaved, ways as well as legal (authorized) and illegal (unauthorized) trails throughout the watersheds and Zone II. Most of these ways and trails through the watershed are not maintained at all or are minimally maintained. The resulting erosion 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 and pose a potential threat to public health and safety. Uncontrolled erosion contributes sediment, various contaminants and pathogens into the contributing waters and reservoirs. Evidence of access to the watershed was observed and anecdotal information indicates access throughout the watersheds. Unmanaged access may also result in vandalism, illegal dumping and access to the reservoir resulting in water quality impairment.

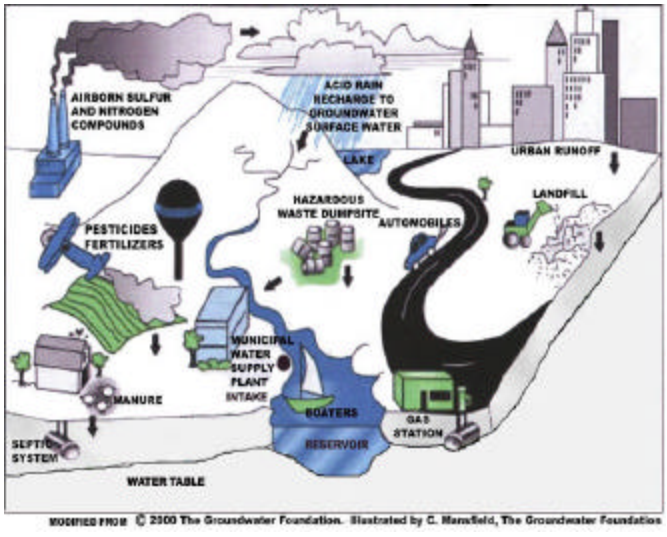


Figure 1: Sample watershed with examples of potential sources of contamination

Northampton continues to negotiate with private land owners, recreation groups and the Department of Environmental Management regarding public access and maintenance of trails and ways. They continue to assess the relationship of erosion along trails and turbidity in the reservoir and feeder streams. The City is investigating the disposition of trails and old roads that access the Conway State Forest and other remote areas within the watershed in an effort to manage access and control erosion on trails through the watershed.

Transportation Corridor Recommendations:

- ✓ Continue investigating disposition of all roads, ways and "trails" as required. The Department may be of

(Continued on page 6)

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	Aquifer Zone II	Watershed Source ID	Potential Contaminant Sources*
Agricultural					
Forestry Operation	Throughout	L	-	All	Have approved forestry plans. Leaks, spills, or improper handling of petroleum products, erosion.
Industrial					
Manufacturer (Proposed)	1	H	Yes	-	Solvents, inks and process waste: spills, leaks, or improper handling or storage of hazardous materials. Area is served by sewer.
Residential					
Fuel Oil Storage (at residences)	> 100 in ZII Few in Watersheds	M	Yes	01S, 03S	Fuel oil: spills, leaks, or improper handling
Lawn Care / Gardening	> 100 in ZII Few in Watersheds	M	Yes	01S, 03S	Over application or improper storage and disposal, of pesticides improper use and handling of petroleum products
Septic Systems / Cesspools	> 100 in ZII Few in Watersheds	M	Yes	01S, 03S	Hazardous chemicals: microbial contaminants, and improper disposal
Miscellaneous					
Aquatic Wildlife	(Actively managed)	H	-	All	Microbial contaminants
Elementary School	1	M	Yes	-	Spills, leaks, or improper handling or storage of household type hazardous materials; large parking area
Stormwater Drains/ Retention Basins	Many in ZII Few in Watersheds	L/H	Yes	All	Erosion, debris, pet waste, and chemicals in stormwater from roads, parking lots, and lawns
Transmission Line Rights-of-Way	1	H	-	01S	Corridor maintenance pesticides: over-application or improper handling; construction
Transportation Corridors—Legal and illegal access	Several	M/H	Yes	All	Fuels and other hazardous materials: accidental leaks or spills; pesticides—vegetation control: over-application or improper handling. Illegal access to watershed, potential of illegal dumping.
Utility Substation Transformers	1	L	Yes	-	MODF (oils): spills, leaks, or improper handling. The utility has stated that the transformer MODF does not contain PCBs

See Table notes on Page 6.

Table 2 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 -** Where there are two rankings, the first is for surface water, the second for groundwater sources. The rankings (high, moderate or low) represent the relative threat of each land use compared to other PSCs. The ranking of a particular PSC is based on a number of factors, including: the type and quantity of chemicals typically used or generated by the PSC; the characteristics of the contaminants (such as toxicity, environmental fate and transport); and the behavior and mobility of the pollutants in soils and groundwater.

assistance with discussions regarding the control of access.

- ✓ Continue current patrols of watershed land and active management including enforcement of no trespassing in designated areas.
- ✓ Continue to evaluate options for management of access to ways. Include evaluation of continuing current practice of full access, closing roads to all traffic, closing road to all commercial traffic and limiting access only to residents with a locked gate and key for residents only. Request abandonment of former county roads as appropriate from MA DCAM or the MA Legislature. Continue proactive management of activities.
- ✓ Continue to regularly inspect watershed and Zone II for illegal activities and spills.
- ✓ Work with local emergency response teams to ensure that any spills within the protection areas can be effectively contained.
- ✓ Work with the Towns and the City to have catch basins or other storm water management structures inspected, maintained, and cleaned on a regular schedule. Regular street sweeping reduces the amount of potential contaminants in runoff.
- ✓ Work with City and town officials to prioritize the mapping of storm drains in the Zone II and the watersheds for the Phase II Stormwater Rule.
- ✓ Promote BMPs for stormwater management and pollution controls. Consider a storm drain stenciling program.
- ✓ Commercial agricultural facilities and rural municipalities may be eligible for funding BMPs through the NRCS. Contact the NRCS about the Environmental Quality Incentives Program (EQIP).

5. Hazardous Materials Storage and Use – There are no industrial activities within the watersheds of the reservoirs. However, it is proposed that the water treatment facility be located immediately adjacent to one of the reservoirs. There is no municipal sewer and therefore the facility is proposed to utilize lagoons. Less than 1% of the Zone IIs for Northampton's wells is commercial and industrial land uses. There is only one large facility within the Zone II area. Presently, that facility is idle, however, a business associated with printing manufacturing, presently located within Northampton is reportedly planning to move or expand into the facility. Many businesses and industries use hazardous materials, produce hazardous waste products, and/or store quantities of hazardous materials as part of their operations. If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be disposed of to floor drains leading directly to the ground. The facilities located within the Zone II area are connected to the municipal sewer system.

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.

The land uses within the Zone III are assessed only for sources that are shown to be groundwater under the direct influence of surface water.

Hazardous Materials Storage and Use Recommendations:

- ✓ Work with Board of Health and Planning Department in assisting local businesses with best management practices for protecting water supplies as appropriate. Make available 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.
- ✓ Consult with the Board of Health to ensure local businesses 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.
- ✓ Consult with the Board of Health regarding local businesses and Massachusetts floordrain requirements. See brochure "Industrial Floor Drains" for more information.
- ✓ Ensure compliance with regulations for management of treatment chemicals including proper containment, emergency response plan for delivery and handling, and stormwater management.
- ✓ Provide the Planning Board and Board of Health with information from the DEP BWP and Office of Technical Assistance regarding existing regulations and assistance available to printing facilities http://www.state.ma.us/dep/erp/erpforms.htm and http://www.state.ma.us/ota/#links.
- ✓ The USDA has various funding sources for government, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site http://search.sc.egov.usda.gov/.

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.

6. Protection Planning – Protection planning protects drinking water by managing the land area that supplies water to a well or reservoir. Currently, Northampton and Williamsburg do have water supply protection controls. The controls should be compared with DEP's Wellhead Protection regulations 310 CMR 22.21(2) or Surface Water Protection regulations 310 CMR 22.20 (b) and (c) to ensure that they are up to date. Wellhead Protection and Surface Water Supply Protection Plans coordinate community efforts, identify protection strategies, establish a timeframe for implementation, and provide a forum for public participation. Northampton has a Surface Water Supply Protection Plan and actively manages the watershed lands. There are resources available to help communities develop and implement plans for protecting drinking water supply sources. Northampton received a Source Water Protection grant from the Department to assist in further protection of their surface water supplies.

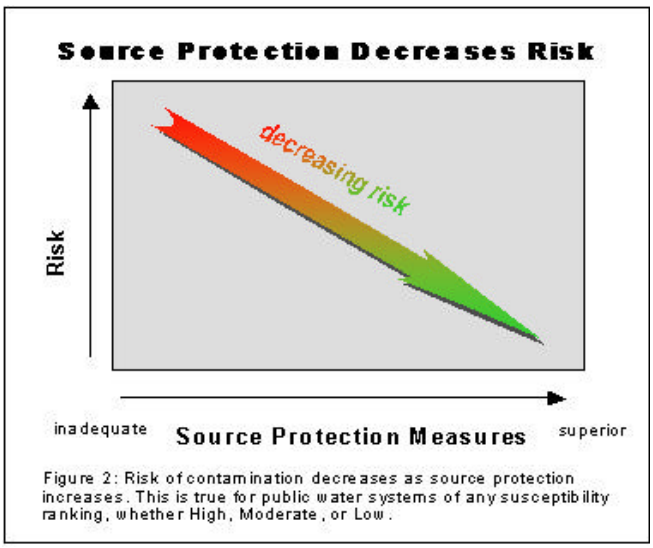


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

Protection Planning Recommendations:

- ✓ Develop a Wellhead Protection Plan. Establish a protection team, and refer them to http://mass.gov/dep/brp/dws/protect.htm for a copy of DEP's guidance, "Developing a Local Wellhead Protection Plan".
- ✓ Coordinate efforts with local officials in Williamsburg, Whately, and Conway to compare local surface water supply protection controls with current MA Surface Water Protection regulations 310 CMR 22.20 (b) and (c) . If they do not meet the current regulations, update the controls. For more information on DEP land use controls see http://mass.gov/dep/brp/dws/protect.htm.

Other land uses and activities within the Zone II and watersheds that are potential sources of contamination are

included in Table 2. Refer to Appendix B for more information about these land uses.

One land use that is not included in the matrix is a sportsmen's shooting range that is located within the Zone II. The facility was visited by representatives of the Department as part of the Massachusetts Lead Shot Initiative who toured shooting range facilities, requested actions as appropriate and provided information on management practices for shooting ranges including how to prepare and implement an Environmental Stewardship Plan. For further information about this or other facilities, please contact Mr. Thomas Keefe, the Department representative for the Lead Shot Initiative in the Springfield Regional Office at 413-784-1100.

Identifying potential sources of contamination is an important initial step in protecting your drinking water sources. Further local investigation will provide more in-depth information and may identify new land uses and activities that are potential sources of contamination. Once potential sources of contamination are identified, specific recommendations like those below should be used to better protect your water supply.

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

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:
As with many water supply protection areas, the system Zone II and watersheds 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:

- Removal of all Underground Storage Tanks (UST) within the Zone II through a town grant program.
- Working cooperatively with landowners within the water supply protection areas to protect the water supplies.
- Working with the town council to allow mandatory water use restriction for water conservation.

Source Protection Recommendations:
To better protect the sources for the future:

- ✓ Continue to inspect the Zone Is and As regularly.
- ✓ Educate residents on ways they can help you to protect drinking water sources.
- ✓ Work with emergency response teams in all host communities and the City to ensure that they are aware of the stormwater drainage in your protection areas and to cooperate by contacting the water supplier when responding to spills or accidents within the protection areas.
- ✓ Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- ✓ Develop and implement a Wellhead Protection Plan.

Conclusions:
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, on or about May 1, DEP posts a new Request for Response (RFR) application for the grant programs. The applications are usually due on or about July 1.

➢ **Other Funding Sources:**

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. The USDA also has various funding sources for government, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site http://search.sc.egov.usda.gov/nrcs.asp?qu=eqip&ct=NRCS. One program in particular, the Environmental Quality Incentives Program (EQIP) may be utilized in a variety of projects from DPW stormwater management to farm nutrient management designed to protect surface and groundwater. Review the fact sheet available on line and call the local office of the NRCS for assistance http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf.

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 Zone II or watershed. 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. Additional Documents on Source Protection

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone I and Zone A		
Does the Public Water Supplier (PWS) own or control the entire Zone I ?	**No**	Zone Is are controlled through a Zoning Ordinance and oversight by the Water Department. Consider Right of First refusal and when possible purchase Zone I lands.
Are the Zone I and Zone A posted with signs to limit access?	**Yes Zone II and Watershed**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988. No trespassing signs are acceptable.
Are the Zone I and Zone A regularly inspected?	**Yes**	Continue regular inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone I and Zone A?	**No**	Monitor non-water supply activities and continue investigating and implementing options for best management practices within these areas.
Municipal Controls (Zoning, Health Regulations, and General Ordinances)		
Does the municipality have Wellhead Protection Controls that meet 310 CMR 22.21 (2) ?	**Wellhead Yes**	Protections are in place for wells and Zone II. Periodically review for compliance with the most recent regulations. Work with the Planning Board and the Board of Health.
Do neighboring communities have Surface Water Protection Controls that meet 310 CMR 22.20C and protect the water supply protection areas extending into their communities?	**Partially (Williamsburg at the Mountain Street Res.)**	Work with the communities of Whately, Williamsburg, Hatfield and Conway to encourage them to compare their current protections for the watershed lands with the most recent regulations listed above. Refer to mass.gov/dep/brp/dws/ for model bylaws, ordinances and health regulations, and current regulations 310 CMR 22.21(2) and 310 CMR 22.20C. MA DEP can be of assistance to communities.
Planning		
Does the PWS have a local surface water and wellhead protection plan?	**Yes - Surface No - Well**	A Surface Water Supply Protection Plan has been approved. Develop a wellhead protection plan. Follow "Developing a Local Wellhead Protection Plan" available at: www.state.ma.us/dep/brp/dws/.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**Yes**	Augment plan by developing a joint emergency response plan with fire departments, Board of Health, DPWs, and local and state emergency officials. Coordinate emergency response drills with local teams in all watershed towns.
Does the municipality have a watershed and wellhead protection committee?	**No**	Develop committees, include representatives from citizens' groups, neighboring host communities, and the business community.
Does the Board of Health conduct inspections of commercial and industrial activities in the protection areas?	**N/A - Surface No - Wells**	There are no commercial or industrial activities in the watersheds. There is an industrial facility within the Zone II. For more guidance see "Hazardous Materials Management: A Community's Guide" at www.state.ma.us/dep/brp/dws/files/hazmat.doc. Be sure the Planning Board and Board of Health are aware of the protection area.
Does the PWS provide watershed protection education?	**Yes**	Currently outreach is to school groups, university groups, and consumers. Increase residential outreach through bill stuffers, Drinking Water Week activities, and coordination with local groups. Aim additional efforts at activities within the protection areas.