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

North Adams Water Department

What is SWAP?

The Source Water Assessment and Protection (SWAP) Program, 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	North Adams Water Department
PWS Address	City Hall, 10 Main Street
City/Town	North Adams, Massachusetts
PWS ID Number	1209000
Local Contact	Mr. Donald Rounds
Phone Number	(413) 662-3157

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 stormwater runoff, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

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

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

This report includes the following sections:

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

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

MA GIS Zone II ID #: 471 *Susceptibility:* High

Well Name	***Source ID#***
Greylock Well #1	1209000-01G

Surface Water Sources

Source Name	*Susceptibility:* High
Notch Reservoir	1209000-01S
Broad Brook Intake	1209000-02S
Williams Reservoir	1209000-04S

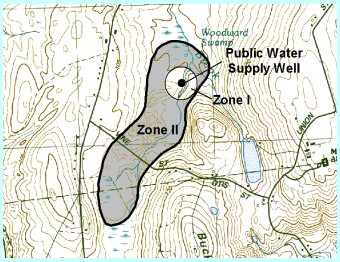
North Adams is a mid-sized city located in the northwest corner of Massachusetts, in the heart of the Berkshires. The city developed primarily as an industrial and commercial center along the Hoosic River valley. Outside of the valley area, the more mountainous areas are primarily forest and residential land use. The Hoosic River flows primarily north from Cheshire to the center of North Adams, where the river valley narrows significantly and flows west then northwest before it discharges into the Hudson River. The portion of the river that flows west and northwest is the aquifer utilized by the Williamstown and North Adams wells. The North Adams Water Department maintains and operates one groundwater source (Greylock Well 01G) and three reservoirs (Notch Reservoir 01S, Broad Brook Intake 02S and Mt. Williams Reservoir 04S); one additional surface water source (James Brook 03S) is registered as an emergency source. The emergency reservoir will not be assessed in this report.

The Greylock Well (01G) is located within the center of the same confined, buried valley, sand and gravel aquifer in the Hoosic River valley as the Williamstown groundwater sources. Data from the well development indicates the aquifer is under artesian pressure during static conditions. The aquifer is within a glacially deepened bedrock valley that was filled with sand and gravel during the glacial recession (melting) some 12,000 years ago. Glacial Lake Bascom was formed throughout much of the westerly trending Hoosic River valley leaving some areas with an extensive clay confining unit overlying a productive sand and gravel aquifer; other areas of the valley do not have a protective clay layer and are sand and gravel throughout. The clay layer pinches out toward the northerly and southerly edges of the aquifer valley and to the east toward the center of North Adams. The protective confining clay unit pinches out approximately 4,500 feet east of North Adams' Greylock well. The bedrock underlying the aquifer is fractured dolomite, a calcium/magnesium carbonate, that can potentially contribute significant amounts of water to the sand and gravel aquifer.

Although some portions of the aquifer are protected from activities and land use on the ground surface by the clay layer, the aquifer is considered to be highly vulnerable to contamination because the hydrogeologic barrier (i.e. clay) is not continuous throughout the developed recharge area. The Zone II for the Greylock well was delineated as part of the SWAP program utilizing empirical data, analytical modeling and geologic mapping. Although the area is densely developed, the entire Zone II area is served by municipal sewers. Please refer to the attached map to view the boundaries of the Zone II.

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 I I protection area.



The Mt. Williams Reservoir is the primary water source for the City and is supplemented by the Notch Reservoir. The Williams and Notch Reservoirs are located in the uplands adjacent to the Mt. Greylock State Forest. The City owns approximately 80% to 90% of the watershed area with the state forest encompassing a small percentage of land. The watersheds are located in an area of steep slopes, in the till covered uplands in the southwestern part of the City. The bedrock is composed primarily of the metamorphic rock types of schist and gneiss. Water is pumped from the Notch Reservoir through a main into the watershed of the Mt. Williams Reservoir. The water is discharged into a brook that flows into the Mt. Williams Reservoir. Water from the Mt. Williams Reservoir (which includes the flow from the Notch Reservoir) is filtered through the Mt. Williams Treatment Facility, an alternative flocculation system with rapid sand filtration, iron and manganese removal, pH adjustment for corrosion control and chlorine disinfection prior to distribution.

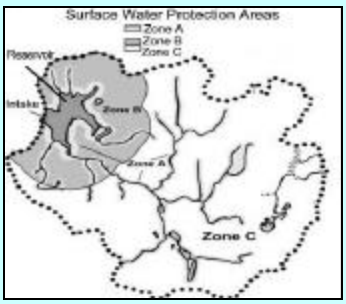
The Broad Brook Intake is located in Pownal, Vermont and is presently an inactive source of water. The source is not filtered but, when used is chlorinated prior to distribution. The watershed is sparsely populated and primarily forest. The Broad Brook watershed is also located within a till covered upland. Bedrock in this area is also primarily schist and gneiss. There are numerous camps along the Broad Brook within the Zone A along with few roads throughout the watershed. Some of the camps are on private land and some appear to be on City- owned land.

The Greylock Well is utilized to supplement the surface water supplies. Water from the Greylock Well does not require treatment and is not treated prior to distribution. There are confirmed hazardous waste release sites located upgradient of the Greylock Well within the Zone II contribution area. Monitoring wells are located upgradient of the Greylock Well associated with the ongoing investigation of one release site and groundwater from those wells is regularly monitored to evaluate the impact on the aquifer. Although there is no currently reported impact to the water quality from the Greylock Well, there is continued long term monitoring of the water quality in the aquifer. At this time water from the Greylock Well does not require treatment and is not treated prior to distribution. The DEP Bureau of Waste Site Cleanup (BWSC) is overseeing the activities and investigation related to that site and may be contacted for additional information about confirmed release sites at 413-784-1100.

For current information on drinking water quality monitoring results and treatment, please request a copy of the most recent Consumer Confidence Report from the Public Water System "Local Contact" listed in Table 1. Drinking water monitoring reporting data is also available on the web at http://www.epa.gov/safewater/ccr1.html.

What is a Watershed?

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



Section 2: Land Uses in the Protection Areas

The Zone II area includes a mix of residential, industrial and commercial land use activities. The watershed areas for the North Adams surface water supplies are primarily forest lands; greater than 90% of the watershed lands is protected through City of State ownership. 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.

Key Land Uses and Protection Issues include:

1. Activities in Zone I
2. Activities in Zone A
3. Residential Land Uses
4. Transportation Corridors
5. Hazardous Materials Storage and Use

6. Oil or Hazardous Material Contamination Sites
7. 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. The susceptibility of the surface water sources is moderate based on the activities within their protective areas.

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.

1. Activities in Zone I – The Zone I for the well is a 400 foot radius around the wellhead. Massachusetts drinking water regulation (310 CMR 22.00 Drinking Water) requires public water suppliers to own the Zone I, or control the Zone I through a conservation restriction. The Greylock Well is located within a developed residential/industrial area of the City. Only water supply activities are allowed within the Zone I. However, many public water supplies were developed prior to promulgation of the Department's regulation and contain non-water supply activities such as homes and public roads. The following non-water supply activities occur in the Zone I of the system well:

Well 01G - Thirteen homes, local roads, a school, and athletic fields. The entire area is served by municipal sewer.

Zone I Recommendations:

- ✓ To the extent feasible, remove all non water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as water supply chemicals and maintenance chemicals.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Prohibit new non-water supply activities in the Zone I.

2. Activities in Zone A - The Zone A for a reservoir includes all areas within 400 feet of the reservoir shore line and within 200 feet of either side of all streams and feeder ponds that flow into the reservoir. Because the Zone A is the area closest to the reservoir and its tributaries, land uses within the Zone A are of particular concern. Therefore, certain 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. Wild animals and domestic pets can be carriers of waterborne diseases such as Giardia, Cryptosporidium, Salmonella, etc. The following activities occur in the Zone As of the system's reservoirs:

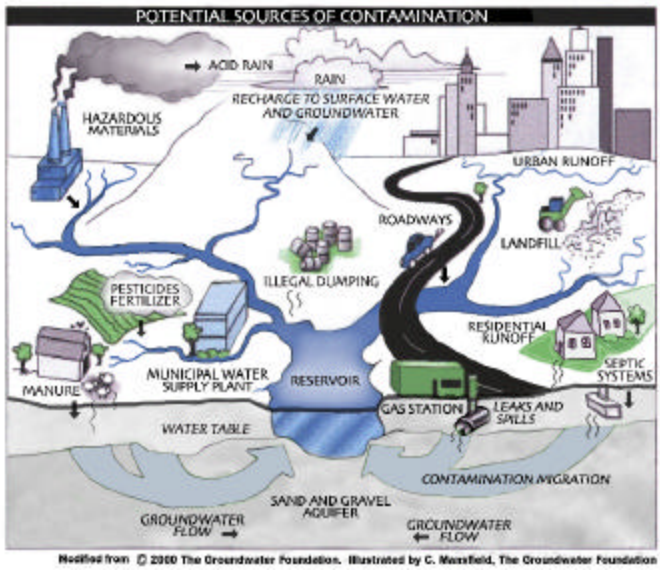


Figure 1: Sample watershed with examples of potential sources of contamination

Broad Brook (02S) - There are few local roads in the watershed but numerous camps and residences, in the Zone A of the Broad Brook source, all of which are primitive sites or utilize private septic systems. There is also evidence of extensive access by off road vehicles on both legal and illegal trails throughout the watershed.

Williams and Notch Reservoirs (01S and 04S) - There are few roads through these watersheds and the runoff from the road immediately adjacent to the Williams Reservoir is reportedly directed out of the watershed and not toward the reservoir.

Zone A Recommendations:

- ✓ Purchase land within the Zone A or protect through conservation restrictions.
- ✓ Enforce no trespassing on Water Department land, particularly in areas along the brooks and closest to the intake. Include signs, patrols and fines for violators as appropriate.
- ✓ To the extent possible, remove all prohibited activities from the Zone A to comply with

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 Water Supply Protection Areas

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

Land Uses	Quantity	Threat	Zone II	Watershed Source ID	Potential Contaminant Sources*
Commercial					
Auto Repair/Body Shops	10	H	Yes	-	Spills, leaks, or improper handling of automotive fluids, and solvents
Railroad Tracks	1	H	Yes	-	Over-application or improper handling of herbicides, leaks or spills of transported chemicals, maintenance chemicals; fuel storage
Funeral Homes	Few	L	Yes	-	Hazardous chemicals: spills, leaks, or improper handling
Laundromats	1	L	Yes	-	Wash water: improper management
Beauty Salons	3	L	Yes	-	Hazardous chemicals
Car/Truck/Bus Washes	1	L	Yes	-	Vehicle wash water, soaps, oils, greases, metals, and salts: improper management
Gas Stations	3	H	Yes	-	Automotive fluids and fuels: spills, leaks, or improper handling or storage
Bus and Truck Terminals	2	H	Yes	-	Fuels and maintenance chemicals: spills, leaks, or improper handling
Cemeteries	2	M	Yes	-	Over-application of pesticides: leaks, spills, improper handling; historic embalming fluids
Industrial					
Chemical Manufacture Or Storage	1	H	Yes	-	Chemicals and process wastes: spills, leaks, or improper handling or storage
Miscellaneous					
Schools	3	M	Yes	-	Laboratories, cleaning materials, fertilizers
Electroplaters	1	H	Yes	-	Solvents and other chemicals: spills, leaks, or improper handling or storage
Aquatic Wildlife	Occasional	H	No	All	Microbial contaminants
Clandestine Dumping	Few	H	Yes	-	Improper use or storage of fuels and other chemicals

Land Uses	Quantity	Threat*	Zone II	Watershed Source ID	Potential Contaminant Sources*
Miscellaneous					
Oil or Hazardous Material Release Sites (MCP-21E)	12	-	Yes	-	Tier Classified Oil or Hazardous Materials Sites are not ranked due to their site-specific character. Individual sites are identified in Appendix B.
Transmission Line Rights-of-Way : Natural gas	1	H/L	Yes	-	Construction and corridor maintenance, over-application or improper handling of herbicides
Transportation Corridors	Numerous	H/M	Yes	-	Accidental leaks or spills of fuels and other hazardous materials, over-application or improper handling of pesticides
Underground Storage Tanks	Numerous	H	Yes	-	Spills, leaks, or improper handling or storage of hazardous materials and waste
Large Quantity Hazardous Waste Generators	1	H	Yes	-	Hazardous materials and waste: spills, leaks, or improper handling or storage
Small Quantity Hazardous Waste Generators	6	M	Yes	-	Hazardous materials and waste: spills, leaks, or improper handling or storage
Very Small Quantity Hazardous Waste Generator	Numerous	L	Yes	-	Hazardous materials and waste: spills, leaks, or improper handling or storage
Aboveground Storage Tanks	Numerous	M	Yes	-	Spills, leaks, or improper handling or storage of hazardous materials and waste
Residential					
Fuel Oil Storage (at residences)	Numerous	M	Yes	Few—02S	Fuel oil: spills, leaks, or improper handling
Lawn Care / Gardening	Numerous	M	Yes	Few -02S	Pesticides: over-application or improper storage and disposal
Septic Systems / Cesspools	Few	M	No	02S	Hazardous chemicals: microbial contaminants, and improper disposal

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.

DEP's Zone A requirements.

- ✓ Use BMPs for the storage, use, and disposal of hazardous materials such as water supply chemicals and maintenance chemicals.
- ✓ Storage of pesticides, fertilizers or road salt within the Zone A should be covered and contained.
- ✓ Keep any new prohibited activities out of the Zone A.

3. Residential Land Uses – The watersheds have very small percentages of residential land use and they are predominantly forested. However, approximately 48% of the Zone II consists of residential land use. The entire Zone II area is served by municipal sewers. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- **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. Visit the Nonpoint Source pollution web site for additional information and assistance at http://www.state.ma.us/dep/brp/wm/nonpoint.htm.

Residential Land Use Recommendations:

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.

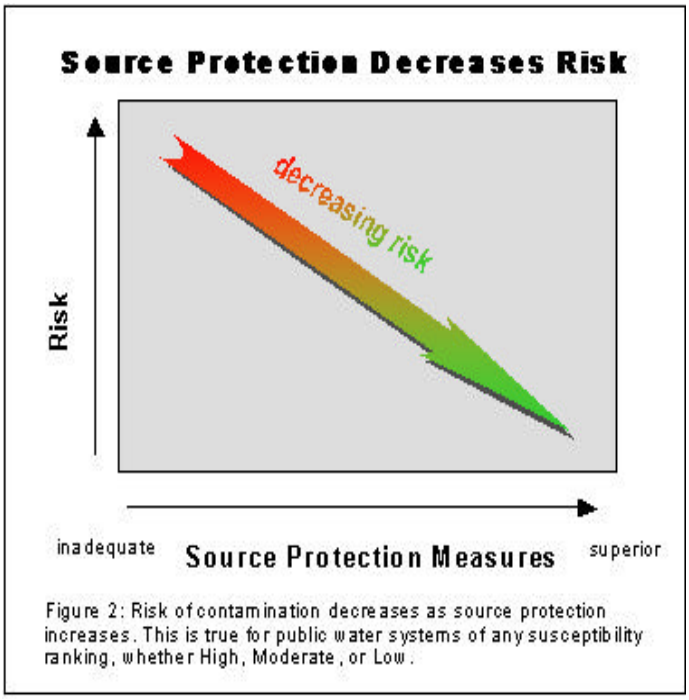


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute 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.

4. Transportation Corridors - There are numerous roads located throughout the Zone II and few within the watersheds. Catch basins and natural drainage, transport stormwater from roadways and adjacent properties to the ground, recharge areas, streams, rivers or reservoirs. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include contaminants from automotive leaks, maintenance, car washing, pet waste, de-icing materials, pesticides and fertilizers or accidental spills. Additionally, roadways are frequent sites for illegal dumping of hazardous or other potentially harmful wastes. There reportedly some illegal dumping evident in the protection areas. Clandestine dumping is identified as a significant threat to water supplies.

Railroad tracks run directly through the Zone II along the edge of the aquifer. Rail corridors serving passenger or freight trains are potential sources of

contamination due to chemicals released during normal use, track maintenance, and accidents. Accidents can release spills of train engine fluids and commercially transported chemicals.

Transportation Corridor Recommendations:

- ✓ Continue routine inspections of the watershed area and the Zone II for illegal access, dumping and spills. Increase patrols in areas of high access.
- ✓ Post "No Trespassing" signs in high access areas and impose fines for trespassers and identified illegal dumpers.
- ✓ Work with local emergency response teams to ensure that any spills within the protection areas can be effectively contained.
- ✓ Coordinate with the City DPW and the State to have catch basins inspected, maintained, and cleaned on a regular schedule. Regular street sweeping reduces the amount of potential contaminants in runoff. For information on DEP's S. 319 Nonpoint Source Competitive Grants Program and upcoming funding opportunity refer to: http://www.state.ma.us/dep/brp/mf/mfpubs.htm#wpa.
- ✓ 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.
- ✓ 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 NPDES Phase II Stormwater Rule requiring some communities to complete stormwater mapping. For additional information, refer to the Stormwater Management Information at http://www.state.ma.us/dep/brp/ww/wwpubs.htm#storm.
- ✓ Promote BMPs for stormwater management and pollution controls.
- ✓ Work with local officials during their review of the railroad right of way Yearly Operating Plans to ensure that water supplies are protected during vegetation control.
- ✓ Review potential USDA funding for mitigation and prevention of runoff pollution through the Environmental Quality Incentives Program (EQIP).

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.

The USDA web site is www.ruraldev.usda.gov or call Bruce Philbrick, at the local office in Pittsfield office at 413-443-6867 (his e-mail address is bruce.philbrick@mapittsfie.fsc.usda.gov). 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.

- ✓ Visit DEP's Nonpoint Source Pollution web site for additional information and assistance at http://www.state.ma.us/dep/brp/wm/nonpoint.htm.

5. Hazardous Materials Storage and Use – Approximately 13% of the Zone II of the North Adams well includes commercial and/or industrial land uses; the entire area is served by municipal sewers. Many businesses and industries 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 <u>never</u> 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 Boards of Health and businesses to register those facilities that are unregistered generators of hazardous waste or waste oil. Request that the Board of Health adopt a floor drain regulation in the City. Partnerships between businesses, water suppliers, and communities enhance successful public drinking water protection practices.
- ✓ Educate local businesses on Massachusetts floor drain requirements. See brochure "Industrial Floor Drains" for more information.

- ✓ The USDA has various funding sources for government, non-government organizations and agricultural facilities in small communities through programs such as those listed on the USDA web site http://search.sc.egov.usda.gov/. Additional information is available on the web site www.ruraldev.usda.gov or call Bruce Philbrick, at the local office in Pittsfield office at 413-443-6867 (his e-mail address is bruce.philbrick@mapittsfie.fsc.usda.gov).

6. Presence of Oil or Hazardous Material Contamination Sites – The Zone II contains DEP Tier Classified Oil and/or Hazardous Material Release Sites indicated on the map as Release Tracking Numbers 1-0000122, 1-0000126, 1-0000342, 1-0000437, 1-0000460, 1-0000475, 1-0000584, 1-0000881, 1-0001061, 1-0010694, 1-0010727, and 1-0013902. Refer to the attached map and Appendix C for more information.

Oil or Hazardous Material Contamination Sites Recommendation:

- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites. Contact the Bureau of Waste Site Cleanup for more information on these sites.

7. Protection Planning – Protection planning protects drinking water by managing the land area that supplies water to a well or reservoir. Currently, North Adams does not have water supply protection controls that meet DEP's Wellhead Protection regulation 310 CMR 22.21(2). 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. North Adams in-town reservoirs are well protected by City and state land ownership. The City owns some land around the Broad Brook source. The watershed for Broad Brook is primarily rural but there are no land use controls for the Zone A. The City, does however have an approved Surface Water Supply Protection Plan for that source.

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."

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

For More Information

Contact Catherine V. Skiba in DEP's Springfield Regional 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 the town boards.

- ✓ Coordinate efforts with local officials to compare local wellhead protection controls with current MA Wellhead Protection Regulation 310 CMR 22.21(2). If there are no local controls or they do not meet the current regulations, adopt controls that meet 310 CMR 22.21(2). For more information on DEP land use controls see http://mass.gov/dep/brp/dws/protect.htm.
- ✓ If local controls do not regulate floor drains, be sure to include floor drain controls that meet 310 CMR 22.21(2).

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

Section 3: Source Water Protection Conclusions and Recommendations

Current Land Uses and Source Protection:

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:

- preparing a Water Supply Protection Plan for and efforts to upgrade the Broad Brook source infrastructure that is

located in Vermont,
- conducting routine inspections of the watersheds, and
- maintaining detailed knowledge of the activities within the watershed and Zone II.

Source Protection Recommendations:

To better protect the sources for the future:
- ✓ Inspect the Zone I and Zone As, regularly; when feasible, remove any non-water supply activities.
- ✓ Educate residents on ways they can help you to protect drinking water sources.
- ✓ Work with emergency response teams to ensure that they are aware of the stormwater drainage in your Zone II and to cooperate on responding to spills or accidents.
- ✓ Partner with local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- ✓ Monitor progress on any ongoing remedial action conducted for the known oil or contamination sites.
- ✓ Develop and implement a Wellhead Protection Plan.
- ✓ Visit DEP's Nonpoint Source Pollution web site for additional information and assistance on NPS pollution at http://www.state.ma.us/dep/brp/wm/nonpoint.htm.

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.

- **Partner with Local Businesses:**

Since many small businesses and industries use hazardous materials and produce hazardous waste products, it is essential to educate the business community about drinking water protection. Encouraging partnerships among businesses, water suppliers, and communities will enhance successful public drinking water protection practices.

- **Educate Residents:**

If managed improperly, household hazardous waste, septic systems, lawn care, and pet waste can all contribute to groundwater contamination. Hazardous materials include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. If a septic system fails or is not properly maintained, it could be a potential source of microbial contamination. Animal waste is also a source of microbial contamination.

- **Provide Outreach to the Community:**

Public education and community outreach ensure the long-term protection of drinking water supplies. Awareness often generates community cooperation and support. Residents and business owners are more likely to change their behavior if they know where the wellhead protection recharge area is located, what types of land uses and activities pose threats, and how their efforts can enhance protection.

- **Plan for the Future:**

One of the most effective means of protecting water supplies is local planning, including adoption of local controls to protect land use and regulations related to watersheds and groundwater protection. These controls may include health regulations, discharge prohibitions, general ordinances, and zoning by-laws/ordinances that prohibit or control potential sources of contamination within the protection areas.

- **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 (Amherst 413-253-4350) of the NRCS for assistance http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf.

The Massachusetts Department of Food and Agriculture's Agricultural Environmental Enhancement Program (AEEP) provides funding to farmers to install a variety of water quality protection practices. For more information on the program contact the coordinator, Susan Phinney, at (617) 626-1772, Susan.Phinney@state.ma.us.

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: if funding is available, each spring DEP posts a new Request for Response for the grant program (RFR) on the website http://www.comm-pass.com/ .

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 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 and watershed 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. Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas
D. 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 and/or Zone A?	**YES** 01S, 03S **NO** 01G, 02S	Follow Best Management Practices (BMPs) that focus on good housekeeping, spill prevention, and operational practices to reduce the use and release of hazardous materials. To the extent possible, remove prohibited activities in Zone As to comply with DEP's Zone A requirements. City owns 82% of the watershed.
Are the Zone I and Zone A posted with "Public Drinking Water Supply" Signs?	**YES**	Additional economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Are the Zone I and Zone A regularly inspected?	**YES**	Continue inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone I?	**NO** 01G, 02S	Monitor non-water supply activities in Zone I and prohibited activities in Zone As, and investigate options for removing these activities.
Municipal Controls (Zoning Bylaws/Ordinances, Health Regulations, and General Bylaws/Ordinances)		
Does the municipality have Surface Water Protection Controls that meet 310 CMR 22.20C and Wellhead Protection Controls that meet 310 CMR 22.21(2)?	**NO**	Working with the Planning Board to review land use controls to see that they meet current requirements of 310 CMR 22.21(2) and 310 CMR 22.20C. Refer to mass.gov/dep/brp/dws/ for model bylaws and health regulations, and current regulations.
Do neighboring communities protect the water supply protection areas extending into their communities?	**NO**	Contact Town officials in Pownal, VT and provide them with information about the boundaries of the watershed. Assist and encourage those representatives in the active protection of the watershed lands.
Planning		
Does the PWS have a local surface water and wellhead protection plan?	**YES** - Surface **NO**-Wellhead	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 department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a watershed and wellhead protection committee?	**NO**	Develop a committee to include representatives from citizens' groups, neighboring communities, and the business community.
Do the Boards of Health conduct inspections of commercial and industrial activities?	**NO**	Request adoption of floor drain and hazardous materials handling regulations. 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 watershed protection education?	**YES**	Currently, the only outreach is through the annual Consumer Confidence Report. Increase residential outreach through bill stuffers, school programs, Drinking Water Week activities, and coordination with local groups. Aim additional efforts at commercial, industrial and municipal uses within the Zone II.

APPENDIX B:
REGULATED FACILITIES WITHIN THE WATER SUPPLY PROTECTION AREA

DEP Permitted Facilities

DEP Facility Number	Facility Name	Street Address	Town	Activity Class	Permitted Activity	Facility Description
	Allied Auto Parts/Napa	432 State Road	North Adams	VSQG	HANDLR	Auto Repair
34605	Bator R B	Lime St	North Adams	VSQG	HANDLR	
131418	Berkmatics Inc	59 Demond Ave	North Adams	SQG	HANDLR	
	Braytonville Garage Inc.	10 State Road	North Adams	VSQG	HANDLR	Auto Repair
35642	Collision Shop	5r River St	North Adams	VSQG	HANDLR	Auto Repair
131910	Commonwealth Sprague (AAG, Inc.)	11 Brown St	North Adams	RES	PLANT	Manufacturing
		11 Brown St	North Adams	LQG	HANDLR	
		11 Brown St	North Adams	LQG-MA	HANDLR	
		11 Brown Street	North Adams	SWMIN	DISCH	
		11 Brown St	North Adams	LQTU	TURRPT	
136848	Cumberland Farms #2148	594 Mohawk Trail	North Adams	FULDSP	FULDSP	Gas Station
130570	Excelsior Printing Co	60 Roberts Drive	North Adams	VSQG	HANDLR	Printer

130570	Excelsior Printing Co	60 Roberts Drive	North Adams	VQG-MA	HANDLR	Printer
136769	Getty 629	148 Eagle St	North Adams	FULDSP	FULDSP	Gas Station
262542	Getty 630	326 State Rd	North Adams	FULDSP	FULDSP	Gas Station
135802	Gibbs Oil 1372	303 State Rd	North Adams	FULDSP	FULDSP	Gas Station
330609	Haddad Motors Of North Adams	179 State Road	North Adams	VSQG	HANDLR	Sales/Repair
330609	Haddad Motors Of North Adams	179 State Road	North Adams	VQG-MA	HANDLR	Sales/Repair
28269	K M Motor Sales Inc	51 W Main St	North Adams	VSQG	HANDLR	Sales/Repair
23034	Maxymillian Technologies Inc	86 S.Main St	North Adams	RCLY		
133673	Ma Elec Co North Adams Satellite	74 Brown St	North Adams	VSQG	HANDLR	
130572	Modern Aluminum Anodizing	510 State Rd	North Adams	BLW-SW	HANDLR	Former Metal Plating
130572	Modern Aluminum Anodizing	510 State Rd	North Adams	BLW-IW	EPIC	
130572	Modern Aluminum Anodizing Corp	510 State Rd	North Adams	SQG	DISCH	
130572	Modern Aluminum Anodizing Corp.	510 State Rd	North Adams	LQTU	HANDLR	
177916	Monro Muffler Brake Number 148	207 State Rd	North Adams	SQG	TURRPT	Auto Repair
303529	North Adams Dswm Illegal Site	Massachusetts Ave	North Adams	ILLGL		

34561	North Adams Tire & Service	163 River St	North Adams	VSQG	HANDLR	Repair
28270	Scarafoni Dick Ford Inc	179 State Rd	North Adams	VSQG	HANDLR	Sales/Repair
136797	State Road Shell	1 State Rd	North Adams	FULDSP	FULDSP	Gas Station
28840	Sun Cleaners	111 River St	North Adams	VSQG	HANDLR	Cleaners
28840	Sun Cleaners	111 River St	North Adams	BLW-AQ	PLANT	
33085	Verizon - New England Inc	Telco Ln	North Adams	SQG-MA	HANDLR	
30318	Walt's Service Center	54 River St	North Adams	VSQG	HANDLR	Auto Repairs
	West End Auto Body, Inc.	362 State Road, Route 2	North Adams	VSQG	HANDLR	Auto Repairs

Underground Storage Tanks

Facility Name	Address	Town	Description	Tank Type	Tank Leak Detection	Capacity (gal)	Contents
Gibbs Oil	303 State Street	North Adams	Gas Station	1 Wall		10,000	Gasoline
				1 Wall		10,000	Gasoline
				1 Wall		10,000	Gasoline
				1 Wall		550	Fuel Oil
Getty Station	326 State Street	North Adams	Gas Station	1 Wall		10,000	Gasoline
				1 Wall		8,000	Gasoline

				1 Wall		8,000	Gasoline
O'Connell Oil Associates, Inc,	1 State Street	North Adams	Gas Station	2 Walls	Interstitial Monitoring	10,000	Gasoline
				2 Walls	Interstitial Monitoring	10,000	Gasoline
				2 Walls	Interstitial Monitoring	10,000	Gasoline
				2 Walls	Interstitial Monitoring	10,000.00	Gasoline

For more information on underground storage tanks, visit the Massachusetts Department of Fire Services web site: http://www.state.ma.us/dfs/ust/ustHome.htm

Note: This appendix includes only those facilities within the water supply protection area(s) that meet state reporting requirements and report to the appropriate agencies. Additional facilities may be located within the water supply protection area(s) that should be considered in local drinking water source protection planning.

APPENDIX C – Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
1-0000122	Ashton Ave.	North Adams	Oil
1-0000126	Brown St	North Adams	
1-0000342	180 River St	North Adams	
1-0000437	Cole St	North Adams	
1-0000460	87 Marshall St	North Adams	
1-0000475	1 State Road	North Adams	Oil
1-0000584	Rt. 2	North Adams	
1-0000881	51 Waldon Street	North Adams	
1-0001061	78 State Rd.	North Adams	Oil

1-0010694	74 Brown St	North Adams	Oil
1-0010727	74 Brown St	North Adams	Hazardous Material
1-0013902	506 State Rd.	North Adams	Hazardous Material

For more location information, please see the attached map. The map lists the release sites by RTN.