Massachusetts Department of Environmental Protection

Source Water Assessment and Protection (SWAP) Report
for

Fall River 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 of a drinking water source does not imply poor 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.

Risk refers to the potential for a consumer to drink water of compromised quality.

Water suppliers protect drinking water by monitoring for more than 100 potential contaminants. Water suppliers also implement watershed land management and protection practices, as well as disinfect, filter and otherwise treat reservoir water 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 Report.**

Table 1: Public Water System Information
September 2002

PWS Name	Fall River Water Department
PWS Address	1831 Bedford Street
City/Town	Fall River, MA 02723
PWS ID Number	4095000
Contact	Linda Correia Director of Water Treatment and Resources
Phone Number	508-324-2723

Introduction

We are all concerned about the quality of the water we drink. Reservoir watersheds may be threatened by potential sources of contamination, including stormwater runoff, improper disposal of hazardous materials and spills. Citizens and local officials can work together to better protect these drinking water sources.

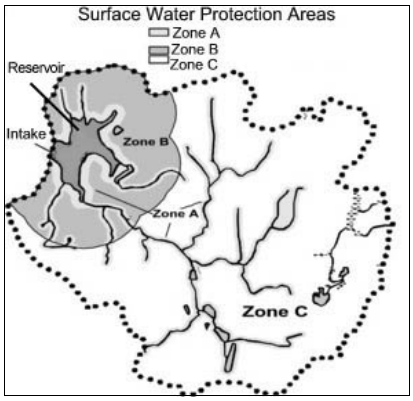
Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination, the assessment helps focus protection efforts on appropriate best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

This report includes the following sections:

1. Description of the Water System;
2. Land Uses in the Watersheds;
3. Source Water Protection;
4. Source Water Protection Recommendations;
5. Additional Resources Available for Source Protection; and
6. Appendices.

What is a Watershed?

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



Glossary

Protection Zones

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

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

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

The attached map shows Zone A and the watershed boundary.

Section 1: Description of the Water System

Source Name	*Source ID*	*Status*	*Susceptibility*
North Watuppa Pond	4095000-01S	Active	High
Copicut Reservoir	4095000-03S	Active	High

The City of Fall River's drinking water comes from two active sources, North Watuppa Pond and Copicut Reservoir. The watershed areas immediately surrounding these drinking water sources are owned by the City and are managed by the Watuppa Water Board. No recreational activity is allowed on either water body.

The treatment plant is located on North Watuppa Pond. For a copy of the Fall River Water Department's Consumer Confidence Report or for current information on monitoring results and treatment, please call the system's contact person listed in Table 1. Drinking water monitoring reporting data is also available on the web at http://www.epa.gov/safewater/ccr/index.html.

Section 2: Land Uses in the Watersheds

The southeastern tips of North Watuppa Pond and Copicut Reservoir are located in Westport and Dartmouth, respectively, as are portions of the watersheds. The land uses within the watersheds consist of a mix of undeveloped land (58% forest), residential development (8%), businesses and roads. A Geographic Information Systems (GIS) map showing the watershed boundaries, Zone A and the percentages of land uses in the watersheds is provided as part of this report. Section 3 discusses protection measures implemented by the Fall River Water Department.

Key Land Uses and Protection Issues include:

1. Industrial Park
2. Landfill
3. Aquatic Wildlife
4. Transportation Corridors; Stormwater
5. Transmission Lines
6. Residential Land Uses
7. Recreation

1. **Industrial Park** - There is one industrial park partially located in the watershed of North Watuppa Pond. Although stormwater runoff and spills from industrial parks are potential sources of contamination to water supplies, swales at this industrial park move stormwater and spills away from the pond. Within the watershed, the industrial park contains a DEP Tier Classified Oil Release Site, a Large Quantity Generator of Hazardous Waste (LQG) and a Large Quantity Toxic User (LQTU). See Appendices B and C for more information.

Industrial Park Recommendations:

- ✓ Maintain swales to effectively handle stormwater.
- ✓ Conduct outreach to businesses on Best Management Practices (BMPs).

2. **Landfill** - a small portion of a solid waste facility is located within the North Watuppa Pond watershed. The landfill is proposed to be expanded. Monitoring wells on landfill and Water Department properties test for leachate movement from the landfill.

Landfill Recommendations:

- ✓ Maintain communication with the owner/operator of the landfill to ensure that BMPs are used for the handling and disposal of solid waste.
- ✓ Continue to monitor for contaminants.

3. **Aquatic Wildlife (Birds)** - Geese and gulls are seasonally present on, or adjacent to, the reservoirs. Waterfowl may increase coliform levels through the release of fecal matter into the water and may also carry other bacteria and viruses. Waterfowl management techniques may include noise and visual harassment, habitat modification and control of food sources. Appendix A contains a DEP fact sheet titled *What You Need To Know About Microbial Contamination*.

Aquatic Wildlife Recommendations:

- ✓ Monitor wildlife populations in and around reservoirs.
- ✓ Where necessary, discourage and control aquatic wildlife. See http://mass.gov/dep/water/drinking/protect.htm for guidance and permit information.

4. **Transportation Corridors (paved and unpaved local roads and highways)** are located adjacent to the reservoirs and throughout the watersheds. Rt. 24 runs along the western edge of North Watuppa Pond and Rt. 195 runs directly adjacent to the southern tip of the pond (between North and South Watuppa Ponds). Deicing procedures used on Rt. 24 and spills from vehicular accidents on Rt. 195 are major concerns. In addition, 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.

Stormwater can transport contaminants into ground and surface waters, including wetlands. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Potential contaminants may come from automotive leaks, maintenance, washing, or accidents. An interceptor drain along the west side of North Watuppa Pond helps to prevent some stormwater and spills from reaching the pond.

Transportation Corridor Recommendations:

(Continued on page 5)

Benefits of Source Protection

- protects drinking water quality at the source
- reduces monitoring costs through the DEP Waiver Program
- treatment can be reduced or avoided entirely, saving treatment costs
- prevents costly contamination clean-up
- preventing contamination saves costs on water purchases and expensive new source development

Contact the DEP staff identified on page seven for more information on Source Protection and the Waiver Program.

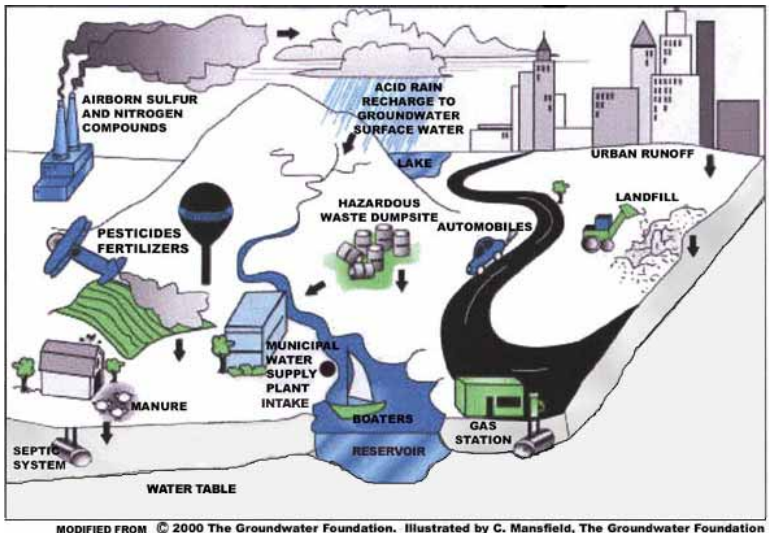


Figure 1: Sample watershed with examples of potential sources of contamination

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 Uses in the Watershed

For more information, refer to Appendix B: Regulated Facilities within Fall River.

Activities	Quantity	Threat	Potential Source of Contamination
Industrial			
Industrial Park	1	H	spills and leaks from improper handling/storage of industrial chemicals and metals; the industrial park contains a Large Quantity Toxic User (LQTU); see Appendix B for more information
DEP Tier Classified Oil Release Site	1	not ranked	see Appendix C for more information
Residential			
Fuel Oil Storage (at residences)	Many	M	spills, leaks, improper handling
Lawn Care/Gardening	Many	M	over-application, improper storage or disposal of pesticides
Septic Systems/Cesspools	Many	M	hazardous chemicals, microbial contaminants
Miscellaneous			
Aquatic Wildlife – waterfowl	Many	H	microbial contaminants
Large Quantity Hazardous Waste	1	H	spills, leaks from improper handling/storage of hazardous materials and wastes; see Appendix B for more information
Transportation Corridors/ Stormwater	Many	H	deicing materials used on Rt. 24; accidental leaks or spills from fuels and hazardous materials; over-application or improper handling of pesticides; microbial and chemical contaminants, debris and pet waste from roads, parking lots, lawns; turbidity can interfere with disinfection
Transmission Line ROW	Gas, Electric	H	spills from over-application or improper handling of pesticides; erosion from construction
Recreation	off-road vehicles - Copicut	M	potential contamination from unauthorized access by off-road vehicles and other unauthorized recreational uses can include erosion, spills, illegal dumping
Landfill	1	H	seepage of leachate, surface runoff, erosion

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 information on regulated facilities, refer to Appendix B: Regulated Facilities within Fall River.

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

✓ Establish vegetated buffers along roads and parking areas to provide some filtration of contaminants.
✓ Schedule regular street sweeping. Appendix A contains a fact sheet titled *DPWs Protect Drinking Water.*
✓ Conduct emergency drills to be ready for spills.
✓ Regularly inspect watersheds for illegal dumping and spills.
✓ Work with local emergency response teams to ensure that any spills within the protection areas can be effectively contained.
✓ Work with the Town and State to have catch basins inspected, maintained, and cleaned on a regular schedule.
✓ If storm drainage maps are available, review the maps with emergency response teams. If maps are not available yet, work with town officials to investigate mapping options such as the upcoming Phase II Stormwater Rule requiring some communities to complete stormwater mapping.

5. **Transmission (Utility) Lines** for gas and electricity are located within the watersheds. These are potential sources of contamination because of the possibility of over-application or improper handling of herbicides during rights-of-way maintenance.

The Rights-of-Way Management Regulations (333 CMR 11.00) were designed to minimize any potential harmful effects of herbicides use for vegetation control along rights-of-way in Massachusetts. The regulations promote the use of an integrated pest management (IPM) approach to vegetation control and require application setback distances to protect drinking water sources and other environmentally sensitive areas. Utilities must submit a Vegetation Management Plan (VMP) and a Yearly Operating Plan (YOP) to the Mass. Department of Food and Agriculture for approval and to the municipalities into which herbicide application is proposed. The Fall River Water Department monitors the YOP.

Transmission (Utility) Lines Recommendations:

✓ Continue to monitor the YOP for pesticide application.

6. **Residential** - Approximately 8% of the watersheds consist of residential areas. If managed improperly, household hazardous waste, septic systems, lawn care and pet waste can all contribute to surface water contamination. Household hazardous wastes include automotive wastes, paints, solvents and other substances that should be disposed of properly at a municipal collection site. If a septic system fails or is not properly maintained, it could be a potential source of microbial contamination. Improperly applied fertilizers and pesticides can wash off lawns and into surface waters. Pet waste may contain bacteria, parasites or viruses that are health risks.

Residential Land Use Recommendations:

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.

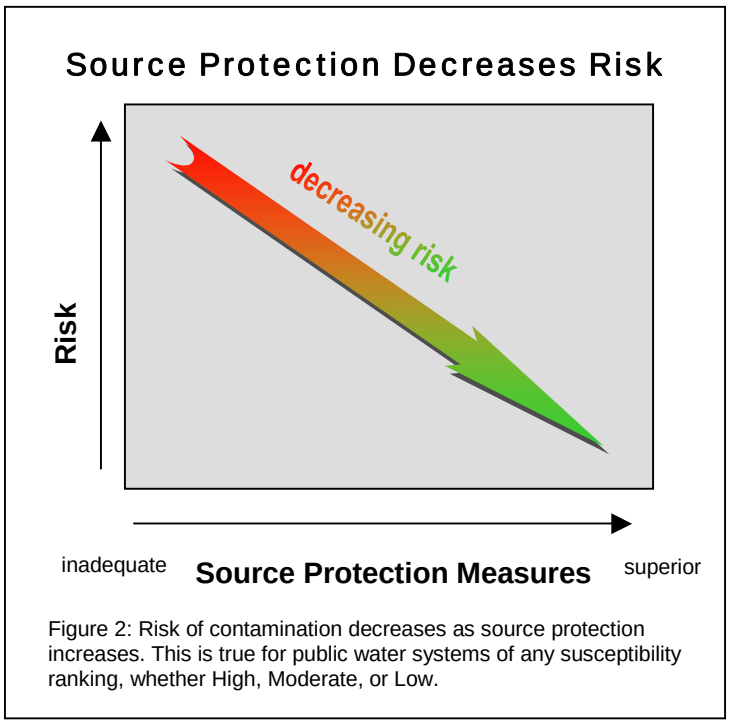


Figure 2: Risk of contamination decreases as source protection increases. This is true for public water systems of any susceptibility ranking, whether High, Moderate, or Low.

- ✓ Educate residents on how to protect water supplies. Distribute the fact sheet *Residents Protect Drinking Water* available in Appendix A and on www.mass.gov/dep/water/drinking/protect.htm.
- ✓ Work with town boards to review and provide recommendations on proposed watershed development.

7. **Recreation** - Public use of reservoirs and watershed lands can result in reduced water quality through microbial contamination, illegal dumping, fuel spills, vandalism and erosion. The Massachusetts Drinking Water Regulations, 310 CMR 22.00, prohibit swimming and other bodily contact with a reservoir and its tributaries. Animals are prohibited within 100 feet of a public drinking water reservoir and its tributaries. Other activities, such as fishing and boating, are left up to the discretion of the local Board of Water Commissioners or like body having jurisdiction over the drinking water sources.

   The Fall River Water Department does a good job of controlling watershed activities, although unauthorized off-road vehicles are a problem at Copicut Reservoir. The Environmental Police are currently directing enforcement efforts at this problem.

   No recreational activity is allowed on either Copicut Reservoir or North Watuppa Pond. There is a plan to open up watershed lands to public access as part of a new state-designated Bioreserve.

Recreation Recommendations:

- ✓ The water system may establish buffer areas more stringent than state regulations, depending upon local conditions such as soils, topography and proximity to intakes.
- ✓ Continue steps, with the assistance of the Environmental Police, to control unauthorized access by operators of off-road vehicles in the Copicut Reservoir watershed.
- ✓ When public access is allowed, a set of rules should be adopted by the Board; users should be directed away from vulnerable areas; inspections should be conducted to ensure adherence to the rules and users should be educated about drinking water protection.

Top 5 Reasons to Develop a Local 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.

Section 3: Source Water Protection

As with many water supply protection areas, this system's watersheds contain potential sources of contamination. However, source protection measures reduce the risk of actual contamination, as illustrated in Figure 2. **The Fall River Water Department is commended for taking an active role in promoting source protection measures in the Water Supply Protection Areas.**

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/water/drinking.htm 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; and
4. Draft Land/Associated Contaminants Matrix.

Watershed Control

The Fall River Water Department does a good job of keeping up with watershed conditions. Watershed protection staff and Environmental Police Officers conduct inspections and educational programs. A consultant forester works with the system.

Emergency Planning and Response

The Fall River Water Department has an EPA-approved Spill Prevention Control and Counter-measure Plan at the treatment plant. They also have an Emergency Response Plan and periodically conduct drills. An interceptor drain along the west side of North Watuppa Pond helps to prevent spills from reaching the pond.

Communication with Local Boards

The Fall River Water Department monitors conditions in the watersheds and communicates with local officials regarding proposals for new development, enforcement, spills, and other issues.

Section 4: Recommendations

DEP recommends that the Fall River Water Department implement the following source protection measures:

- develop a seasonal waterfowl management program;
- post signs denoting the public water supply and watershed;
- continue to conduct regular watershed inspections;
- continue to keep emergency response plan updated and conduct a drill to test plan;
- continue to communicate with watershed communities about protection measures and emergency response;
- implement projects to improve the control and quality of stormwater and reduce potential threats from spills;
- follow-up with the Southeastern Regional Planning & Economic Development District (SRPEDD)'s recommendations to address stormwater runoff;
- stay aware of proposed new and expanding development within the watersheds;
- provide comments to local town boards on proposals for development, where appropriate;
- provide technical assistance and educational programs (start with residents within Zone A and businesses);
- request that street sweeping be conducted on a regular, seasonal basis; and
- finish writing the protection plan for North Watuppa Pond and Copicut Reservoir.

Section 5: Additional Resources Available for Source Protection

DEP staff, informational documents and resources are available to help build on this SWAP report and to help improve drinking water protection in watershed communities.

Information about DEP Tier Classified Oil or Hazardous Material Release Sites within the watersheds can be obtained at DEP's Bureau of Waste Site Cleanup's web site, http://www.mass.gov/dep/cleanup/. Sites are identified on the attached GIS map and site specific information is available in Appendix C and at http://db.state.ma.us/dep/cleanup/sites/search.asp.

Funding Resources

DEP's Source Water Protection Grant Program provides funds to conduct local source protection projects. Protection recommendations discussed in this document may be eligible for funding under the grant program. For additional information, please call Kathy Romero at 617-292-5727.

Section 6: Appendices

A. Fact Sheets - *What You Need to Know About Microbial Contamination, Water Suppliers Protect Drinking Water, Residents Protect Drinking Water, Boards of Health Protect Drinking Water, Planners Protect Drinking Water, DPWs Protect Drinking Water and Businesses Protect Drinking Water*.
B. List of Regulated Facilities within Fall River.
C. Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas.

For More Information

www.state.ma.us/dep
The following DEP staff can be contacted for more information and assistance on improving watershed protection.
Mike Quink, 508-946-2766, DEP's Southeast Regional office
Kathy Romero, 617-292-5727, DEP's Boston office

Table 3: Current Protection and Recommendations

Protection Measures	Status	Recommendations
Zone A		
Does the Public Water Supplier (PWS) own or control the entire Zone A?	**NO**	Encourage source protection measures that reduce the use and release of potential contaminants.
Is the Zone A posted with "Public Drinking Water Supply" Signs?	**YES**	Missing signs should be replaced. Economical signs are available from the Northeast Rural Water Association (802) 660-4988.
Is the Zone A regularly inspected?	**YES**	Continue to conduct regular inspections of drinking water protection areas.
Are water supply-related activities the only activities within the Zone A?	**NO**	Continue monitoring non-water supply activities in Zone A.
Municipal Controls (Zoning Bylaws, Health Regulations, and General Bylaws)		
Does Fall River have Surface Water Protection Controls that meet 310 CMR 22.20C?	**NO**	However, the City has adopted zoning regulations for watershed protection and the Health Department has regulations that require annual pump-out of septic systems in the watershed protection district. Update local ordinances. Stay aware of proposed watershed development and provide comments to city boards as
Planning		
Does the PWS have a local surface water supply protection plan?	**NO**	The Fall River Water Department is working on a draft. Systems with a DEP-approved plan receive extra credit in DEP's Source Water Protection Grant Program.
Does the PWS have a formal "Emergency Response Plan" to deal with spills or other emergencies?	**YES**	Augment the plan by developing a joint emergency response plan with the Fire Department, Board of Health, DPW, and local and state emergency officials. Coordinate emergency response drills with local teams.
Does the municipality have a watershed protection committee?	**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 guidance see *Hazardous Materials Management: A Community's Guide* at http://www.mass.gov/dep/water/drinking/protect.htm#gwsource.
Does the PWS provide watershed protection education?	**YES**	Develop an educational program starting with residents in Zone A and businesses.