

Applicable Federal & State Regulations

The City of Cambridge's Watershed Management Program utilizes federal, state and local regulations to achieve the goals of the program.

FEDERAL PROGRAMS

For more than a century, the U.S. Congress has passed laws designed to achieve specific environmental and natural resource management goals, many of which affect watersheds and drinking water quality. Over the past few years (1995-2000) the laws and regulations concerning drinking water have been enhanced by placing focus on protecting the quality of source water by watershed management.

The CWD utilizes the following federal Programs:

The Safe Drinking Water Act is the legislation from which all federal drinking water regulations are derived. The federal government implements the SDWA through delegating authority for its administration to the states. Although most states have primacy, the act stipulates minimum requirements and state agencies exercise judgment on individual cases. The SDWA enables the Environmental Protection Agency (EPA) to control contaminants by requiring compliance with maximum contaminant levels, and through monitoring and treatment technology requirements.

State Source Water Assessment Program

The SDWA Amendments of 1996 required states to develop and implement a State Source Water Assessment Program (SWAP) to analyze existing and potential threats to the quality of the public drinking water. This program requires states to:

- Delineate the source water protection area

- Conduct a contaminant source inventory

- Determine the susceptibility of the public water supply to contamination from the inventoried sources

- Release the results of the assessments to the public

As a part of this program states are able to use up to 10% of the States' Drinking Water State Revolving Fund (DWSRF) money for activities associated with the source water assessment and protection,

possibly making funds available for land acquisition, conservation easements, and source water quality protection programs.

Nonpoint Source Management

Nonpoint source management programs (Section 319) have particular relevance to source water protection. This section was added to the CWA in 1987, and requires state assessments and management programs where water quality goals cannot be achieved by point source controls. State reports and programs are submitted to EPA for approval, and all programs have been at least partially approved; delays in full approval have been due to the lack of source characterization, and the effectiveness of controls. Grants are available from EPA for preparing and implementing state programs. Although this section contains no direct enforcement authority, financial support and expanded use of point source regulations provide powerful incentives to ensure implementation. Also, assistance for public-owned treatment works can be withheld if Section 319 programs are not in effect.

More than any other provision of CWA, the Section 319, or Nonpoint Source Management Program, has the greatest benefit to water suppliers interested in comprehensive watershed management planning -- particularly those suppliers whose watersheds are large, multi-use environments where suppliers typically lack control. The 319 program is one of the CWA programs that helped form the context for EPA's Watershed Protection Approach, described previously. Many states consider their 319 programs to be comprehensive statewide watershed management programs, and to embody the characteristics, funding, and breadth of purpose to function successfully as a drinking water supply source water protection program.

The Clean Water Act (CWA) also called the Water Pollution Control Act (33 U.S.C. 1251-1387) contains numerous pollution control regulations that are also linked to measures under the Rivers and Harbors Act (RHA) (33 U.S.C. 401). The wide-ranging authorities under the CWA are established to control the discharge of pollutants into the waters of the United States, including the discharges from water treatment plants. Water utilities can directly benefit from specific CWA programs that inventory and regulate pollution sources in watersheds, require states to develop water quality monitoring and Nonpoint pollution control and management plans, and provide direct financial assistance to eligible parties.

Water suppliers can also benefit from the act in that the CWA has fueled a significant body of research and experience in watershed management and watershed-based planning, specifically for Nonpoint source pollution control. Although, in most cases, this experience and planning has not included water supply watersheds, in some cases it has, and will continue to do so as long as water suppliers express their interests and involve themselves in CWA watershed management programs.

The National Primary Drinking Water Regulations establish limits for various contaminants that can be present in drinking water supplies. They also require monitoring, control, design, construction, and operation of disinfection and treatment facilities. (Ruben, 1992ref_ruben) The regulations specify goals and enforceable limits that must be met, or, alternatively, require compliance through particular treatment processes. Other requirements of the regulations include testing procedures and specification of treatment processes.

EPA CLEAN WATER ACT

National Pollutant Discharge Elimination System

The discharge of any pollutant to the navigable waters of the United States from any point source is regulated under Title IV of the CWA. Each source is the subject of an NPDES permit, usually issued through the state that has been delegated NPDES authority. Such permits must collectively achieve the ambient water quality standards established through a planning process and site-specific objectives that are established for each local area. In addition, EPA has promulgated various industry-specific effluent guidelines; however, since these limitations are not necessarily stringent enough to achieve water quality standards, receiving water quality-based limitations are included by states in NPDES permits. Permits can also contain conditions imposing various requirements on operation and maintenance, monitoring, and record keeping by the permit holder.

Where the terms of an NPDES permit are not complied with, or a point source is not regulated, any party--including an affected water supplier--can initiate a process under the act to ensure appropriate compliance and/or regulation. The water supplier should document the threat and make a formal request for action to the state. If the state is not responsive, an appeal can be made to EPA. If EPA is not responsive, CWA provides for a judicial remedy.

The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating stormwater discharges under the NPDES program. In 1990, EPA published Phase I regulations establishing application requirements for stormwater permits. In 1999, as a part of the Clean Water Action Plan, Phase II regulations were signed, regulating smaller municipalities and construction sites not covered by Phase I. Under these regulations, the following stormwater discharges must be permitted:

- A discharge associated with certain industrial activities

- A discharge from a medium to large municipal storm sewer system, serving a population greater than 100,000

- A discharge from a small municipal storm sewer system, serving a population less than 100,000, located in an urbanized area

- A discharge which the state has determined is contributing to violations of water quality standards, or is a significant source of pollution to waters of the United States

The regulation requirements differ between the small and medium to large municipalities, but both entities must:

- Apply for NPDES permit coverage

- Prepare and implement the stormwater management program

- Develop and evaluate measurable program goals

Under the regulations, industrial facilities required to have an NPDES permit include:

- "Heavy" manufacturing facilities

- Manufacturing facilities

- Active and inactive mining and oil and gas facilities

- Recycling facilities

- Transportation facilities

- Facilities subject to the requirements of 40 CFR Subchapter N

- Hazardous waste treatment, storage, or disposal facilities

Landfills, land application sites, and open dumps

Steam electric generating facilities

Wastewater treatment plants

Construction activities disturbing one acre or more

Under the Phase II rule, all of the above industrial activities, excluding construction sites may be conditionally excluded from NPDES permitting if the industrial materials contained therein do not come in contact with stormwater. The operators of such industries must submit written certification (No Exposure Certification Form) verifying that this condition is met. In addition, construction sites disturbing between one and five acres may apply for a waiver if certain conditions are met.

The new stormwater NPDES program is significant to water suppliers who manage urban watershed lands subject to the provisions of Section 402(p). In most states, it is the only regulatory program that requires local government to implement watershed controls. In some cases, the NPDES stormwater program can provide a sound foundation for watershed management in urban watersheds.

STATE PROGRAMS

OVERVIEW

In Massachusetts, the Department of Environmental Protection (DEP) plays the primary role in environmental regulation. Water suppliers have responsibility for water supply protection and monitoring activities.

Regional planning agencies are the main source of regional water supply planning. Stemming from special legislation, the Cape Cod Commission is a county-based agency with significant regulatory and support involvement.

The Executive Office of Environmental Affairs Massachusetts Watershed Initiative is a partnership of local communities with state and federal environmental agencies, formed to more effectively solve today's environmental problems. Each of Massachusetts' 27 watersheds has a Watershed Team that includes representatives from local, state and federal groups. The Watershed Teams focus on an

innovative five year management process that is designed to collect and share resources and information, target present and potential impacts to natural resources and develop and implement activities to protect and improve those resources.

Massachusetts Source Water Assessment Program (SWAP)

Amendments (1996) to the federal Safe Drinking Water Act require each state to perform an assessment at all public water sources to identify potential contaminant sources that could impact the supplies. Over 3000 drinking water sources will be assessed in Massachusetts. The assessment reports, including Geographic Information Systems (GIS) mapping, will be made available to local officials, community groups, watershed associations and the general public. DEP will be following up on the recommendations in each report with technical assistance to improve local protection measures. In addition, DEP is using State Revolving Fund Set-Aside Money to provide grants to water suppliers and others to conduct source protection projects.

WATER SUPPLY REGULATION AND SUPPORT

DEP holds primacy from EPA and is the agency responsible for water supply regulation in Massachusetts. DEP's water supply regulations are encompassed in *310 CMR 22.00 (Drinking Water Regulations)*, which includes SDWA regulations, drinking water quality standards, new source development, public water system staffing requirements, and other rules, and in *310 CMR 36.00, 313 CMR 2-5 (Water Management Act and Interbasin Transfer Act)*, which require permitting for large-scale water withdrawals. The latter permits require an assessment of supply-demand and the need for additional sources or additional flow and protection of the existing/proposed sources. The Division of Watershed Management, which includes the Drinking Water Program, coordinates the permitting of water withdrawals with the permitting of discharges. It also develops regulations, sets policies, conducts planning, and administers these programs (with the exception of the Interbasin Transfer), while the DEP Regional Offices are the primary contact points for water suppliers; the regional offices conduct most approvals and permitting related to water supply. The Department of Environmental Management and Water Resources Commission administer the provisions of the Interbasin Transfer Act.

DEP's Bureau of Resource Protection, Drinking Water Program and DEP Regional Offices are the primary state sources of technical assistance to water suppliers. DEP has expertise and information on issues of

interest to water suppliers, ranging from public education to water conservation. EPA Region I, Office of Ecosystem Protection, provides technical support to New England state drinking water programs (e.g., DEP). In some cases, EPA will also provide technical assistance directly to water suppliers.

Dams are regulated by the Department of Environmental Management.

POLLUTION SOURCE REGULATION

DEP is the primary agency in Massachusetts concerned with pollution source regulation. Relevant regulations/programs include those for the following pollution sources:

Septic Systems: DEP regulates sanitary wastewater disposal by septic systems through the *State Environmental Code Title 5 (310 CMR 15.00)*. This regulation gives enforcement authority and implementation responsibility to local Boards of Health. *Title 5* establishes standards for such design parameters as minimum percolation rate, leaching field area, tank size and design, and wastewater flow rate. The regulation also specifies minimum setback distances from water supply areas, distribution lines, water sources, and wells. DEP also regulates nitrate loading from septic systems within wellhead protection areas. A local Board of Health may establish additional or more stringent requirements within its town through local regulations. The state has made tens of millions of dollars in grants available to help towns launch betterment programs to assist homeowners with septic system upgrades.

Hazardous Materials: Hazardous waste generation, treatment, storage, transportation, and disposal are regulated by DEP Bureau of Waste Prevention, Regional Offices under the *Massachusetts Hazardous Waste Management Act (MCL c. 21C and 310 CMR 30.00)*, as well as the regulations of the federal Resource Conservation and Recovery Act (RCRA) delegated to states.

RCRA and the state law require registration of hazardous waste generation above specified amounts. Waste transporters, generators, and treatment/storage or disposal (TSD) facilities must comply with specific design and management standards. Also, all regulated hazardous wastes are subject to a "cradle-to-grave" manifest system, and to standards for their handling, storage, and disposal.

The Massachusetts Contingency Plan (*MCP*), *implemented by DEP's Bureau of Waste Site Cleanup*, specifies emergency response and notification requirements for any release of hazardous materials above

defined reportable quantities. The *MCP* also develops the state program for listing and setting priorities for suspected or known spill sites, and mandates a multi-phase remediation process for contaminated sites. The *MCP* provides for more stringent cleanup requirements and timeframes when the spill occurs within water supply Zones A, I or II.

Underground Storage Tanks (USTs): USTs are regulated by *UST Regulations of the State Fire Code (527 CMR 4.00 & 9.00)*, promulgated by the Massachusetts Department of Public Safety, and by the *MCP*, promulgated by DEP. UST registration, installation, and maintenance requirements are generally implemented by local fire departments, while leaking tanks are handled by DEP Bureau of Waste Site Cleanup, Regional Offices, sometimes in conjunction with local fire departments.

Solid Waste Facilities: *Massachusetts Solid Waste Regulations (310 CMR 19.00)* and the *Site Assignment Regulations (310 CMR 16.00)* formulate a permit system for solid waste handling and disposal facilities. Implemented by DEP Bureau of Waste Prevention, Solid Waste Program, these regulations include specific requirements for setbacks from water supplies and provide a forum for comprehensive environmental review of proposed facilities. Virtually all landfills that did not comply with the location or setback requirements, including all landfills within Zone IIs, are no longer operating.

Discharges to Surface Water: DEP is responsible for regulation and enforcement of surface water discharges in conjunction with EPA's NPDES Program. DEP's Bureau of Resource Protection, Wastewater Management Program has authority for municipal wastewater, including treatment facilities and sewers. DEP's Bureau of Waste Prevention, Industrial Wastewater Program regulates industrial surface water discharges, including process water, wastewater, and sanitary flow.

The state Surface Water Quality Standards, Groundwater Quality Standards, Surface Water Discharge Permit Program, and Groundwater Discharge Permit Program are contained in *314 CMR 1-6*. Discharges of over 10,000 gallons per day require a permit, and adequate treatment must be provided so that the discharge does not result in violations of water quality standards. The Water Quality Certification program--which requires state certification as a prerequisite to federal permits, and is intended to ensure that the Surface Water Quality Standards will be met--is contained in *314 CMR 9.00*. The Sewer System Extension and Connection Permit Program and Industrial

Wastewater Pretreatment Regulations are contained in *314 CMR 7.00 and 12.00*, respectively.

The programs protect water supplies primarily through prohibiting any new direct discharges to water supplies and conditioning discharges through the permit program. However, discharges to tributaries or wetlands could be permitted if conditions such as adequate treatment are met. In 1997 DEP developed a Stormwater Policy Handbook and a Stormwater Technical Handbook, which mandate performance standards for stormwater and provide site planning and technical information about stormwater management techniques.

Pesticides: The Massachusetts Pesticide Board of the Department of Food and Agriculture (DFA) is responsible for pesticide regulations. Users of a minimum amount of herbicides must submit a Vegetation Management Plan and Yearly Operating Plan incorporating other requirements of the regulations (e.g., setback distances from sensitive areas, including water bodies). Additionally, the regulations contain specific rules for application near water supplies, including restrictions for pesticide application in Zone II and prohibition of handling within 400 feet of surface water supplies. Under the regulations, communities may petition the DFA to impose more stringent requirements.

Residential Hazardous Waste: DEP solid waste regulations restrict the types of materials that may be disposed of in permitted solid waste facilities. Some hazardous materials (e.g., oil-based paints, batteries, used motor oil, etc.) cannot be accepted by landfills, but are generated in small quantities in households. To address this gap, many communities are sponsoring household hazardous waste collections in which professional hazardous waste disposers collect the communities' residential hazardous waste, and provide proper transportation and disposal.

Road Salt: Road salting practices have been recognized as the source of many water supply problems in Massachusetts for several years. A formal guideline has been developed for remediation of salt contaminated water supplies. The only law concerning road salt is *MGL c. 85, s. 7A*, requiring parties using over 2,000 pounds of deicing chemicals per year to file an annual report with the Department of Environmental Protection. The MHD is currently updating a Generic Environmental Impact Report (GEIR) for road salting prepared in 1989. Currently, MHD is working to develop guidelines for appropriate road salting practices on state roads in sensitive water supply areas. MHD evaluates various alternative de-icing chemicals and salting rates against drinking water, highway safety, and cost considerations on an

ongoing basis. DEP and MHD are available to assist individual water suppliers in addressing road salt issues in their watershed or wellhead protection area.

LAND USE REGULATION

Massachusetts has several laws that enable local governments to regulate land use and development. Through the Zoning Act, municipalities may adopt zoning codes, special permit procedures, site plan review, subdivision regulations, and floodplain regulations. Typically, local zoning is also the mechanism for regulating earth removal and mining. Overlay districts are another tool available to municipalities under this law. The Zoning Act provides a firm basis for local zoning provisions designed to protect water supplies by citing water and water supply among its public interests. Massachusetts municipalities can also pass bylaws regulating activities on town-owned lands (e.g., prohibiting motorized vehicles, restricting dog walking, closing the area at dusk, etc.).

The state's direct involvement in the regulation of land development is limited to the Massachusetts Environmental Policy Act (MEPA) (*MGL c. 30, ss. 61-62*), implemented by the Executive Office of Environmental Affairs MEPA Unit. Under this law and its implementing regulations, projects that are anticipated to have environmental impacts are reviewed by the public and state agencies during the project's planning stage. The applicant is required to document the effects of the proposal on the environment and to develop measures to compensate for any adverse impacts. The MEPA process is crucial to limiting adverse environmental impacts, and specifically requires the applicant to consider the effects of the project on drinking water supplies.

CRITICAL RESOURCE PROTECTION

Massachusetts has no established programs addressing land acquisition or overlay protection districts as they relate to water supply. However, the DEP Bureau of Resource Protection, Drinking Water Program and DEP Regional Offices provide general technical assistance and may offer information about these subjects, or suggest additional contacts.

Local Conservation Commissions and DEP's Bureau of Resource Protection Wetlands and Waterways Program implement the *Massachusetts Wetland Protection Act (WPA) (MGL c. 131, s. 40)*. This act and its regulations (*310 CMR 10.00*) are significant tools in watershed management. All activity within wetlands and within a

buffer zone of 100 feet is subject to review for its potential effect on wetlands (including waterways). While the regulations set minimum standards for filling and compensation, mitigation measures such as erosion controls are left to the discretion of the individual conservation commissions. These commissions have considerable power to approve applications with little controls, set conditions on applications, or deny them altogether on the basis of adverse impacts. Overall, the WPA can effectively protect water supplies by limiting the effects of development on wetlands and streams that may be tributary to or near the water supplies.

The WPA is also the primary means of regulating development within the floodplain. It requires flood proofing or elevation of structures, and providing compensatory storage when flood storage capacity is lost; these rules can be supplemented through local bylaws. DEM's Flood Hazard Management Program also provides technical assistance regarding flood issues.

Rivers Protection Act

The Rivers Protection Act was signed into law in August 1996. The provisions, which were incorporated into the Massachusetts Wetlands Protection Act, require a 200 ft. undisturbed "riverfront area" for new development projects along most of the major rivers in Massachusetts unless the applicant demonstrates no significant adverse impact to the area and that there is no practicable alternative to the project.

Massachusetts also has a program for designating Areas of Critical Environmental Concern (ACEC). The Executive Office of Environmental Affairs and DEM administer this program and have developed guidelines for nomination and designation of these areas. Once an ACEC is designated, certain projects within the area are subject to a more comprehensive environmental review through MEPA than they would be otherwise.