

## **I. Introduction**

The Department of Conservation and Recreation (DCR)-Office of Watershed Management (OWM)'s 2006 *Public Access Management Plan Update: Quabbin Reservoir Watershed System* explains DCR policies for typical recreational activities that occur on the land and water resources in the System and outlines control measures used to mitigate impacts from public access. This update builds upon the information provided in the 1998 *MDC Public Access Plan for the Quabbin Reservoir Watershed System* and uses current regulations and legislation to outline updated policies for public access to DCR/OWM property in Barre, Belchertown, Hardwick, New Salem, Orange, Pelham, Petersham, Shutesbury, Ware, and Wendell. DCR will begin implementation of the *Public Access Plan Update: Quabbin Reservoir Watershed System* in March 2006.

### **A. DCR/DWSP/OWM**

The DCR's Division of Water Supply Protection (DWSP), Office of Watershed Management (OWM) and its predecessors have a long tenure of providing high quality drinking water to the citizens of Massachusetts. There are a variety of laws that OWM must work under as a drinking water manager. OWM is also responsible for implementing its own regulations in its efforts to protect the source drinking water for approximately one third of the Commonwealth.

## **1. Organizational Structure**

### **History**

During the nineteenth century, the Boston area had obtained water mostly from Lake Cochituate in Natick, a reservoir completed in 1848 under the auspices of the Boston Water Board. Some communities were also served by the Mystic Lakes. Public health officials determined by 1878 that these sources of supply would prove inadequate, so a system of seven reservoirs to supplement the Cochituate system was constructed by the Boston Water Board. These new reservoirs, created by holding back portions of the Sudbury River, were: Sudbury, Whitehall, Hopkinton, Ashland, Stearns, Brackett, and Foss (the last three referred to respectively as Framingham Reservoirs Nos. 1, 2 and 3).

Limited supply in the existing water system, urbanization of the watersheds of the water supply, and unsatisfactory water quality in the water supply led to an investigation for an additional water supply of satisfactory quantity and quality. A study completed by the state health board in 1895 recommended the development of a reservoir along the South Branch of the Nashua River. The Metropolitan Water Board was created in 1895 with the planning and development of the Wachusett Reservoir. The Wachusett Dam and Reservoir were completed in 1908, harnessing the Nashua River in central Massachusetts as the new source of drinking water for metropolitan Boston.

The Metropolitan Water Board, Sewer Board, and Parks Commission were combined by the Commonwealth as the Metropolitan District Commission (MDC) in 1919. State officials realized during the 1920s that, once again, additional sources of water were needed to serve the growing needs of Eastern Massachusetts. The Quabbin Reservoir was created in the 1930s, using the Winsor Dam to impound the Swift River and flood an area formerly occupied by the

four Western Massachusetts towns of Dana, Enfield, Greenwich, and Prescott. The Ware River was also identified as a source of water, which could be used from October through June when there was sufficient quantity of water to divert. Diversions of water from the Ware River are conveyed into the Quabbin Reservoir through the Quabbin tunnel aqueduct at Shaft 11A.

The creation of the Wachusett and Quabbin Reservoirs meant that increasingly substandard source waters from many of the reservoirs in the Sudbury System could be discontinued. The Whitehall, Hopkinton, Ashland and Lake Cochituate Reservoirs were transferred in 1947 for use as State Parks. The entire Sudbury System was officially removed from active use and classified as an emergency water supply in 1976. Today only the northern reservoirs (Sudbury and Reservoir No. 3) are classified as a reserve drinking water supply.

In 1984, the Massachusetts legislature, under Chapter 372 of the Acts of 1984, divided the former MDC Water Division into the MDC Division of Watershed Management and the Waterworks Division of the Massachusetts Water Resources Authority (MWRA). The MDC/DWM became responsible for reservoir watershed operation and management to provide a safe and sufficient supply of water to the MWRA. The MWRA became responsible for the treatment, transmission, and distribution of this water. The MDC merged with the Department of Environmental Management (DEM) in 2003 to become the Department of Conservation and Recreation (see the next section for more details).

Since water started flowing from Quabbin Reservoir in 1948, no new sources of drinking water have been required to meet the water supply needs of metropolitan Boston. Through watershed management by the Division and ongoing improvements of the distribution system by the MWRA, the current prognosis is that the DCR/MWRA watershed system will provide adequate supply and delivery to the MWRA member communities well into the 21<sup>st</sup> century.

### **The Department of Conservation and Recreation**

The Department of Conservation and Recreation (DCR) was created in July 2003 when the legislature merged the Metropolitan District Commission (MDC) and the Department of Environmental Management (DEM). Chapter 26 of the Acts of 2003, §290 transferred the responsibilities of the former MDC Division of Watershed Management entirely to the Office of Watershed Management within the Division of Water Supply Protection. The names have changed, but the DCR/DWSP Office of Watershed Management, like the former MDC Division of Watershed Management, is still legislatively mandated to manage and protect the drinking water supply watersheds, providing pure drinking water for distribution by the MWRA to approximately 2.2 million residents of Massachusetts.

Appropriate changes in terminology have been made throughout this document. In most cases the phrase “the Division” or the acronym OWM is used to reference both the current and former watershed management agency now within the Department of Conservation and Recreation. In some contexts, particularly in historical discussions or referencing studies and publications, the terms “Metropolitan District Commission/Division of Watershed Management,” MDC and MDC/DWM remain accurate. In the context of this plan, “the Division” always refers to the Division of Water Supply Protection’s Office of Watershed Management or the former Division of Watershed Management, not to any other Division in the Commonwealth. The terms “Division lands” refer to properties that are owned by the Commonwealth of Massachusetts and

are under the care and control of the Division of Water Supply Protection, Office of Watershed Management.

### **Memorandum of Understanding with MWRA**

There is a well established working relationship between DCR and MWRA. MWRA's ratepayers entirely fund the Office of Watershed Management's annual \$30 million budget, including costs associated with land acquisition and payments in lieu of taxes. The terms of this relationship are defined in a Memorandum of Understanding (MOU) between the two agencies. The latest version of this MOU, developed soon after the creation of DCR, was signed into effect in April, 2004. A key provision of the updated MOU is the requirement for an annual work plan and budget to detail all of the Office of Watershed Management's functions.

### **Water Supply Protection Trust**

The legislature further enhanced the ability of the Office of Watershed Management to maintain the drinking water supply by establishing a Water Supply Protection Trust, created by Chapter 149 of the Acts of 2004, §27, and written into the general laws at MGL c. 10, §73. The trust provides a more efficient mechanism for MWRA's funding of the Office of Watershed Management. The Trust has also allowed the Office of Watershed Management to fill a wide range of critical positions that were previously frozen due to state budget constraints.

The Water Supply Protection Trust has a five person board of trustees responsible for approving the Office of Watershed Management's annual work plan and budget each spring for the following fiscal year beginning in July. The members of the board of trustees are the Secretary of the Executive Office of Environmental Affairs, the Executive Director of the MWRA, the chairperson of the MWRA Advisory Board, a representative jointly selected by the North Worcester County Quabbin Anglers Association, Inc. and the Quabbin Fishermen's Association, Inc., and a representative from the Swift River Valley Historical Society.

## **2. Mission and Goals**

The Office of Watershed Management within the Division of Water Supply Protection of the Department of Conservation and Recreation, a state agency within the Executive Office of Environmental Affairs, has been charged by Chapter 26 of the Acts of 2003, §290 with protection of the Quabbin Reservoir, Ware River, Wachusett Reservoir, and Sudbury Reservoir watersheds. The Office of Watershed Management inherits the mission derived from the MDC Division of Watershed Management's enabling legislation and subsequent amendments, found at MGL c. 92, §§ 104 – 120. The statute directs the OWM to:

...construct, maintain and operate a system of watersheds, reservoirs, water rights and rights in sources of water supply [to] supply thereby a sufficient supply of pure water to the Massachusetts Water Resources Authority, and [to] utilize and conserve said water and other natural resources to protect, preserve and enhance the environment of the Commonwealth and to assure the availability of pure water for future generations.

The body of legislation makes directives on specific management aspects of the watersheds, authorizing OWM to:

- Have the exclusive right and control over all ponds, reservoirs, and other property within the watershed system, and [may] order all persons to keep from entering in, upon or over the waters thereof and the lands of the commonwealth or towns surrounding same.
- Make rules and regulations for the protection of the watersheds.
- Establish the Quabbin Watershed Advisory Committee, the Watershed System Advisory Committee (covering Wachusett and Sudbury watersheds), and the Ware River Watershed Advisory Committee.
- Adopt periodic watershed management plans to provide for forestry, water yield, and public access among other purposes.

Beyond its broad mandate, OWM has additional, specific responsibilities as provided in various legislative acts. Some of the acts most relevant to OWM are listed in **Table 1**.

Building on the legislative-defined mission, OWM's charge today has evolved:

- To preserve and improve water quality of the supply sources, through regulation, direct action, and cooperation, as needed to protect public health and to meet state and federal water quality standards.
- To maintain and operate the source facilities (including dams) safely and efficiently.
- To fulfill the watershed protection and management requirements associated with drinking water regulations.
- To implement the specific directives of the legislature, such as providing recreation opportunities balanced with the protection of the water supply sources and promulgating and enforcing rules and regulations for OWM lands and for protected zones.
- To involve watershed towns, residents, and the public in appropriate ways in the conduct of the OWM's watershed management functions.

In addition, OWM has defined water quality goals for the system:

- Primary Goals
  - To prevent waterborne disease.
  - To maintain a high quality source water.
  - To meet the source water coliform criterion.
- Secondary Goals
  - To reduce/control nutrient inputs to the reservoir.
  - To reduce risk of a chemical or hazardous material spill.
  - To control general pollutant transport into the reservoir.

Together, the mission, legislatively defined responsibilities, and water quality goals provide the basis for all of OWM's watershed protection activities.

### **3. OWM Related Acts and Regulations**

#### **DCR Regulations**

The Massachusetts Legislature has passed numerous laws over the past century to ensure an adequate and safe flow of drinking water to the metropolitan Boston region and three water

systems of South Hadley Fire District #1, Chicopee, and Wilbraham. These Acts range from enabling the construction of Wachusett and Quabbin Reservoirs, defining membership on advisory boards to regulating access to watershed lands and land use activities in the watershed system. See **Table 1** for a comprehensive list of legislative acts relevant to OWM. The creation of different agencies and authorities are important milestones in the evolution of this drinking water supply. Two acts that have had a significant impact on how OWM protects and manages these water supply resources are the Kelly-Wetmore Act and the Watershed Protection Act.

The Kelly-Wetmore Act (Chapter 737 of the Acts of 1972) dictates the type of public access allowed in the Quabbin Reservoir and Ware River watersheds including specific restrictions related to Prescott Peninsula.

The Watershed Protection Act (WsPA, Chapter 36 of the Acts of 1992) established a comprehensive scheme to regulate land use and activities within certain critical areas of the Quabbin Reservoir, Wachusett Reservoir and Ware River watersheds. Some of the strategies used by the WsPA to minimize the effects of human activities on water quality include: preserving a buffer zone along tributaries to the reservoir, limiting impervious surfaces, and restricting the storage and use of hazardous materials. OWM utilizes the WsPA to avoid detrimental land uses close to water resources and guide development into more appropriate locations, densities and configurations.

The passage of the Watershed Protection Act also provided the opportunity to unify various watershed protection regulations into 350 CMR 11.00. While the first eight sections of these regulations specifically relate to the WsPA, 350 CMR 11.09 provides the agency the general authority to protect the water supply from pollutants (See **Appendix A**; please note that any reference to “the Commission” in these regulations is now DCR). The WsPA also authorized a \$135 million bond for land acquisition, to be spent at a rate of \$8 million per year. \$100 million was spent prior to the remaining \$35 million being integrated into the 2002 Environmental Bond.

**Table 1 Legislative Acts Relevant to the Office of Watershed Management**

<b>Source</b>	<b>Summary</b>
Chapter 488 of the Acts of 1895	Creates Metropolitan Water Board, with diverse duties and authorities, including construction of Wachusett Reservoir by taking waters of the Nashua River.
Chapter 168 of the Acts of 1901, §§ 1,5	Creates Metropolitan Water and Sewage Board.
Chapter 350 of the Acts of 1919, §123	Creates MDC.
Chapter 21 of the Acts of 1931, §1	Grants bird management authority.
Chapter 375 of the Acts of 1926	Makes additional provisions for the water supply needs of the MDC. Authorizes the construction of the Wachusett-Coldbrook Tunnel. Limits the diversion from the Ware River.
Chapter 321 of the Acts of 1927	Authorizes creation of Quabbin Reservoir by taking waters of the Swift River; and diverse related activities.
Chapter 77 of the Acts of 1932	Authorizes removal of game fish from Wachusett for stocking purposes.
Chapter 262 of the Acts of 1932	Authorizes sewer construction.
Chapter 421 of the Acts of 1946	Permits fishing in certain parts of the Quabbin Reservoir (from the shore).
Chapter 300 of the Acts of 1947	Amends c. 421 of the Acts of 1946 to allow adoption of regulations governing fishing and water supply protection.
Chapter 737 of the Acts of 1972 (Kelly-Wetmore Act)	Sets forth rules for the management of Quabbin and Ware lands.
Chapter 204 of the Acts of 1975	Allows MDC administrative rights of entry like those of DWPC.
Chapter 797 of the Acts of 1979	Requires Payment in Lieu of Taxes (PILOT Payments) to municipalities.
Chapter 372 of the Acts of 1984	Creates DWM (and MWRA), with diverse duties and authority. Directs DWM to periodically prepare watershed management plans that shall provide for forestry, water yield enhancement, and recreational activities. (MGL 92a.5 Section16)
Chapter 734 of the Acts of 1985	Adds to the list of organizations from which QWAC membership may be nominated.
Chapter 436 of the Acts of 1990	Amends c. 737 of the Acts of 1972 to allow hunting in accordance with a deer management program.
Chapter 36 of the Acts of 1992 (Watershed Protection Act)	Establishes land use restrictions around water features in Quabbin, Ware and Wachusett; land acquisition authority and related provisions.
Chapter 242 of the Acts of 1995, §§ 2, 3	Creates Ware River Watershed Advisory Committee.
Chapter 26 of the Acts of 2003, §290	Creates Department of Conservation and Recreation, Division of Water Supply Protection.
Chapter 149 of the Acts of 2004, §27	Creates Watershed Trust.

Source: DCR/DWSP/OWM, 2005

## Laws and Regulations Affecting OWM

A variety of federal and state regulations exist that pertain to drinking water watershed protection. OWM staff diligently work to comply with these laws. See **Table 1** for a list of these laws.

The federal Safe Water Drinking Act and its Surface Water Treatment Rule are of particular concern to OWM. The Surface Water Treatment Rule (SWTR) regulations were promulgated in June 1989 to reduce the risk of waterborne disease from microbial pathogens. The SWTR provides two paths for adequate public health protection. It requires filtration for all surface drinking water supplies, unless the water supply is of very high quality and meets specific criteria to qualify for a waiver. One of these criteria, which has been met by DCR, is an adequate watershed control program. The rule emphasizes the need for the watershed control program “to minimize the potential contamination by *Giardia* cysts and viruses in the source water,” and requires an equivalent level of treatment through disinfection.

The SWTR establishes minimum requirements of the watershed control program as:

- Assessing the hydrology, land cover, and land use characteristics of the watersheds.
- Describing activities or characteristics of the watershed that may impact source water quality adversely.
- Monitoring and controlling these activities or characteristics.

In addition, the SWTR also requires that the public agency responsible for watershed management demonstrates control over the watershed’s land, either through land ownership or through agreements with private land owners. There must also be an annual survey by the primacy agency (in this case, DEP) that documents the effectiveness of the watershed control program.

U.S. EPA promulgated the Interim Enhanced Surface Water Treatment Rule (IESWTR) in December, 1998. The IESWTR builds on the SWTR, adding requirements of treatment and control for *Cryptosporidium*. The IESWTR adds the specific requirement that unfiltered water systems must maintain a watershed control program to minimize the potential for *Cryptosporidium* contamination, including identifying and monitoring watershed characteristics and activities that may have an adverse effect on water quality. In the IESWTR, EPA states, “it appears that unfiltered water systems that comply with the source water requirements of the SWTR have a risk of cryptosporidiosis equivalent to that of a water system with a well-operated filter plant using a water source of average quality.”

DWSP strives to meet all the regulatory requirements set forth for a manager of an unfiltered public water supply as well as a steward of natural and cultural resources.

**Table 2 Federal and State Laws and Regulations Affecting OWM Resource Protection Activities**

<b>Name</b>	<b>Citation</b>	<b>Regulatory Agency</b>	<b>Description</b>
Safe Water Drinking Act	33 U.S.C. 1251 et seq.	US EPA, MA DEP	Surface Water Treatment Rule, Interim Enhanced Surface Water Treatment Rule, and Long Term 2 Enhanced Surface Water Treatment Rule (LT2) are all parts of federal law that protect drinking water supplies.
Massachusetts Drinking Water Regulations	310 CMR 22.00	MA DEP	Promotes public health and general welfare by ensuring that public water systems in Massachusetts provide to the users thereof water that is safe, fit and pure to drink.
Federal Endangered Species Act	16 U.S.C. 1531 et seq.	US Fish & Wildlife Service	The purpose of the ESA is to conserve the ecosystems upon which endangered and threatened species depend and to conserve and recover listed species. Under the law, species may be listed as either Endangered or Threatened. Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future.
MA Endangered Species Act	MGL c. 131 s. 23; 321 CMR 10.00	MA Division of Fisheries and Wildlife	Procedures and rules that establishes a comprehensive approach to the protection of the Commonwealth's Endangered, Threatened, and Special Concern species and their habitats.
Americans with Disabilities Act	Public Law 101-336	US Department of Justice	The ADA prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation.
Wetlands Protection Act	MGL c. 131 s. 40; 310 CMR 10.00	MA DEP, Local Conservation Commissions	A public review and decision making process by which activities affecting wetlands are to be regulated in order to contribute to the following interests: protection of public and private water supply; protection of ground water supply; flood control; storm damage prevention; prevention of pollution; protection of fisheries; and protection of wildlife habitat.
Rivers Protection Act	MGL c. 258, Acts of 1996; 310 CMR 10.00	MA DEP, Local Conservation Commissions	Amendments made to Wetlands Protection Act to provide additional protection to the state's rivers.



<b>Name</b>	<b>Citation</b>	<b>Regulatory Agency</b>	<b>Description</b>
Forest Cutting Practices Act	MGL c. 132 § 40 to 46; 304 CMR 11.00	DCR Bureau of Forestry	Protects the benefits of forests through a permitting process. Applicable to timber harvesting on both public and private forestland, the FCPA regulates any commercial timber cutting of wood products greater than 25 thousand board feet or 50 cords on any parcel of land at any one time.
Clean Water Act - NPDES Phase II Stormwater Rules	33 U.S.C. 1251 et seq.	US EPA, MA DEP	The Storm Water Phase II programs, through the use of NPDES permits, implements programs and practices to control polluted storm water runoff from municipal separate storm sewer systems and small construction sites. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of storm water discharges that have the greatest likelihood of causing continued environmental degradation.
Hazardous Waste Site Assessment/ Cleanup	MGL c. 21E; 310 CMR 40.00	MA DEP	The Massachusetts Contingency Plan lays out a detailed process on when and how contaminated sites must be assessed and cleaned up.
Historical/ Archaeological Resource Protection	MGL c. 9 § 26 to 27C; 950 CMR 70.00	Massachusetts Historical Commission	Encourages all governmental bodies and persons considering action which may affect a historical or archeological asset of the commonwealth to consult with the Massachusetts Historical Commission to avoid any adverse effect to such asset.
Massachusetts Environmental Policy Act (MEPA)	MGL c. 30 §61-62H; 301 CMR 11.00	EOEA	Provides meaningful opportunities for public review of the potential environmental impacts of projects for which action is required by an EOEA agency, and to assist each Agency in using (in addition to applying any other applicable statutory and regulatory standards and requirements) all feasible means to avoid damage to the environment or, to the extent damage to the environment cannot be avoided, to minimize and mitigate damage to the environment to the maximum extent practicable.

Name	Citation	Regulatory Agency	Description
Outstanding Resource Waters	314 CMR 4.00	MA DEP	Waters with exceptional socio-economic, recreational, ecological and/or aesthetic values are designated as Outstanding Resource Waters (ORWs) by the MA Surface Water Quality Standards. ORWs include surface Public Water Supplies and their tributaries, wetlands bordering surface Public Water Supplies and their tributaries, certified vernal pools. Discharge of pollutants to a Massachusetts Outstanding Resource Water is severely restricted and requires special review by DEP.

Sources: DCR, MWRA, DEP, EPA, DOJ, and USF&WS

### Filtration Waiver

The combination of Quabbin and Wachusett Reservoirs' size, the watersheds' natural characteristics, and DCR's management activities were a cornerstone to the MWRA's ability to obtain filtration waivers for this water supply. The Quabbin Reservoir, with its significant size and amount of permanently protected land, received its waiver in 1991. The Wachusett Reservoir, which is smaller than Quabbin, has less protected open space, and more development in its watershed, required more analysis by state and federal regulators prior to issuing a waiver for the entire watershed system.

In June 1993, MWRA and MDC entered into an administrative consent order with the MA Department of Environmental Protection (DEP) that allowed the pursuit of a "dual track" for regulatory compliance with the SWTR for the Wachusett Reservoir. It required MWRA to design a filtration plant and to build it, unless MWRA could demonstrate with MDC that the system met the criteria for avoiding filtration and DEP determined that filtration was not required. After years of study and research on the needs of the water supply system, review of current information on water treatment effectiveness on pathogens of concern, disinfection byproducts, watershed protection and public health concerns, and input from the public and water supply and public health experts, MWRA concluded that an ozonation/chloramination plant would provide appropriate treatment of the water supply, and that adding filtration to the new plant for \$180 million would not provide as much additional benefit as would using funds to rehabilitate old unlined cast iron pipes in the MWRA and local distribution systems.

DEP agreed with MWRA's approach in December 1998 after a hearing and comment period, and determined that filtration was not required for the DCR/MWRA system. EPA, however, did not agree and continued to prosecute the enforcement action previously filed under its SDWA "overfiling" rights, seeking to require MWRA to build a filtration plant, contending that the SDWA allowed no other option. The U.S. District Court ultimately concluded that the comprehensive strategy to improve drinking water proposed by MWRA and MDC/DWM, through watershed protection for Wachusett and Quabbin reservoirs, a new ozonation/chloramination disinfection facility, and a community pipe rehabilitation program, sufficiently protects the public health and cost-effectively improves drinking water quality. (Kurtz, 2000; *U. S. v. MWRA*, 97 F.Supp.2d 155).

The John J. Carroll Water Treatment Plant at Walnut Hill in Marlborough, MA came on-line in July, 2005. The effectiveness of this state-of-the-art facility and ultimately compliance with all safe water drinking regulations relies on OWM maintaining the integrity of the watershed as the first barrier against contamination of the source waters.

## ***B. DCR/MWRA Drinking Water Supply System***

### **Description of System**

The Department of Conservation and Recreation, Division of Water Supply Protection, Office of Watershed Management and the MWRA supply drinking water to 49<sup>1</sup> communities in the metropolitan Boston area. The Town of Clinton also draws water from Wachusett Reservoir, independent of the MWRA transmission and treatment system. Two communities near Wachusett Reservoir, Worcester and Leominster, may also withdraw water from the system for emergency supply. In addition, three communities west of Quabbin Reservoir obtain their water directly from this reservoir through the Chicopee Valley Aqueduct. MWRA is responsible for treatment and transmission, while OWM is responsible for collection and safe storage of water (within the reservoir), protection of reservoir water quality, and management of the watersheds.

**Figure 1** is a schematic of the drinking water supply system. Quabbin Reservoir, the Ware River, and Wachusett Reservoir are the active water supply sources for the metropolitan Boston water system. Ware River water is transferred seasonally to Quabbin Reservoir, while Quabbin Reservoir water is transferred regularly to Wachusett Reservoir through the Quabbin Aqueduct. Wachusett Reservoir is the terminal supply reservoir. Water is withdrawn through the Cosgrove intake at the eastern end of Wachusett Reservoir, and is carried by the Cosgrove Tunnel to the distribution system. The Wachusett Aqueduct provides redundancy to the Cosgrove Tunnel; it was used during the winter of 2003-2004 to allow connections to be made to MWRA's new Walnut Hill Treatment Plant.

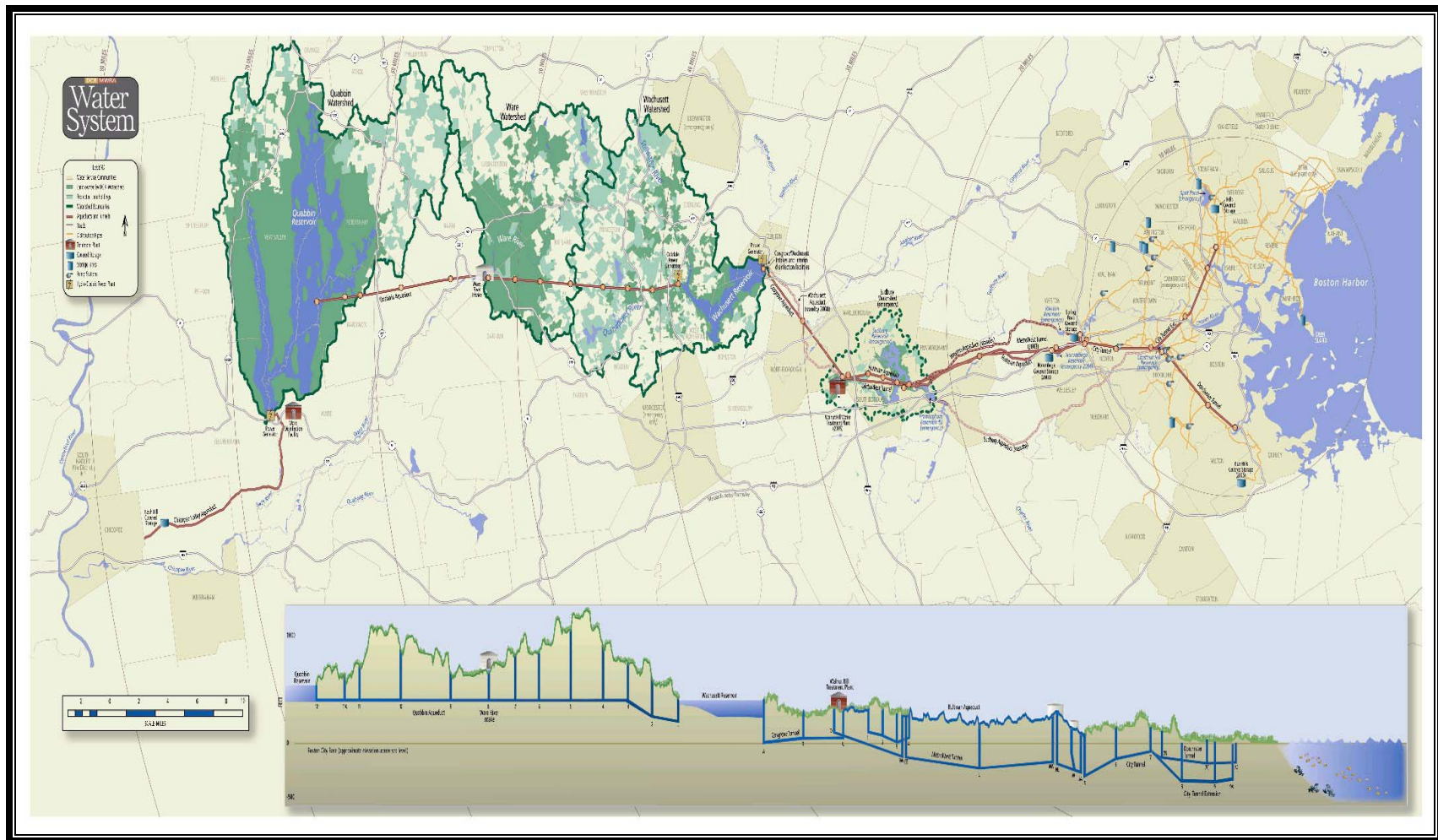
The Sudbury and Foss (Framingham #3) Reservoirs are the emergency reserve water supplies for this system. There are three emergency conditions that would require the use of the Sudbury System: 1.) Wachusett Reservoir is declared non-potable; 2.) there is an inability to convey water from the Wachusett Reservoir to the MWRA system (e.g., failure of the Hultman Aqueduct, Southborough Tunnel, or the City Tunnel); or 3.) a serious drought occurs.

Depending on the situation, the Sudbury Reservoir would be used either as a primary source of water supply, as a pass through of Wachusett Reservoir water, or as a supplemental source to the Quabbin and Wachusett Reservoirs.

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<sup>1</sup> Reading, MA and the Dedham Westwood Water District were just approved for partial supply and were already MWRA sewer user communities.

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**Figure 1 DCR/MWRA Drinking Water Supply System**

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## ***C. Payment-in-lieu of Taxes (PILOT)***

### **PILOT Program Description and Legislation**

The DCR Division of Water Supply Protection, Office of Watershed Management PILOT program monetarily compensates the communities that contain the land and water bodies which comprise one of the nation's largest unfiltered water supply systems. The Payment in Lieu of Taxes program guarantees regular and stable payment to 31 communities (see below for the 15 towns of the Quabbin Reservoir and Ware River watersheds).

The PILOT program is mandated by Massachusetts General Laws ch. 59, § 5G. This legislation updated old payment laws MGL ch. 59, §§ 5D-5F, which were written in the 1940s, and did not value lands in all communities currently entitled to payments. The current PILOT law was first ratified in 1984 for the Quabbin Reservoir and Ware River watersheds. The law was amended in 1987 to include communities in the Wachusett Reservoir and Sudbury Reservoir watersheds.

### **Where PILOT funds come from**

Money for the Office of Watershed Management PILOT program comes from the Massachusetts Water Resources Authority (MWRA) rate payers who use the reservoir waters. They pay their water bills to the MWRA, which provides DCR with the funds needed to make the PILOT payment. DCR makes the annual payment in full to each community in the program. This program is solely for lands managed for drinking water supply by the Office of Watershed Management. All other state-owned lands that are eligible for payments in lieu of taxes under MGL ch. 58, §§ 13-17 are reimbursed, subject to appropriation, by the legislature through state aid to municipalities (the "cherry sheet").

### **How PILOT payments are determined**

The Department of Revenue (DOR) revalues state-owned land every five years. DOR is currently evaluating all property owned in-fee by the Commonwealth as of 1/1/2005. The revaluation takes into account all lands purchased by the state over the previous five years as well as any changes in land values. The new values will take effect in FY2006.

The PILOT amount is determined by multiplying the Department of Revenue valuation of DCR Division of Water Supply Protection land by the highest local property tax classification (regardless of actual land classification). Most PILOT land is forested, but the PILOT calculations use the same rate structure as commercial or industrial property. ***Legislative provisions state that the Office of Watershed Management PILOT payment can never be less than that of the previous year, even if the value of the land or tax rates decrease.***

DCR works diligently with the watershed communities, MWRA, and DOR to comply with the PILOT law. The following numbers show that the PILOT program provides substantial revenue to the watershed communities.

**Table 3 Payment-in-lieu of Taxes FY03-FY05, Quabbin Reservoir and Ware River Watershed Communities**  
**Payment in Lieu of Taxes FY03-FY05**

<b>Quabbin/Ware Community</b>	<b>PILOT FY2003</b>	<b>PILOT FY2004</b>	<b>PILOT FY2005</b>	<b>% TOTAL PILOT</b>
Barre	\$129,668	\$129,668	\$129,668	2.6%
Belchertown*	\$170,786	\$170,786	\$170,786	3.4%
Hardwick*	\$53,682	\$54,761	\$54,761	1.1%
Hubbardston	\$238,371	\$238,371	\$238,371	4.7%
New Salem*	\$236,144	\$264,481	\$264,481	5.2%
Oakham	\$77,760	\$77,760	\$77,760	1.5%
Orange	\$3,286	\$3,286	\$3,286	0.1%
Pelham*	\$160,929	\$162,276	\$162,276	3.2%
Petersham*	\$323,481	\$323,481	\$338,978	6.7%
Phillipston	\$7,067	\$7,067	\$7,067	0.1%
Rutland	\$285,401	\$285,401	\$285,401	5.6%
Shutesbury	\$244,712	\$250,019	\$250,019	4.9%
Templeton	\$534	\$534	\$534	0.0%
Ware*	\$311,259	\$320,224	\$320,224	6.3%
Wendell	\$16,247	\$16,247	\$16,247	0.3%
<b>Total Quabbin/Ware Watersheds</b>	<b>\$2,259,326</b>	<b>\$2,304,361</b>	<b>\$2,319,859</b>	<b>45.7%</b>

Source: (DCR/DWSP, 2005)

\* Includes payments for land annexed by town after disincorporation of communities for Quabbin Reservoir.

**Total FY05 PILOT**

**\$5,076,573**

(Distributed to 31 communities in the Quabbin Reservoir, Ware River, Wachusett Reservoir, and Sudbury Reservoir Watershed Systems)

For more information on the Office of Watershed Management's Payment in Lieu of Taxes Program, please go to [www.mass.gov/dcr/waterSupply/watershed/pilot.htm](http://www.mass.gov/dcr/waterSupply/watershed/pilot.htm).

## ***D. Purpose of the Plan Updates***

### **1. DCR/DWSP/OWM Planning Process**

OWM is engaged in an on-going planning process, consistent with legislative, regulatory, and court mandates, to maintain the watershed system's superior water quality. There are three critical components of the OWM planning process that are prepared for each watershed.

The Public Access Plan describes the management policies that allow people to recreate on designated OWM lands and waters while still protecting water quality. The Land Management Plan is a thorough description of the watershed's physical features, the natural resources on OWM property, and the variety of techniques used by the agency to enhance water quality,



including land protection and forest and wildlife management. Implementation of the Land Management Plans is a key reason for the continued independent “Green Certification” of OWM forestry activities. Quabbin forest management was the first public forestry program in North America to receive the international Forest Stewardship Council’s certification of sustainability, originally conveyed in 1997. Quabbin’s FSC certification was renewed in 2002 as a component of the certification of all state agency forestry in the Commonwealth, a process that continues to provide guidance for significant improvements in these practices, effective through 2009. The full report on Massachusetts forest certification is available on the website of the auditor, Scientific Certification Systems, at [http://www.scs-certified.com/PDFS/forest\\_mass.pdf](http://www.scs-certified.com/PDFS/forest_mass.pdf). The Watershed Protection Plan takes information from the Public Access Plan and Land Management Plan and integrates water quality monitoring findings and other studies to create an action plan that is the basis for OWM’s annual work plan and budget. The Watershed Protection Plan acts as an “umbrella,” encompassing all efforts by OWM that affect both public and private lands in the quest to provide the highest quality drinking water in the world.

Additional studies and reports utilized in the Watershed Protection Plan include: The Land Acquisition Plan, OWM’s guide to purchasing properties that are critical to long-term water quality protection; annual Water Quality Reports and basin specific Environmental Quality Assessments that identify water quality trends, link problems to sources of contamination, and develop prioritized goals for corrective actions; and Emergency Action Plans that detail the necessary steps and chain of command required in case of a catastrophe associated with the reservoirs. Stormwater Management, Agriculture, and Hazardous Materials Emergency Response are examples of topics that have come under special study.

This comprehensive approach to watershed planning has made it possible for MWRA to maintain a waiver from federal filtration requirements and make the Office of Watershed Management a national model. While consultants are utilized when necessary for specific expertise, the vast majority of these plans and outreach material are developed by OWM staff. **Table 4** is a summary of the status of OWM’s plans, including the current version, term, and history. Recent plans, fact sheets and newsletters are available on-line at [www.mass.gov/dcr/waterSupply/watershed](http://www.mass.gov/dcr/waterSupply/watershed).

## **2. Public Access Plan Update**

DCR and MWRA are dedicated to watershed protection as part of a multi-barrier approach to drinking water quality protection. Updating a plan provides the opportunity to consider the implementation of OWM’s programs, integrate the increased knowledge of water quality and watershed sources of concern, and set a focused watershed protection agenda. Some of the issues considered include development of new technologies, changes in population, and trends in recreation and public access.

The terrorist attacks of September 11, 2001 forced all public water suppliers to focus their attention on the security of the water supply. OWM and MWRA consider security of the water system to be of the highest importance. Security of the water system must be comprehensive – source to tap – but flexible enough to adjust to a range of potential threat conditions. The Division’s policies must be periodically reviewed in order to achieve the goal of providing a safe and secure water supply system.

## ***E. Public Input Process***

Public outreach is an important element in the success of OWM's watershed protection efforts. As managers of public land, DCR/DWSP staff has a responsibility to solicit public input in order to address concerns, explain existing management practices, and when practical, integrate new ideas, in order to provide the best possible protection for the drinking water supply. Each plan seeks input from a variety of perspectives—such as legislatively mandated watershed advisory groups, visitors, abutters, and user interest groups—through individualized mailings, public meetings, the press, and the DCR website. OWM supports an ongoing discourse with the public on water supply protection strategies through individual contact by OWM Watershed Rangers and interpretive staff, implementation of the Watershed Protection Act, municipal technical assistance, fact sheets, and the bi-annual newsletter *Downstream*. **Section III** describes specific public input received during the OWM's Public Access Plan update efforts in 2005.