

MUNICIPAL DRINKING WATER

Grade: C

Overview

More than two-thirds of Maine residents are served by 150 public community drinking water systems. Maine has a more than adequate water supply and water quality is addressed through mandatory testing of public water supplies. Approximately \$900 million in water projects will be needed over the next 20 years. Current funding, approximately \$15 million per year, only provides for one-third of needs.

Introduction and Background

Maine has approximately 2,000 public drinking water supply systems, which range from large systems supplying entire communities to small systems that provide water to seasonal facilities such as campgrounds and restaurants. Two-thirds of Maine residents are supplied by a few large systems, such as those serving Portland, Lewiston/Auburn and Bangor, which use surface water sources. Most other public water systems use groundwater as their water source.

A public water supply in Maine is defined as a system that supplies more than 25 people for more than 60 days a year. Three types of systems are regulated in Maine:

- **Community supply systems** serve residential customers. Approximately 400 of these systems exist in Maine. Of the community supply systems, 250 systems are either investor-owned or privately held community systems, which serve many trailer parks, condominiums and apartments. The remaining 150 are quasi-municipal community water systems/public utilities and are the focus of this brief.
- **Non-transient, non-community systems** serve facilities such as schools and office buildings. Approximately 400 of these systems exist in Maine (not addressed in this brief).
- **Transient water systems** serve facilities such as summer camps and hotels. Approximately 1,200 of these systems exist in Maine (not addressed in brief).

Water supply infrastructure includes:

- Source of water supply
- Watershed area or zone of influence that supplies recharge water
- Intake systems or wells and pumps
- Treatment plants
- Transmission and distribution systems
- Storage tanks and reservoirs
- Administrative facilities and laboratory testing facilities

Condition and Adequacy

Water supply systems are vastly different as each has a different "owner," varying numbers of customers, and treatment processes. While one system may have an intake in a lake, use slow sand filtration and pump to a reservoir on a mountain before distribution through WWII-era pipes,¹ another may have three sand and gravel wells, need little more than disinfection, and be sent to a storage tank connected to brand new piping. For these reasons, comprehensive data for conditions do not exist.

¹ WWII-era piping was installed when high quality materials were in short supply.

Maine's environment provides more than adequate sources of supply. However, the infrastructure components that make up public water systems require continued and adequate funding. Storage, treatment and distribution facilities require maintenance, replacement and upgrades to meet current drinking water standards. The greatest need may lie out of sight in underground lines, many of which are more than 100 years old. Sources of supply also need funding for protection from pollutant and security threats.

In addition to the obvious aging infrastructure needs, many water systems are constructing facilities to address other concerns. Redundant wells, interconnections with neighboring systems, water storage structures, treatment facilities and new plant and process improvements to reduce disinfection by product formation are being put in place to ensure adequate service and reliability for the future.

Despite variations in facilities, regulatory oversight of Maine's public systems is firmly rooted in the Safe Drinking Water Act. The Safe Drinking Water Act is enforced by the Maine Drinking Water Program (DWP). The DWP is part of Maine's Department of Health and Human Services and has a staff of approximately 32 to conduct compliance, enforcement, field services, revolving loan fund administration, drinking water security, capacity development and source water protection.

A primary responsibility of the DWP is oversight of compliance with and enforcement of United States Environmental Protection Agency (EPA) National Primary Drinking Water Standards.² "Drinking water standards are regulations that EPA sets to control the level of contaminants in the nation's drinking water. These standards are part of the Safe Drinking Water Act's 'multiple barrier' approach to drinking water protection, which includes assessing and protecting drinking water sources; protecting wells and collection systems; making sure water is treated by qualified operators; ensuring the integrity of distribution systems; and making information available to the public on the quality of their drinking water. With the involvement of EPA, states, tribes, drinking water utilities, communities and citizens, these multiple barriers ensure that tap water in the United States and territories is safe to drink. In most cases, EPA delegates responsibility for implementing drinking water standards to states and tribes.

"A **National Primary Drinking Water Regulation** (NPDWR or primary standard) is a legally enforceable standard that applies to public water systems. Primary standards protect drinking water quality by limiting the levels of specific contaminants that can adversely affect public health and are known or anticipated to occur in water. They take the form of Maximum Contaminant Levels or Treatment Techniques, which are described below.

"A **National Secondary Drinking Water Regulation** (NSDWR or secondary standard) is a non-enforceable guideline regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards."

In addition to the DWP, the Source Water Protection Program (SWAP) was established in 1998 to protect Maine's drinking water sources and to provide additional protection to public water supplies. SWAP focuses on protecting the water supply before contamination occurs by delineating recharge areas, inventorying land uses within recharge areas, evaluating potential hazards and communicating protection strategies to the public.

The viability of each system also depends on capacity, which refers to the ability of a water system to operate in compliance with NPDWRs. The effectiveness of system capacity depends on the interaction of technical, managerial and financial capacity. Technical capacity concerns the ability of a system to meet standards and to provide safe and reliable drinking water, including infrastructure adequacy (source water adequacy and collection, storage, treatment and distribution facilities). The 1996 amendments to the Safe Drinking Water Act require states to implement strategies to ensure that new public water systems have sufficient capacity to meet federally mandated drinking water requirements.

² <http://www.epa.gov/ogwdw000/standard/setting.html> "The Safe Drinking Water Act (SDWA), passed in 1974 and amended in 1986 and 1996, gives the Environmental Protection Agency (EPA) the authority to set drinking water standards."

Security

The DWP has received approximately \$500,000 during the last five years for security planning and training through the EPA and the Department of Homeland Security. With that funding, DWP personnel provided training, developed emergency response plans, and created templates for public water systems to develop their own plans. DWP personnel also conducted tabletop exercises and emergency response plan training, as well as internal coordination with other state agencies regarding safety. Additionally, funding was given for a series of public service announcements on water system security. Some water systems received portions of the EPA money and some of the funding, earmarked for safety and security, was routed to county emergency management agencies. DWP funded fencing and other security measures for wells and associated structures through wellhead protection grants.

Investment Needs

Safe and abundant water is critical to human health, sustainable development and economic growth. The DWP estimates that hundreds of millions of dollars worth of necessary water projects remain unfunded due to shortfalls in both state and federal budgets. According to ASCE, the national gap in funding versus need is more than \$11 billion. While Congress mandated improvements in both water quality standards and in sewage treatment, federal funding for water and wastewater has decreased by \$600 million since 2003.

In Maine, funding for drinking water system maintenance and upgrades is provided through user fees or local taxes and from loans provided by the Drinking Water State Revolving Loan Fund (DWSRLF). In addition, the United States Department of Agriculture Rural Development Authority provides funding for systems with less than 4,000 customers, or for communities with less than a total population of 10,000. The table below, from DWP, summarizes the funding available, as well as priority projects that did not receive funding (waitlisted) in a given year:

YEAR	2006	2007	2008
Amount Funded (in millions)	\$13.4	\$14.7	\$15.0
Amount Waitlisted (in millions)	\$11.4	\$12.8	\$7.5

DWP believes the low number of waitlisted projects reflects expectations of the amount of funding available. Water utilities might not apply for funds when the amount of funding available is projected to be low.

On June 18, 2008, the *Bangor Daily News* reported that “Maine’s economic development has been slowed because of an increasing backlog of drinking water projects and needed wastewater treatment upgrades.” The state and the utilities identified \$900 million in water projects that will be needed over the next 20 years. Through 2008, \$15 million in funding is expected to be available for water projects. However, with infrastructure need of \$900 million over 20 years, \$45 million in funding per year is needed. At that rate, current funding is approximately one-third of what is needed. Many systems defer maintenance to keep from having to raise rates.

Due to competing state budgetary lines, Maine’s DWP has experienced difficulty obtaining the required 20 percent matching funds from the state. This match is required to maintain the revolving loan fund and the DWP continues to search for options to provide adequate matching funds. In the November 2008 election, Maine voters approved a state bond issue for \$3.4 million which will leverage an additional \$17 million in federal aid. However, for the DWP to both assist public water systems to maintain the health objectives of the Safe Drinking Water Act and maintain the fiscal integrity of the fund, the need is far greater.

Conclusions and Recommendations

The drinking water grade applies only to the 150 publicly funded water systems. Many of the underground facilities for drinking water are more than 100 years old. Although individual systems have not been graded, state and industry officials estimate that systems range from A to D-, but because of mandatory state support, no systems fall into the failing F category. Overall, Maine ASCE gives drinking water a grade of C.

Maine ASCE makes the following recommendations:

- Work with the federal government and Congress to fully fund the needed projects and eliminate the waitlist. Congress needs to provide \$1 billion to the DWSRLF in FY2009;
- Develop a more reliable funding mechanism, such as a federal or state infrastructure trust fund, that would provide both low interest loans and grants for infrastructure investment. The availability and access to sufficient and economically attractive funding resources would help utilities make the necessary investments to their systems;
- Require active asset management programs be implemented and reviewed annually to maintain the terms and conditions of the new grants or loans; and
- Advocate the consolidation or regionalization of utilities throughout the state to reduce operational costs.

Sources:

Andrews Tolman, Assistant Director, Maine CDC Drinking Water Program, Maine Dept. of Health and Human Services

DWSRF, Biennial Reports, For State Fiscal Years 2006 & 2007 (7/01/05 To 6/30/07), and 2004 & 2005 (7/01/03 To 6/30/05), prepared by the State of Maine, Maine Municipal Bond Bank & Department of Health and Human Services

Maine Dept of Health and Human Services, Drinking Water Program Website and staff.

[Bangor Daily News](#) 6-25-2008

Maine Water Utilities Association

Maine Rural Water Association, Jeff McNelly

Portland Water District, Jay Hewett, P.E.

<http://maine.gov/dhhs/eng/water/>

ASCE testimony to the subcommittee on Interior, Environment, and related Agencies of the Committee on Appropriations March 13, 2008