

## MUNICIPAL WASTEWATER

### Grade: D+

#### Overview

Maine's 2004 Clean Watersheds Needs Survey listed a wastewater infrastructure need of \$854 million. The primary source of funding for wastewater improvements is the State Revolving Fund (SRF), which has declined by 50% since 2004 and is scheduled to end entirely in 2011. Without adequate funding, waitlists will increase and improvements to treating wastewater and protecting the environment will be deferred.

#### Introduction and Background

Maine cities, towns, and utility districts are being severely challenged with the need to repair and upgrade old or failing infrastructure in their wastewater treatment systems. These entities are supported by a population of 1.32 million citizens that earn the lowest average annual income (\$41,287) in New England.<sup>1</sup> Limited financial resources and other community demands have postponed, delayed, and neglected the repair, upgrade, and modernization of the infrastructure that is a vital component of a community's public health, environmental stewardship, and economic vitality.

In conjunction with the need to rehabilitate a significant portion of the existing infrastructure, federal and state regulatory requirements on wastewater and stormwater are becoming more restrictive. These increasingly stringent conditions and effluent limits are designed to reduce pollutant loads on receiving waters. In addition, stormwater pollution has become a concern to regulatory agencies, with communities, utilities, private and public entities just entering the preliminary stages of stormwater management.

Separation of stormwater from wastewater allows for better treatment and less overload on facilities by eliminating stormwater peaks that may exceed the capacity of the treatment processes. Separation of sewers that carry both wastewater and stormwater (known as combined sewers) has become a major area of investment for many of the larger municipalities in Maine. The Portland City Council has recently authorized a \$61 million bond to fund Tier II of their Combined Sewer Overflows (CSO) Long Term Control Plan. Additional phases will be needed to achieve complete separation. Bangor, Augusta, and Lewiston-Auburn have invested heavily in CSO control, and continue to invest in solving sewer overflows caused by wet weather and snow melt.

#### Condition and Adequacy

Municipally-based wastewater infrastructure got a boost in Maine in the 1930s when Civilian Conservation Corps projects led to the development of the earliest systems. The second leap in development of municipal wastewater infrastructure was in the 1970s and 1980s in response to the Clean Water Act and the subsequent funding programs that developed. In all, there are approximately 166 publicly owned treatment works (POTW) in municipalities around the state. Through the years, the areas within the communities served by the infrastructure have increased to support more widespread economic growth. Now many communities are faced with the reality of maintaining an infrastructure that is 30 to 40 years old and approaching or exceeding its design life, with federal funding programs at risk.

Many larger communities in the state have completed one or more upgrades of their treatment processes; however, a much larger percentage of facilities, generally in the smaller, more rural communities, have had little or no upgrades. Federal and state funding for these communities has not been available due to the low number of users and the relative high cost per user to repay the necessary loans. Local user fees are typically designed to cover operating and

<sup>1</sup> U.S. Census Bureau, 2007 data.

regular maintenance costs and do not address the need for major renovation or replacement. Low average annual income of ratepayers prohibits the payment of high user fees to support the upgrades and replacement of aging infrastructure.

Wastewater infrastructure can be broken down into two primary categories: the Publicly-Owned Treatment Works (POTW) facilities where treatment occurs; and the **collection systems** comprised of pipes, manholes, pump stations and other subsurface components that convey the wastewater to the POTW facilities. Almost half of back-logged wastewater treatment projects are related to CSO, an indication that combined collection systems continue to be a significant problem in Maine. According to the Maine Department of Environmental Protection's (DEP's) report on the *Status of Licensed Discharges and Combined Sewer Overflow Abatement Program* approximately 12% of licensed discharges are not maintained in substantial compliance with license requirements, indicating that many treatment facilities require significant improvements. Unfortunately, there has been no comprehensive statewide assessment of collection systems so our understanding is based on CSO projects that have been brought to the attention of the DEP.

### Investment Needs

Maine's 2004 Clean Watersheds Needs Survey (most recent available) conducted by the DEP and submitted to the United States Environmental Protection Agency (EPA) listed a total wastewater need of \$854 million. According to data gathered by the DEP, approximately 87 communities are waiting for funding assistance for a variety of upgrade projects with total project costs estimated in 2007 at over \$420 million. Over \$174 million of that cost is related to CSO issues that continue to be a problem where systems struggle with stormwater infiltration and inflow.

The funding for the necessary investment in infrastructure improvements has primarily come from the Clean Water State Revolving Loan Fund (CWSRLF), Rural Development, Community Development Block Grant Program (CDBG), State Clean Water Grants (SCWG), other grants and commercial loans and bonds. Environmental and Community Development Block Grants are based on a community's median household income, as compared against other Maine communities, plus other considerations including current and anticipated user fees. In most funding packages, grants are a small part of the total funding. The CWSRLF program is the most advantageous funding resource available with its interest rate 2% below market. In FY 2007, the budget for the United States for this fund was over \$1 billion. In FY 2009, the President's budget recommended only \$555 million. Rural Development offers a mix of loans and grants, but in recent years the loan portion has dominated the financing package, that has an interest rate about the same as SRF programs. It is not uncommon for public infrastructure projects to have participation from multiple agencies and resources to obtain the level of funds necessary to finance infrastructure and facility improvements.

The capital investment needs for the wastewater treatment and conveyance facilities, stormwater management programs, and water recycling programs are greater than allocated funding. The needs represent the capital investment necessary to plan, design, build, replace or rehabilitate publicly-owned wastewater treatment and collection facilities, and establish and implement stormwater management programs. The projected total annual loan amount available is estimated at \$40 million. The SRF program will remain a major component in funding wastewater projects through 2011, when it is slated to end. However, it is becoming evident that inflation and unrecognized costs associated in rehabilitating existing infrastructure will rapidly decrease the resources of the SRF program. With \$854 million in current unmet needs, it would take more than 20 years to address all current issues assuming no additional project needs during that period.

In November 2008, Maine voters authorized \$3.4 million in state bond funds to leverage an additional \$17 million in federal grant funds to support the SRF program. These funds are intended to support the construction of water and wastewater treatment facilities and continue to establish a sufficient capital investment fund to ensure the SRF program can continue beyond 2011. The 5:1 matching ratio is an advantageous way to grow the fund as long as federal funding is available and the bond referendums continue to pass. The combined impact of the \$20 million investment, which is divided between water and wastewater, is considered minor when compared to the \$854 million need for wastewater.

In addition to treatment process and collection system upgrades, security of facilities and the possible risk to public health is a factor considered in this grading. The majority of public wastewater facilities have not had security system updates within the decade. Otherwise, there is no official data available to identify the actual anticipated investment.

### Conclusions and Recommendations

The most influential factor preventing consistent investment has been the setting of user rates and fees. Since the Clean Water Act legislation was adopted, regulation has existed that requires local utilities to set user rates to allow maintenance and capital investment. Unfortunately, the rates are rarely set high enough to achieve the intended goal. In some instances, the funds have been directed to other projects. The lack of funding for infrastructure investment and proper maintenance adversely affects Maine's ability to protect the public health.

The condition of Maine's wastewater infrastructure suffers from declining conditions, decreasing reliability, limited capacity for future growth, security issues, environmental stewardship concerns and sustainability problems. Current federal, state and local funding levels are insufficient to support existing funding requests for major upgrades and CSO separation. No major effort has been undertaken to understand collection system conditions and that the actual need is substantially larger than identified, and that environmental impact will continue to increase. Maine ASCE gives municipal wastewater a grade of **D+**.

Maine ASCE makes the following recommendations:

- Work with federal government and Congress to fully fund the CWSRLF program and reduce the list of needed projects. Congress would need to provide \$1.5 billion to the fund in FY2009;
- Develop a 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 economic attractive funding resources would help utilities make the necessary investments to their systems;
- Encourage all utilities to develop an Asset Management Plan, implement full cost pricing and educate the public as to the importance of sustainable operations. A requirement for a utility to access any new funds is that an active Asset Management Program is implemented and reviewed annually to maintain the terms and conditions of the grant/loan; and
- Advocate the consolidation or regionalization of utilities throughout the state to reduce operational costs.

#### Sources:

Maine Department of Environmental Protection report to the 123<sup>rd</sup> Legislature "Status of Licensed Discharges and Combined Sewer Overflow Abatement Program" dated April, 2007

Maine Department of Environmental Protection "Maine Wastewater Facilities Needs" dated January 2008

Maine Department of Environmental Protection 2004 Clean Watershed Needs Survey dated January 2008

Maine Waste Water Control Association, "Maine Clean Water State Revolving Fund (SRF) Funding the Future Clean Water of Maine" dated October 23, 2008

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