

## **Project Descriptions for September 7, 2016**

### **Board of Trustees Meeting**

#### **Clean Water Commitments**

##### **Fitchburg CW-16-10**

The Fitchburg Easterly Wastewater Treatment Facility (WWTF) is a secondary treatment facility with current average annual flows of about 9.8 MGD. This project includes a number of elements intended to significantly improve discharge permit compliance. These include: upgrades to secondary treatment system with a biological selector zone to increase peak flow capacity, provide biological nutrient removal and improve permit compliance; replacement of existing primary and secondary sludge pumps, aeration blowers, pipes, valves, fine bubble diffuser, clarifier mechanisms, surface repairs to existing concrete aeration and clarifier tanks; installation of two new emergency generators; and instrumentation and electrical improvements; and modifications to the existing flood protection berm.

##### **Nantucket CW-16-11**

This is a Community Septic Management Program loan.

##### **Saugus CW-16-09**

This Subsystem 4B project includes the rehabilitation of pipelines, manholes, and the removal of private inflow sources to eliminate infiltration/inflow from the sewer system and significantly reduce or eliminate sewer system overflows from occurring at the Lincoln Avenue Pumping Station. Approximately 34,000 feet of 8-inch and 12-inch pipe and 1,500 feet of 15-inch pipe will be rehabilitated using cured in place pipe lining. Approximately 865 sewer services and 222 manholes will be lined as part of the project.

The Pump Station Upgrade & Replacement project involves the replacement of the existing Morris Place pump station and improvements to the Bristol Street pump station. The equipment within many of the Town's wastewater pump stations has been operating beyond its design life and in some cases is exhibiting signs of failure. Replacement of the existing Morris Place Pump Station is required due to the poor structural condition of the structure, the need to restore useful life and as a result of the close proximity of the station to environmental receptors. Improvements to the Bristow Street Pump Station are required to restore useful life of the station, improve operator safety, alleviate flooding concerns and improve system reliability.

#### **Drinking Water Commitments**

##### **Chicopee DW-16-04**

The City of Chicopee's source of drinking water is the Chicopee Aqueduct, which is owned and maintained by the Massachusetts Water Resources Authority. The city's transmission main from this source is a single 36-inch diameter cast iron main. With no redundant transmission main, a majority of the city is at risk of losing water, if the single transmission line goes down.

Depending on where the damage to the existing main occurs, service could be lost for an extended period of time. Construction of the second main also allows repairs and upgrades to be

made to the existing 36-inch main, without interruption in service. The project will also replace the existing gaseous chlorine system with a sodium or calcium hypochlorite system to improve safety and performance of the transmission main.

#### **Merrimac DW-12-11**

The work of the contract generally includes construction of three above grade precast concrete package pumping stations, and furnishing and installing approximately 4,000 linear feet of ductile water main and associated appurtenances. Pump stations will include a booster pump skid, VFDs, pump controls and appurtenances, mechanical piping, electrical and instrumentation equipment and HVAC systems.

#### **Revere DW-13-09**

The Automatic Meter Reading (AMR) system will fully replace the aging residential water meter system throughout the City with approximately 10,000 new residential meters, plus a city-wide fixed based AMR system. The system will provide automated readings of every new meter in the system which will minimize or eliminate the need for mobile or hand readings. This program is vital for Revere in order to improve the city's water conservation. The City of Revere has unaccounted-for water of 18.6%, well above the Massachusetts Standard of 10%. The current metering system uses handheld meter reading equipment that was installed in 1993-1994. The handheld equipment is somewhat labor intensive for city employees and only allows for meter readings biannually. The handheld readers may be contributing to this high unaccounted-for water. Under the current system, the city is unable to reach the meters at certain commercial locations due to the location of the meter. Estimating the water usage at these locations may also be a contributing factor to the high unaccounted-for water. The new AMR program will be a more sophisticated and reliable system for the city. Revere will have the capabilities of retrieving daily (or hourly) readings of all meters without the labor of meter reading. The city can receive leak detection indication, meter tampering warnings, or meter malfunction warnings. The new system will also allow the city to retrieve periodic unaccounted-for water percentages. Based on a customer's usage profile, customers have the option of receiving an email notification when using an atypical amount of water. These notifications will enhance the ability for the city to respond to customer inquiries.

### **Clean Water Agreements**

#### **Nantucket CWT-16-11**

This is a Community Septic Management Program loan.

#### **Springfield Water and Sewer Commission CWP-14-27**

The overall objective of the project is to rehabilitate and extend the lifespan of existing infrastructure and to improve hydraulic capacity which allows for mitigation of structural failure leading to sanitary sewer overflow (SSO) events. Approximately half the City of Springfield and the surrounding towns of Ludlow and Wilbraham are served by the Main Interceptor (MI) which runs for approximately 27,200 feet. The MI was built in 1972 and is constructed of 60-in and 66-in Reinforced Concrete Pipe (RCP). Based on recent inspection, the MI is considered to be in structural distress. The Dickinson Street Siphon feeds a large catchment of flow into the MI.

SSOs into the Mill River and neighborhoods have occurred at the siphon during heavy rainfall events. As part of the project, the siphon will be replaced with a large diameter gravity sewer.

### **Drinking Water Agreements**

#### **Merrimac DW-12-11**

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#### **Revere DWP-13-09**

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