Project Descriptions for December 14, 2022

Board of Trustees Meeting

Asset Management Planning Commitments

Avon CW-22-27
The Town of Avon seeks to consolidate asset inventory and mapping of horizontal assets to a single authoritative platform that will supply digital records of the assets to the town's workflow and asset management software. The goal is to allow a dynamic updating of priorities, including the PLA and SLA lists.

Fall River DW-22-22
The City of Fall River will map the water distribution system in GIS format to support asset management and implement the City's computerized maintenance management system for the water maintenance department. The project will geolocate horizontal assets, assess the water main renewal program, and do a risk analysis for horizontal assets. The project will create a hierarchical asset registry for horizontal water system assets.

Fitchburg CW-22-70
The City of Fitchburg seeks to develop a Stormwater Asset Management Plan to: (1) Improve the current stormwater system mapping in GIS; (2) Perform a desktop condition and risk assessment of the stormwater pipeline system; (3) Develop a capital improvement plan for stormwater pipelines; and (4) Prioritize areas for detailed CCTV inspections.

Greenfield CW-22-37
The City of Greenfield seeks to develop a comprehensive Asset Management Plan. Project objectives are: 1) determine an appropriate level of service for the water and wastewater systems; 2) improve the GIS database by performing condition assessments and translating institutional knowledge; and 3) perform a criticality analysis and creating a written asset management plan to plan for future asset operation, maintenance, and rehabilitation costs.

Marshfield CW-22-60
The Town of Marshfield seeks to develop an Asset Management Plan to better manage the stormwater infrastructure. The project will include enhancing the Town's existing mapping layers by field locating and conducting assessments on catch basins, manholes, and outfalls, and gathering important attribute information such as condition, elevations and inverts, and pipe connectivity.

Mashpee CW-22-29
The Town of Mashpee seeks to develop an all-encompassing Stormwater Asset Management Plan (AMP) to: further asset inventory work completed to date; better understand condition of the existing drainage system; move from a reactive program to a consistently proactive overall program; coordinate with water quality programs (MS4, lakes and ponds, etc.) and resiliency planning completed; and create a risk-based AMP and capital improvement planning methodology that is defendable to the public and decision makers.

Millis CW-22-72
The Town of Millis seeks to develop Phase 3 of the ongoing Asset Management Program that focuses on updating and refining sewer system and stormwater system asset inventory, condition, and capital improvement plan.

Rutland CW-22-62
The Town of Rutland seeks to continue its Asset Management planning efforts in water, wastewater, and stormwater. The project's objectives are to: store and organize the existing information in a way that can be accessed and updated electronically in the field, capture institutional knowledge. By using this knowledge to develop operation and management plans the Town will be able to shift their maintenance program to be more proactive.

Taunton DW-22-42
The City of Taunton Water Division is looking to improve their Asset Management processes and perform criticality analysis on important water system infrastructure.

Winchendon CW-22-64
The Town of Winchendon seeks to develop a comprehensive sewer and water Asset Management Plan (AMP) to establish a proactive maintenance operations style and to build upon their risk and resiliency efforts. The goals of the project are to: create a defendable risk-based AMP and capital improvement planning methodology, develop inventory, and perform condition assessments at sewer and water facilities, estimate the cost of asset maintenance and renewal in future years, and develop existing GIS data to help manage Town assets.

Lead Service Line Planning Program Loan Commitments

Auburn Water District DW-22-55
This project includes the evaluation and development of a Lead Service Line (LSL) replacement plan for utility and customer side service line materials connected to the Auburn Water District distribution system in order to meet the 2021 Lead and Copper Rule Revision (LCRR) issued by the EPA. The project is divided into two phases: Phase 1-Initial Water Service Inventory Development and Phase 2- Lead Service Line Replacement Plan. Tasks for Phase I include a review of current water distribution data, field investigations to verify service line materials, and the finalization of an initial inventory. During Phase 2, Engineers will work closely with the District to produce a LSL replacement plan. The plan will include a procedure for conducting replacements and a funding strategy. To comply with the LCRR requirements, this work must be complete by October 2024.

Brockton DW-22-54
The City of Brockton seeks to develop a detailed electronic database and map of the various components of the water service lines. The City will utilize the service tie cards which are currently in paper and/or electronic format to develop a detailed electronic service line inventory. The planning phase will also include developing Lead Service Line Replacement Program Plan, conducting public outreach, and inventory verification which includes developing and providing customer application and field verification (house to house inspections/ test pit oversight).

Deerfield Fire District DW-22-58
The project consists of collecting and reviewing water service documentation (e.g., water main installation dates and locations, meter installation dates, curb stop locations building construction dates, etc.) to create an LSL inventory in the form of Excel spreadsheet and GIS maps. Known and unknown LSLs will be validated by field investigation including test pitting. The LSL inventory will then be used to develop an LSL replacement prioritization list and Capital Improvement Plan (GIP).

Hamilton DW-22-60
The project includes establishing a formal inventory of existing water service lines and materials, including water record review and database creation, field to identify service line materials, verification of unknown service line materials, desktop inventory database reconciliation and field verification data population, and LCR inventory

Melrose DW-22-59
The work of this project generally consists of updating the City's Service Line Inventory with updated information collected from the City through records review and field investigation, updating the existing database with additional information included in the EPA's Service Line Inventory Guidance released on August 4, 2022 and in the MassDEP Drinking Water Program Tools and template inventory spreadsheet released August 15, 2022, updating approximately 250 locations with unknown service line materials through assumptions based on installation date, home construction date, and utility line size, approximately 700 home inspections for addresses that were identified as having a lead service, and subcontracting a contractor to perform subsurface investigation on the City side of the service.

Norwood DW-22-56
This project includes establishing a formal inventory of existing water service lines and materials, including data review and documentation, field investigation support, and summary memorandum

Webster DW-22-57
This project includes the evaluation and development of a Lead Service Line (LSL) replacement plan for utility and customer side service line materials connected to the Webster water distribution system in order to meet the 2021 Lead and Copper Rule Revision (LCRR) issued by the EPA. The project is divided into two phases: Phase 1- Initial Water Service Inventory Development and Phase 2- Lead Service Line Replacement Plan. Tasks for Phase I include a review of current water distribution data, field investigations to verify service line materials, and the finalization of an initial inventory. During Phase 2, Engineers will work closely with the Town to produce a LSL replacement plan. The plan will include a procedure for conducting replacements and a funding strategy. To comply with the LCRR requirements, this work must be complete by October 2024.

Clean Water Commitments

Boston Water & Sewer Commission CW-22-52
The Boston Water and Sewer Commission’s project entails updating the Commission's Sewer and Drain Models to reflect structural and hydraulic changes made to the systems since the models were last updated in 2018. It will include recalibration of Drain Model's Stormwater Quality component to incorporate data recently collected under the Commission's Drain Model Validation Project. The project will also include updating the Commission's Inundation Model (IM) with new LIDAR data and re-running the IM under various climate change scenarios to evaluate the impacts future mitigation efforts (e.g., constructing flood/ocean barriers, storage facilities) on Commission and City of Boston assets. The project will include general model maintenance, staff support and training.

Fairhaven CW-22-67
The Town of Fairhaven seeks essential upgrades to the WWTF to address stringent total nitrogen permit limits by 10/1/2026 and replace aging/obsolete infrastructure. Meeting the TN limit requires the upgrade of existing secondary treatment systems to a Modified Ludzak-Ettinger (MLE) format and the addition of a new tertiary denitrification filter system. The project includes numerous equipment, mechanical, and electrical upgrades.

Fitchburg CW-22-58
The Town of Fitchburg seeks to perform sewer separation and rehabilitation. The CSO 010, 032, 045, 083 Separation/Rehabilitation Project will involve the separation of an estimated 27, 600 linear feet (LF) of combined sewers, the separation of 9 combination manholes, and the closure of 4 CSO regulators (CSO 010, 032, 045, and 083) that have discharged a combined estimated 35.7 million gallons of untreated combined sewage to the North Nashua River between 2015 and 2020. The project will also include approximately 37, 600 LF of trenchless rehabilitation of sanitary sewers to reduce infiltration/inflow upstream of the 4 regulators. This project will also include green infrastructure, when applicable, and will include stormwater improvements for the 2070 10-year, 24-hour storm event.

Hudson CW-21-36
The Town of Hudson's Wastewater Treatment Facility (WWTF) Phase 2 Upgrades project involves upgrades to Hudson's WWTF and Main Street Pump Station, which include the replacement of aged systems that have exceeded their useful life. At the WWTF, improvements will consist of comprehensive renovation and upgrade to the Control Building; Headworks Building repair and improvements; replacement of Trickling Filter and Activated Sludge Clarifier mechanisms; Aeration System Upgrades; Process Building system improvements; new generator to power the entire facility; and miscellaneous improvements. Improvements to the Main Station include new pumps, instrumentation, electrical, and generator. The project will improve the facility's overall reliability and efficiency to allow it to continue to meet its NPDES permit requirements.

Massachusetts Water Resources Authority CW-21-56
The Nut Island Headworks is a preliminary treatment facility serving 22 communities that provides screening and de-gritting of wastewater prior to the wastewater receiving primary and secondary treatment and disinfection at MWRA's Deer Island Treatment Facility. This project replaces the odor control and HVAC systems at the Nut Island Headworks to maintain reliable operation of the systems, to meet requirements of the MADEP Air Quality Permit and to maintain an environment within the facility that is safe for workers and suitable for equipment. The project will also replace other equipment at the headworks that is approaching the end of its lifecycle to ensure reliable operation of this critical wastewater treatment facility.

Massachusetts Water Resources Authority CW-22-41
The Massachusetts Water Resources Authority (MWRA) seeks installation of a new pipe connection from the 85" X 90" Somerville Marginal Interceptor that conveys wet weather flow to the MWRA's Somerville Marginal CSO Facility to Section 35 of MWRA's Somerville-Medford Branch Sewer.

New Bedford CW-22-61
The City of New Bedford seeks to complete the first phase of a sewer system evaluation survey (SSES). The SSES will include flow isolation, manhole inspections, cleaning and television inspection, smoke testing and dye testing in 3 high priority areas and CSO Group 1. Findings will provide a basis for specific improvements aimed at removing infiltration and inflow (I/I) and reducing combined sewer overflows (CSOs).

Oak Bluffs CW-22-32
The Town of Oak Bluffs seeks Advanced Wastewater Treatment to upgrade the existing Oak Bluffs Wastewater Treatment Facility's biological nitrogen removal (BNR) treatment process to an enhanced nitrogen removal (ENR) process for the purpose of reducing the net effluent nitrogen discharged to the Lagoon Pond watershed (which has been issued a TMDL to total nitrogen). The upgrade is designed for an average flow of 0.25 MGD and a maximum month flow of 0.62 mgd.

Pittsfield CW-18-12
This project is to upgrade the WWTP to achieve compliance with NPDES permit limits and an AO (CWA-01-15-014) issued by the EPA. The project will optimize the nitrogen removal process and result in reductions of phosphorus and aluminum discharges to the Upper Housatonic River Area of Critical Environmental Concern and remediate documented nutrient enrichment in the downstream Wood's Pond impoundment. Four major component projects are necessary to achieve compliance: Tertiary Treatment Upgrade, Sludge Dewatering Upgrade, Nitrogen Removal Upgrade (Phase I) and Secondary Clarifiers Upgrade. The project components are consistent with the plant needs and energy efficiency improvements identified in the recently updated WWTP Facilities Plan.

Pittsfield CW-22-48
The City of Pittsfield seeks to develop an updated, comprehensive plan to manage water, wastewater, and stormwater needs in a holistic and balanced manner. The Integrated Water Resource Management Plan will build off the recently completed Comprehensive Water Management Plan and include the following additional critical components: focus on protecting and improving the City's water resources, updated Water Master Plan, a new city-wide I/I Analysis and SSES, evaluation and screening of wastewater alternatives, WWTP Nitrogen removal alternatives to meet new NPDES permit limits, updated Stormwater Master Plan, Stormwater Utility Feasibility Study, 20-year Integrated CIP, Rate Study Updates.

Drinking Water Commitments

Abington-Rockland Joint Water Works DW-22-23
The Abington-Rockland Joint Water Works' project includes the construction of permanent PFAS treatment solutions at the Hannigan and Myers Avenue WTPs. Currently the ARJWW is depending on temporary PFAS treatment at both plants in the form of a retrofitted GAC pressure filter at Myers Avenue and injected PAC slurry in the raw water at Hannigan. Permanent solutions are needed by the Joint Water Works and required by the state. In addition to PFAS treatment, much needed plant upgrades are required which include a new filter building with redundancy to replace the single ABW filter at Hannigan WTP and capacity improvements at Myers Avenue including installation of a new clear well, filter backwash pumps, finished water pumps and reactivation of Well No.4 at Myers Avenue WTP.

Belchertown DW-22-33
The Town of Belchertown seeks the replacement of approximately 4 miles of existing water distribution piping serving 389 units within the PVP Mobile Home Park with a new 4 PVC distribution system. The project will also replace water services to the lots within the development. The goal of the project is to replace the existing undersized system. Additionally, the existing system was built in phases by different contractors using different materials and fittings that have resulted in poor water supply, numerous leaks and failures, and significant ongoing maintenance.

Blandford DW-22-30
The Town of Blandford seeks to conduct the preliminary planning and investigations required for the replacement of 14,000 feet of water main, replacement of galvanized services with lead goosenecks, siting and sizing of a new water storage tank, and evaluation of the existing booster station. Since a new site may be required for the storage tank, it is important to survey preliminary borings, easements, and obtain other preliminary information prior to design. This project will be vital for understanding the existing conditions, evaluating the most cost-effective route and approach for proper design.

Fitchburg DW-22-40
The City of Fitchburg seeks to replace an existing 0.5 MG water storage tank and coating rehabilitation for two additional water storage tanks within the City's water distribution system. The storage tank replacement has been requested to be addressed by the Massachusetts Department of Environmental Protection (DEP) following a 2019 sanitary survey and the coating rehabilitation is required by an existing Administrative Consent Order (ACO). The project is required to address deficiencies within the existing storage tanks and maintain the existing storage capability and operations of the water distribution system.

Massachusetts Water Resources Authority DW-21-28
The Weston Aqueduct Supply Main 3 (WASM 3) is an existing 10-mile, 56-inch to 60-inch diameter, steel water main that supplies the communities of Waltham, Watertown, Belmont, Arlington, Lexington, Bedford and Winchester. In addition, the pipe conveys flow to the MWRA's Intermediate High, Northern High and Northern Extra High-pressure systems. The pipe was built in the 1920's and is in need of repair due to frequent leaks and aging valves and appurtenances. It serves as a primary means of backup supply within the MWRA's distribution system in the event of a failure along the City Tunnel and City Tunnel Extension.

Nantucket DW-22-25
The Town of Nantucket seeks to expand the water distribution system in the area west of the Nantucket Memorial Airport to provide water service to up to 80 existing homes that are impacted by PFAS in private domestic wells. This will provide a safe municipal drinking water source to these homes and be protective of public health. The project requires installation of up to 14, 800 feet of new 12 diameter ductile iron water main and appurtenances.

New Bedford DW-22-45
The City of New Bedford's Transmission Main Inspection Program consists of 5 phases; this project represents the first phase of planning inspection work on the City's transmission main system. The project will inspect two 48-in mains between the Quittacas WTP and the High Hill Reservoir, which represent the most critical transmission mains in the system.

New Bedford DW-22-46
The City of New Bedford's Quittacas Water Treatment Plant (QWTP) Upgrades project is the second phase of the QWTP upgrades. The QWTP was constructed in the 1970's and no major upgrade has been completed since. Phase 1 was just completed and included upgrades to the electrical distribution system. This phase includes upgrades to the remaining major equipment such as the HVAC system, SCADA, and process areas to ensure the plant continues to function safely and properly.

Somerset DW-22-43
The Town of Somerset seeks the replacement of a booster pump station to re-establish the high service area in the Town's distribution system. The current booster pump station is no longer operable requiring the distribution system to operate at one pressure zone. Replacement of the booster pump station will allow re-establishment of the high service zone, which will reduce the total dead water storage within the distribution system and lower water age. A TTHM removal system will also be added to the tanks within the low service area to address disinfection by-products exceedances.

Asset Management Planning Agreements

Avon CWA-22-27
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Clean Water Agreements

Hudson CWP-21-36
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Pittsfield CWP-18-12-D
This project is to upgrade the WWTP to achieve compliance with NPDES permit limits and an AO (CWA-01-15-014) issued by the EPA. The project will optimize the nitrogen removal process and result in reductions of phosphorus and aluminum discharges to the Upper Housatonic River Area of Critical Environmental Concern and remediate documented nutrient enrichment in the downstream Wood's Pond impoundment. Four major component projects are necessary to achieve compliance: Tertiary Treatment Upgrade, Sludge Dewatering Upgrade, Nitrogen Removal Upgrade (Phase I) and Secondary Clarifiers Upgrade. The project components are consistent with the plant needs and energy efficiency improvements identified in the recently updated WWTP Facilities Plan.

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Drinking Water Agreements

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Braintree DWP-21-21
The proposed Tri-Town Regional Water Treatment Plant (TTRWTP) project would create a regional facility to replace the existing Braintree WTP and Randolph/Holbrook WTP. The new regional facility would eliminate redundancies of having two individual plants and their associated capital and operation and maintenance costs.
The new Tri-Town WTP will help protect public health by reducing bacteria, carcinogenic compounds, and disinfectant byproducts present in the current systems. The water treatment process would be as follows:
- Polymer and PACL addition for coagulation of raw water
- Dissolved air floatation (DAF) for removal of larger, coagulated solids
- Granular activated carbon (GAC) filtration for removal of per- and polyfluoroalkyl substances (PFAS) and smaller,
finer solids
- Chlorine addition for disinfection and pH adjustment for corrosion control

The new TTRWTP will incorporate improved treatment technology in order to provide high quality finished water and to maintain distribution system residuals. The regional facility, with a design capacity of 12.5 MGD, would meet all current and anticipated drinking water standards, and would also improve the aesthetic quality of drinking water for Braintree, Randolph, and Holbrook.

Braintree DWP-22-51
The proposed Tri-Town Regional Water Treatment Plant (TTRWTP) project would create a regional facility to replace the existing Braintree WTP and Randolph/Holbrook WTP. The new regional facility would eliminate redundancies of having two individual plants and their associated capital and operation and maintenance costs.

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Randolph DWP-21-23
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- Granular activated carbon (GAC) filtration for removal of per- and polyfluoroalkyl substances (PFAS) and smaller, finer solids
- Chlorine addition for disinfection and pH adjustment for corrosion control

The new TTRWTP will incorporate improved treatment technology in order to provide high quality finished water and to maintain distribution system residuals. The regional facility, with a design capacity of 12.5 MGD, would meet all current and anticipated drinking water standards, and would also improve the aesthetic quality of drinking water for Braintree, Randolph, and Holbrook.

Randolph DWP-22-52
The proposed Tri-Town Regional Water Treatment Plant (TTRWTP) project would create a regional facility to replace the existing Braintree WTP and Randolph/Holbrook WTP. The new regional facility would eliminate redundancies of having two individual plants and their associated capital and operation and maintenance costs.

The new Tri-Town WTP will help protect public health by reducing bacteria, carcinogenic compounds, and disinfectant byproducts present in the current systems. The water treatment process would be as follows:
- Polymer and PACL addition for coagulation of raw water
- Dissolved air floatation (DAF) for removal of larger, coagulated solids
- Granular activated carbon (GAC) filtration for removal of per- and polyfluoroalkyl substances (PFAS) and smaller, finer solids
- Chlorine addition for disinfection and pH adjustment for corrosion control

The new TTRWTP will incorporate improved treatment technology in order to provide high quality finished water and to maintain distribution system residuals. The regional facility, with a design capacity of 12.5 MGD, would meet all current and anticipated drinking water standards, and would also improve the aesthetic quality of drinking water for Braintree, Randolph, and Holbrook.

Sudbury Water District DW-22-05

The Town of Sudbury seeks the construction of a permanent treatment system consisting of four 12-foot diameter pressure vessels containing granular activated carbon (GAC). The vessels will be housed in a building adjacent to the exiting Raymond Road Water Treatment Plant (Raymond Road WTP). The proposed treatment system is to remove PFAS from the water, therefore providing the pubic with safe drinking water.