MASSACHUSETTS
CLEAN WATER TRUST

ANNUAL GREEN BONDS REPORT

2018 • FOR THE MASSACHUSETTS CLEAN WATER TRUST

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A NOTE FROM THE TREASURER

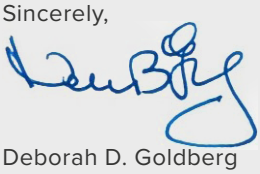
As Chair of the Massachusetts Clean Water Trust's (the Trust) Board of Trustees, I am pleased to submit our first Green Bond Report. Massachusetts has been leading the way in the issuance of Green Bonds since 2013, and the Trust joined this tradition with its 2015 State Revolving Fund Bonds, Series 18, Green Bonds. With the inaugural Green Bond sale combined with the two proceeding issuances, over $643 million have been raised to support local water infrastructure.

The Trust finances water infrastructure projects across the Commonwealth to assist communities in adhering to the Clean Water and Safe Drinking Water Acts. It provides low interest loans to local governments and other eligible entities. Since its establishment, the Trust has financed approximately $7 billion to nearly three hundred borrowers, serving 97% of the Commonwealth's population.

With its AAA credit rating by all three major credit agencies, this program funds vital infrastructure projects that protect the environment and public health. Access to below-market rate financing makes improvements to water infrastructure more feasible while reducing the overall financial impact on communities and ratepayers.

The Trust is pleased to contribute to this innovative marketplace. And, this report supports the Commonwealth's commitment to transparency and openness. We ask that you let us know if there are any additional ways that we can meet your needs for more information. Your feedback is much appreciated and always welcome.

Sincerely,



Deborah D. Goldberg
Treasurer and Receiver-General
Commonwealth of Massachusetts

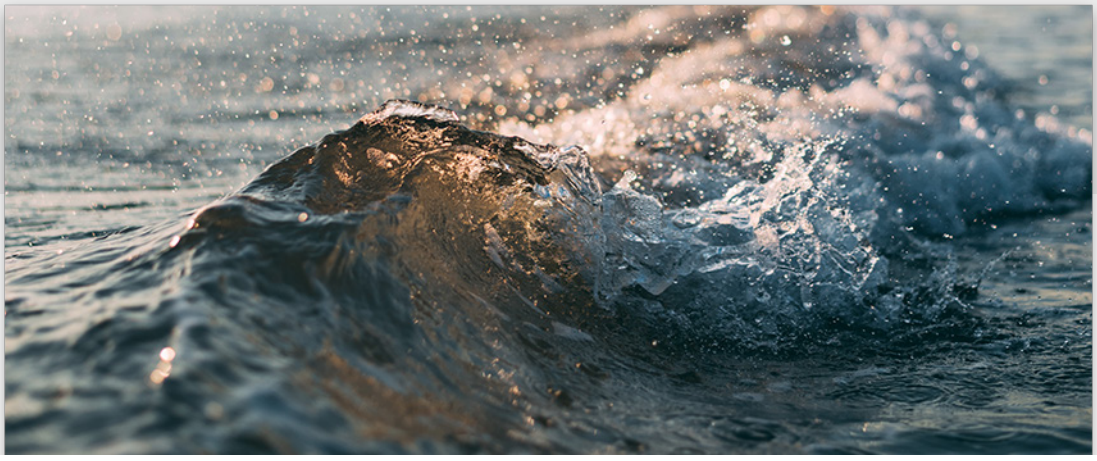
INTRODUCTION TO THE TRUST

The Massachusetts Clean Water Trust (the Trust) manages the finances for the Commonwealth's State Revolving Funds (SRFs), the Clean Water and Drinking Water SRFs. The Clean Water SRF was established in 1987 under the Clean Water Act and the Drinking Water SRF was established in 1996 under the Safe Drinking Water Act. The SRFs receive annual federal capitalization grants from the Environmental Protection Agency (EPA) with a 20% match by the Commonwealth. These funds are provided to borrowers, usually cities and towns, to finance wastewater and drinking water infrastructure projects with below market rate loans. When these loans are paid back, the money is then loaned out again, which is how the fund "revolves."

The Trust, in partnership with the Massachusetts Department of Environmental Protection (MassDEP), has issued loans that have served 97% of the Commonwealth's population. MassDEP manages project development and oversight while the Trust manages the flow of money to borrowers. The Trust's SRF Programs utilize a "leveraged" financing model, under which program equity funds are used as a source of security for revenue bonds issued by the Trust. The proceeds from these bonds are used to fund the loans to borrowers for project costs. Massachusetts has capped the Trust's interest rate at 2% or 2.4% - depending on loan terms, while some specific types of projects qualify for 0% interest loans.

The Trust is administered by a three-member board of trustees that is chaired by the Treasurer of the Commonwealth. The Secretary of the Executive Office for Administration and Finance and the Commissioner of the MassDEP serve as trustees. The Board of Trustees approves all financial commitments and program decisions during monthly meetings. Minutes from these meetings can be found on the Trust's website.

Since 2015, the Trust has issued $643 million of its bonds as Green Bonds in compliance with the federal Clean Water Act and the Safe Drinking Water Act. The Bonds were issued to finance wastewater infrastructure projects under the Clean Water SRF and drinking water infrastructure projects through the Drinking Water SRF, throughout the Commonwealth to comply with the above mentioned acts. The goal of these laws are to improve and maintain water quality, protect the environment and ensure public health.



PROJECT CATEGORIES

WASTEWATER TREATMENT PROJECTS

These projects involve the maintenance, upgrade or construction of wastewater treatment facilities. A wastewater treatment facility receives all the sewage from the municipal government or utility district and treats the water before releasing it back into the environment in accordance with National Pollutant Discharge Elimination System permits. The goal of these projects is to reduce or eliminate pollutants and nutrients found in wastewater resulting in cleaner water ways.

INFILTRATION/INFLOW (I/I) AND SEWER SYSTEM REHABILITATION PROJECTS

These projects involve removing infiltration and inflow (i.e. water other than wastewater) from a sewer system, including construction associated with I/I rehabilitation. I/I is when groundwater or stormwater enters a dedicated wastewater or sanitary sewer system either by direct connections or through damaged parts of sewer pipes. I/I increases the flow to wastewater treatment facilities and leads to back-ups or overflows of the system. Sewer system rehabilitation and I/I correction projects are concerned with removing sources of water that are either illicitly being added to a sewer system, or from sources entering via defective pipes or manholes. Eliminating I/I and replacing sewer systems reduces the occurrences of overflows, meaning less untreated wastewater is released into the environment.

COLLECTOR AND INTERCEPTOR SEWER PROJECTS

These projects involve the physical conveyance of wastewater. Collector sewers collect wastewater from the source, and interceptor sewers convey wastewater to a treatment facility. Extending capacity in an existing sanitary sewer system can help mitigate issues in communities that have insufficient infrastructure to meet local demand. These projects are generally implemented in conjunction with other project categories; such as combined sewer overflow correction which separates stormwater and wastewater collection systems to reduce untreated water being released into surface water bodies.

COMBINED SEWER OVERFLOW CORRECTION PROJECTS

These projects involve the reduction of untreated water discharged from combined sewer systems. Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. During wet weather events, the combined sewer systems can reach capacity and the excess overflows into surrounding waters, creating a combined sewer overflow (CSO). CSO correction projects work to reduce the amount of untreated water discharged from combined sewer systems. The elimination of CSOs is an EPA and Commonwealth priority goal that will reduce the amount of untreated wastewater that is released into the local environment.

PLANNING PROJECTS

These projects involve developing plans to address water quality and related public health problems. Infrastructure management tracking, capital investment schedules, and the adoption of best management practices are also objectives. For example, comprehensive wastewater management plans provide strategies for addressing wastewater treatment and disposal issues in a city or town. Integrated municipal stormwater and wastewater resource management planning assist municipalities in meeting requirements that arise from distinct wastewater and stormwater programs. Fiscal sustainability and asset management planning assist communities with maintaining replacement schedules and forecasting capital needs in the future.

DRINKING WATER TREATMENT PROJECTS

These projects involve the upgrade, maintenance and construction of water treatment facilities. These projects are meant to improve the overall quality of drinking water and are targeted at removing specific pollutants that are known health risks. Treatment plant upgrades can impact the overall efficiency of a plant's energy consumption. Replacing equipment at the end of its useful life will improve overall system efficiency, and new pumping and filtering equipment are designed with energy efficiency in mind.

DRINKING WATER TRANSMISSION AND DISTRIBUTION PROJECTS

These projects involve the infrastructure that brings raw water to treatment facilities and the infrastructure that conveys treated water for consumption. This includes everything from large transmission mains from reservoirs to the service lines that provide treated water to homes and businesses. Lines at the end of their useful life can lead to inefficiency in water transmission. Older pipes, made of lead or cast iron, can be severe health risks when corrosion occurs. Upgrades to pumping and booster stations make the transmission process more energy efficient and improve the overall efficiency of the system.

DRINKING WATER SOURCE AND STORAGE PROJECTS
These projects involve two different categories. Source water projects are related to untreated water sources – such as rehabilitating surface water in a reservoir or drilling and maintaining wells. Storage projects deal with infrastructure that is related to maintaining and storing treated water before it is distributed into a system.

PROJECT SELECTION PROCESS

Project eligibility is determined by the Clean Water Act and Safe Drinking Water Act. Projects that apply for financing are selected on an annual basis. MassDEP engineers review detailed project specifications and rank them using criteria that measure the severity of the problem, the sensitivity of the environmental hazard and public health risk, and the appropriateness of the proposed solution.

For Clean Water projects, MassDEP emphasizes watershed management priorities, stormwater management, green infrastructure, and encourages communities to undertake projects with meaningful water quality and public health benefits. Drinking Water projects emphasize compliance with federal and state water requirements to protect the public health while addressing the Commonwealth's drinking water needs.

These selection processes result in project lists called Intended Use Plans (IUPs). There is a Clean Water IUP and a Drinking Water IUP. The IUPs establish the Commonwealth's project priorities for the upcoming year.

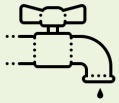
FREQUENTLY ASKED QUESTIONS

Q. ARE GREEN BOND PROCEEDS SEPARATED FROM TRADITIONAL BOND PROCEEDS?
Yes, all Green Bond proceeds are deposited into segregated Clean Water and Drinking Water accounts within the Project Fund for each individual series of bonds. The accounts are individually tracked for each project internally at the Trust and MassDEP. If it is determined that a project no longer needs funds after loans for a project have been permanently financed with bond proceeds, the remaining bond proceeds will be reallocated to additional green projects. Those new projects will be included in the Green Bond reporting.

Q. HOW OFTEN WILL THE TRUST PREPARE GREEN BOND REPORTS?
The Trust will track the progress of projects and use of proceeds in its Annual Report and now this Green Bond report. The Trust will report on the bonds until the proceeds have been fully expended.

Q. WHERE CAN I FIND YOUR GREEN BOND REPORTS?
You may view this report by visiting the Trust's website. Prior reports were included in the Trust's Annual Report that can also be found on its website. The Trust also posts all annual reports and this Green Bond Report to the MSRB's EMMA website, attached to their associated CUSIPs.

Q. DO YOU MAKE USE OF THIRD-PARTY OPINIONS OR OTHER "GREEN CERTIFICATIONS"?
No, not at this time. The Trust is in constant dialogue with investors and thought leaders in the Green space. Based on continued and consistent feedback, due to our repeat-issuer status and robust reporting regimen, we have determined that third-party opinions are not necessary for our issuances. The Trust reports on the selection of projects, management of proceeds and use of proceeds following a bond sale. Information can be found in the Official Statements, Annual Reports and in this Green Bond Report. The Trust is committed to full disclosure as demonstrated in this report. We will continue to monitor the market and make any necessary changes to our approach as needed.



OUR QUALITY OF LIFE & HEALTH CANNOT BE SUSTAINED WITHOUT CONTINUED & IMPROVED ACCESS TO CLEAN WATER. WATER IS OUR LIFELINE.

X

If we did nothing other than provide access to clean water and sanitation, without any other medical intervention, we could save two million lives a year. U.S. cities are spending more dollars on water and wastewater each year, but the investment needs far outweigh local governments' abilities to keep up with aging infrastructure.

THE STATE OF CLEAN WATER

Clean water infrastructure is one of the most vital types of infrastructure in the United States. These systems address both public health and environmental safety. Since 1972, the EPA has recognized these concerns and has worked to limit pollution and wastewater discharges. The Clean Water SRF program was established to address these concerns. To date, the Trust and MassDEP, has provided nearly $5.5 billion in subsidized below market rate loans for clean water projects. The impact of these projects and investing in Green Bonds supports the clean water initiatives that are vital to our planet and local communities.

According to EPA's 2012 Clean Watershed Needs Survey:

The United States would need to spend $271[1] billion dollars between 2012 and 2032 to maintain the coutry's current level of water infrastruture

Massachusetts will need to invest $8.3 billion during that timeframe

This is a 7% decrease from 2008 which demonstrates that these initiatives have a meaninful impact

WHAT IS WASTEWATER TREATMENT

According to the EPA, wastewater treatment is the most common form of pollution control in the United States. The collection and treatment of domestic sewage and wastewater is vital to public health and clean water. Sewers collect water from homes, businesses, and industries then transport it to treatment facilities which remove or reduce contaminants such as bacteria, chemicals, nutrients and other pollutants before discharging the water back into local water system. Untreated wastewater can have serious health and environmental consequences that lead to low dissolved oxygen, fish kills, algae blooms and bacterial contamination that can affect more than just the local community. These treatment processes, and their related infrastructure, are vital components of any municipal, state or federal pollution mitigation strategy.

[1] In 2012 dollars

WASTEWATER TREATMENT PROJECTS

Wastewater Treatment projects are eligible for SRF assistance under the Clean Water Act for facilities that provide, or are being upgraded to provide, secondary or advanced wastewater treatment. The distinction between secondary and advanced treatment projects essentially refers to the level of pollutant removal. For example, secondary treatment requires that a 5-day Biochemical Oxygen Demand (BOD5) be less than 30 milligrams per liter (mg/l). BOD5 is the amount of dissolved oxygen needed by organisms to break down organic materials present in a water sample over a period of 5 days and is listed as a pollutant under the Clean Water Act. Advanced treatment requires that the BOD5 level be less than 20mg/l. Advanced treatment facilities also address nitrogen, phosphorous, ammonia, metal and/or synthetic organic removal.

Water treatment facility upgrades or improvements can vary widely depending on the age of the infrastructure in question. These facilities are governed under National Pollutant Discharge Elimination System (NPDES) permits, which determine the level of water treatment required to discharge wastewater. Many of the upgrades, funded by the Trust, help facilities meet their NPDES requirements. These upgrades could include replacing inefficient mechanical equipment, upgrading pollutant removal systems or updating water storage facilities to reduce odor. Replacing equipment at the end of its useful life will improve overall system efficiency, and new pumping and filtering equipment are designed with energy efficiency in mind.

Highlighted Project

MIDDLEBOROUGH (WASTEWATER TREATMENT FACILITY UPGRADES) - $24,346,341

The Town of Middleborough operates a municipally owned wastewater treatment plant. The plant, built in 1977, operates 24 hours a day, 365 days a year. The plant treats roughly 1.1 million gallons of wastewater each day. The plant recently completed a $25 million nutrient management upgrade that will allow the town to meet EPA's stringent National Pollutant Discharge Elimination System permit limits – which regulate the amount and type of pollutants that can be discharged into water systems.

These upgrades included a new control building with a supervisory control and data acquisition (SCADA) control room to assist the Wastewater Department in managing its 23 miles of sewer main and six pump stations. Additionally, the upgrade significantly improved the plant's capability to lower the levels of phosphorous and nitrogen that are discharged into the Nemasket River. This water ends in the Mount Hope Bay, a tidal estuary that has struggled with environmental degradation for years.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Billerica	**WASTEWATER TREATMENT FACILITY UPGRADES** The main objective of this project was to increase the physical and biological capacity of the Letchworth Avenue wastewater treatment facility as well as replace equipment that was beyond its useful life. This effort augmented additional flow and pollutant load of sewering and the implementation of the capital improvements plan regarding capacity concerns.	$4,568,100
Charles River Pollution Control District	**WASTEWATER FACILITY IMPROVEMENTS PHASE C** This project involved upgrades to an advanced wastewater treatment facility that treats wastewater from the communities of Franklin, Medway, Millis and Bellingham. It accepts septage from Norfolk, Sherborn, Dover, Wrentham, Weston, Holliston and Sharon. Upgrades in this phase focused on achieving phosphorus compliance with the district's draft National Pollution Discharge Elimination System permit renewal and achieving overall process and support system reliability through the year 2035.	$10,600,000
Falmouth	**WASTEWATER TREATMENT FACILITY UPGRADE** The project addressed the current effluent discharge requirements of the National Pollution Discharge Elimination System permit, which the plant could not currently meet and the needed facility upgrades and improvements at the plant were primarily to meet the nitrogen limit, which requires an average annual total nitrogen effluent limit of 3.0 milligrams per liter. The design capacity of the plant is 1.2 million gallons per day, but flow was restricted to 800,000 gallons per day.	$4,284,956
Gardner	**WASTEWATER TREATMENT PLANT UPGRADE** The City of Gardner upgraded their wastewater treatment plant to address aging infrastructure and take proactive measures to meet future discharge permit limits. The projects included modifications to the headworks and grit removal system, upgrades to the sludge handling system, and improvements to the nutrient removal system.	$4,433,242
Grafton	**WASTEWATER TREATMENT PLANT IMPROVEMENTS** This construction project included modifications and additions to the Grafton wastewater treatment facility, including the replacement of aged systems that exceeded their useful life as well as the addition of new treatment systems. To achieve compliance with nutrient discharge limits, improvements included modification of the secondary treatment system for advanced nitrogen removal and the construction of a new tertiary treatment system and superstructure with cloth disk filters for phosphorus removal.	$14,613,300
Great Barrington	**WASTEWATER TREATMENT FACILITY UPGRADE AND INFILTRATION AND INFLOW REMOVAL** This project included upgrades to the wastewater treatment facility (WWTF) and improvements to the collection system to reduce inflow and infiltration. The treatment plant upgrades replaced or repaired aging equipment, improved system reliability, achieved higher levels of phosphorus removal, and prepared for nitrogen removal upgrades. The WWTF was upgraded to reduce total phosphorus loads discharged to the Housatonic River, which will result in a reduction of eutrophication potential in the river and its receiving body, Long Island Sound.	$4,210,000
Great Barrington	**WASTEWATER TREATMENT FACILITY UPGRADES AND SEWER IMPROVEMENTS** This project is part of the long-term solution for consistently meeting all wastewater treatment requirements, including phosphorous removal. It addressed aging infrastructure and improved pumping efficiency and control of the chemical treatment process. This project included an overhaul of the headworks, replacement of the plant water pumps, and electrical system improvements.	$4,579,305
Leominster	**WATER POLLUTION CONTROL FACILITY UPGRADES** This project upgraded the aeration system at the wastewater treatment plant. The City of Leominster's secondary wastewater treatment facility has been operational since 1983 with capacity to handle 9.3 million gallons per day. The facility has not had any significant upgrades to this point. The facility discharges to North Nashua River with ultimate discharge to the Atlantic Ocean via the Merrimack River under the EPA National Pollution Discharge Elimination System (NPDES) permit.	$10,500,000

BORROWER	PROJECT DESCRIPTION	AMOUNT
Marlborough	**MARLBOROUGH EASTERLY WASTEWATER TREATMENT PLANT UPGRADES** This project consisted of the improvements to the Easterly wastewater treatment facility to reduce effluent phosphorus, replaced aging infrastructure and improved energy efficiency. Secondly this project conducted an infiltration/inflow study of the wastewater collection system to identify, characterize and prioritize deficiencies in the system to reduce peak flows. The upgrades were intended to reduce the phosphorus loads discharged from the facility to help remediate documented nutrient enrichment of the receiving waters and the downstream Sudbury River. The project was consistent with the comprehensive wastewater management plan and regional nutrient reduction goals. The project improved the energy efficiency of the facility.	$14,626,671
MFN Regional Wastewater District	**MFN REGIONAL WASTEWATER DISTRICT LAND TREATMENT** This project was for the purchase of two parcels of land that will be used for groundwater disposal for the MFN Regional Wastewater District. The plant had a surface water discharge and needed additional treatment capacity for expanded growth in the three communities based upon findings from their comprehensive wastewater management planning efforts. The Town purchased the first parcel in December 2010 and has reached an agreement for the second parcel.	$1,012,310
Middleborough	**WASTEWATER TREATMENT FACILITY UPGRADES** *Highlighted Spending Project*	$24,346,341
MWRA	**CLINTON WASTEWATER TREATMENT FACILITY PHOSPHOROUS REMOVAL** After extensive alternatives analysis and pilot testing, MWRA determined that disk filter technology is the most feasible alternative for meeting the current and upcoming discharge phosphorous concentration limits at the Clinton wastewater treatment plant (WWTP). This project installed a full-scale disk filter phosphorous removal system at the WWTP.	$2,496,267
MWRA	**WASTEWATER TREATMENT PLANT UPGRADE** These projects were for upgrades to Deer Island Treatment Plant (DITP), and consisted of two groups of activities. 1) DITP Digester and Cryogenics Upgrade: The digester upgrade involved replacing the pumps that send the sludge from DITP to the Fore River Pelletizing Plant. The pumps were replaced with centrifugal pumps with higher flow rates, reducing potential grit settlement. 2) DITP Electrical and Plant Upgrades: are directly related to wastewater processing or control of the processing and are focused on long-term plant reliability. These projects were intended to prevent equipment/system failures that could have resulted in odor problems for the Town of Winthrop and the inability of DITP to meet discharge permit requirements.	$7,069,573
Westborough	**WASTEWATER TREATMENT FACILITY UPGRADES AND SEWER IMPROVEMENTS** The Westborough Wastewater Treatment Plant discharges its effluent to the Assabet River under a National Pollutant Discharge Elimination System permit. Westborough is a member of the Assabet River Consortium. The Assabet River is distressed due to severe eutrophication because of excessive nutrients such as phosphorous and nitrogen. The 2005 discharge permit EPA issued to the Town imposes stringent phosphorus and copper limits. This project implemented a construction upgrade of the wastewater treatment plant that enabled it to achieve compliance with the permit.	$302,305

INFILTRATION/INFLOW (I/I) AND SEWER SYSTEM REHABILITATION PROJECTS

These projects correct sewer system infiltration and inflow problems. Infiltration includes water (usually groundwater) penetrating a sanitary or combined sewer system from the ground through defective pipes or manholes. Inflow includes controlling the penetration of water (usually stormwater) into a system from sump pumps, drains, storm sewers, and other improper entries.

Sewer system rehabilitation projects are to maintain, reinforce, or reconstruct, deteriorating or undersized sewers. The corrective actions are necessary to maintain the functional integrity of the system.

Highlighted Project

REVERE (SEWER REHABILITATION) - $10,902,107

In 2010, the City of Revere was placed under a MassDEP and EPA consent decree due to excessive sewer blockages that caused raw sewage to discharge into rivers and streams that flow into Boston Harbor and Massachusetts Bay, including Chelsea River, Sales Creek, Belle Isle Inlet and Pine River. These blockages also caused basement backups from its wastewater collection system and violated the City's discharge permit. This project included the repair of existing pipes, sewer spot repairs, sewer replacements, new sewer lines, pump station and sewer cleaning, water pump station improvements, drainage improvements, and additional wastewater metering. Additionally, depth sensors (Smart Covers) were installed to monitor potential sanitary sewer overflow (SSO) locations and take proactive corrective action. The work locations and activities for this construction season were based on the most current cumulative Sanitary Sewer Evaluation Survey (SSES) and system operational data.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Bridgewater	**SEWER INSPECTION, CLEANING AND LINING** This project inspected, cleaned and lined sewers to control I/I that was using up excess capacity at the wastewater treatment plant. Many of the sewer pipes were old asbestos cement and vitrified clay pipes, some almost 100 years old. The National Pollutant Discharge Elimination System permit required I/I reductions for capacity.	$781,616
Brockton	**SEWER SYSTEM REHABILITATION** The focus of the project was to address and remediate high bacteria concentrations during dry and wet weather, as identified in water quality studies, to reduce and eliminate impacts to receiving waters. The City has completed nine sewer system rehabilitation projects and four wastewater treatment facility upgrades to address the issues and mandates within the EPA Administrative Consent Order, which was lifted. The project included both trenchless rehabilitation and open cut repair of prioritized areas to address sources of exfiltration, infiltration and inflow and sections of undersized pipe to improve water quality in Salisbury Brook, Trout Brook, Salisbury Plain River and Beaver Brook.	$1,704,244
Brockton	**SEWER REHABILITATION** This on-going sewage collection system construction project addresses sources of water loss, infiltration, inflow, and undersized pipe sections. The areas that will be addressed were identified and prioritized by the initial illicit discharge detection and elimination program and the current sanitary sewer evaluation survey. The project includes pumping, repairs of existing pipe, manhole rehabilitation, and surface restoration.	$1,356,694
Everett	**STORMWATER ILLICIT DISCHARGE DETECTION** This loan amount reflects an additional loan for this project. The original loan amount for this project was $250,000 and was previously financed by the Trust. The project's objective was to perform follow-up investigations in accordance with the City's stormwater management plan. The intent of the investigation was to identify illicit connections and sources of fecal contamination in the drainage system to improve water quality in the region's surface waters.	$61,076
Framingham	**CENTRAL STREET SIPHON/SUDBURY INTERCEPTOR** This project was a component of the Capital Improvement Program for the Town's collection system that includes elimination of the two siphons under the Sudbury River and rehabilitation of the Sudbury River interceptor from Central Street continuing south along the Sudbury River to Worcester Road.	$2,114,587
Lawrence	**SEWER SYSTEM REHABILITATION** Wastewater from the city of Lawrence is part of the Greater Lawrence Sanity District (GLSD) system which discharges into the Merrimack River. The current National Pollutant Discharge Elimination System permit became effective in 2005 and required all members of GLSD to develop inflow and infiltration (I/I) control programs to find, document, and eliminate I/I sources within their respective systems. The City of Lawrence completed several of the required tasks and over the past year began portions of the Phase I and II Sewer System Evaluation Survey (SSES) and Capacity, Management, Operations and Maintenance (CMOM) work. This project, sewer system rehabilitation and high priority pipe replacement, included cast-in-place-pipe lining and replacement of sewer mains in areas across the City.	$8,978,897
MWRA	**CARUSO PUMP STATION** The purpose of the Caruso Pump Station Improvements project was to replace the standby power generator system and to improve the Heating Ventilation and Air Conditioning system, fire detection/suppression, and security systems to significantly improve the pump station reliability, operations, safety and efficiency.	$2,031,614
Needham	**REPLACEMENT OF RESERVOIR B SEWER PUMP STATION** This project consisted of replacing the existing Reservoir B Pump Station building and pumps. Construction included the addition of a new building to house the three new high efficiency pumps, new wet wells, control system, alarms and a new backup generator.	$78,491

BORROWER	PROJECT DESCRIPTION	AMOUNT
Norwood	**WESTOVER AREA SEWER REHABILITATION** The project was for the rehabilitation of sewers in the Hawes Brook area of Norwood to reduce excessive infiltration and inflow into the system and to minimize the occurrence of sanitary sewer overflows. The Town is under an EPA Administrative Order that includes implementation of corrective action in the Hawes Brook area. The environmental benefit of this project is the elimination of surcharging and sanitary overflows into Hawes Brook, an impaired water body that is tributary to the Neponset River.	$110,127
Norwood	**MEADOWBROOK AREA SEWER REHABILITATION** The objective of this project was to perform comprehensive sewer rehabilitation in a portion of the Meadowbrook sewer area in Norwood to eliminate exfiltration of sanitary sewage into the adjacent stormwater system that ultimately discharges to Meadowbrook (a tributary of the Neponset River). Work was performed in the area tributary to the Meadowbrook outfall at Sunnyside Road, and included the installation of approximately 7,995 linear feet cured-in-place lining in mainline sewer and 287 service laterals, manhole rehabilitation, TV inspection, and protruding tap removal.	$2,638,952
Norwood	**UNDERDRAIN AREA SEWER REHABILITATION** The project consisted of a variety of planning measures associated with operation and maintenance of the sanitary sewer and stormwater systems. Work included elements such as infiltration and inflow investigations, sewer system evaluation surveys, development of Capacity, Management, Operation and Maintenance (CMOM) programs, compliance with Phase 2 National Pollutant Discharge Elimination System Stormwater regulations including the implementation of programs, mapping of systems, development of geographic information systems, sampling of outfalls, performing illicit discharge detection programs and all other related work.	$2,212,267
Palmer	**SEWER REPLACEMENT** The objective of the Palmer Sewer Replacement project was to replace aging and deteriorated infrastructure that was not functioning as intended. Several sewer reaches contained sags, adverse slopes, cracked pipes and offset joints which impaired carrying capacity of the collection system. The project replaced approximately 22,650 linear feet of sanitary sewer in five district locations in the Town (Brainerd Street, Riverview Street, Chudy Street, South High Street and High Street areas).	$5,807,217
Quincy	**FORT SQUARE PUMPING STATION REHABILITATION** The objective of the Fort Square Pump Station Rehabilitation Project was to avoid sanitary sewer overflows (SSOs), which are a threat to public health. The Fort Square Pumping Station is one of Quincy's larger wastewater pumping stations. The pump station was constructed in 1985, and although some upgrades have been made over the years, the station was still using most of its original equipment. Due to the deteriorating condition of the Fort Square Pumping Station, a complete rehabilitation was recommended in order to avoid SSOs.	$2,787,004
Revere	**COLLECTION SYSTEM IMPROVEMENTS** This was Phase IV of an ongoing effort to reduce the volume of infiltration and inflow (I/I) within the City of Revere sewage collection system to reduce SSOs and the volume of wastewater conveyed to the Deer Island Sewage Treatment Plant. This phase included main line sewer lining and spot repairs in problem areas identified in the Phase IV Field Investigation throughout Revere. It included manhole lining and the rehabilitation of two of the City's pump stations, as well as the initiation of the Home Sump Pump/Roof Leader Removal Program resulting from the private citizen response to Revere's Sump Pump Amnesty Program.	$7,218,581
Revere	**SEWER REHABILITATION** *Highlighted Spending Project*	$10,902,107
Saugus	**SEWER SYSTEM OVERFLOW REDUCTION SUBSYSTEM 5** The Town of Saugus entered an Administrative Consent Order (ACO) with the MassDEP in 2005, requiring the Town to address sanitary sewer overflows and excessive infiltration and inflow (I/I). The Town of Saugus has completed several years of I/I removal projects based on the requirements of the ACO. Rehabilitation included manhole rehabilitation, cast-in-place-pipe lining of sewer main and lateral connections, spot repairs and private inflow removal.	$1,579,841

BORROWER	PROJECT DESCRIPTION	AMOUNT
Taunton	**SEWER SYSTEM EVALUATION SURVEYS PHASES 10-12** This description is the combination of four separate projects. The work done under this project helped the City stay in compliance with the EPA's Order for Compliance. Under the order, the City was required to submit a plan and schedule by June 2013 for elimination of the CSO outfall. Phases 10-12 entailed both investigation and rehabilitation efforts in the eastern portion of the City's system, which has not been focused on during previous investigations due to its younger age and lower flows than the core area. This project was a cost effective, targeted plan to assess operations and remove sources of I/I in the City's collection system. This project greatly reduced or eliminated the public health problem of combined and sanitary sewer overflows to the Taunton River.	$14,732,533
Worcester	**LAKE AVE SEWER INFILTRATION AND INFLOW** This project implemented the recommendations from the Lake Avenue Area Sewer System Evaluation Survey to remove inflow/infiltration from the Lake Avenue area that contributed to surcharging and overflows into Lake Quinsigamond.	$1,048,196

COLLECTOR AND INTERCEPTOR SEWERS PROJECTS

According to the EPA, millions of gallons of human and industrial waste are sent through complex underground collections systems. These systems operate all day, every day, and most municipal sewer systems are at least 60 years old. Many communities have sewers that are more than 100 years old. Collection systems consist of pipelines, conduits, pumping stations, force mains and other components to collect wastewater and convey it to treatment facilities before being discharged into the environment. Design, operation and maintenance are critical for system efficiency and public health. System expansions can be used to mitigate issues with combined sewer overflows and septic systems.

New Collector Sewers
These are projects associated with new pipes used to collect and carry wastewater from a sanitary or industrial wastewater source to an interceptor sewer that will convey the wastewater to a treatment facility.

New Interceptor Sewers
These are projects for constructing new interceptor sewers and pumping stations that convey wastewater from collection sewer systems to a treatment facility or to another interceptor sewer. This category includes costs for relief sewers, which are designed to handle the excess capacity of an existing system.

Highlighted Project
DRACUT (CONTRACT NO. 32 SEWER EXTENSIONS) - $4,875,455
This project involved the construction of new sanitary sewers to mitigate the migration of leachate (untreated water runoff from a septic tank that is a known pollutant of groundwater) from failing septic systems into tributaries of the Merrimack River. These sewer systems tied residential homes into the Town's wastewater system. In addition, the project eliminated several direct sewage connections to the local stormwater system. The project reduced negative impacts on natural resources, town conservation land and private drinking water supplies. The project installed approximately 11,000 linear feet of 8-inch diameter gravity sewer, approximately 1,000 linear feet of small diameter pressure sewers, approximately 2,100 linear feet of force mains and two submersible pumping stations within town roads and cross-country areas.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Billerica	**CONTRACT 35 SEWERS** The project included a sewer extension in the Jones Brook Watershed and Andover Road/ Pond Street area of Billerica, outlined in the Town's 2008 comprehensive wastewater management plan. The flow from this area was expected to be approximately 81,000 gallons per day and will be discharged to the Letchworth Avenue wastewater treatment facility which includes secondary and tertiary treatment.	$9,724,962
Chatham	**COLLECTION SYSTEM EXTENSION AND IMPROVEMENTS** This sewer collection system extension and improvement project addressed nitrogen loading concerns by further extending the wastewater collection system. This project was the third phase of implementing nitrogen mitigation efforts that began in 2010. The project included installing sewers to additional sections of Chatham and constructing two pump stations capable of handling a total of 68,000 gallons per day of sewage.	$3,336,119
Dracut	**CONTRACT NO. 32 SEWER EXTENSIONS** *Highlighted Spending Project*	$4,875,455
Dracut	**CONTRACT 27 PETERS POND WEST AREA SEWERS** This loan amount reflects an additional loan for this project. The original loan amount for this project was $5,551,684 and was previously financed by the Trust. The project work involved the construction of 25,200 linear feet of sanitary sewers, 2,800 linear feet of force main and two pump stations in Peters Pond West Area.	$19,114
Falmouth	**SEWER EXTENSION AND NEW RECHARGE SITE** The Maravista/Little Pond area of Falmouth has been recommended for sewering since the Town's 1981 Wastewater Facilities Plan (updated in 2001). A study, completed in January 2006 recommended 100% sewering of this watershed. The area is densely developed, primarily with very small lots, and high groundwater. The Town's Comprehensive Waterwater Management Plan cites 20% of the properties having septic systems installed after 1995, and a large percentage of those are cesspools. Sewering will be done in 3 multi-year contracts, encompassing 1,500 parcels. Additionally, a new treated water recharge site is proposed to accommodate the flow from the Little Pond watershed, as required by the new flow limitations to the wastewater treatment facility.	$32,010,065
Lunenburg	**SEWER EXTENSION** A Comprehensive Wastewater Management Plan (CWMP) was completed by the Town and Wright-Pierce in four phases. Phase 4 of the CWMP included the need for off-site wastewater management solutions for Sewer Service Zones 6 and 9. Area 6 includes Pratt Street and Rennie Street, which has the most pressing need for a sewer extension. Area 9 includes Pine Grove Road, Sunset Avenue, Harris Avenue, Lakeview Avenue and Cross Road. The Town may pursue the other portions of Sewer Service Zone 9 later, but the listed streets are immediately adjacent to Whalom Lake and have the most pressing need for a municipal sewer extension now.	$1,216,325
South Essex Sewerage District	**MARBLEHEAD REPLACEMENT CROSSING SEWER** This project consisted of the replacement of two parallel subaqueous sewer pipelines that carry all the raw wastewater from the Town of Marblehead collection system under Salem Harbor to the South Essex District treatment plan in Salem. Each pipeline is approximately 6,000 feet in length.	$9,250,000
Taunton	**SEWER SYSTEM SEPARATION OF COMBINED MANHOLES AND UPGRADE OF VITAL PUMP STATIONS** This loan amount reflects an additional loan for this project. The original loan amount for this project was $5,705,665 and was previously financed by the Trust. This multi-year project is for the repair and replacement of sewer mains and service laterals, removal of stormwater connections to sanitary sewers, removal of roof leaders and sump pump connections from the sewer system, separation of combined manholes and upgrades to vital pump stations. This project eliminated potential public health threats and nuisances resulting from sewage discharge to the receiving waters and reduced the risk of sewer overflows.	$180,526

CSO CORRECTION PROJECTS

Combined Sewer Overflows (CSO) are events where a combined sewer system fails to collect rainwater, domestic sewage and industrial wastewater in the same pipe as intended. When these systems exceed their capacity, untreated water can discharge directly into a water body. CSOs are a major source of water pollution for approximately 772 cities in the US that have combined sewer systems. CSO Correction projects are associated with measures used to achieve water quality objectives by preventing or controlling periodic discharges that occur when the capacity of a sewer system is exceeded during a wet weather event.

Highlighted Project

CAMBRIDGE (HURON B SEWER SEPARATION PROJECT) - $14,000,000

The Huron Ave Contract B and the Concord Ave Contract were part of the Massachusetts Water Resources Authority's (MWRA) Long Term Combined Sewer Overflow (CSO) Control Plan for the Alewife Brook. Sewer separation and stormwater management in these contract areas separated existing combined sewers and provide dedicated sanitary sewers and stormwater drains. The goal of this project was to improve water quality in the Alewife Brook by eliminating combined sewer overflows; protect Fresh Pond Reservoir from potential contaminants; and, control the occurrences of street flooding and sewer and stormwater backups on public and private properties. The sewer separation work included removing existing lamp holes, transferring illicit sanitary services to the sanitary sewer, and providing drain laterals to private properties with illicit storm drain service and sump pump connections. Additionally, this project included transferring driveway drains, area drain laterals, and catch basin laterals from the sanitary sewer to the stormwater drain.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Cambridge	**HURON B SEWER SEPARATION PROJECT** *Highlighted Spending Project*	$14,000,000
Chicopee	**COMBINED SEWER OVERFLOW ELIMINATION** This project separated over 400 acres and eliminated the combined sewer overflows (CSOs) in these areas. In most cases sewer separation for this project was achieved by providing a new sanitary sewer pipe and utilizing the existing combined sewer pipe for stormwater. The elimination of CSO discharges to the Chicopee River and the creation of additional capacity downstream to accommodate combined sewer flows from other areas within the City will contribute to improved water quality.	$25,478,178
Fitchburg	**COMBINED SEWER SEPARATION** This project was the continuation of the City's program to separate combined sewers to eliminate raw sewage discharges during wet weather events. The project eliminated combined sewers by constructing new drainage pipes adjacent to sewer pipes to convey stormwater, which allowed the City to close combined sewer overflows. The project will realize health and safety benefits from reduced odors, improved aesthetic and better water quality in the Nashua River and affected tributaries. This also allowed the City to comply with the Administrative Consent Order issued by the EPA.	$721,426
Fitchburg	**COMBINED SEWER SEPARATION AREA 4D** This loan amount reflects an additional loan for this project. The original loan amount for this project was $13,553,330 and was previously financed by the Trust. The City undertook a series of projects to separate its sanitary sewers from its storm drainage sewers. The scope of work for the projects consisted of separating approximately 24,000 linear feet of combined sewers by installing new drainage pipe (or sanitary sewer pipe), connecting existing catch basins to the separate storm sewer, replacing existing catch basins, and rehabilitating existing combined sewers and manholes as necessary. The existing combined sewer overflow outfalls and any overflow piping within the project area are anticipated to be disconnected from the sanitary system and the existing outfalls will be reused for the stormwater flows from the separate storm drain system.	$1,231,951
Haverhill	**COMBINED SEWER OVERFLOW IMPROVEMENTS, WASTEWATER TREATMENT FACILITY AND SEWER SYSTEM** In this project the City addressed combined sewer overflow (CSO) discharges to the Merrimack and Little Rivers. The latest project included CSO improvements based on recommendations from the Long-Term Capital Plan. Capital improvements included: 1) Closing and eliminating 9 existing CSO regulator/ outfalls to combine discharges to 14 remaining CSO outfalls; 2) Raising the regulator/ diversion weir elevations at 5 of the 14 remaining CSO regulator/outfalls to minimize CSO discharges; 3) Constructing improvements to increase the size of the interceptor connector pipe capacity at the Bradford CSO regulators and reconfiguring the Middle Siphon CSO to direct more flow into the interceptors and to reduce the frequency and magnitude of the CSO discharges from these outfalls; 4) Develop standard operating procedure for house-to-house inspections, coordinate inspections with the automatic meter reading (AMR) project; develop recommended modifications, and enter data into item 2; and 5) Replacing the existing centrifuges with new centrifuges for improved biosolids handling at the Haverhill WWTF to maximize the wet weather capacity of the wastewater treatment facility during storm events.	$8,366,419
Ludlow	**COMBINED SEWER OVERFLOW** The main objective of this project was the separation of a combined sewer system existing in the Hubbard Street area of the Town of Ludlow. The Hubbard Street sewer separation reduced environmental stresses placed on the Chicopee River due to discharged, untreated sanitary waste. The new sewer system addressed dangers to public health by decreasing backups of the combined stormwater and sanitary waste. The recreational uses of the Chicopee River, which include boating swimming and fishing, will also be protected.	$503,676

BORROWER	PROJECT DESCRIPTION	AMOUNT
MWRA	**COMBINED SEWER OVERFLOWS PHASE 14 AND 16** The primary objective of the combined sewer overflow (CSO) control plan is to bring CSO discharges in Boston Harbor and its tributaries into compliance with state and federal requirements. All the projects will be accomplished by constructing new storm drains and allowing the existing combine sewers to function as separate sanitary sewers, or by constructing new sanitary sewers and allowing the existing combined sewer to serve as storm drains. The project resulted in the elimination of CSO discharges at several outfalls.	$5,650,025
New Bedford	**COMBINED SEWER OVERFLOW ABATEMENT** This project included the construction of 3,650 feet of new reinforced concrete pipe storm drains, 2000 feet of PVC and fiberglass reinforced thermosetting sewers, 2,650 feet of ductile iron water mains, including precast and cast-in-place concrete structures, valves, hydrants, service connections. Additionally, work included cured-in-place pipe lining of existing sewers and storm drains, and manhole rehabilitation in Coggeshall Street, Jean Street, Mitchel Steer, and Bellville Avenue to facilitate sewer separation activities within the project area.	$8,063,124

PLANNING PROJECTS

Projects in this category are for developing plans to address water quality and water quality-related public health problems. Planning projects can consist of multiple types of investigations. Field investigations are used to view the state of current water infrastructure assets, and to identify and prioritize design, maintenance and replacement activities. Sensor and field analysis can be used as part of a larger analysis that consist of plans to adopt best management practices and capital improvements. These projects assist municipalities with determining environmental issues that may be affecting local water sources or endangering public health.

For example, comprehensive wastewater management plans provide strategies for addressing wastewater treatment and disposal issues in a municipality or utility district. Integrated municipal stormwater and wastewater resource management planning assist municipalities meet requirements that arise from distinct wastewater and stormwater programs. Fiscal sustainability and asset management planning assist communities with maintaining replacement schedules and forecast capital needs in the future.

Highlighted Project

EVERETT (STORMWATER AND SANITARY SEWER EVALUATION) - $500,000

The proposed project consists of planning measures associated with the operation and maintenance of the stormwater and sanitary sewer systems. Work includes elements such as the assessment of existing stormwater quantity for various storm event scenarios, development of a stormwater conveyance model based on the existing record information and other sources, and flow monitoring. Additionally, a physical inspection of the system was conducted to ascertain the physical condition of stormwater and sanitary systems.

The environmental benefits from this project will result in the reduction or elimination of public health impacts from flooding, contaminated stormwater, contaminated sanitary sewer overflow. Impacts also include reduced infiltration and inflow, improved stormwater and wastewater collection systems, improved stormwater quality and management, the elimination of illicit connections, improved stormwater recharge and treatment, and the implementation of best management practices.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Andover	**LEDGE ROAD LANDFILL CLOSURE PLANNING** The project facilitated a landfill closure, groundwater source control and wetlands remediation necessary to mitigate adverse impacts to public health and the environment caused by the Ledge Road Landfill. The project scope included: 1) Additional site investigation; 2) Groundwater source control system pilot study; 3) Massachusetts Environmental Policy Act Compliance; 4) Landfill environmental monitoring; 5) Post closure use evaluation; 6) MassDEP review facilitation; 7) Public involvement.	$675,000
Barnstable	**NUTRIENT MANAGEMENT PLANNING PROJECT** This project was executed to manage the Town's excess nutrient flow from stormwater and wastewater into fresh bodies of water. The nutrient levels were measured, and a solution was identified for implementation.	$255,941
Chicopee	**INTEGRATED MUNICIPAL STORMWATER AND WASTEWATER RESOURCE MANAGEMENT PLAN** The purpose of the Integrated Municipal Stormwater and Wastewater Resource Management Plan is to serve as a planning basis for future phases of combined sewer overflow (CSO) abatement and infrastructural renewal work. Significant portions of the Integrated Plan are devoted to collecting data and modeling to document the actual CSO reduction progress being made by the already completed sewer separation projects, evaluating the effectiveness of those projects, and re-assessing whether to continue full implementation of the currently proposed CSO Long Term Control Plan recommendations.	$1,000,000
Easthampton	**INTEGRATED WATER RESOURCE MANAGEMENT PROJECT** This project allows the City of Easthampton to proactively plan for, fund, and implement necessary capital improvements and/or administrative practices related to their drinking water, wastewater and stormwater systems.	$1,100,000
Everett	**STORMWATER AND SANITARY SEWER EVALUATION** *Highlighted Spending Project.*	$500,000
Framingham	**PHASE 4 SEWER SYSTEM EVALUATION SURVEYS** The planning project proposed to continue investigations into the status of the wastewater collection system employing closed circuit TV inspections, manhole inspections, site specific flow monitoring, house-to-house inspections and smoke testing and easements investigations.	$84,190
Lawrence	**CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE AND SEWER SYSTEM EVALUATION SURVEYS** This two-phase project focused mostly on locating sources of inflow in portions of the sanitary sewer system that are separated causing limited drainage from the combined system. This project was part of a cost effective, targeted plan to assess operations and remove sources of inflow and infiltration to Lawrence's collection system. It is expected to greatly reduce public health problems of combined and sanitary sewer overflows to the Merrimack, Spicket and Shawsheen Rivers.	$3,840,000
Manchester by the Sea	**COMPREHENSIVE WASTEWATER MANAGEMENT PLAN** The objective of this project supplemented a 1998 town-wide wastewater needs assessment to determine whether or not conventional Title 5 onsite wastewater disposal systems will be effective in disposing of wastewater within a given study area throughout and beyond the 20-year planning period. Solutions to the needs areas will be identified and evaluated as part of the Comprehensive Wastewater Management Plan (CWMP). An investigation into the viability of siting wastewater treatment facility(s) and/or highly treated wastewater effluent disposal facilities will be included. The CWMP document presents recommendations for wastewater management in the identified areas where existing onsite wastewater disposal systems are shown to be inadequate. Specific recommendations considered the appropriateness of utilizing: (1) innovative alternative systems; (2) communal systems; (3) local wastewater collection, treatment, and disposal facilities; and (4) regional wastewater collection treatment and disposal facilities.	$234,450

BORROWER	PROJECT DESCRIPTION	AMOUNT
Mashpee	**COMPREHENSIVE WASTEWATER MANAGEMENT PLAN** This project was for the development of a watershed Nitrogen Management Plan for the Town of Mashpee. The plan recommended measurers and facilities to comply with the total maximum daily load issued for Popponesset Bay and Waquoit Bay East.	$79,966
Revere	**CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE PROGRAM** The main objective of this project was to continue the progress made by the City of Revere in their efforts to identify, assess, prioritize and implement improvements to their collection system ultimately leading to the reduction of sanitary sewer overflows and sewage back-ups. This Capacity, Management, Operations, and Maintenance (CMOM) Program development and implementation was customized for the City of Revere and allows the city to proactively handle day-to-day collection system operation and maintenance requirements and improve wastewater transport service citywide.	$300,000
Revere	**FIELD INVESTIGATION AND ILLICIT CONNECTION DETECTION** This planning project focused on the assessment of the wastewater system along with support of the City's ongoing development of a Geographic Information System (GIS). Further technical support for implementation and use of GIS will be available through the planned scope of work for this planning study. This work allows Revere to continue to identify assess, prioritize and complete improvements to the City's sewer system. Significant components of the planning efforts included field investigations and evaluation of the City's wastewater system. The following field investigations and technical activities were carried out: supplemental flow isolation, closed circuit television inspection, dye testing, smoke testing, and house-to-house inspections. These investigations were an evaluation of the wastewater collection system and provide support for ongoing assessments of Infiltration/Inflow Removal (I/I Removal).	$1,500,000
Revere	**COMPREHENSIVE WASTEWATER MANAGEMENT PLAN	COMPREHENSIVE STORMWATER MANAGEMENT SUPPLEMENTAL PLAN** Phase VI Field Investigations and Supplemental Comprehensive Wastewater Management Plan supported activities needed to prioritize sewer improvements.	$1,200,000
Revere	**ILLICIT CONNECTION DETECTION PROGRAM** This planning project focused on the identification of sources of direct inflow to the sanitary sewer system and planning and coordination activities for inflow removal. This project covered the public information program, and inflow removal prioritization. The effort monitored methods currently being applied under the construction phase. House to house inspections were completed utilizing access provided through the drinking water meter replacement project.	$700,000
Revere	**SANITARY SEWER EVALUATION SURVEY** Revere established a multi-year phased Sanitary Sewer Evaluation Survey program that includes Phase I, II, III, IV and V to identify deficiencies within the existing sanitary sewer system. This project included supplemental flow isolation, closed circuit television inspection, dye testing, smoke testing, and house-to-house inspections. The resulting information was integrated into the existing Geographic Information System based sewer system mapping and database program.	$1,700,000

BORROWER	PROJECT DESCRIPTION	AMOUNT
Revere	**ILLICIT CONNECTION DETECTION** This was a planning project for the continuing effort to reduce inflow to the wastewater collection system. The planning tasks included: 1) Administration of the sump pump removal; 2) Review hydraulic modeling results to aid in prioritization of removal locations, development of a database for integrating removal status with GIS, and development of a public web based tracking application; 3) Conduct a public information program to support the sump pump removal program; 4) Develop standard operating procedure for house-to-house inspections, coordinate inspections with the automatic meter reading project; develop recommended modifications, and enter data into item 2; and 5) Coordinate the sump pump removal program.	$800,000
Revere	**SANITARY SEWER EVALUATION SURVEY INVESTIGATIONS** This project allowed the City of Revere to continue to identify, assess, prioritize and complete improvements to the City's sewer and storm drain systems. The sewer system evaluation survey activities included field investigations and desktop evaluation of the City's municipal wastewater and stormwater systems. The field investigations included TV inspection, dye water testing and smoke testing, which helps to complete the evaluation of the wastewater collection system along with support for ongoing assessment of the stormwater system including illicit discharge detection and elimination in addition to routine maintenance programs currently underway in the City.	$767,322

THE CITY OF REVERE AND GREEN BONDS

OVER $33.9 MILLION IN CLEAN WATER LOANS FINANCED WITH GREEN BONDS

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The City of Revere had been experiencing sewer blockages and capacity limitations in their wastewater sewers and wastewater treatment plant. The results were wastewater backing up into basements and untreated wastewater being discharged to surface waters. These events led to a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements. In 2010, the City of Revere and the EPA entered a Consent Decree (CD) to remediate these issues.

The CD required the removal of illicit and cross connections to its sanitary system and Municipal Separate Storm Sewer System (MS4) to detect and eliminate sanitary sewer overflows (SSOs). Additionally, the CD required the City to develop and implement a comprehensive wastewater management plan (CWMP) and a comprehensive stormwater management plan (CSMP). The City has launched several initiatives to come into compliance with these terms by the December 31, 2022 deadline.

Detection, Evaluation and Investigations
With $8.24 million in Green Bond funding, the City has employed measures to evaluate the physical state and function of its wastewater and stormwater infrastructure. These multiphase efforts included using closed circuit TV (CCTV) inspections to assess the internal condition of pipes and locate blockages. Dye water and smoke testing were employed to identify leaks and illicit connections with sump pumps and down spouts. These programs were accompanied with the launch of a sump pump amnesty program that ran until 2015 and replaced illicit home connections at no charge to residents.

A planning program was implemented to allow the City to proactively handle operations, maintenance, and improve wastewater transport services. The City's CWMP and CSMP are continuously supplemented to reflect improvements and are integrated with a new Geographic Information System (GIS) database for improved tracking.

Corrective Measures
The result of these planning measures has led to $25.68 million in Green Bond construction financing. Like planning, corrective measures were implemented in rolling phases. This included the repair of pipes, sewer replacements, new sewers, the rehabilitation and cleaning of sewers and pump stations, drainage improvements, and additional wastewater metering. Sensors were installed to monitor areas with high potential for SSOs.

These improvements can be technically challenging and cause major disruptions. In 2013, a 100-year-old vitrified clay sewer collapsed as it was being evaluated. The sewer was surrounded by water, electrical, natural gas and data lines. The replacement sewer took nearly seven months, two contractors, and the collaboration of multiple government entities to complete.

Cost and Benefits
In 2010, the City and the EPA estimated that the activities mandated by the CD would cost between $50 and $75 million. This cost has since increased to well over $100 million. EPA noted that this enforcement action will substantially reduce the release of microbial pathogens, suspended solids, toxins, and nutrient pollutants that are detrimental to public health and the environment. EPA calculated that system improvements will result in a reduction of 1.8 million gallons of untreated water and 4,494 pounds of pollutants being discharged into the environment annually.

DRINKING WATER AS GREEN INVESTMENTS

In May of 2001, the American Water Works Association announced that American water utilities were entering the "Replacement Era." Many utilities need to invest not only in expansion, but also in replacing infrastructure that has reached its useful life. These projects which were funded with Green Bonds, help keep communities safe and ensure that the water received at the tap is clean.

According to the EPA's Sixth Drinking Water Needs Survey and Assessment, from March of 2018:

U.S. Drinking Water utilities will need to invest nearly $473 billion over the next 20 years

Massachusetts utilities will need to invest $12.2 billion over this period

The Survey and Assessment showed that the need to invest has increased by 10.3% on a national scale from 2011 to 2015

Massachusetts saw a 43% increase in the needed investment during that time period

Drinking Water challenges range from removing contaminants from raw water to removing lead service lines from older communities. Delivering safe and clean water involves major investments in new technologies that are efficient and effective. The investments in these Green Bonds allow water utilities to replace infrastructure that is over 100 years old in some cases. Projects funded by Green Bonds have helped many residents receive water that is free of toxins and harmful bacteria.

The Trust and MassDEP have proudly supported eligible entities with nearly $1.6 billion in low-interest loans. These investments have been greatly expanded by investors that recognize the vitality of Drinking Water projects, and recently the importance of Green Bonds.

DRINKING WATER TREATMENT PROJECTS

Treatment projects include the construction, expansion, and rehabilitation of Drinking Water infrastructure that reduces contamination through various treatment processes. Such processes include conditioning water or removing contaminants. Treatment processes include filtration of surface water, pH adjustment, softening, disinfection, waste handling, other treatment needs (i.e., granular activated carbon which filters out chemicals, particularly organic chemicals, aeration, iron/manganese removal), and chemical storage tanks.

Upgrades and maintenance to water treatment plants lead to improved water quality and system efficiency. Replacing equipment that has reached the end of the its useful life and upgrading filtering and purifying equipment makes these tcorrosion control, help keep the public safe from issues related to older cast iron pipes and lead service lines. Upgraded equipment generally leads to more efficient facilities that consume less power and improve worker safety.

Highlighted Project

GLOUCESTER (WATER TREATMENT PLANT UPGRADE) - $474,127 ($5,455,188 COMBINED)

This loan is an additional loan for an existing project. The original amount of $4,981,061 was financed in a previous series. The purpose of this project was to improve the reliability and efficiency of Gloucester's West Gloucester and Babson water treatment plants. The upgrades targeted mechanical and electrical equipment that exceeded its useful life and was therefore inefficient. The upgrade included a backwash water recycle system which significantly reduced wastewater discharged to the Gloucester sewer system. This will reduce the frequency and severity of sanitary system overflows. In addition, safety equipment was updated and installed at both the West Gloucester and Babson water treatment plants. All improvements at the West Gloucester facility allowed for the water treatment plants to provide a constant supply of drinking water more reliably.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Auburn Water District	**WEST ST. WATER TREATMENT FACILITY UPGRADE** This project focused reducing elevated levels of arsenic in wells 11G and 12G. Arsenic levels were above the Maximum Containment Level of 0.01 milligrams per liter. In addition, measures were taken to address iron and manganese levels that were above secondary maximum contaminant levels. The 2012 samples from the West Street Wells (combined water) were 0.021 milligrams per liter. These wells were taken offline in May 2013 until arsenic removal upgrades were completed.	$2,688,952
Falmouth	**LONG POND WATER TREATMENT FACILITY** The Town of Falmouth currently relies on Long Pond for 50 to 60% of its water supply needs. The Long Pond Treatment Facility operates under a filtration waiver and only provides chlorination and pH adjustment. Increasing algae blooms in Long Pond and organic loading from the surrounding forest are resulting in degraded water quality. The Town also has an extension to install a second disinfection method to comply with the EPA's Long Term 2 of the Enhanced Surface Water Treatment Rule (LT2). As of September, the Town has exceeded a trihalomethane Locational Running Annual Average under Stage 2 of the Disinfection By-Products Rule. The Town needs to invest significant money to comply with the LT2 rule which will not solve its trihalomethane problems. A proper surface water treatment facility is required to provide a long-term solution to the Town's water quality problems.	$31,446,880
Gloucester	**WATER TREATMENT PLANT UPGRADE** *Highlighted Spending Project*	$474,127
Harwich	**WATER TREATMENT PLANT** The project included the construction of a 1 million gallon per day iron and manganese removal facility at the Water Department's Well No. 10 site, located off North Westgate Road in Harwich. All chemical treatment remained in the existing pump house and the new facility is for water polishing only.	$1,875,541
Marlborough	**MILLHAM WATER TREATMENT PLANT IMPROVEMENTS** The purpose of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) is to reduce disease incidence associated with Cryptosporidium and other pathogenic microorganisms in drinking water. There were three positive results for cryptosporidium during the 24-month sampling period. On November 30, 2010, MassDEP notified Marlborough that the Millham Water Treatment Plant has a 2-log or 99-percent removal/inactivation of cryptosporidium. Under the new LT2 requirements, an additional 1-log removal/inactivation is required for a total of 3-log or 99.9% removal/inactivation of cryptosporidium.	$4,809,184

DRINKING WATER TRANSMISSION AND DISTRIBUTION PROJECTS

These projects are for the purpose of installing, replacing, or rehabilitating transmission lines that carry drinking water from the source to the treatment plant or from the treatment plant to the consumer. Items such as pipes for raw and finished water transmission, service lines, valves, backflow prevention, water meters, and pumping stations may be components of these projects.

Replacing or repairing transmission lines improve water quality, system pressure and reliability. Additionally, the replacement and relocation of lines may be needed to improve the overall efficiency of a system that was designed for a smaller and less expansive community. The older practice of grouping transmission lines can lead to water distribution issues if one begins to leak and causes physical damage to the surrounding soil and adjacent transmission lines. Replacement of lead service lines reduces the risk of lead exposure and removes public safety risk.

Highlighted Project

SPRINGFIELD WATER AND SEWER COMMISSION (SOUTH WATER TRANSMISSION MAIN REPLACEMENT) - $21,645,275

The Springfield Water and Sewer Commission (SWSC) provides drinking water to the residents of the City of Springfield and the Town of Ludlow. SWSC provides wholesale drinking water to Agawam, East Longmeadow, and Longmeadow. SWSC provides partial water service or peak service to Southwick, Westfield, and West Springfield. The Commission has three main water transmission lines that use gravity to feed water into the distribution system. The southmost line, a 54 and 48-inch diameter steel line, was installed in 1928. After years of spending millions of dollars on emergency repairs, SWSC determined that replacement was necessary. This transmission line was vital to providing uninterrupted service for the region.

The project replaced six miles of pipeline through multiple wetlands and required extensive site preparation for vegetation removal. Construction was completed in three phases. Each phase involved installing a section of pipe as well as related valves and infrastructure. The section was then pressure tested, disinfected, and tested for water quality. In June 2016, the final section of pipe was brought back into service. SWSC believes that the new South Transmission Main will reliably supply water for the next 80 to 100 years.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Barnstable	**HYANNIS WATER SYSTEM IMPROVEMENTS** The project included the replacement of approximately 4,000 feet of the 6-inch cast iron and asbestos-cement pipe with 8-inch ductile iron water main, and 500 feet of 2-inch pipe with 6-inch ductile iron water main. A three-phase cleaning and lining of a 16-inch water main from water tanks down to Main Street was completed.	$2,418,547
Eastham	**WATER SYSTEM PHASE I** This loan amount reflects an additional loan for this project. The original loan amount for this project was $24,985,403 and was previously financed by the Trust. Eastham's drinking water is currently supplied by small community public water systems and individual private wells. There is no municipal water supply system and sampling indicated impaired water quality, the consequence of which has been a plan to put the Town on a public water system that meets the standards of the Safe Drinking Water Act. The first phase of water system development included the construction of two well fields, a storage tank, and 45 miles of water distribution piping.	$2,304,545
Fall River	**AIRPORT ROAD HIGH SERVICE AREA IMPROVEMENTS** The project created a high service area at the Airport Road Industrial Park. The tank was replaced with a taller tank to improve pressures in the new high service area. A new booster pump station was constructed, and water mains were replaced and upgraded to connect the new pump station and tank to the existing system.	$4,006,171
Fall River	**WATER MAIN IMPROVEMENTS** This project included the replacement of approximately 14,200 linear feet of cast iron water mains and 23 lead services. This addressed water quality and reliability issues and is the fifteenth year of Fall River's annual cast iron water main and lead service replacement program.	$2,219,602
Fall River	**WATER MAIN IMPROVEMENTS AND WATER TREATMENT PLANT RESIDUAL HANDLING** The project included the replacement of approximately 19,000 linear feet of cast iron water mains and 19 lead service lines. A new sanitary grinder pump station was installed for the discharge of domestic sewage from the City's water treatment plant and the replacement of the residuals pump station and associated electrical and control systems.	$3,157,717
Holden	**WATER MAIN INSTALLATION AND SUPERVISORY CONTROL AND DATA ACQUISITION IMPROVEMENTS** This project included the replacement of approximately 4,500 linear feet of existing water main to improve water quality, system pressure, and reliability. Also included in the project were water supervisory control and data acquisition system improvements (hardware, software and a programmable logic controller for system monitoring).	$525,000
Lawrence	**WATER MAIN REPLACEMENT** This project involved the replacement of approximately 45,000 linear feet of water mains, broken and malfunctioning hydrants, and valves.	$9,186,062
Lowell	**REDUNDANT TRANSMISSION MAIN** This project included the construction of a new 36-inch diameter redundant treated water transmission main. This allowed the Lowell Regional Water Utility to continue to supply water and fire protection to the entire distribution system in the event of a break in the existing 36-inch main transmission pipe in the water treatment plant.	$3,520,254
Malden	**WATER DISTRIBUTION SYSTEMS IMPROVEMENTS** This project consists of two contacts, 2014-H/W-1 and 2014 H/W-2, which replaced over 15,000 feet of old unlined cast iron water mains which are severely tuberculated, with new cement lined ductile iron pipe along with the replacement of hydrants and inoperable valves. This has resulted in better water quality and flow in the system.	$1,811,870
Manchester by the Sea	**WATER SYSTEM IMPROVEMENTS** The project included the replacement of 5,400 feet of water main and lead service lines to improve capacity and water quality. The existing 6-inch diameter water main was replaced with new 12-inch water main and existing 8 and 14-inch water main with new 16-inch water main. The water main replacement was on Pine Street from Pleasant to Central Streets and from Rockwood Heights to Moses Hill Roads.	$1,440,000

BORROWER	PROJECT DESCRIPTION	AMOUNT
Medway	**WATER MAIN REPLACEMENT** This project addressed the replacement of aging water mains and accessory equipment in various streets in the community. The replacement of these old mains helped improve water quality with respect to disinfection, circulation, volume and system pressure.	$1,216,667
Merrimac	**WATER MAIN REPLACEMENT** The Town of Merrimac, in conjunction with MassDOT reconstructed a one-mile segment of Main Street (Route 110) through the State Transportation Improvement Plan. Running beneath the roadway was an aging 12-inch diameter water main in need of replacement to ensure stability and improve water distribution. This project replaced that water main as a part of the larger MassDOT roadway and infrastructure improvement project providing efficiency and collaboration.	$860,000
MWRA	**SOUTHERN SPINE DISTRIBUTION MAINS** This project required cleaning, rehabilitation and repair of 20 miles of old water mains which are currently functioning at 50% of their original capacity. In addition, inoperable valves were replaced in the system. The mains begin in Brookline and end at the Blue Hills Reservoir in Quincy. The mains serve the Southern High and Southern Extra High System communities of Boston, Brookline, Milton, Quincy, Norwood and Canton.	$806,874
MWRA	**WACHUSETT AQUEDUCT PUMPING STATION** This project was for the construction of an emergency pump station from the Wachusett Aqueduct to the Carroll Water Treatment Plant (CWTP). The pump station provides redundancy in the event of failure at the Cosgrove Tunnel or Intake and for the inspection/rehabilitation of the Cosgrove Tunnel. The pump station can deliver 240 million gallons per day of raw water to the CWTP during a planned or emergency shutdown of the Cosgrove Tunnel. This flow rate represents the full water demand from CWTP during the fall, winter, and spring low-flow seasons and mitigates potential disruption of service to Northborough, Southborough, Marlborough, and Westborough State Hospital.	$12,404,988
MWRA	**LOWER HULTMAN AQUEDUCT REHABILITATION** The work included the construction of interconnections between the Metro West Tunnel and the Hultman Aqueduct, as well as rehabilitation of the aqueduct that includes replacement or repair of air relief structures, blow-off valves, culverts beneath the aqueducts and replacement of existing valves.	$3,516,897
MWRA	**WESTON ACUEDUCT SUPPLY MAINS AND SEC 36/101** MWRA conducted improvements to the distribution system necessary for constructing a redundant main to prevent the loss of water to several communities, including Waltham, in the event the primary main fails.	$11,296,507
New Bedford	**TRANSMISSION MAIN IMPROVEMENTS** This project included work on twin 36-inch cast iron transmission mains that convey potable water from the City's 75-million-gallon High Hill finished water reservoir to the eastern and central sections of New Bedford. The 103-year-old mains are interconnected in many places and cannot be isolated because of their significant disrepair. The mains are within 7 feet of each other, so a prolonged failure of one would likely cause failure to the other. These transmission mains are critical components which would cause catastrophic consequences to the City should they fail. The work consisted of installing new valves, blow offs, air release assemblies, hydrants and temporary piping.	$4,466,812
Quincy	**WATER SYSTEM INFRASTRUCTURE REHABILITATION** This loan amount reflects an additional loan for this project. The original loan amount for this project was $8,115,595 and was previously financed by the Trust. The project consisted of four contracts: 1) Replacement of water meter and installation of automated meter reading system; 2) Replacement of existing 6-inch and 8-inch diameter water distribution mains and service connections; 3) Installation of a supervisory control and data acquisition system and security improvements; 4) Improvements to the Penns Hill, Riccuiti Drive, West Street and Roosevelt Booster Pump Stations.	$233,275

BORROWER	PROJECT DESCRIPTION	AMOUNT
Revere	**WATER METERS AUTOMATIC METER READING SYSTEM** The Automatic Meter Reading (AMR) system fully replaced the aging residential water meter system throughout the City with approximately 10,000 new residential meters, plus a citywide fixed based AMR system. The system provides 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 to improve the City's water conservation. 18.6% of Revere's water was unaccounted for, which was well above the Massachusetts Standard of 10%. The new AMR program is more sophisticated and reliable system for the City.	$6,370,373
Springfield Water and Sewer Commission	**SOUTH WATER TRANSMISSION MAIN REPLACEMENT** Highlighted Spending Project.	$21,645,275
Taunton	**PUMP STATION AND WATER MAIN REPLACEMENT** The project involved the replacement of approximately 10,000 linear feet of water main throughout the City of Taunton's water distribution system. The project involved the construction of a new pumping station on Harris Street to replace the original station constructed in 1876.	$6,663,446
Uxbridge	**RT. 122 WATER MAIN REPLACEMENT** This ongoing project consists of replacing a water main on Route 122 that does not meet system pressures. This main on Route 122 has experienced breaks and is considered a critical component to the Town's system and would affect 5,000 consumers should it lose transmission.	$3,186,000
Webster	**WATER MAIN** The project included the construction of approximately 4,500 feet of new water main in Rawson Road Reservoir Access Road, Rawson Road, and sections of Gore Road. 75 linear feet cured-in-pipe liner was installed as well as a Tideflex Mixing System for the Rawson Road Water Tank. The project reduces the probability of future failures and reduces the risk of system contamination, iron and manganese water quality disturbances and the loss of water from storage.	$170,246

DRINKING WATER SOURCE AND STORAGE

These projects are used for developing or improving sources of water used in public water systems. This includes costs for constructing or rehabilitating surface water intake structures, drilled wells, wellhead pumps and spring collectors. Having multiple sources of raw water are a standard precaution in making sure water supplies are not endangered or cut off. Source protection and testing are necessary to confirm that raw water quality can be properly purified at the intended water treatment plant. Excessive amounts of toxins or pollutants in raw water can cause efficiency issues once it reaches a water treatment plant. Pumping, well maintenance and water extraction must be monitored to ensure that water quality at the source is not impacted by these activities.

Storage projects in this category aim to provide finished water storage for public water systems. Examples may include systems involving elevated and ground level storage for treated water and covers for existing storage. Storage tanks and the systems they employ are vital components of a water distribution system. Tanks are used to ensure water supply when there may be issues with supply lines or when maintenance is being performed. Upgraded systems that chlorinate water or monitor water quality are more efficient with advanced systems, meaning that water quality is more consistent and requires less human maintenance.

Highlighted Project

PAXTON (MAPLE STREET ELEVATED TANK) - $1,370,000

The Town of Paxton distributes more than 97 million gallons of water to approximatively 3,680 people annually. Paxton purchases pretreated water from the nearby City of Worcester and uses two large storage tanks as part of their distribution process. The 80-year-old Maple Street water tank needed to be replaced with a smaller, more efficient tank. The original tank did not have an internal mixing system which can lead to water being stored longer than is recommended. Aging water can lead to the lessening of chlorine residual, a cause of bacterial growth. The new tank contains an internal mixing system and a booster chlorination system that will allow Paxton to mitigate issues and maintain water quality.

The Maple Street Tank is the primary tank for the northern portion of the system, which includes the faculty and student population of Anna Maria College and a senior housing complex. Having two storage tanks provides extra storage that allows the Town to take one tank offline for routine maintenance or for adequate water storage in the event of an emergency. In November 2012, the City of Worcester experienced a large water main break that shut off the water supply for hours. Paxton's sole source of water comes from the City. However, Paxton could sustain water supply and water pressure because of the two tanks.

BORROWER	PROJECT DESCRIPTION	AMOUNT
Eastham	**WATER SYSTEM PHASE I** The project was the first phase in the development of a town-wide water system that included the construction of two well fields, a storage tank, and 45 miles of water distribution piping. Previously, individual private wells were the main source of drinking water to residents and businesses, as there was no municipal water supply system. Sampling indicated some impaired water quality and resulted in the Town's decision to construct a public water system that meets safety standards.	$10,402,720
Lynn Water and Sewer Commission	**LOW SERVICE RESERVOIR IMPROVEMENTS** The project included the rehabilitation of the Low Service Reservoir by replacing its cover and lining to address potential public health concerns due to the aging system.	$1,297,810
MWRA	**LOW SERVICE STORAGE** This project was for the construction of a 20-million-gallon potable water storage tank in the Town of Stoneham in its terminal reservoir at the northeast extremity of the MWRA water service to metropolitan Boston. The project provides improved storage (16-20 million gallons) but also provides surge relief, protect MWRA and community mains, allows for more efficient use of the existing MWRA distribution system and provides emergency backup relief to 21 communities in the Northern Intermediate High and Northern High Systems.	$10,474,691
Paxton	**MAPLE ST. ELEVATED TANK** Highlighted Spending Project.	$1,370,000
Plainville	**TANK REHABILITATION** This project addressed deficiencies in the East Bacon Street Tank relating to its overflow structure. The tank was due for recoating to extend its useful life. This project included tank recoating and modifications to the vent and overflow structures.	$666,593
Stockbridge	**WATER SYSTEM IMPROVEMENTS** Stockbridge used two 150,000-gallon steel storage tanks constructed in 1908 and 1947, and one 600,000-gallon concrete tank completed in 2010. Tank inspection results indicated that the older steel tanks have coating failure and corrosion. This project involved the replacement of two steel tanks with a single 300,000-gallon concrete tank. This project included replacement of the Church Street Water Main which was known to be severely corroded.	$1,800,000
Turner Falls Fire District	**HANNEGAN BROOK WELL PUMP STATION** This project involved the construction of a pump station and chemical feed systems to bring the Hannegan Brook Well on line as a backup water supply source for the Turners Falls Water Department. The project not only serves as the backup for the system but assists the Department in reducing the vulnerability to the Town of Irving water supply and the Montague Center Water District, since both of these systems rely on a single well and use Turners Falls Water Department as their backup.	$780,677

APPENDIX A
SERIES 18 PROJECTS [1]

BORROWER	LOAN NO.	PROJECT NAME	AMOUNT	LOAN DRAWN	PROGRAM	CATEGORY
Acton Water Supply District	DWP-12-19	New Water Treatment Plant	$726,554 [3]	100%	DW	Drinking Water Treatment
Barre	DW-11-15	Well #3 Evaluation	$63,800	100%	DW	Drinking Water Planning and Design
Bellingham	DW-13-11	New Water Treatment Plants	$1,259,831 [3]	100%	DW	Drinking Water Treatment
Belmont	CW-12-17	Illicit Connection Elimination	$2,300,000	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Billerica	CW-12-08	Sewer Extension and Pump Station Improvements	$9,000,000	100%	CW	Collector and Interceptor Appurtenances
Billerica	CW-12-18	Wastewater Treatment Facility Improvements	$11,361,364	100%	CW	Drinking Water Treatment
Billerica	CW-10-24	Phase I Pump Station Upgrade	$1,497,797 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Boston	CWP-14-02	Gardner St. Landfill Closure	$4,110,181 [3]	100%	CW	NPS Sanitary Landfills
Bridgewater	CW-14-17	Sewer Inspection, Cleaning and Lining	$122,523 [3]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Brockton	DWP-12-26	Water System Improvement Program	$1,912,312	100%	DW	Drinking Water Transmission and Distribution
Chatham	CW-12-21	Collection System Extension and Improvements	$3,847,853	100%	CW	Collector and Interceptor Appurtenances
Cherry Valley and Rochdale Water District	DW-12-01	Modification to Water Treatment Plant	$555,588 [2]	100%	DW	Drinking Water Treatment
Chicopee	CWP-12-22	Combined Sewer Overflow	$2,886,337 [2]	100%	CW	Combined Sewer Overflow Correction
Chicopee	CWP-13-21	Wastewater Treatment Facility and Stormwater Improvements	$14,845,991	100%	CW	Combined Sewer Overflow Correction
Clinton	CW-11-22	Stormwater Management Plan	$120,000	100%	CW	Planning
Dartmouth	CWP-11-19	Infiltration/Inflow and Sanitary Sewer Evaluation Sewer	$288,057	100%	CW	Planning
Dartmouth	CW-12-16	Wastewater Treatment Facilities Upgrades	$9,847,478	100%	CW	Wastewater Treatment
Dracut	CW-12-11	Collection Sewers	$9,220,005 [2]	100%	CW	Collector and Interceptor Appurtenances
Everett	CW-10-20-A	Stormwater/Wastewater Capital Improv.	$661,967	100%	CW	Stormwater Infrastructure
Fairhaven	DWP-12-10	Boston Hill Tank Rehab and Main Replacement	$741,116 [2]	100%	DW	Drinking Water Source and Storage
Fall River	CWP-13-02	Combined Sewer Overflow Abatement Program	$12,668,331	100%	CW	Combined Sewer Overflow Correction
Fall River	DWP-12-03	Water System Master Plan Update	$112,499	100%	DW	Drinking Water Planning and Design
Fall River	DWP-12-06	Water Main Improvements, Phase 12	$2,384,078 [2]	100%	DW	Drinking Water Transmission and Distribution
Fitchburg	CWP-12-01	Combined Sewer Separation	$5,575,799	100%	CW	Combined Sewer Overflow Correction
Fitchburg	CWP-12-02	Chemically Enhanced Primary Treatment Upgrade	$7,143,406	100%	CW	Drinking Water Treatment
Framingham	CW-09-17	East Framingham Sewer Improvements	$3,515,998	100%	CW	Collector and Interceptor Appurtenances
Gloucester	DWP-11-19	Water System Improvements	$9,866,524	100%	DW	Drinking Water Transmission and Distribution
Gloucester	DWP-12-05	Water Transmission Improvements	$2,522,368	100%	DW	Drinking Water Transmission and Distribution
Gloucester	DWP-12-02	Water Treatment Plant Upgrade	$4,482,909	100%	DW	Drinking Water Treatment
Greater Lawrence Sanitary District	CWP-11-13	Wastewater Treatment Plant improvements	$1,980,741 [2]	100%	CW	Drinking Water Treatment
Greater Lawrence Sanitary District	CWP-11-14-A	New Force Main for Riverside Pumping Station	$548,890 [2]	100%	CW	Drinking Water Treatment
Haverhill	CWP-12-14	Combined Sewer Overflow/Flood Control Improvements	$3,851,669 [2]	100%	CW	Stormwater Infrastructure
Holliston	DW-11-11	Well No. 4 Replacement and Treatment Plant Upgrade	$2,500,000	100%	DW	Drinking Water Treatment
Ipswich	CW-10-09-A	Wastewater Solids Handling and UV Disinfection Upgrade	$2,246,791	100%	CW	Drinking Water Treatment
Kingston	DWP-12-15	Trackle Pond Water Treatment Facility	$4,366,113 [2]	100%	DW	Drinking Water Treatment
Lawrence	DWP-12-09	Water Meter Replacement	$3,163,833 [2]	100%	DW	Drinking Water Restructuring
Lawrence	DWP-12-08	Valve Replacement	$1,579,087 [2]	100%	DW	Drinking Water Transmission and Distribution
Lynn Water and Sewer Commission	CWP-10-26	Wind Turbine Project	$907,374	100%	CW	Stormwater Infrastructure

[1] Series 18 projects have been fully drawn and will no longer appear in Green Bond reporting.
[2] Amount was reduced following the completion of the project. Excess funds were reallocated to additional green projects and are listed within the Series 18 table.
[3] Amount reflects Series 18 Bond proceeds reallocated from excess funds of completed Series 18 projects.

BORROWER	LOAN NO.	PROJECT NAME	AMOUNT	LOAN DRAWN	PROGRAM	CATEGORY
Malden	DWP-11-16	Water Distribution System Planning	$270,899	100%	DW	Drinking Water Planning and Design
Malden	DW-10-07	Water Main Replacement Projects	$378,173 [2]	100%	DW	Drinking Water Transmission and Distribution
Malden	DWP-12-04	Water Main Replacement Projects	$5,946,761 [2]	100%	DW	Drinking Water Transmission and Distribution
Malden	CWP-13-25	Sewer Improvements	$3,698,538 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Marion	CW-13-07	Wastewater and Stormwater Improvement	$2,625,585 [2]	100%	CW	Stormwater Infrastructure
Marlborough	CW-11-21-A	Marlborough Easterly Wastewater Treatment Facility Upgrades	$20,000,000	100%	CW	Drinking Water Treatment
Medway	DW-13-13	Water Main Replacement	$1,501,102	100%	DW	Drinking Water Transmission and Distribution
Monroe	CW-11-03	Wastewater Treatment Facility Repairs	$159,463 [2]	100%	CW	Planning
MWRA	CW-13-32	Combined Sewer Overflow Phase 14	$15,000,000	100%	CW	Combined Sewer Overflow Correction
MWRA	DW-12-17	Low Service Storage	$5,000,000	100%	DW	Drinking Water Source and Storage
MWRA	CW-12-10	Nut Island Headworks Electrical and Conveyor Improvement	$2,000,000	100%	CW	Drinking Water Treatment
MWRA	CW-12-24	Electrical Upgrades	$1,977,802	100%	CW	Drinking Water Treatment
MWRA	CW-12-25	Wastewater Treatment Plant and Sewer Improvements	$2,912,188	100%	CW	Drinking Water Treatment
MWRA	CW-12-26	Deer Island Treatment Plant Improvements	$5,113,812	100%	CW	Drinking Water Treatment
MWRA	CW-13-30	Nut Island Headworks Electrical and Conveyor Improvement	$840,982	100%	CW	Drinking Water Treatment
MWRA	DW-12-20	NHS - Revere and Malden Pipeline	$600,000	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-12-21	Northern Low Service Area Rehabilitation	$600,000	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-12-22	New Connecting Mains	$1,000,000	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-12-23	Lower Hultman Aqueduct Rehabilitation	$1,600,000	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-12-24	Southern Spine Distribution Mains	$240,342	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-13-22	Lower Hultman Aqueduct Rehabilitation	$1,800,000	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-13-23	New Connecting Mains	$666,666	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-13-24	Low Service Storage	$2,500,000	100%	DW	Drinking Water Source and Storage
Nantucket	CW-12-09	Sewer Replacement for I/I removal	$4,999,200	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Newburyport	DW-10-09-B	Water Treatment Facility Upgrade and Water Distribution	$296,527 [2]	100%	DW	Drinking Water Treatment
North Attleborough	CW-10-31-A	Wastewater Treatment Facility Upgrade and I/I Removal	$10,910,182 [2]	100%	CW	Drinking Water Treatment
Pembroke	CW-10-39-A	Capping of Hobonock Street Landfill	$98,393	100%	CW	NPS Sanitary Landfills
Pittsfield	CW-09-22-A	Energy Efficiency, Photovoltaic and CHP Installation	$4,100,000	100%	CW	Stormwater Infrastructure
Randolph	DWP-13-14	Water System Improvements	$1,961,620 [2]	100%	DW	Drinking Water Transmission and Distribution
Revere	CW-13-08	Winthrop Ave. Emergency Sewer Replacement	$1,810,760 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Revere	CWP-12-12	Sanitary Sewer Evaluation Sewer Construction	$5,750,051 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Revere	CWP-11-25	Sanitary Sewer Evaluation Sewer Phase 3 and SWSMP	$1,273,774	100%	CW	Planning
Saugus	CW-12-07	Sewer System Rehabilitation	$362,443 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Saugus	CWP-13-05	SSO Reduction Subsystem 6	$1,455,461 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Shrewsbury	CW-12-20	Sewer Interceptor and Pump Station	$3,821,859 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Taunton	CWP-10-36-A	Sewer Extensions	$503,058 [2]	100%	CW	Collector and Interceptor Appurtenances
Taunton	CWP-12-27	Phases 8 - 9 Sanitary Sewer Evaluation Sewer and Pump Station Upgrades	$4,688,669	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Webster	DWP-13-15	Water Main	$1,657,267	100%	DW	Drinking Water Transmission and Distribution
Wellfleet	CW-10-11	Comprehensive Wastewater Management Plan	$200,000	100%	CW	Planning
West Springfield	DWP-11-23-A	Water Transmission Main and Wellfield	$566,384	100%	DW	Drinking Water Transmission and Distribution
Westborough	CW-08-22-A	Infiltration/Inflow Analysis - Sanitary Sewer Evaluation Survey	$98,280	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Westfield	DWP-12-18	Water Main Replacement	$2,350,948 [2]	100%	DW	Drinking Water Transmission and Distribution
Worcester	CW-13-06	Lake Avenue Area Sewer System Evaluation Survey	$561,500	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation

APPENDIX B
SERIES 19 PROJECTS [1]

BORROWER	LOAN NO.	PROJECT NAME	AMOUNT	LOAN DRAWN	PROGRAM	CATEGORY
Andover	CW-11-24	Ledge Road Landfill Closure Planning	$675,000	100%	CW	Planning
Auburn Water District	DW-14-01	West St. Water Treatment Facility Upgrade	$2,688,952	87.53%	DW	Drinking Water Treatment
Barnstable	DWP-13-01	Hyannis Water System Improvements	$2,418,547	84.22%	DW	Drinking Water Transmission and Distribution
Bridgewater	CW-14-17	Sewer Inspection, Cleaning and Lining	$781,616 [3]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Brockton	CWP-14-30	Sewer System Rehabilitation	$1,704,244	86.02%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Cambridge	CWP-13-03-A	Huron B Sewer Separation Project	$14,000,000	93%	CW	Combined Sewer Overflow Correction
Charles River Pollution Control District	CW-13-09-A	Wastewater Treatment Facility Improvements Phase C	$8,741,935	100%	CW	Wastewater Treatment
Chatham	CW-13-10	Collection System Extension and Improvements	$3,336,119	86.36%	CW	Collector and Interceptor Appurtenances
Dracut	CW-13-24	Contract No. 32 Sewer Extensions	$4,693,582	100%	CW	Collector and Interceptor Appurtenances
Dracut	CWS-08-18-A	Contract 27 Peters Pond West Area Sewers	$19,114	100%	CW	Collector and Interceptor Appurtenances
Fall River	DWP-13-06	Airport Road High Service Area Improvements	$4,006,171	100%	DW	Drinking Water Transmission and Distribution
Fall River	DWP-14-08	Water Main Improvements and Water Treatment Plant Residual Handling	$3,157,717 [2]	100%	DW	Drinking Water Transmission and Distribution
Fall River	DWP-15-10	Water Main Improvements	$2,219,602 [3]	100%	DW	Drinking Water Transmission and Distribution
Falmouth	CWP-14-23	Sewer Extension and New Recharge Site	$11,140,583	100%	CW	Collector and Interceptor Appurtenances
Falmouth	DWP-14-04	Long Pond Water Treatment Facility	$16,126,207	100%	DW	Drinking Water Treatment
Falmouth	CWP-14-22	Wastewater Treatment Facility Upgrade	$4,284,956	99.55%	CW	Wastewater Treatment
Fitchburg	CWP-12-01-A	Combined Sewer Separation	$721,426	100%	CW	Combined Sewer Overflow Correction
Framingham	CW-09-11	Central Street Siphon/Sudbury Interceptor	$2,114,587	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Framingham	CW-09-30-A	Phase 4 Sanitary Sewer Evaluation Survey	$84,190	100%	CW	Planning
Gloucester	DWP-12-02-A	Water Treatment Plant Upgrade	$474,127	100%	DW	Drinking Water Treatment
Great Barrington	CW-12-23	Wastewater Treatment Facility Upgrade and Infiltration/ Inflow Removal	$4,210,000	100%	CW	Wastewater Treatment
Harwich	DWP-13-02	Water Treatment Plant	$1,875,541 [2]	100%	DW	Drinking Water Treatment
Holden	DW-13-12	Water Main Installation and SCADA Improvements	$525,000	100%	DW	Drinking Water Transmission and Distribution
Lawrence	DWP-13-05	Water Main Replacement	$9,186,062	100%	DW	Drinking Water Transmission and Distribution
Leominster	CW-10-41	Water Pollution Control Facility Upgrades	$8,000,000	100%	CW	Wastewater Treatment
Leominster	CW-10-41-A	Water Pollution Control Facility Upgrades	$2,500,000	100%	CW	Wastewater Treatment
Lowell	DWP-13-04	Redundant Transmission Main	$3,520,254 [2]	100%	DW	Drinking Water Transmission and Distribution
Ludlow	CW-08-05-A	Combined Sewer Overflow	$503,676	100%	CW	Combined Sewer Overflow Correction
Lunenburg	CW-14-29	Sewer Extension	$1,216,325 [2]	100%	CW	Collector and Interceptor Appurtenances
Malden	DWP-13-18	Water Distribution Systems Improvements	$1,811,870 [2]	100%	DW	Drinking Water Transmission and Distribution
Marlborough	DW-14-02	Millham Water Treatment Plant Improvements	$4,809,184	100%	DW	Drinking Water Treatment
Marlborough	CW-11-21-B	Marlborough Easterly Wastewater Treatment Plant Upgrades	$14,626,671 [2]	100%	CW	Wastewater Treatment
Medway	DW-13-13-A	Water Main Replacement	$1,216,667 [2]	100%	DW	Drinking Water Transmission and Distribution
Merrimac	DW-12-14	Water Main Replacement	$860,000	100%	DW	Drinking Water Transmission and Distribution
MFN Regional Wastewater District	CW-10-07-A	MFN Regional Wastewater District Land Treatment	$1,012,310	100%	CW	Wastewater Treatment
MWRA	CW-13-32-F	Combined Sewer Overflow Phase 14	$2,611,847	100%	CW	Combined Sewer Overflow Correction
MWRA	DW-14-14	Low Service Storage	$3,000,000	100%	DW	Drinking Water Source and Storage
MWRA	DW-13-21-B	Southern Spine Distribution Mains	$806,874	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-14-11	Weston Aqueduct Supply Mains and Sec 36/101	$6,876,818	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-14-13	Lower Hultman Aqueduct Rehabilitation	$3,000,000	100%	DW	Drinking Water Transmission and Distribution

[1] Series 19: Amount and Loan Drawn sections are accurate as of July 31, 2018
[2] Amount was reduced following the completion of the project. Excess funds were reallocated to additional green projects and are listed within the Series 19 table.
[3] Amount reflects Series 19 Bond proceeds reallocated from excess funds of completed Series 19 projects.

BORROWER	LOAN NO.	PROJECT NAME	AMOUNT	LOAN DRAWN	PROGRAM	CATEGORY
MWRA	CW-14-37	Deer Island Treatment Plant: Digester and Cryogenics Upgrade	$6,255,873	100%	CW	Wastewater Treatment
MWRA	CW-14-38	Deer Island Treatment Plant: Electrical and Plant Upgrades	$813,700	100%	CW	Wastewater Treatment
Needham	CW-11-11-A	Replacement of Reservoir B Sewer Pump Station	$78,491	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
New Bedford	CWP-14-19	Combined Sewer Overflow Abatement	$8,063,124	100%	CW	Combined Sewer Overflow Correction
Norwood	CW-11-12-A	Westover Area Sewer Rehabilitation	$110,127	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Norwood	CWP-13-19	Meadowbrook Area Sewer Rehabilitation	$2,638,952	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Palmer	CWP-13-23	Sewer Replacement	$5,807,217 [2]	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Paxton	DW-14-07	Maple St. Elevated Tank	$1,370,000	100%	DW	Drinking Water Source and Storage
Quincy	DW-09-12-A	Water System Infrastructure Rehabilitation	$233,275	100%	DW	Drinking Water Transmission and Distribution
Quincy	CWP-13-26	Fort Square Pumping Station Rehabilitation	$2,787,004	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Revere	CWP-13-16	Collection System Improvements	$7,218,581	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Revere	CW-13-17	Field Investigation and Illicit Connection Detection	$1,500,000	100%	CW	Planning
Revere	CWP-12-13	Sanitary Sewer Evaluation Survey Investigations	$767,322	100%	CW	Planning
Saugus	CWP-14-08	SSO Reduction Subsystem 5	$1,579,841	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
South Essex Sewerage District	CW-13-33	Marblehead Replacement Crossing Sewer	$9,250,000	100%	CW	Collector and Interceptor Appurtenances
Springfield Water and Sewer Commission	DWP-13-16	South Water Transmission Main Replacement	$21,645,275	98.29%	DW	Drinking Water Transmission and Distribution
Taunton	CWP-11-17-A	Sewer System Separation of Combined Manholes and Upgrade of Vital Pump Stations	$180,526	100%	CW	Collector and Interceptor Appurtenances
Taunton	DWP-13-07	Pump Station and Water Main Replacement	$6,663,446	100%	DW	Drinking Water Transmission and Distribution
Taunton	CWP-13-18	Sanitary Sewer Evaluation Survey Phases 10-12	$6,295,244	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Taunton	CWP-14-26	Sanitary Sewer Evaluation Survey Phases 10-12	$4,021,122	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Turners Falls Fire District	DWP-13-17	Hannegan Brook Well Pump Station	$780,677 [2]	100%	DW	Drinking Water Source and Storage
Webster	DWP-13-15-A	Water Main	$170,246 [2]	100%	DW	Drinking Water Transmission and Distribution
Westborough	CW-07-19	Wastewater Treatment Plant Upgrade	$302,305	100%	CW	Wastewater Treatment
Worcester	CWP-13-20	Lake Ave Sewer Infiltration/Inflow	$1,048,196	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation

APPENDIX C
SERIES 20 PROJECTS [1]

BORROWER	LOAN NO.	PROJECT NAME	AMOUNT	LOAN DRAWN	PROGRAM	CATEGORY
Barnstable	CW-04-31-R	Nutrient Management Planning Project	$255,941	100.00%	CW	Planning
Billerica	CW-14-21	Contract 35 Sewers	$9,724,962	89.25%	CW	Collector and Interceptor Appurtenances
Billerica	CW-14-20	Wastewater Treatment Facility Upgrades	$4,568,100	97.91%	CW	Wastewater Treatment
Brockton	CWP-15-22	Sewer Rehabilitation	$1,356,694	89.15%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Charles River Pollution Control District	CW-13-09-B	Wastewater Treatment Facility Improvement Phase C	$1,858,065	88.54%	CW	Wastewater Treatment
Chicopee	CW-14-05	Combined Sewer Overflow	$25,478,178	93.52%	CW	Combined Sewer Overflow Correction
Chicopee	CW-13-22	Integrated Municipal Stormwater and Wastewater Resource Management Plan	$1,000,000	99.65%	CW	Planning
Dracut	CW-13-24-A	Contract No. 32 Sewer Extensions	$181,873	100%	CW	Collector and Interceptor Appurtenances
Eastham	DW-16-02	Water System Phase I	$10,402,720	92.68%	DW	Drinking Water Source and Storage
Eastham	DWP-15-01-A	Water System Phase I	$2,304,545	98%	DW	Drinking Water Transmission and Distribution
Easthampton	CW-14-13	Integrated Wastewater Resource Management Plan	$1,100,000	95.68%	CW	Planning
Everett	CW-08-14-A	Stormwater Illicit Discharge Detection	$61,076	87.62%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Everett	CW-14-24	Stormwater/Sewer Evaluation	$500,000	100%	CW	Planning
Falmouth	CWP-14-23-A	Sewer Extension and New Recharge Site	$20,869,482	74.95%	CW	Collector and Interceptor Appurtenances
Falmouth	DWP-15-02	Long Pond Water Treatment Facility	$15,320,673	100%	DW	Drinking Water Treatment
Fitchburg	CWP-13-01-A	Combined Sewer Separation Area 4D	$1,231,951	98.69%	CW	Combined Sewer Overflow Correction
Gardner	CWP-15-21	Wastewater Treatment Plant Upgrade	$4,433,242	91.15%	CW	Wastewater Treatment
Grafton	CW-15-14	Wastewater Treatment Plant Improvements	$14,613,300	100%	CW	Wastewater Treatment
Great Barrington	CWP-15-24	Wastewater Treatment Facility Upgrades and Sewer Improvements	$4,579,305	99.64%	CW	Wastewater Treatment
Haverhill	CWP-14-15	Combined Sewer Overflow Improvements, Wastewater Treatment Facility and Sewer System	$8,366,419	98.56%	CW	Combined Sewer Overflow Correction
Lawrence	CW-14-16	Sewer System Rehabilitation	$8,978,897	73.05%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Lawrence	CW-13-13	Capacity Management Operations and Maintenance Program and Sanitary Sewer Evaluation Survey	$3,840,000	100%	CW	Planning
Lynn Water and Sewer Commission	DW-13-19	Low Service Reservoir Improvements	$1,297,810	100%	DW	Drinking Water Source and Storage
Manchester by the Sea	DW-14-03	Water System Improvements	$1,440,000	100%	DW	Drinking Water Transmission and Distribution
Manchester by the Sea	CW-14-31	Comprehensive Wastewater Management Plan	$234,450	100%	CW	Planning
Mashpee	CW-00-50-C	Comprehensive Wastewater Management Plan	$79,966	97.59%	CW	Planning
Middleborough	CWP-14-32	Wastewater Treatment Facility Upgrades	$24,346,341	99.41%	CW	Wastewater Treatment
MWRA	CW-15-27	Combined Sewer Overflow Phase 16	$3,038,178	100%	CW	Combined Sewer Overflow Correction
MWRA	DW-15-13	Low Service Storage	$7,474,691	100%	DW	Drinking Water Source and Storage
MWRA	DW-15-04	Wachusett Aqueduct Pump Station	$12,404,988	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-15-12	Lower Hultman Aqueduct Rehabilitation	$516,897	100%	DW	Drinking Water Transmission and Distribution
MWRA	DW-15-14	Weston Aqueduct Supply Mains and Sec 36/101	$4,419,689	100%	DW	Drinking Water Transmission and Distribution
MWRA	CW-15-30	Caruso Pump Station	$2,031,614	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
MWRA	CW-15-32	Clinton Wastewater Treatment Plant Phosphorous Removal	$2,496,267	100%	CW	Wastewater Treatment
New Bedford	DWP-14-05	Transmission Main Improvements	$4,466,812	100.00%	DW	Drinking Water Transmission and Distribution
Norwood	CWP-15-08	Underdrain Area Sewer Rehabilitation	$2,212,267	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Plainville	DWP-15-09	Tank Rehabilitation	$666,593	95.41%	DW	Drinking Water Source and Storage
Revere	DWP-13-09	Water Meters AMR System	$6,370,373	95.51%	DW	Drinking Water Transmission and Distribution

[1] Series 20: Amount and Loan Drawn sections are accurate as of July 31, 2018

BORROWER	LOAN NO.	PROJECT NAME	AMOUNT	LOAN DRAWN	PROGRAM	CATEGORY
Revere	CWP-15-29	Sewer Rehabilitation	$10,902,107	89.94%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Revere	CW-13-14	Capacity Management Operations and Maintenance Program	$300,000	100%	CW	Planning
Revere	CW-14-11	Comprehensive Wastewater Management Plan/CSMP Supplemental Plan	$1,200,000	100%	CW	Planning
Revere	CW-14-25	Illicit Connection Detection Program	$700,000	100%	CW	Planning
Revere	CW-15-18	Sanitary Sewer Evaluation Survey	$1,700,000	95.93%	CW	Planning
Revere	CW-15-19	Illicit Connection Detection Program	$800,000	100%	CW	Planning
Stockbridge	DW-15-08	Water System Improvements	$1,800,000	83.16%	DW	Drinking Water Source and Storage
Taunton	CW-14-26-A	Sanitary Sewer Evaluation Survey Phases 10-12	$4,320,918	95.71%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Taunton	CWP-13-18-A	Sanitary Sewer Evaluation Survey Phases 10-12	$95,249	100%	CW	Infiltration/Inflow and Sewer System Rehabilitation
Uxbridge	DW-14-12	Rt. 122 Water Main Replacement	$3,186,000	78.44%	DW	Drinking Water Transmission and Distribution