2017 ANNUAL REPORT

MASSACHUSETTS CLEAN WATER TRUST

OFFICE OF THE STATE TREASURER
EXECUTIVE OFFICE OF ADMINISTRATION AND FINANCE
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Message from the chair

The Massachusetts Clean Water Trust (the Trust) is pleased to submit our Clean Water and Drinking Water State Revolving Fund (SRF) Annual Report for State Fiscal Year (SFY) 2017.

The Trust is a collaborative effort between the State Treasurer's Office, the Executive Office for Administration and Finance, the Massachusetts Department of Environmental Protection (MassDEP) and borrower communities across the Commonwealth. To date, approximately $2.3 billion in federal grants and state matching funds have supported nearly $7 billion in clean water and drinking water planning and construction projects through a leveraged financing program.

Local leaders rely on easy access to below-market rate financing to maintain and improve water infrastructure. The Trust continues to do our part by providing subsidized loans backed by AAA credit. This year, we achieved exceptionally competitive pricing as we closed our Series 20 bonds – our third Green Bond series overall.

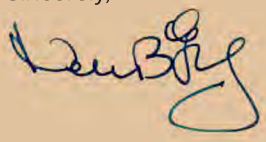
In SFY 2017, the Trust provided cities and towns approximately $350 million in commitments for low interest rate loans, including $7.6 million in principal forgiveness to 24 projects, which will support an estimated 2,102 construction and engineering jobs. The financing will help improve waterway quality and promote public health through projects such as combined sewer overflow removal, wastewater treatment plant upgrades, sewer system construction, septic system repairs, improvements to drinking water treatment facilities, treated water storage and water main replacement and rehabilitation.

Additionally, I am pleased to report the completion of the first round of the Assistance Program for Lead and Copper in School Drinking Water, which the Trust funded to identify contamination in public schools. Our Board of Trustees approved $2.75 million to help support public outreach, technical assistance and water fixture sampling in any school that applied. The results are detailed in this report. As we start the second round of testing, I challenge the Trust and MassDEP to continue developing innovative solutions that will allow us to maintain our status as a national leader on these issues.

I would like to take this opportunity to thank the staff of the Environmental Protection Agency Region 1 for their efforts during SFY 2017. I also would like to congratulate the staff of the Trust and MassDEP for a job well done. Finally, I would like to thank the cities and towns in Massachusetts. Without the dedication of all involved, our program would not be a success.

I look forward to continuing this critical work together.

Sincerely,



Deborah B. Goldberg
Chair
Massachusetts Clean Water Trust
www.mass.gov/treasury

Introduction

The Massachusetts Clean Water Trust (the Trust), in partnership with the Massachusetts Department of Environmental Protection (MassDEP) provides cities and towns of the Commonwealth with below market rate loans for water infrastructure projects. MassDEP manages project development and approval while the Trust manages the flow of money to the communities. Each year, MassDEP prepares the Intended Use Plan (IUP) of projects as required by the Environmental Protection Agency (EPA).

This IUP establishes the Commonwealth's project priorities for the upcoming year. This is accomplished through two programs – the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF). The EPA requires reporting on both of the programs through the CWSRF Annual Report and the DWSRF Biennial Report. These reports have been combined into this report, which covers the State Fiscal Year (SFY) ending June 30, 2017.

An estimated 97% of Massachusetts citizens have benefited from these essential projects. In SFY 2017, the Trust provided binding commitments for 33 clean water projects, including the Community Septic Management Program (CSMP), totaling $235 million and 16 drinking water projects totaling $115 million.

The SRF loan program receives funding from the EPA in the form of an annual grant, supplemented by state matching funds and the repayment of loans from borrowers. To increase lending capacity, the Trust issues special obligation bonds that receive a AAA credit from all three major rating agencies. The Trust's lending and bond issuance programs are structured in such a way as to ensure adequate cash flows to fund its loans and to repay its bonds to maturity. The Trust's bonds are secured by a combination of pledged sources, which include loan repayments, contract assistance from the Commonwealth and interest earnings on debt service reserve funds. The "Financial Summary" section provides additional details on the financial management activities and details on the Series 20 Green Bonds and 2017 Refunding Bonds issued in 2017.

Clean Water SRF Annual Summary

Massachusetts continues to finance projects that focus on the development and rehabilitation of wastewater infrastructure, while promoting sustainability, energy efficiency and green infrastructure. The CWSRF program provides additional subsidies to designated low-income Affordability Communities, and continues to perform outreach activities to help borrowers realize opportunities to implement energy efficiencies and alternative energy projects.

2017 Clean Water Program Results

In SFY 2017, the Trust continued to expand its program by providing new commitments of $235 million in financing for 33 loans to communities across the Commonwealth. Of the 33 loans, 6 were provided to the Community Septic Management Program (CSMP). The CSMP provides low interest financing to Massachusetts' cities and towns to assist homeowners in the repair of failed septic systems.

Interim Loans

Through the Trust's Interim Loan Program, funds are available to eligible projects on the IUP year round to provide construction financing, similar to a bond anticipation note. Borrowers can enter into a short term loan that enables projects to proceed prior to a Trust bond sale. The Trust can operate this program by extending the use of program equity funds, funds that have revolved back from loan repayments, as a source of capital. In an effort to make Trust financing even more appealing to borrowers, the Board of Trustees removed the interim loan interest rate and any associated fees in 2016. This change to the program makes interim loans from the Trust the least expensive access to capital possible for local communities. Only 14 interim loans still carried an interest rate, and that average interest rate charged to borrowers was 0.12% in SFY 2017. In the SFY 2017, 74 projects had drawn $186.6 million of interim loan funds.

Disbursements

During SFY 2017, the Trust disbursed $223.4 million for clean water projects to various local governmental entities through the program project funds and interim loans.

Extended Term Financing

As in previous years, the Trust continues to offer extended term financing up to 30 years to its participants. Extended term financing is available for Clean Water projects that can demonstrate the project's useful life is at least as long as the term of the loan. By offering the extended term financing, the Trust provides an equivalent interest rate subsidy for a 30 year loan as it does for a 20 year loan based off current market conditions near the time of closing the loan. Extended term financing for 30 year loans financed in the Series 20 sale received an interest rate of 2.40%.

American Iron and Steel

MassDEP has incorporated the American Iron and Steel (AIS) requirements into its Loan Application and Plans and Specifications Package. The necessary language has also been added into the Project Regulatory Agreement and the Financing Agreement. All projects during the reporting period were subject to the AIS requirements because all projects had Plans and Specifications submitted or contracts finalized after the AIS effective date of January 17, 2014.

Federal Funding Accountability and Transparency Act

In compliance with the Federal Funding Accountability and Transparency Act (FFATA), the Trust reports recipient or sub-recipient awards for any amount equaling $25,000 or greater in the FFATA Subaward Reporting System (FSRS) at www.fsrs.gov. The loans used by the Trust for FFATA Reporting can be found in the Appendices to this report.

Administrative Expenses

For SFY 2017, $3.2 million of annual Clean Water SRF grant administration funds were spent by MassDEP. This consisted of $3.0 million in federal funds and $0.2 million in state matching funds. These costs were associated with construction management of the Clean Water SRF program. An additional amount of $3.6 million was spent from the Trust's Administrative Fund to supplement MassDEP administrative costs for both the Clean and Drinking Water programs as well as fund the administrative costs of the Trust.

$2.75 M

Approved for lead & copper testing in schools

In SFY 17 the Trust provided $1.36 million.

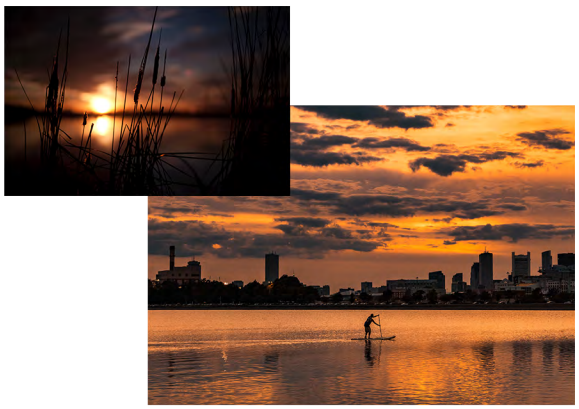
This was in addition to the $1.39 million provided in SFY 16, to test 818 schools for lead and copper in their drinking water.

Additionally, in SFY 17 the Trust funded $1.36 million, which is in additional to the $1.39 million space funded in SFY 16, from the Administrative Fund to cover the cost of the Assistance Program for Lead and Copper in School Drinking Water. The program, which was approved by the Board of Trustees for $2.75 million provided hands-on technical assistance, and no-cost lab analysis, for schools to collect one round of samples at all fixtures that are used for drinking, food preparation, and medical care. Schools were also given the information necessary to take remedial actions to address elevated lead and copper levels, and to establish and implement on-going sampling programs. MassDEP, who managed the operation of the program, posted all sampling results on its website. The program was implemented with key partners, including the University of Massachusetts, who provided the majority of the technical assistance and oversaw the contracted laboratory analysis services, as well as the Massachusetts Water Resources Authority, who provided the laboratory analysis services for all participating schools in their service area. MassDEP also worked closely with several other partners, including the Department of Public Health, the state education departments, local school districts, and local water suppliers.

By the end of the Program in February 2017, it had provided technical assistance and laboratory analysis to 818 schools from 153 different communities, and a total of 55,919 samples were collected from 31,832 fixtures. Sample results were compared against MassDEP's action levels (AL) for lead (0.015 mg/l) and copper (1.3 mg/l). Of the total samples analyzed, about 7 percent exceeded the AL for lead only, 1 percent exceeded for both lead and copper, and 1 percent exceeded for copper only. Approximately 72 percent of participating school buildings had one or more fixtures exceeding the AL for lead or copper; whereas 28 percent did not have any AL exceedances. Once schools received their sampling results they were encouraged to shut off all fixtures with AL exceedances, and to communicate the results as well as short-term action plans to parents and staff. Schools communicated this information through various methods including, emails, automated informational calls, letters and website postings. Actions taken to address elevated copper or lead levels included removing and replacing fixtures, using signage to indicate fixtures not intended to be used for drinking water, and implementing water line flushing programs. Of the $2.75 million approved for the program, approximately $600,000 in un-spent funds has been made available to continue the assistance program in calendar year 2017-2018 for schools that have not participated to date.

Green Project Reserve

Under the Fiscal Year 2016 Omnibus Appropriations Bill, Congress requires that at least 10% of the federal grant be used to fund "green infrastructure". For Massachusetts, this requires that an estimated $4.4 million be allocated towards Green Infrastructure projects. For 2016, MassDEP has identified and highlighted 16 new projects with a total value of over $200 million that meet EPA guidelines for Green Infrastructure. Most of these projects are not entirely green; therefore, determining the exact value of the green portions of the project is not yet possible. The total value of green components of those projects will be determined when detailed project applications are submitted. MassDEP expects to meet the minimum $4.4 million Green Infrastructure projects.



Additional Subsidy

Massachusetts provided $4.5 million, 10% of the FFY 16 grant, in additional subsidy from the 2016 grant in compliance with the EPA grant requirement. This additional subsidy is dedicated to communities that would not otherwise be able to afford the project. Massachusetts chose to apply these funds to communities that were deemed Affordability Communities based upon requirements outlined in the Water Resources Reform and Development Act (WRRDA) of 2014, an amendment to the Clean Water Act. WRRDA provided an outline to follow for developing a methodology for providing additional subsidy. Using that methodology, which was approved by EPA Region 1, the Trust's formula considers the per capita income, population trend from 2000-2010 and the employment rate for each community to develop an adjusted per capita income. Each community is then ranked against the state average and communities below the state average are sorted into three tiers. Tier 3 is 60% of the state average or below, tier 2 is 60%-80% and tier 1 is 80%-100%. Tier 3 communities receive a share and half of subsidy, tier 2 receives one share and tier 1 receives half a share.

The Trust's formula provides the subsidy to those communities most in need in the state but at the same time, providing all communities below the state average an additional incentive to using the Trust. During the reporting period, Massachusetts provided the subsidy to sixteen clean water projects. Tier 3 communities received a 4.63% reduction in principal, tier 2 received a 3.09% reduction and tier 1 received a 1.54% reduction.

As of SFY 2017, none of the additional subsidy from the 2016 grant has been disbursed. The funds should be disbursed within the next few months. The funds have not been disbursed yet because the date for contracts to be awarded and still qualify for principal forgiveness was pushed back a month to June 30th to coincide with the final date for all contracts to be awarded. As a follow up to the 2016 Annual Report, all of the additional subsidy funds from the 2015 grant have been fully expended.

YOUR EFFORT
WATER'S WORTH IT

WE ALL CONSUME WATER. EVERY DROP THAT ENTERS OUR HOMES & BUSINESSES IS TREATED. WATER CONSERVATION STARTS WITH YOU.

X

We all consumer water and create waste. In fact, the average American uses 176 gallons of water and contributes between 66 and 192 gallons of wastewater to the system each day. Every drop that enters our homes and businesses is treated and discharged back into the water cycle to be reused and recycled. Water conservation and stewardship starts with you. You can conserve water in small ways that make a big difference to preserve, protect, and prevent water waste.

Community Septic Management Program

The Community Septic Management Program (CSMP) provides loans to Massachusetts' communities to assist homeowners in repairing failed septic systems. The Trust makes low interest rate loans to communities who, in turn, loan the funds directly to homeowners for up to 20 years. Loans to homeowners are secured through a betterment on the property. This program allows municipalities to provide access to capital for home repair at a subsidized interest rate.

Prior to SFY 14, this program was funded through a one-time appropriation by the State Legislature. Those funds have been fully expended, and the program has now been rolled into the Clean Water SRF as a non-point source project. During SFY 17, 7 loans were made to Massachusetts' communities totaling $2.5 million.

Since the program's inception, approximately 7,500 septic systems have been repaired or replaced in 145 communities throughout Massachusetts.

2017 Clean Water Leveraged Program

The Trust program is leveraged by issuing bonds to increase capacity to be able to issue more loans. Federal and state grants are pledged to secure the bonds by either funding reserve funds or pledged direct loans or a combination of both. Since 2002, the Trust has provided loans to communities at a 2% interest rate, as set by statute. However, clean water projects addressing nutrient reduction may receive an interest rate below 2%. As the effective market interest rate on the bonds is higher than the 2% loan rate, borrowers receive a subsidy equal to the difference between the rates. Debt service on the Trust's SRF bonds is paid from a combination of three sources: borrower loan principal and interest repayments, interest earnings on the debt service reserve funds, and subsidy payments provided by the Commonwealth, known as contract assistance. Further discussion of the Trust's leveraged financing program can be found in the "The Financial Summary" sections.

Borrower Repayments

Each borrower is obligated to repay the principal amount of its loan at a subsidized interest rate of 2% or less. Although those with extended term financing, greater than 20 years, the subsidized interest rate will be higher than 2%, for Series 20 closed in April of 2017 the interest rate was 2.40%. In SFY 2017, borrower principal and interest loan repayments accounted for approximately 74.5% of debt service, totaling $217.4 million. The Trust has always pledged assets as additional security on the bonds. Since 2012, the Trust has pledged certain direct loans funded with program equity funds as additional security for its series of revenue bonds, rather than utilizing a traditional reserve fund. The interest the Trust receives from the pledged assets is used to pay a portion of debt service, while the principal payments received are available as additional security and recycled back to SRF program funds after debt service obligations have been met. As of June 30, 2017, the Trust has $331.4 million of pledged direct loans outstanding.

Reserve Fund Interest Earnings

Pledged assets are held as security for all Trust bonds at an amount between 33% and 50% of the outstanding principal. As of June 2017, the Trust held $619.7 million in clean water debt service reserve funds invested in guaranteed investment contracts (GIC), and US Treasury and Agency obligations. Earnings on these investments are applied to pay a portion of the debt service on the related series of SRF bonds. In SFY 2017, reserve fund earnings applied to current debt service payments accounted for 11.7% of debt service, totaling $34.0 million. As bonds are repaid, reserve funds are released and returned to the Clean Water Equity Fund. In SFY 2017, $77.4 million was released to the Clean Water Equity Fund, and made available for new loans.

Commonwealth Contract Assistance

The Commonwealth has entered into an agreement with the Trust for contract assistance payments to subsidize debt service on the SRF bonds. Contract assistance is appropriated annually in the Commonwealth's operating budget. To date, the Trust has received $999.0 million in Clean Water contract assistance with a future commitment of $234.1 million, for a total commitment by the Commonwealth of $1.2 billion. In SFY 2017, Commonwealth contract assistance accounted for approximately 13.8% of debt service, totaling $40.4 million in assistance applied.

Clean Water Projects

The Massachusetts SRF program continues to meet the goals established in the annual IUP. As outlined in the IUP, all SRF projects are subject to the rigorous environmental review procedures of the Massachusetts Environmental Policy Act. The Clean Water SRF provides loans for a wide variety of projects. The primary recipients of Clean Water loans have been combined sewer overflow, wastewater treatment, and wastewater collection projects. Other projects such as drainage improvement, landfill closure, brownfields remediation, renewable energy, and non-point source pollution projects are eligible for financing.

Cambridge Concord Ave CSO Project Final Surface Restoration

The project will complete the sewer separation as required by USEPA federal court order. These contracts consist of sewer and stormwater separation. The sewer separation work includes removing existing lamp holes, transferring illicit sanitary services to the sanitary sewer, providing drain laterals for private properties with illicit storm drain service and sump pump connections, transferring driveway drain and area drain laterals from the sanitary sewer to the storm drain, and transferring catch basin laterals from the sanitary sewer to the storm drain. $27.8 million in project financing is being provided by the Trust for the sewer and stormwater separation.

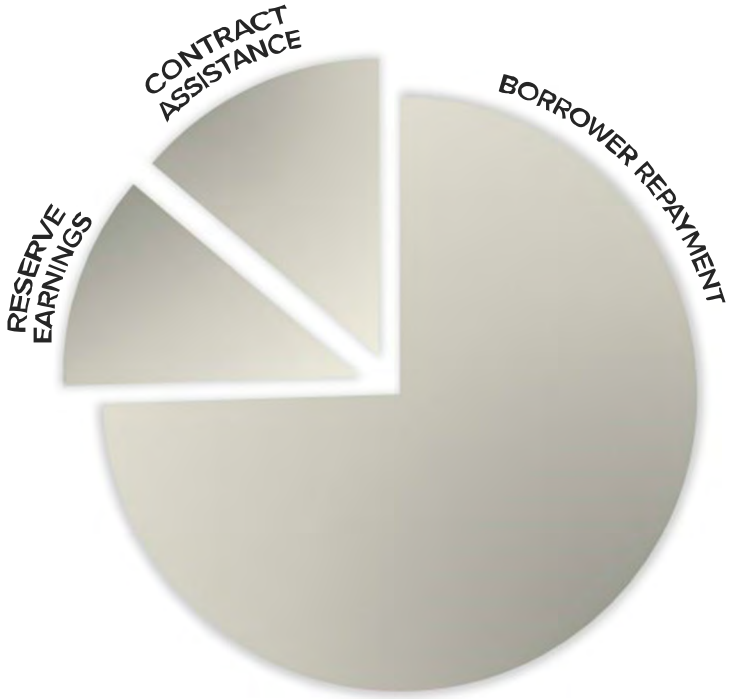
Clean Water Grant Awards

TYPE	FEDERAL FY 2016	PROGRAM TO DATE
FEDERAL	$45,363,000	$1,465,973,761
STATE	$9,072,600	$266,583,292
TOTAL	$54,435,600	$1,732,557,053

SFY 2017 Clean Water Disbursements

TYPE	AMOUNT	NUMBER OF LOANS
INTERIM LOAN	$186,632,960	74
POOL PROGRAM PROJECT FUNDS	$36,787,125	54
TOTAL	$223,420,085	128

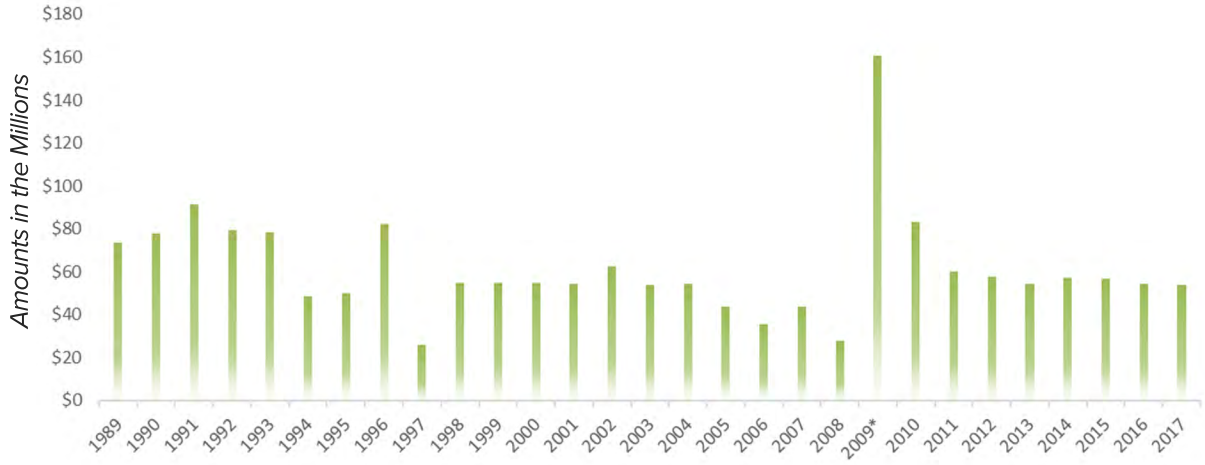
Total Sources of Revenue for CWSRF SFY 2017



2016 Federal Grant Projects Receiving Additional Subsisdy

Borrower	Project	Loan #	Eligible Project Cost	Principal Forgiveness
Brockton	Sewer Rehabilitation Project	CWP-16-29	$ 3,120,242	$ 144,520
Chicopee	Bay State Rd&Clarendon Ave. Area Separation	CWP-16-25	3,611,695	167,282
Dartmouth	Installation of New UV Disinfection System	CWP-16-32	1,260,000	19,453
Fall River	Globe Street Sewer Improvements Project	CWP-16-03	4,304,547	199,373
Fitchburg	Beech and Hazel Streets Sewer Separation	CWP-16-05	2,169,164	100,469
Fitchburg	Fitchburg WWTF Secondary Systems Upgrade	CWP-16-10	21,214,360	982,582
Hopedale	Hopedale WWTF Improvements	CWP-16-34	5,043,179	77,861
Lowell	West St. Flood Protection, Storage and Stations	CWP-16-13	6,839,570	316,787
Lowell	CIP Phase - WWTF & Infrastructure Upgrades	CWP-16-15	1,877,061	86,939
Plymouth	Emergency Sewer FM Repairs & Rehab	CWP-16-07	48,200,000	744,157
Revere	Phase VII Construct- I/I, IDDE, P.S. & Drainage	CWP-16-17	2,910,045	134,784
Revere	Illicit Connect. & Sump Pump Removal Program	CWP-16-18	857,552	39,719
Saugus	Sewer System & PS Rehab/Improvements	CWP-16-09	3,092,716	95,497
Southbridge	Bio-Tower Upgrade/Replacement	CWP-16-31	1,689,100	78,234
Taunton	Sewer/Drain Separation and Inflow Removal	CWP-16-38	4,117,776	190,722
Upper Blackstone WPAD	Nutrient Removal Improvements	CWP-16-39	25,000,000	1,157,921
Total			**$ 135,307,007**	**$ 4,536,300**

Clean Water Grant History



** Includes ARRA stimulus funds*

Drinking Water SRF Annual Summary

Massachusetts continues to support protection of public health by ensuring that all of its public water suppliers have the necessary technical, financial, and managerial capacity to meet the current and foreseeable Safe Drinking Water Act requirements. The program continues to promote the completion of cost-effective projects that maximize protection of public health.

2017 Drinking Water Program Results

In SFY 2017, the Trust continued to expand its program by providing new commitments of $115 million in funding for 16 loans to communities across the Commonwealth.

Interim Loans

Through the Trust's Interim Loan Program, funds are available to eligible projects on the IUP year round to provide construction financing, similar to a bond anticipation note. Borrowers can enter into a short term loan that enables projects to proceed prior to a Trust bond sale. The Trust can operate this program by extending the use of program equity funds, funds that have revolved back from loan repayments, as a source of capital. In an effort to make Trust financing even more appealing to borrowers, the Board of Trustees removed the interim loan interest rate and any associated fees in 2016. This change to the program makes interim loans from the Trust the least expensive access to capital possible for local communities. Only 2 interim loans still carried an interest rate, and that average rate charged to borrowers was 0.10% in SFY2017. In the SFY 2017, 23 projects had drawn $51.1 million of interim loan funds.

Disbursements

During SFY 2017, the Trust disbursed $90.5 million for drinking water projects to various local governmental entities through the program project funds and interim loans.

Federal Funding Accountability and Transparency Act

In compliance with the Federal Funding Accountability and Transparency Act (FFATA), the Trust reports recipient or sub-recipient awards for any amount equaling $25,000 or greater in the FFATA Subaward Reporting System (FSRS) at www.fsrs.gov. The loans used by the Trust for FFATA Reporting can be found in the Appendices to this report.

Extended Term Financing

In SFY 2016, the Trust was able to offer extended term financing up to 30 years to its participants. The extended term financing is available to any project that can demonstrate a useful life to match the term of the loan, up to 30 years. By offering the extended term financing, the Trust provides an equivalent interest rate subsidy for a 30 year loan as it does for a 20 year loan based off current market conditions near the time of closing the loan. Extended term financing for 30 year loans financed in the Series 20 sale received an interest rate of 2.40%.

American Iron and Steel

As with the Clean Water Program, MassDEP has incorporated the American Iron and Steel (AIS) requirements into its Loan Application and Plans and Specifications Package. The necessary language has also been added into the Project Regulatory Agreement and the Financing Agreement. All projects during the reporting period were subject to the AIS requirements because all projects had Plans and Specifications submitted or contracts finalized on or after the January 17, 2014 AIS effective date.

Water should be clear, but not invisible

Indispensable to jobs, the economy, our health and our communities, water runs through our lives in many ways. We must all work together to keep our water clean and healthy. To do that, we each need to learn to value water. We need to invest our time and energy in protecting our natural resources and infrastructure. And we need to come together to share an important message. Water's worth it.

Small Systems

The total DWSRF funds expected to be available for 2017 is $124.2 million. Fifteen percent of that amount is $18.6 million. The Final IUP list contains 5 small system projects totaling $16.0 million, including two Eastham projects for $14.8 million. There were an insufficient number of applications from small systems to achieve the 15% goal. MassDEP elevated all of the small systems to the IUP in order to come as close to the goal as possible. Going forward, the Trust will continue to attempt to comply with the new interpretation of the small systems requirement.

$125 M

Overall Expected Cost

Eastham is establishing a water distribution system for the first time.

The first phase of this project is $45.0 million, to be phased over three years.

The MassDEP Drinking Water program does significant outreach to small systems throughout the Commonwealth through the 2% Small Systems Technical Assistance set aside, which stresses the availability and use of the SRF as a low cost source of financing. Even with these efforts to reach and recruit small systems, the Trust is concerned that in most years, there may not be sufficient applications to make up 15% of the total assistance provided.

Additional Subsidy

Massachusetts provided $3.0 million, 10% of the FFY 16 grant, in additional subsidy from the 2016 grant in compliance with the EPA grant requirement. This additional subsidy is dedicated to communities that would not otherwise be able to afford the project. Massachusetts chose to apply these funds to communities that were deemed Affordability Communities based upon requirements outlined in the Water Resources Reform and Development Act (WRRDA) of 2014, an amendment to the Clean Water Act. Even though the DWSRF does not have to comply with the Clean Water Act, the Trust used the same methodology for both programs. WRRDA provided an outline to follow for developing a methodology for providing additional subsidy. Using that methodology, which was approved by EPA Region 1, the Trust's formula considers the per capita income, population trend from 2000-2010 and the employment rate for each community to develop an adjusted per capita income. Each community is then ranked against the state average and communities below the state average are sorted into three tiers. Tier 3 is 60% of the state average or below, tier 2 is 60%-80% and tier 1 is 80%-100%. Tier 3 communities receive a share and half of subsidy, tier 2 receives one share and tier 1 receives half a share.

The Trust's formula provides the subsidy to those communities most in need in the state but at the same time, providing all communities below the state average an additional incentive to using the Trust. During the reporting period, Massachusetts provided the subsidy to sixteen clean water projects. Tier 3 communities received a 4.94% reduction in principal, tier 2 received a 3.30% reduction and tier 1 received a 1.65% reduction.

As of SFY 2017, none of the additional subsidy from the 2016 grant has been disbursed. The funds should be disbursed within the next few months. The funds have not been disbursed yet because the date for contracts to be awarded and still qualify for principal forgiveness was pushed back a month to June 30th to coincide with the final date for all contracts to be awarded. As a follow up to the 2016 Annual Report, all of the additional subsidy funds from the 2015 grant have been fully expended.

2017 Drinking Water Leveraged Program

The Trust program is leveraged by issuing bonds to increase capacity to be able to issue more loans. Federal and state grants are pledged to secure the bonds by either funding reserve funds or pledged direct loans or a combination of both. Since 2002, the Trust has provided loans to communities at a 2% interest rate, as set by statute. As the interest rate on the bonds is higher than the 2% loan rate, borrowers receive a subsidy equal to the difference between the rates. Debt service on the Trust's SRF bonds is paid from a combination of three sources: borrower loan principal and interest repayments, interest earnings on the debt service reserve funds, and subsidy payments provided by the Commonwealth, known as contract assistance.

Borrower Repayments

Each borrower is obligated to repay the principal amount of its loan at a subsidized interest rate of 2% or less. The newly implemented extended term borrowing has a subsidized interest rate above 2% based upon market rates at the time of financing, for Series 20 closed in April of 2017 the interest rate was 2.40%. In SFY 2017, borrower principal and interest loan repayments accounted for approximately 81.0% of debt service, totaling $76.6 million. The Trust has always pledged assets as additional security to its bonds. Since 2012, the Trust has pledged certain direct loans funded with program equity funds as additional security for its series of revenue bonds, rather than utilizing a traditional reserve fund. The interest the Trust receives from the assets is used to pay a portion of debt service, while the principal payments received are available as additional security and recycled back to SRF program funds after debt service obligations have been met. As of June 30, 2017, the Trust has $138.9 million of pledged direct loans outstanding.

Reserve Fund Interest Earnings

Pledged assets are held as security for all Trust bonds at an amount between 33% and 50% of the outstanding principal. As of June 2017, the Trust held $143.1 million in drinking water debt service reserve funds invested in guaranteed investment contracts and US Treasury and Agency obligations. Earnings on these investments are applied to pay a portion of the debt service on the related series of SRF bonds. In SFY 2017, reserve fund earnings applied to current debt service payments accounted for 8.6% of debt service, totaling $8.2 million. As bonds are repaid, reserve funds are released and returned to the Drinking Water Equity Fund. In SFY 2017, $26.2 million was released to the Drinking Water Equity Fund, and made available to be applied to new loans.

Commonwealth Contract Assistance

The Commonwealth has entered into an agreement with the Trust for contract assistance payment to subsidize debt service on the SRF bonds. Contract assistance is appropriated annually in the Commonwealth's budget. To date, the Trust has received $146.6 million in drinking water contract assistance with a future commitment of $66.6 million, for a total commitment by the Commonwealth of $213.2 million. In SFY 2017, Commonwealth contract assistance accounted for approximately 10.4% of debt service, totaling $9.8 million in assistance applied.

Drinking Water Set-Asides

MassDEP continues to use set-aside funds as outlined in the annual Intended Use Plans. The following sections describe the basic programs and accomplishments.

4% Set-Aside: Administration

MassDEP uses 4.9 full time equivalent (FTE) staff members to administer the Drinking Water SRF program. These FTEs utilize 4% set-aside funding to accomplish the following tasks: developing program selection criteria, application ranking and rating, project development, construction inspections, invoice payment, data management and administrative support functions.

2% Set-Aside: Small System Technical Assistance

Municipal Services Support – MassDEP uses one FTE to support Municipal Services. The FTE provides training and technical assistance (compliance and operational issues) to small systems throughout Massachusetts. During the past year, MassDEP also worked with outside training and technical assistance providers. The Massachusetts Rural Water Association, United States Department of Agriculture (Rural Development), and US EPA Environmental Finance Center also provided training to public water suppliers.

Contract Services – MassDEP signed an Inter-Agency Service Agreement (ISA) with the University of Massachusetts – Amherst. The ISA required UMass to

provide Technical Assistance and Training and Outreach on a variety of topics including (but not limited to): Very Small System Operator Training, Opening and Closing a Seasonal System, Total Coliform Rule (RTCR), Manganese, Annual Statistical Reporting and Regulatory Updates, pump and motor maintenance, rate setting, board training, public relations, disinfection, sampling and exam review. The ISA also included funding from the 15% set-aside.

10% Set-Aside: State Program Management

Mass DEP used approximately 13 FTEs to administer the state drinking water program. These FTEs utilize 10% set-aside funding for Public Water System support, including the following programs: Sanitary Survey, Source & Wellhead Protection, Emergency Response, Capacity Development, Operator Certification, Consumer Confidence Report assistance, adoption and implementation of new regulations, evaluation and maintenance of existing federal rules, planning, outreach, eDEP and data management, engineering and construction supervision, compliance supervision and other drinking water program activities. Some highlights of the programs in SFY 2016 include:

Sanitary Survey Program – MassDEP Drinking Water staff is responsible for evaluating the technical, financial and managerial capability of Community, Non-Transient Non-Community and Transient Non-Community Public Water Systems. During the last year the drinking water staff has completed 400 evaluations on existing systems.

Operator Certification – MassDEP has a very active operator certification program. The program activities have been integrated into daily staff activities. Program activities range from chairing the Board of Certification of Drinking Water Operators to providing general and specialized training of, and guidance for, drinking water operators at all levels.

Wellhead Protection Program – Technical assistance was provided to water supply systems for wellhead protection compliance, the development of protection plans, and for determining monitoring waiver eligibility.

Capacity Development – During the course of conducting sanitary surveys on public water systems, DEP staff identified 1,366 technical, financial, or managerial deficiencies and provided corrective action assistance to ensure compliance. MassDEP's Capacity Development strategy focuses on improving the technical, financial, and managerial operations of both new and existing public water systems in the Commonwealth.

15% Set-Aside: Local Assistance

MassDEP used sixteen (16) FTEs from the 15% local assistance set-aside to support the Public Water System Supervision programs, including sanitary surveys, adoption and implementation of new regulations, registration of new systems, evaluation and maintenance of existing federal rules, planning, outreach, data management, engineering and construction supervision. Some highlights of the programs in 2016 include:

Source Protection Support – Work includes the registration of new public water systems (see Figure 2), continuing the implementation and monitoring of the chemical monitoring waiver program which provides incentive to do source protection as well as promoting preparedness and sustainability. Source protection technical assistance was provided during the 400 sanitary surveys that were completed throughout the year.

Contract Services – MassDEP has contracted to fund Information Technology (IT) staff to assist with data management support for public water systems and implementation of the Safe Drinking Water Act programs. Key activities include reporting, program evaluation and database maintenance and improvement. MassDEP signed an Inter-Agency Service Agreement (ISA) with the University of Massachusetts – Amherst to provide Technical Assistance and Training and Outreach on a variety of topics including (but not limited to) Very Small System Operator Training, Total Coliform Rule (RTCR), Manganese, Annual Statistical Reporting and Regulatory Updates, rate setting, board training, public relations, disinfection, sampling and exam review. The ISA also included funding from the 2% set-aside.

Drinking Water Projects

The Massachusetts Drinking Water SRF program continues to meet the goals established in the annual IUP. As outlined in the IUP, all SRF projects are subject to the rigorous environmental review procedures of the Massachusetts Environmental Policy Act. Drinking Water projects typically involve construction and/or rehabilitation of drinking water treatment plants, replacement of aging water mains, and construction of drinking water storage facilities.

Dedham Westwod Water District Bridge St Water Treatment Plan Upgrades

The Bridge Street Water Treatment Plant (BSWTP) has performed reliably for the District for over one hundred years, but is in need of significant rehabilitation and updating to continue to protect the safety and reliability of the water supply to customers of the District. This project will include renovations to the existing treatment facility along with the addition of a new multi-purpose treatment building. $8.8 million in project financing is being provided by the Trust for these upgrades.

Castle Island

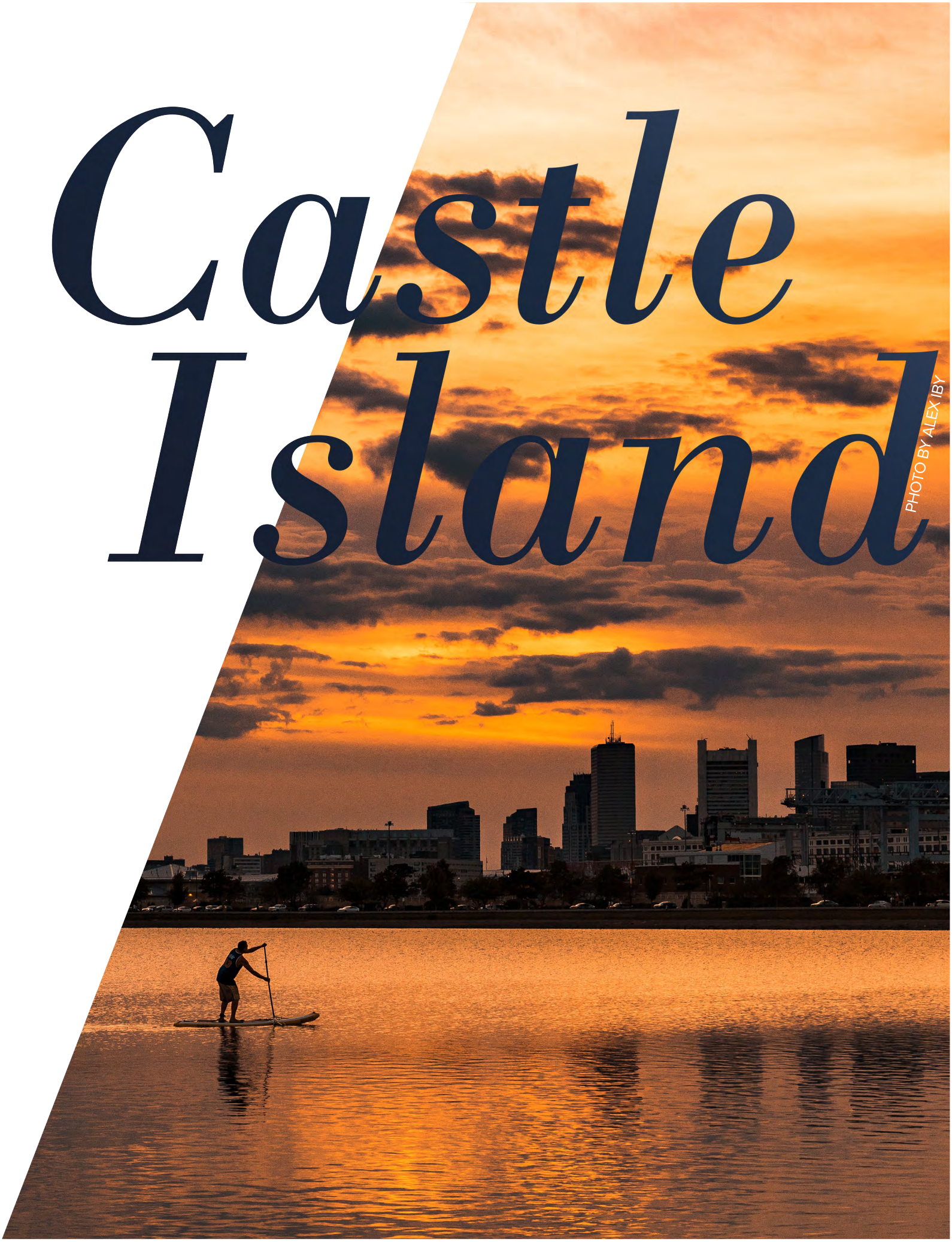


PHOTO BY ALEX IBY

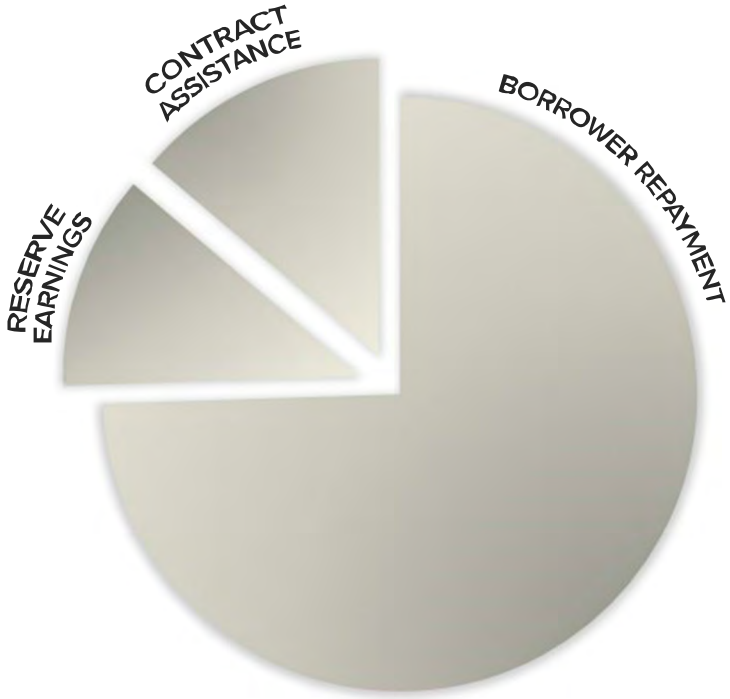
Drinking Water Grant Awards

TYPE	FEDERAL FY 2017	PROGRAM TO DATE
FEDERAL	$15,451,000	$510,470,100
STATE	$3,090,200	$91,650,820
TOTAL	$18,541,200	$602,120,920

SFY 2017 Drinking Water Disbursements

TYPE	AMOUNT	NUMBER OF LOANS
INTERIM LOAN	$51,147,312	23
PROGRAM PROJECT FUNDS	$39,369,165	31
TOTAL	$90,516,478	54

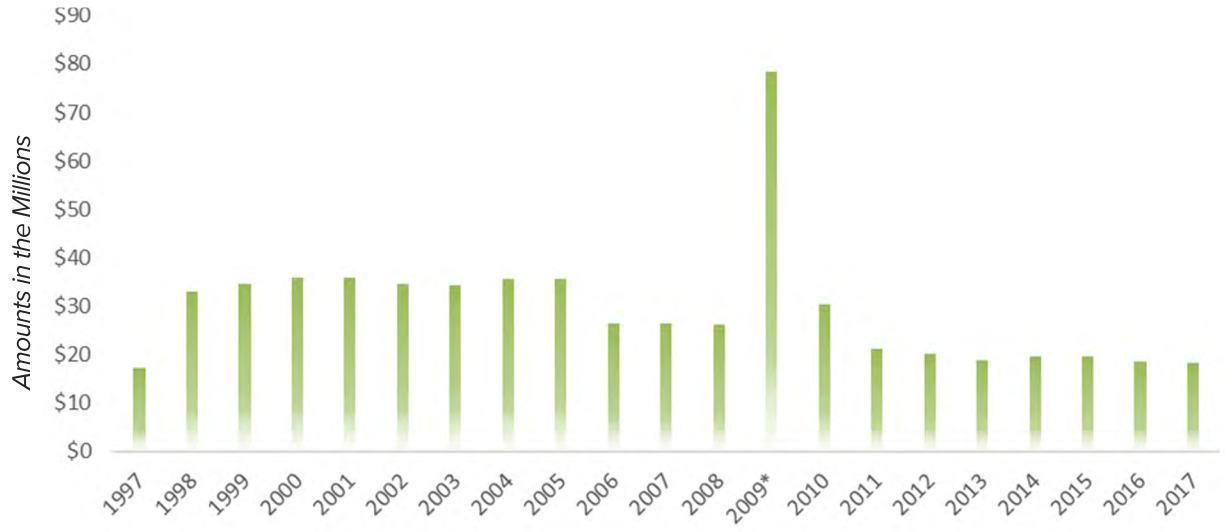
Total Sources of Revenue for CWSRF SFY 2017



2017 Federal Grant Projects Receiving Additional Subsisdy

Borrower	Project	Loan #	Eligible Project Cost	Principal Forgiveness
Barnstable	Permanent Interconnections	DWP-16-17	$ 2,448,262	$ 40,343
Chicopee	Redundant Water Transmission Main	DWP-16-04	11,762,351	581,470
Fall River	Water Main Improvements - Phase 16	DWP-16-09	3,695,000	182,662
Hadley	Water Infrastructure Improvement	DWP-16-03	249,971	4,119
Haverhill	Haverhill Water Treatment Plant Upgrades	DWP-16-05	41,094,762	1,354,341
Haverhill	Transmission Main Improvements	DWP-16-07	2,636,000	86,873
Leominster	Rehabilitation of Pump Stations	DWP-16-13	1,500,000	49,435
New Bedford	Quittacas WTP Rehabilitation	DWP-16-14	16,000,000	790,957
Total			**$ 79,386,346**	**$ 3,090,200**

Drinking Water Grant



** Includes ARRA stimulus funds*

SRF Financial Subsidy

The following discussion provides additional details on the financial management activities of the SRF loan program.

Leveraged Financing Model

The Trust's SRF loan program receives funding from the EPA in the form of an annual grant, supplemented by state matching grants and the repayment of funds from previous borrowers ("SRF Program Funds"). The Trust's SRF Program utilizes a "leveraged" financing model, under which federal grants and state matching grants are used as a source of security for revenue bonds ("SRF Bonds") issued by the Trust. The proceeds from the SRF bonds are used to fund loans to local governmental units for eligible project costs.

The leveraged structure of the Trust's program permits the Commonwealth to substantially increase the amounts available to fund eligible project costs. Each federal grant and associated state matching grant dollar contributed to the program results in at least three dollars of project cost financing while assuring the perpetual nature of the revolving fund. See the following chart that demonstrates the lending ability of the Trust by comparing grants received, state and federal, throughout the life of the program to total loans provided.

The Trust's lending and bond issuance programs are structured in such a way as to ensure adequate cash flows to fund its loans and to repay its bonds to maturity. Depending on the type of projects being financed, the terms of the loans to borrowers, and the subsidy levels to which the borrowers are entitled, the Trust applies its SRF Program Funds to fund either direct loans to local governmental units or, invest in reserve funds, or a combination of both, which are then pledged as a source of payment and security for the SRF Bonds.

Pledged Direct Loans

Under the pledged direct loan approach, the Trust pledges as additional security for a series of its SRF Bonds, direct loans ("Pledged Direct Loans") that it has made or is making concurrently with the issuance of such SRF Bonds from its SRF Program Funds to eligible borrowers for water pollution abatement and drinking water projects.

The Trust applies the interest payments on such Pledged Direct Loans to pay a portion of the debt service on the related series of SRF Bonds, thereby supplementing the loan repayment obligations of the borrowers of the Leveraged Loans funded by such SRF Bonds. Principal payments on the Pledged Direct Loans are pledged as further security for the related series of SRF Bonds. Since 2012, the Trust has used the Pledged Direct Loan approach. As of June 30, 2017, the Trust has $470.3 million in Pledged Direct Loans.

Reserve Funds

In the past, the Trust has applied a portion of its Program Equity Funds to establish reserve funds to secure a series of its SRF Bonds. Those investment earnings are then applied to pay a portion of the debt service on the related SRF Bonds, thereby supplementing the loan repayment obligation of the borrowers of the Leveraged Loans funded by such SRF Bonds. As of June 30, 2017, with a total of $767.6 million, the Trust has $483.9 million in DSRF reserve funds invested in guaranteed investment contracts (GIC) and $284.6 million in US Treasury and Agency Obligations.

SRF Bonds Sources of Repayment

Principal and interest payments on the Trust's SRF Bonds are made from the following sources: (1) loan repayments from borrowers; (2) earnings on the federal grants and state matching grants pledged as security to the SRF Bonds, including, as applicable, interest earning on reserve funds and interest payments on direct loans pledged to secure such bonds; and (3) subsidy payments provided by the Commonwealth, known as contract assistance.

Commonwealth Contract Assistance Payments

The Commonwealth makes assistance payments on behalf of certain Loans to borrowers to be used to pay a portion of debt service on the related series of the Trust's SRF Bonds, and thereby reduced the borrower's loan repayment obligation. The obligation of the Commonwealth to make such payments to the Trust is a general obligation of the Commonwealth, for which its full faith and credit are pledged.

Deallocation of Funds

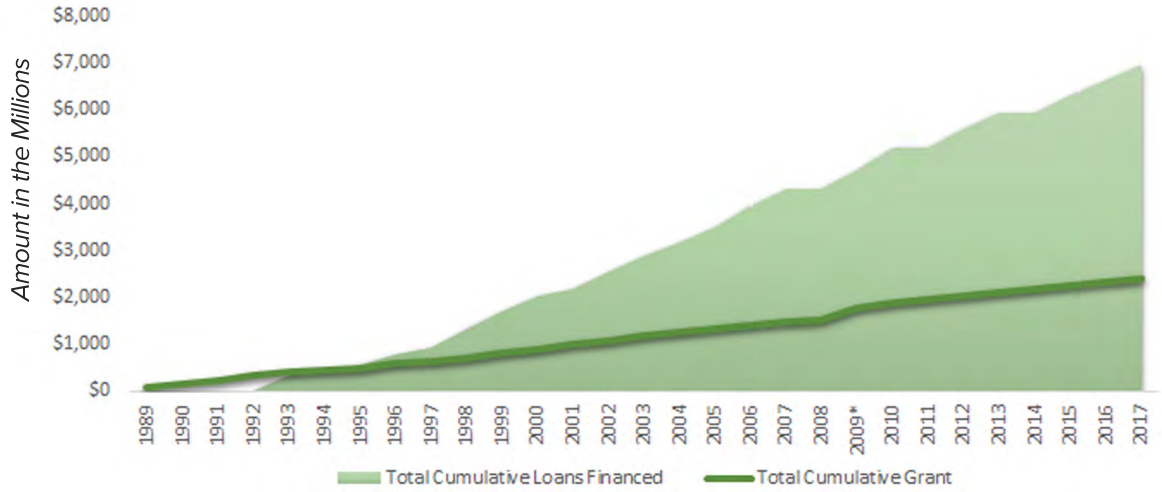
For all bond series issued prior to Series 18, on each date that the Trust pays down the principal amount of a series of SRF Bonds, or borrowers pay down the principal amount of the related pledged loans, the amount of pledged assets is reduced proportionately, and the amounts released are transferred either to the Pool Program Reserve Fund and then to the Deficiency Fund or directly to the Deficiency Fund and are available to cure shortfalls in any bond series. If not needed to cure a shortfall, the released funds are transferred to the Program Equity Funds which assures the perpetual nature of the revolving fund.

Beginning with Series 18, bonds are governed by the new Master Trust Agreement (MTA). The MTA simplifies the flow and deallocation of funds. As depicted on the chart below, the MTA deallocates funds in the same method as prior bond series but when the funds release they flow directly to the Program Equity Fund. The Program Equity Fund is then available to cure shortfalls in all bond series governed by the MTA and prior bond series. Once it has been determined there are no shortfalls, the funds are then available to be disbursed to new loans, thus assuring the perpetual nature of the revolving fund.

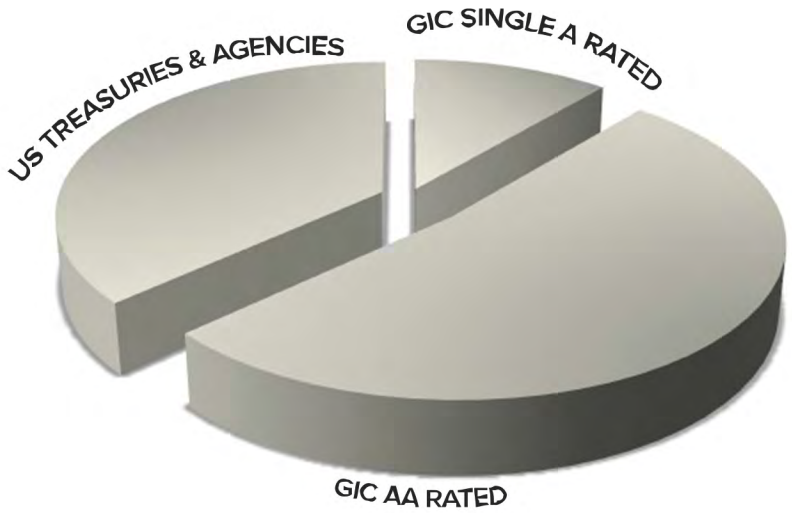
Series 20 Green & 2017 Refunding Bonds

On April 13, 2017 the Trust issued $207.3 million in Green Bonds to fund 48 loans to 28 unique borrowers which was secured by 26 pledged direct loans totaling $92.7 million to an additional 26 borrowers. The Trust was able to borrow these funds at the true interest cost of 2.0638% due to its AAA rating by all three rating agencies and the credit strength of its borrowers. The bond offering was the Trust's third Green Bond series. In the Appendix to the Annual Report the Trust is providing an update to the Green Bond Disclosures for the Series 18, Series 19 and Series 20 Official Statements as to the use of Green Bond proceeds. The Trust will continue to report on the use of proceeds until the full amount has been expended. In addition, the Trust also refunded $102.3 million of bonds from three outstanding series that generated $7.9 million of cash flow savings, resulting in an economic gain (net present value) of $6.7 million, or 6.535% of refunded par.

Combined Loan and Grant Amounts



Reserve Funds



Appendix A

Clean Water SRF	2017		2016	
	Annual Grant Awards			
Federal Clean Water SRF Grant	$ 45,363,000		$ 47,360,000	
State Matching Funds	9,072,600		9,472,000	
Total Federal & State Grant Awards	$ 54,435,600		$ 56,832,000	

	Annual Binding Commitments			
Binding Loan Commitments Issued	$ 234,705,206	33	$ 191,656,089	36

	Annual Disbursements			
Clean Water Interim Loans	$ 186,632,960	74	$ 144,028,419	93
Pool Program Project Loans	36,787,125	54	71,683,411	44
Total Disbursements	$ 223,420,085	128	$ 215,711,829	137

	Financial Results from Program Inception			
Federal Clean Water SRF Grant	$ 1,465,973,761		$ 1,420,610,761	
State Matching Funds	266,583,292		257,510,692	
Total Federal & State Grant Awards	$ 1,732,557,053		$ 1,678,121,453	

TOTAL Clean Water Assets	$ 4,454,453,000		$ 4,434,947,000	
TOTAL Loans Financed	$ 5,418,910,721		$ 5,185,541,235	

Drinking Water SRF	2017		2016	
	Annual Grant Awards			
Federal Drinking Water SRF Grant	$ 15,451,000		$ 16,333,000	
State Matching Funds	3,090,200		3,266,600	
Total Federal & State Grant Awards	$ 18,541,200		$ 19,599,600	

	Annual Binding Commitments			
Binding Loan Commitments Issued	$ 115,645,985	16	$ 48,801,600	13

	Annual Disbursements			
Drinking Water Interim Loans	$ 51,147,312	23	$ 60,650,990	32
Pool Program Project Loans	39,369,165	31	47,037,012	35
Total Disbursements	$ 90,516,478	54	$ 107,688,002	67

	Financial Results from Program Inception			
Federal Drinking Water SRF Grant	$ 510,470,100		$ 495,019,100	
State Matching Funds	91,650,820		88,560,620	
Total Federal & State Grant Awards	$ 602,120,920		$ 583,579,720	

TOTAL Drinking Water Assets	$ 1,346,035,000		$ 1,328,819,000	
TOTAL Loans Financed	$ 1,575,306,608		$ 1,476,467,070	

Appendix B

PRA #	Government Entity	Agreement Date	Project Description	Commitment Amount
CWT-17-05	BELLINGHAM	6/1/2017	Community Septic Management Program	$ 300,000.00
CW-16-27	BROCKTON	12/1/2016	Sewer Flow Monitoring Program	1,100,000.00
CW-16-28	BROCKTON	12/1/2016	Stormwater Management Plan	400,000.00
CWP-16-29	BROCKTON	6/1/2017	Sewer Rehabilitation Project	3,120,242.00
CW-13-09B	CHARLES RIVER PCD	7/1/2016	WWF Improvements Phase C	1,858,065.00
CWP-16-03	FALL RIVER	8/1/2016	Globe Street Sewer Improvements Project	4,304,547.00
CWP-13-01A	FITCHBURG	8/1/2016	Combined Sewer Separation Area 4D	1,231,951.00
CWP-16-05	FITCHBURG	10/1/2016	Beech and Hazel Streets Sewer Separation	2,169,164.00
CWP-16-10	FITCHBURG	1/1/2017	Fitchburg WWTF Secondary Systems Upgrade	21,214,360.00
CW-16-13	LOWELL	4/1/2017	West St. Flood Protection, Storage and Stations	6,839,570.00
CWT-16-08	MANCHESTER-BY-THE-SEA	8/1/2016	Community Septic Management Program	200,000.00
CWT-16-06	MEDWAY	7/1/2016	Community Septic Management Program	200,000.00
CW-15-25	MFN REGIONAL WASTEWATER DISTRICT	7/1/2016	WPCF Upgrades and Landfill Closure	11,338,787.00
CW-15-25A	MFN REGIONAL WASTEWATER DISTRICT	7/1/2016	WPCF Upgrades and Landfill Closure	27,070,950.00
CWT-17-04	MIDDLEBOROUGH	5/1/2017	Community Septic Management Program	400,000.00
CW-15-28	MWRA	2/1/2017	Nut Island Headworks Electrical & Conveyor Improv.	1,176,680.00
CW-15-27	MWRA	2/1/2017	CSO Phase 16	3,038,178.00
CW-15-30	MWRA	2/1/2017	Caruso Pump Station	2,031,614.00
CW-15-32	MWRA	2/1/2017	Clinton WWTP Phosphorous Removal	2,496,267.00
CW-15-26	NANTUCKET	6/1/2017	Surfside WWTF Improvements	7,872,975.00
CW-16-35	NANTUCKET	5/1/2017	Sea Street Pump Station Upgrade	5,873,812.00
CWT-16-11	NANTUCKET	9/1/2016	Community Septic Management Program	1,000,000.00
CWP-16-07	PLYMOUTH	8/1/2016	Emergency Sewer Forcemain Repairs & Rehabilitation	48,200,000.00
CW-16-18	REVERE	5/1/2017	Illicit Connection & Sump Pump Removal Program	1,307,552.00
CW-16-19	REVERE	1/1/2017	Phase VIII Field Investigations - I/I and IDDE	1,500,000.00
CW-16-23	REVERE	1/1/2017	Illicit Connections & Sump Pump Detection	850,000.00
CWP-16-09	SAUGUS	10/1/2016	Sewer System and Pump Station Rehab/Improvements	3,292,716.00
CW-14-27	SPRINGFIELD WATER & SEWER COMMISSION	4/1/2017	Dickinson Siphon/Main Interceptor Rehab	2,000,000.00

CWT-17-02	STOUGHTON	3/1/2017	Community Septic Management Program	400,000.00
CWP-16-38	TAUNTON	6/1/2017	Sewer/Drain Separation and Inflow Removal	4,117,776.00
CW-16-39	UPPER BLACKSTONE WPAD	1/1/2017	Nutrient Removal Improvements	25,000,000.00
CW-16-26	UXBRIDGE	6/1/2017	WWTF BNR and Infrastructure Upgrade	13,600,000.00
CW-16-26A	UXBRIDGE	6/1/2017	WWTF BNR and Infrastructure Upgrade	29,200,000.00
Total				**$ 234,705,206.00**
***** *Loans used for FFATA Reporting*				

PRA #	Government Entity	Agreement Date	Project Description	Commitment Amount
DWP-14-09A	BARNSTABLE	6/1/2017	Pipe Replacement and Maher WTP Upgrade	$ 17,960.00
DWP-16-17	BARNSTABLE	4/1/2017	Permanent Interconnections	4,611,552.00
DW-14-06	CHATHAM	4/1/2017	New WTF	9,274,815.00
DW-16-04*	CHICOPEE	12/1/2016	Redundant Water Transmission Main	11,762,351.00
DW-16-08	DEDHAM-WESTWOOD WATER DISTRICT	5/1/2017	Bridge Street Water Treatment Plant Upgrades	8,841,400.00
DWP-13-06A	FALL RIVER	7/1/2016	Airport Road High Service Area Improvements	428,194.00
DWP-16-09	FALL RIVER	6/1/2017	Water Main Improvements - Phase 16	3,695,000.00
DW-16-05	HAVERHILL	5/1/2017	Haverhill Water Treatment Plant Upgrades	41,094,762.00
DW-14-02A	MARLBOROUGH	4/1/2017	Millham WTP Improvements	257,691.00
DW-12-11	MERRIMAC WATER DEPARTMENT	9/1/2016	Water Booster Pump Stations	1,676,460.00
DW-15-12	MWRA	2/1/2017	Lower Hultman Aqueduct Rehabilitation	516,897.00
DW-15-13	MWRA	2/1/2017	Low Service Storage	7,474,691.00
DW-15-14	MWRA	2/1/2017	Weston Aqueduct Supply Mains and Sec 36/101	10,713,039.00
DW-15-04	MWRA	2/1/2017	Wachusett Aqueduct PS	12,404,988.00
DW-15-08	STOCKBRIDGE	7/1/2016	Water System Improvements	1,800,000.00
DWP-13-07A	TAUNTON	10/1/2016	Pump Station and Water Main Replacement	1,076,185.00
Total				**$ 115,645,985.00**
** Loans used for FFATA Reporting*				

Appendix C

Series 18 Green Bond Project Descriptions
Projects Financed with Green Bond Proceeds[1]

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Bellingham	**DW**	$1,259,831[2]	The project includes the construction of a new water treatment plant at Wrentham Road, improvements to the existing Harford Avenue Water Treatment Plant, new transmission mains for connecting wells to the treatment facilities. The project will increase the overall quality of the town's water supply by providing required disinfection, compliance with the Groundwater Rule and removal of manganese and iron that is present in existing source water. The community is currently under a Department issued Administrative Consent Order.	100.00%
Town of Billerica	**CW**	$1,497,797[3]	Phase I Pump Station Upgrade- This project will result in sewer pump station improvements/upgrades to all of the pump stations in the town that are in immediate need of repair or replacement due to imminent failure or safety hazard. The pump station improvements are the result repairs necessary for operator safety, proper alarms and back-up power be implemented. The elimination of the Bertha Circle and Poe Road Pump Stations and bypass with gravity sewer will be done as part of Phase I. In addition to the Category 3 repairs, Phase I includes instituting a SCADA system, completion of the remaining upgrades to the Roger and Brown Pump Stations and compete upgrade to the Middlesex Turnpike Pump Station.	100.00%
Town of Billerica	**CW**	$9,000,000	Sewer Extension and Pump Station Improvements- This project includes a sewer extension in East Billerica and improvements, upgrades, and/or elimination of several sewer pump stations in the town. The project includes installation of approximately 5 miles of sewer in the highest priority area identified in the Comprehensive Wastewater Management Plan. The pump station improvement project includes elimination of the Bertha Circle, Poe Road and Marshall Street Pump Stations and improvements to the Nashua Road, Ilford Road and Monson Pump Station.	100.00%

[1] List not comprehensive; omits loans shown as fully drawn in prior annual reports. See prior annual reports for descriptions of such projects.
[2] Amount Financed reflects the amount the of the project financed with Series 18 Bond proceeds made available following final draws for certain other projects as described herein. Additional costs of the project have been financed with Trust Equity.
[3] Amount Financed was reduced in December 2016 following the final draw for the loan. The amount of the reduction was used to finance additional green projects described herein.

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
City of Boston	**CW**	$4,110,181[2]	Phase II project includes construction of a solid waste landfill cap over the remaining portion of the former Gardner Street landfill that has not been closed. A post-closure use permit will be submitted for MassDEP approval to allow the site to be used by the West Roxbury Education Complex as an athletic field. The landfill cap will serve to reduce infiltration, which may lessen the generation of leachate under the Site and may help reduce the exposure of groundwater to buried wastes. The project will also will also include landfill gas mitigation components to address existing Site concerns.	100.00%
Cherry Valley & Rochdale Water District	**DW**	$555,588[3]	Modifications to Water Treatment Plant- This project will be done in two phases. The work in Phase I consists of replacing valves and sand media at the Grindstone WTF. Phase I also includes a pilot study for the proposed upgrades to the WTF, an update to the existing feasibility study and a Capacity Assessment Report. Phase 2 consists of the construction of modifications to the existing WTF. Modifications will include installing a Miex system for TOC removal, a continuous monitoring system for the Groundwater rule, re-piping of the backwash system, spillway modifications and replacement of high lift pumps in the existing clearwell. The completion of this project will significantly improve the quality of water supplied to the Cherry Valley and Rochdale Water District including the chief goal of removal of TOC's.	100.00%
City of Chicopee	**CW**	$3,008,860	Wastewater, Waste Water Treatment Facility (WWTF) and Stormwater Improvements- The Integrated Municipal Stormwater and Wastewater Resource Management Plan will serve as a planning basis for future phases of CSO abatement and infrastructural renewal work. Significant portions of the Integrated Plan will be devoted to collecting data and modeling to document the actual CSO reduction progress that has been made by the already completed sewer separation projects, evaluating the effectiveness of those projects and re-assessing whether or not to continue full implementation of the currently proposed CSO Long Term Control Plan recommendations.	95.93%
Town of Dartmouth	**CW**	$9,847,478	Waste Water Treatment Facilities (WWTF) Upgrades- This project includes upgrades and improvements to the (WWTF) and four pump stations. Most of the facilities/processes are 20 years old and upgrades warranted to continue to meet the current and future NPDES permit. Upgrades will include odor control upgrades, addition of tertiary filtration system and replacement of pumping systems. The completed project will eliminate sewer system overflows at south main pumping station, eliminate odor related complaints from residents, decrease fecal coliform and enterococci concentrations and TSS in the effluent. The project will improve water quality discharged to the watershed area and to the Buzzards Bay area.	98.94%
Town of Dracut	**CW**	$9,220,005[3]	Collection Sewers- The objective of the project is to improve water quality in the area by reducing the amount of untreated wastewater entering the environment from failed septic systems and direct sewerage connections to the local storm water system. This project will provide sewer service to the Methuen Street and Wheeler Road Areas which are located in the eastern and southeastern sections of	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			Dracut. The project includes the construction of approximately 40,000 lf of sanitary gravity sewer, force main and pressure sewer and one pumping station.	
Town of Fairhaven	**DW**	$741,116[3]	Boston Hill Tank Rehab and Main Replacement- The project is for the painting, cleaning and rehabilitation of the Boston Hill Water Storage Tank. Installation of a new mixing system in the tank will enhance water quality and minimize the formation sediment at the bottom of the tank. The addition of security measures will reduce unauthorized access to the tank and potential contamination.	100.00%
City of Fall River	**DW**	$2,384,078[3]	Water Main Improvements, Phase 12- This project is for the replacement of water mains and lead services on various streets in Fall River and for water main improvements at Wattuppa Pond. The project includes the evaluation and refurbishment of the transmission mains between the water treatment plant and the Bedford Street Tanks. The work will also include new drainage infrastructure along Bedford Street in the vicinity of the Water Department facilities to better protect North Wattuppa Pond from washouts of surrounding roadways. The city is currently under Administration Order due to violations of the lead and copper rule. The water main improvements at Wattuppa Pond will help continue protection of the water supply and continue to provide safe and reliable water supply to the city.	100.00%
Greater Lawrence Sanitary District	**CW**	$1,980,390[3]	Waste Water Treatment Plant Improvements- The project is Phase 1 of the District's "Final Long Term Combined Sewer Overflow (CSO) Control Plan and Environmental Impact Report" and includes: primary clarifier enhancements to improve removal efficiency under high flow conditions, addition of a fifth aeration blower and additional aeration tank diffusers, modifications and improvements to the secondary treatment system influent flow gates and aeration system, relocation of the existing ferric chloride system to allow expansion of the plant sodium hypochlorite system and further study of proposed improvements to the Riverside Pump Station and force main. The district anticipates the project will further reduce the number of CSO overflows and increase capture of wet weather flows.	100.00%
Greater Lawrence Sanitary District	**CW**	$548,890[3]	New Force Main for Riverside Pump Station- The project is Phase 3 of the District's "Final Long Term Combined Sewer Overflow (CSO) Control Plan and Environmental Impact Report" and includes construction of approximately 1/2 miles of new force main from the Riverside Pump (the District's main pumping station) to the District's wastewater treatment facility (WWTF) and modifications to the force main header. The existing force main has been identified as subject to premature failure due to breakage of the pre-stressing wire. Acoustic monitoring of the pipe confirms that the wire breaks are occurring on this pipe. Replacement will eliminate the threat of a catastrophic pipe failure which poses a direct threat to the Merrimack River, nearby residents, and the adjacent MBTA railroad line. The District anticipates that this project will provide the conveyance	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			capacity necessary to fully implement the district's CSO Control Plan. Full implementation of the plan will reduce the number of CSO overflows and will increase capture of wet weather flows.	
City of Haverhill	**CW**	$3,851,669[3]	Combined Sewer Overflow/Flood Control Improvements- The project includes the purchasing of three mobile 10.5 MGD trailer mounted pumps and improvements to the sewer collection system, on the Merrimack River Floodwall and the Little River Conduit. The trailer mounted pumps will be used as a backup to the Marginal Pump Station during high flow events. Collection system improvements include upgrades to seven diversion gates to allow flow to be diverted away from the middle sewer interceptor and Marginal Pump Station. Improvements to the Merrimack Floodwall consist of repairs to the existing floodwall; improvements to the Little River Conduit include concrete repairs, repairing expansion joints, re-pointing piers, and related work to mitigate stormwater impacts on the conduit.	100.00%
Town of Kingston	**DW**	$4,366,113[3]	Trackle Pond Water Treatment Facility (WTF)- This project includes the construction of a new WTF to reduce manganese concentrations at the Trackle Pond Well. The new WTF will include LayneOx Filtration System, UV disinfection, PLC and SCADA system, solar panel installation, and replacement of existing well pumps. The completed project will reduce high manganese concentrations that are affecting taste and color of the drinking water. The project will also eliminate health concern for infants and young children.	100.00%
City of Lawrence	**DW**	$1,579,087[3]	Valve Replacement- This project will repair and replace broken and malfunctioning valves in a significant number of locations in the Lawrence Water Distribution System. Over 90 valves, ranging in size from 6" to 12", have been identified needing repair or replacement in the distribution system. As a result of this project, the city will be able to implement a unidirectional flushing program and a valve exercise program which will allow the city to isolate water main sections during repairs or in the case of emergencies.	100.00%
City of Lawrence	**DW**	$3,163,833[3]	Water Meter Replacement- This project involves replacing approximately 10,700 existing meters in residential, commercial and municipal structures and implementing a meter reading system. The project will enable the city to recover costs of under-registering meters and reduce the amount of unaccounted for water.	100.00%
City of Malden	**CW**	$3,698,538[3]	Sewer Improvements- This sewer line improvement project was initiated in response to an Administrative Consent Order negotiated with MassDEP and the US EPA. The construction project will reduce infiltration and inflow (I/I) and sanitary sewer overflows from occurring within the City of Malden's wastewater collection system which is being treated at the Deer Island Sewage Treatment Plant unnecessarily. The project includes cured-in-place pipe liner (CIPPL) for approximately 28,000 feet of 8-inch to 10-inch pipe. Approximately 80 manholes have also been identified as being in need	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			of monolithic cementitious liner. Further, approximately 1,200 service lateral liners are proposed to mitigate infiltration from entering the sewer mains at service lateral connections.	
City of Malden	**DW**	$5,946,761[3]	Water Distribution System Planning- The project will update the lead service line replacement program required as part of the administrative consent order to remove lead services throughout the system. This planning project consists of a new water distribution model and Capital Improvements Plan (CIP) and will allow the city to develop a computer model that will help stimulate existing conditions of the system and evaluate the conditions of the system. The CIP be based on system deficiencies identified in the hydraulic model. The project will provide the city with technical resources to complete development of GIS data and base for the existing Drinking Water distribution system.	100.00%
City of Malden	**DW**	$378,173[3]	This project will include the replacement of old unlined cast iron water mains with larger cement lined ductile iron water mains to enhance the carrying capacity and quality of water. The project will also include the removal of several lead service lines in compliance with an ACO issued by the state in response to drinking water samples that exceeded the action level for lead.	100.00%
Town of Marion	**CW**	$2,625,585[3]	Wastewater and Stormwater Improvement- The objective of this Wastewater Collection System and Drainage System Improvements project is to improve water quality in coastal receiving waters and to improve the operations of the Town's wastewater collection system and treatment plant by reducing the volume of infiltration and inflow (I/I) entering the collection system, and improving the water quality of storm water discharges through the removal of illicit connections to the sewer system and through the construction of Best Management Practices. The project will provide the foundation for the reduction of pathogen discharges to Sippican Harbor and Buzzards Bay as well as significantly reduce the volume of public and private I/I entering the collection system.	100.00%
Town of Monroe	**CW**	$159,463[3]	Waste Water Treatment Facility (WWTF) Repairs- As a result of damage sustained by the WWTF during the winter of 2010, the town has requested and received approval for use of emergency funds to make temporary emergency repairs/modifications to the existing facility and to start design of a replacement WWTF. The design will be done in accordance with the recommendations outlined in an approved engineering report dated December 2010.	100.00%
City of Newburyport	**DW**	$296,527[3]	Water Treatment Facility (WTF) Upgrade and Water Distribution System- The project, which includes three contracts, will upgrade the Newburyport WTP by constructing a new WTP with dissolved air floatation clarification and will install new water mains to address low pressure areas and dead ends within the water distribution system. The new WTP will allow the plant to better meet the peak flow rate for which the plant is capable and to meet the turbidity requirements. WTP improvements also include upgrade of the existing WTP building, construction of a new clearwell and pump station to house the finished water and backwash water pumps, and upgrade of the residuals handling system to provide recycle of the filter backwash water and discharge of residuals	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			to the existing lagoon. The Water Distribution System Improvements project would address low pressure problems in two locations: the streets surrounding the interconnection between the City of Newburyport and the Town of West Newbury by replacing the existing force main crossing over Route 95 and the portion of the system that supplies water to the Town of Newbury by replacing approximately one-mile of force main with an increased size pipe. The Water Distribution project will also address the elimination of dead-ends by installing new force mains on five streets including Bowlen Avenue, Finnigan Way, Goldsmith Drive, Hope Avenue, and Tracey Street.	
Town of North Attleborough	**CW**	$10,910,182[3]	Waste Water Treatment Facility (WWTF) Upgrade and Inflow and Infiltration (I/I) Removal- WWTF will be upgraded to remove nitrogen and phosphorus in response to a new NPDES permit and EPA Administrative Order. The work will improve the discharge to the Ten Mile River to improve water quality. The project also initiates a five-year (I/I) removal program throughout the city. The I/I project includes collection system rehabilitation and replacement and disconnecting storm system connections form the sewer system. Reducing I/I from the treatment plant will reduce the volume of water to be treated, resulting in operational and energy savings.	100.00%
Town of Randolph	**DW**	$1,961,620[3]	Water System Improvements- This project addresses the requirements set forth in the consent order, by identifying and repairing water mains in need of rehabilitation, to provide improvements to the water distribution system.	100.00%
City of Revere	**CW**	$5,750,051[3]	Sewer System Construction- The project consists of the improvements to the most deficient sewer piping in the Phase 3 area, as well as improvements identified during previous investigations. The project will primarily reduce infiltration and sources of extraneous inflow and will also reduce the amount of storm water entering the city's wastewater collection system, contributing to sanitary sewer overflows (SSO's) that are unnecessarily being treated at the Deer Island Wastewater Treatment Plant.	100.00%
City of Revere	**CW**	$1,810,760[3]	Winthrop Ave Emergency Sewer Replacement- On August 28, 2013 during the process of performing maintenance on the Winthrop Avenue trunk sewer, an approximate 20 foot long section of sewer collapsed. The collapse occurred at the approximate mid-point of a 160 foot long, 18 foot deep, vitrified clay (VC) sewer segment, located below two MWRA water mains running from the Elm Street intersection easterly to the downstream manhole. Several alternatives to address the collapsed pipe have been considered. Previous performed hydraulic modeling showed that the existing 18-inch trunk sewer in Winthrop Avenue is undersized and should be replaced with a 36-inch sewer to address surcharging/flooding issues in this area related to capacity of the trunk sewer. Since the collapsed trunk sewer is scheduled for eventual replacement/upsizing in the next few years and sewer segments upstream and downstream of the collapse are in poor condition, the city intends to install approximately 900 feet of 36-inch replacement sewer from the interceptor in Revere Beach Parkway up to Victoria Avenue.	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Saugus	**CW**	$362,443[3]	Sewer System Rehabilitation- This project includes sewer system rehabilitation in subsystem 6B, which represents continued work to reduce extraneous water in the wastewater system to decrease the likelihood of system surcharges. Rehabilitation of subsystem 6B includes approximately 3-1/2 miles of CIPP lining, installation of approximately 250 lining systems to improve service to mainline connections, rehabilitation of approximately 150 manholes, and removal and/or re-directing private inflow base on those properties confirmed to have inflow sources during the town-wide house-to-house inspection program. This project also includes upgrades and rehabilitation to the Lincoln Avenue Pump Station.	100.00%
Town of Saugus	**CW**	$1,455,461[3]	Sewer System Overflow (SSO) Reduction Subsystem 6- This project involves the rehabilitation of pipelines, manholes and the removal of private inflow sources in Subsystem 6 of the Saugus Sewer System as a means to eliminate infiltration and inflow (I/I) from the system and significantly reduce or eliminate sewer system overflows at the Lincoln Avenue Pumping Station. The project also includes the installation of a wet weather pump station (Saville Street pumping Station) to mitigate the SSO's in the Innis and Elm Street area. This project is part of an ongoing program to eliminate excessive I/I in the Saugus Sewer System from causing sewer overflows to Rumney Marsh and the Saugus River and surcharging to the Lynn Sewer System.	100.00%
Town of Shrewsbury	**CW**	$3,821,859[3]	Sewer Interceptor and Pump Station- This project is a three-phased construction to replace or line Shrewsbury sewer Interceptor, and upgrade existing six pump stations. The proposed project will eliminate sewer back-ups and overflows.	100.00%
City of Taunton	**CW**	$503,058[3]	Winthrop St. Sewer Extensions - The project will extend sewer service to needs areas identified by the city's Comprehensive Wastewater Management Plan (CWMP). The project includes constructing a new sewage pumping station. The work will allow balancing of flows between pump stations to prevent overtaxing the Warner Boulevard pump station.	100.00%
Water Supply District of Acton	**DW**	$726,554[2]	The project includes the construction of a new water treatment facility and water mains at the Christofferson, Lawsbrook, and Scribner wells in accordance with the forthcoming Administrative Consent Order (ACO). The new water treatment facility will include membrane filtration system, aeration tower, and additional building, new emergency back-up power, and replacement of existing well pumps. The completed project will improve drinking water quality by reducing high manganese and iron concentrations and eliminate microbiological contaminations.	100.00%
Town of West Springfield	**DW**	$566,384	Water Transmission Main and Wellfield- The project involves the complete replacement (about 5 miles) of the transmission main from Well #4 at the Southwick Wellfield to an existing main located on Dewey Street in West Springfield's distribution system. The existing transmission main is unreliable (installed in 1938), undersized, and follows a mostly cross-country route that greatly limits accessibility. Due to this, the Town is not able to utilize the Southwick Wellfield to its permitted capacity. The Southwick Wellfield provides approximately 80% of the Town's water supply. Due to	100.00%

Series 19 Green Bond Project Descriptions
Projects Financed with Green Bond Proceeds[1]

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Auburn Water District	**DW**	$2,688,952	This project will address increased levels of arsenic in wells (11G and 12G) above MCL of 0.010 milligrams per liter. Iron and manganese levels are 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 off line in May 2013 until arsenic removal upgrades can be completed. In June 2013, MassDEP met with the district regarding a draft Administrative Consent Order with Penalty to have them upgrade their water treatment facility for arsenic removal.	87.53%
Town of Barnstable	**DW**	$2,418,547	The project includes 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 16 inch water main from water tanks down to Main Street will also be done.	82.97%
City of Brockton	**CW**	$1,704,244	The focus of the project is to address and remediate high bacteria concentrations during dry and wet weather, as identified in recent 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 Administrative Consent Order, which has recently been lifted. The project includes 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.	76.33%
City of Cambridge	**CW**	$14,000,000	Contracts 8B Huron and Contract 9 Concord will complete the sewer separation of the CAM 004 tributary as required by USEPA federal court order. These contracts consist of sewer and storm water separation. The sewer separation work may include removing existing lamp holes, transferring illicit sanitary services to the sanitary sewer, providing drain laterals for private properties with illicit storm drain service and sump pump connections, transferring driveway drain and area drain laterals from the sanitary sewer to the storm drain and transferring catch basin laterals from the sanitary sewer to the storm drain.	63.69%
Charles River Pollution Control District	**CW**	$8,741,935	This project involves upgrades to an advances wastewater treatment facility that treats wastewater from the communities of Franklin, Medway, Millis and Bellingham and it also accepts septage from Norfolk, Sherborn, Dover, Wrentham, Weston, Holliston and Sharon. Upgrades in this phase will	100.00%

[1] List not comprehensive; omits loans shown as fully draw in prior annual reports. See prior annual reports for descriptions of such projects.

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			focus 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.	
Town of Chatham	**CW**	$3,336,119	This sewer collection system extension and improvement project will address nitrogen loading concerns by further extending the wastewater collection system. This project is the third phase of implementing nitrogen mitigation efforts that began in 2010. The project will include 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.	81.08%
Town of Dracut	**CW**	$4,693,582	This project involves the construction of new sanitary sewers that will mitigate the migration of leachate from failing septic systems into tributaries of the Merrimack River. In addition, the project will eliminate several direct sewerage connections to the local storm water system in addition to mitigating impacts to natural resources, town conservation land and private drinking water supplies.	100.00%
City of Fall River	**DW**	$3,169,082	The project includes the replacement of up to approximately 19,000 linear feet of cast iron water mains and 19 lead services. The project also includes installation of a new sanitary grinder pump station for 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.	99.64%
Town of Falmouth	**CW**	$4,284,956	The project is to address the current effluent discharge requirements of the National Pollution Discharge Elimination System permit, which the plant cannot currently meet and the needed facility upgrades and improvements at the plant, 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 is currently restricted to 800,000 gallons per day.	99.28%
Town of Great Barrington	**CW**	$4,210,000	This project includes upgrades to the wastewater treatment facility (WWTF) and improvements to the collection system to reduce inflow and infiltration. The treatment plant upgrades will replace or repair aging equipment, improve system reliability, achieve higher levels of phosphorus removal, and prepare for nitrogen removal upgrades. The WWTF upgrade will include installation of a reliable system to reduce total phosphorus loads to the Housatonic River, resulting in a reduction of eutrophication potential in the river and its receiving body, Long Island Sound.	100.00%
Town of Harwich	**DW**	$1,878,232	The project includes 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 will remain in the existing pump house and the proposed facility will be for water polishing only.	99.86%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
City of Lawrence	**DW**	$9,186,062	This project involves the replacement of approximately 45,000 linear feet of water mains, also replacing broken and malfunctioning hydrants and valves.	88.66%
City of Leominster	**CW**	$10,500,000	This project is for the upgrade of 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 yet to receive any significant upgrades. The facility discharges to North Nashua River with ultimate discharge to the Atlantic Ocean via the Merrimack River under EPA National Pollution Discharge Elimination System (NPDES) Permit (MA-0100617) issued on Sep. 28. 2006. The facility is currently not in compliance with its current discharge permit, and as a result has entered into an Administrative Consent Decree with EPA which requires the facility to comply with its total Phosphorous discharge limits no later than Nov. 30, 2011. This project will implement all treatment facility upgrades and process modifications required to achieve compliance with total phosphorous discharges limits mandated in the 2006 EPA NPDES Permit.	93.57%
City of Lowell	**DW**	$4,541,510	This project includes constructing a new 36 inch diameter redundant treated water transmission main. The project will allow 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 existing in the water treatment plant.	77.51%
Town of Lunenburg	**CW**	$1,521,653	In order to determine existing conditions and prioritize needs for long-term wastewater management for the town, MassDEP and the Massachusetts Estuaries Program approved the Comprehensive Wastewater Management Plan (CWMP), completed by the town and Wright-Pierce in four phases. The CWMP began in 2006 and the final phase was completed in May 2010. The fourth and final phase of the CWMP delineated and prioritized the areas of highest concern. Among them were specific "Areas of Concern," referred to as "areas." Areas 6 and 9 (Sewer Service Zones 6) are areas where municipal sewer extensions are highly recommended due to the fact that on-site wastewater treatment was considered inadequate in these locations due to site conditions. Phase 4 of the CWMP includes 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 at a later date, but the listed streets are immediately adjacent to Whalom Lake and have the most pressing need for a municipal sewer extension at this time.	79.93%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
City of Malden	**DW**	$2,790,063	This project consists of two contacts, 2014-H/W-1 and 2014 H/W-2, which will be replacing over 15,00 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. The result will be better quality and flow of water in the system.	64.94%
City of Marlborough	**CW**	$14,960,073	This project consists of the improvements to the Easterly wastewater treatment facility to reduce effluent phosphorus, replace aging infrastructure and improve energy efficiency and secondly to conduct an infiltration/inflow study of the wastewater collection system to identify, characterize and prioritize deficiencies in the system to reduce peak flows. The upgrades are primarily intended to reduce the phosphorus loads discharged to from the facility to help remediate documented nutrient enrichment of the receiving waters and the downstream Sudbury River. The project is consistent with the comprehensive wastewater management plan and regional nutrient reduction goals. The project will also improve the energy efficiency of the facility and is expected to include the installation of renewable energy systems at the site.	97.24%
City of Marlborough	**DW**	$4,809,184	As per the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) requirements, the Millham Water Treatment Plant was required to sample the water for cryptosporidium between April 2008 and March 2010 to determine bin classification. The bin classification provides cryptosporidium removal requirements that systems have to meet by deadlines based on their service population. The purpose of the LT2 rule 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 the Marlborough Department of Public Works 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 removal of cryptosporidium.	100.00%
Town of Medway	**DW**	$1,383,000	This project addresses the replacement of aging water mains and appurtenances in various streets in the community. The replacement of these old mains will help improve water quality with respect to disinfection, circulation, volume and fire protection.	87.97%
City of New Bedford	**CW**	$8,063,124	This project consists of installing new valves, blow offs, air release assemblies, hydrants and temporary piping. Twin 36 inch cast iron transmission mains convey potable water from the city's 75 million gallon High Hill finished water reservoir to the eastern and center sections of New Bedford. The 103 year old mains cannot be isolated or shut down as the valves are inoperable and in significant disrepair. The mains are also interconnected in many places. The mains are within 7 feet of each other, so a prolonged failure of one would likely cause failure to each other. Those transmission	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			mains are critical components which would cause catastrophic consequences to the city should they fail.	
Town of Norwood	**CW**	$110,127	The project is the rehabilitation of sewers in the Hawes Brook area of Norwood in order to reduce excessive infiltration and inflow into the system and to minimize the occurrence of sanitary sewer overflows. The town is under an Administrative Order from EPA that includes implementation of correction action in the Hawes Brook area. Environmental benefits of this project are the elimination of surcharging and sanitary overflow into Hawes Brook, an impaired water body that is tributary to the Neponset River.	100.00%
Town of Norwood	**CW**	$2,638,952	The objective of this project is to perform comprehensive sewer rehabilitation in a portion of the Meadowbrook sewer area in Norwood to eliminate exfiltration of sanitary sewage into the adjacent storm water system that ultimately discharges to Meadowbrook (a tributary of the Neponset River). Work will be performed in the area tributary to the Meadowbrook outfall at Sunnyside Road. Work includes but not limited to: 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.	100.00%
Town of Palmer	**CW**	$5,950,103	The objective of the Palmer Sewer Replacement project is to replace aging and deteriorated infrastructure that is not fully functioning as intended. Several sewer reaches have sags, adverse slopes, cracked pipes and offset joints which impair carrying capacity of the collection system. The project will replace 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).	97.60%
Town of Paxton	**DW**	$1,370,000	There is only one service area in Paxton and both storage tanks service all of the customers. The system serves approximately 3,680 people. This tank is critical to maintain due to their vulnerability with the aging infrastructure of the City of Worcester. This project includes a major system component. Loss of this tank would affect more than 50% of the population. The Maple Street Tank is the primary tank for the northern portion of the system, which includes the faculty and student population for Anna Maria College and the new senior housing complex located on Grove Street, while the Asnebumskit Tank is the primary tank for the southern portion of the Town. Having two storage tanks provides a redundant storage that allows the town to take one tank offline for routine maintenance or in the event of an emergency and still have adequate storage for the system. In addition to providing redundant storage, the new tank will be equipped with a booster chlorination system to improve water quality. In November 2012 the City of Worcester experienced a large water main break that shut the water off for hours. Paxton's sole source of water comes from the city and they were able to sustain pressures and water in town because they have two tanks.	99.65%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
City of Revere	**CW**	$7,218,581	This planning project focuses on the assessment of the wastewater system along with support of the city's ongoing development of a state-of-the-art GIS system. Further technical support for implementation and use of the GIS system will be available through the planned scope of work for this planning study to allow Revere to continue to identify assess, prioritize and complete improvements to the city's sewer system. Significant components of the planning efforts include field investigations and evaluation of the city's wastewater system. The following field investigations and technical activities are planned: supplemental flow isolation, closed circuit television inspection, dye testing, smoke testing, and house-to-house inspections. These investigations will lead to the evaluation of the wastewater collection system and will provide support for ongoing assessments of infiltration/ inflow removal.	100.00%
Town of Saugus	**CW**	$1,579,841	The Town of Saugus entered into 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 and the report titled, "Sewer System Facilities and Private Inflow Source Removal Plan," dated October 2006. Previous projects include the pilot program study and rehabilitation in subsystems 5B, PS5, 6A, 4C, and 6B. The 2014 project includes I/I removal in subsystem 5. Rehabilitation will include manhole rehabilitation, cast-in-place-pipe lining of sewer main and lateral connections, spot repairs and private inflow removal.	100.00%
South Essex Sewerage District	**CW**	$9,250,000	This project consists of replacement of two parallel subaqueous sewer pipelines that carry all of the raw wastewater from the Town of Marblehead collection system under Salem Harbor to the South Essex District treatment plan in Salem. Length of each pipeline is approximately 6,000 feet.	96.39%
Springfield Water & Sewer Commission	**DW**	$21,645,275	This project will replace the existing 83- year old steel finished water transmission main which provides water to the city of Springfield and the towns of Agawam, Longmeadow and East Longmeadow. This project is critical for improving the integrity and reliability of this transmission main since it is near the end of its useful life and recent inspections have uncovered significant internal and external pipeline corrosion.	97.55%
City of Taunton	**CW**	$4,021,122	The Phase 10-12 Sewer System Evaluation Survey (SSES) is a continuation of work begun during previous phases. The objectives of the SSES is to remove infiltration and inflow (I/I) from the sanitary collection system, with the ultimate goal of reducing and eliminating Combined Sewer Overflows in the city. Implementation of this project is in partial compliance with the requirements of a MassDEP Administrative Consent Order. In addition, the work done under this project will help the city stay in compliance with the USEPA Order for Compliance (Docket 08-042).	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			Under the order, the city is required to submit a plan and schedule by June 2013 for elimination of the CSO outfall. Previous SSES Phases and investigations have revealed that there are widespread problems within the city's wastewater collection system. Previous construction phases have focused on the older sections of the city, known as the "core area". Phases 10-12 will entail 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 is part of a cost effective, targeted plan to assess operations and remove sources of I/I in the city's collection system. It is expected to greatly reduce or eliminate the public health problem of combined and sanitary sewer overflows to the Taunton River.	
City of Taunton	**DW**	$6,663,446	The project involves the replacement of approximately 10,000 linear feet of water main throughout the City of Taunton water distribution system. The project also involves the construction of a new pumping station on Harris Street to replace the original station constructed in 1876.	95.06%
Turners Falls Fire District	**DW**	$794,103	This project involves 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 will assist the Department in reducing the vulnerability to the Town of Irving water supply and the Montague Center Water District, since both these systems rely on a single well and use Turners Falls Water Department as their backup.	98.31%
Town of Webster	**DW**	$196,585	The project includes the construction of approximately 4,500 feet new water main in Rawson Road Reservoir Access Road, Rawson Road to Gore Road, and section of Gore Road, installation of approximately 75 linear feet cured-in-pipe liner and installing a Tideflex Mixing System for the Rawson Road Water Tank. The project will reduce the probability of future failures and thus reduce the risk of system contamination, iron and manganese water quality disturbances and the loss of water from storage.	86.60%

Series 20 Green Bond Project Descriptions
Projects Financed with Green Bond Proceeds

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
Town of Barnstable	**CW**	**$255,941**	This project seeks to manage the town's excess nutrient flow into fresh bodies of water, such as stormwater and wastewater. The nutrient levels will be measured and a solution will be identified and resolved.	100.00%
Town of Billerica	**CW**	**$4,568,100**	The main objective of this project is to increase the physical and biological capacity of the Letchworth Avenue wastewater treatment facility as well as to replace equipment that is beyond its useful life. This effort will attempt to augment additional flow and pollutant load of sewering and implementation of the portions of the capital improvements plan which addresses capacity concerns.	97.53%
Town of Billerica	**CW**	**$9,724,962**	The project includes 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 is 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.	74.33%
City of Brockton	**CW**	**$1,356,694**	This on-going sewage collection system construction project will address 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 will include pumping, repairs of existing pipe, manhole rehabilitation, and surface restoration.	79.37%
City of Chicopee	**CW**	**$1,000,000**	The purpose of this Integrated Municipal Stormwater and Wastewater Resource Management Plan is to have it serve as a planning basis for future phases of combined sewer overflow (CSO) abatement and infrastructural renewal work. Significant portions of the Integrated Plan will be devoted to collecting data and modeling to document the actual CSO reduction progress that has been 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.	99.65%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
City of Chicopee	**CW**	**$25,478,178**	The project will separate over 400 acres and eliminate the combined sewer overflows (CSOs) in these areas. In most cases sewer separation for this project will be 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.	85.09%
Charles River Pollution Control District	**CW**	**1,858,065**	This project involves upgrades to an advanced wastewater treatment facility that treats wastewater from the communities of Franklin, Medway, Millis and Bellingham. It also accepts septage from Norfolk, Sherborn, Dover, Wrentham, Weston, Holliston, and Sharon. Upgrades in this phase will focus on achieving phosphorus compliance with the District's draft National Pollutant Discharge Elimination System permit renewal and achieving overall upgrades lasting through the year 2035.	86.30%
Town of Dracut	**CW**	**$181,873**	This project involves the construction of new sanitary sewers that will mitigate the leachate from failing septic systems into tributaries of the Merrimack River. In addition, the project will eliminate several direct sewerage connections to the local stormwater system, and mitigate impacts to natural resources at town conservation land, and private drinking water supplies.	100.00%
Town of Eastham	**DW**	**$12,707,265**	The project is the first phase in the development of a town-wide water system that includes the construction of two well fields, a storage tank, and 45 miles of water distribution piping. Currently, individual private wells are the main source of drinking water to residents and businesses, as there is no municipal water supply system. Sampling has indicated some impaired water quality and has resulted in the town’s decision to construct a public water system that meets safety standards.	87.36%
City of Easthampton	**CW**	**$1,100,000**	This project will allow 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.	81.65%
City of Everett	**CW**	**$61,076**	The project's objective is to perform follow-up investigations in accordance with the City's stormwater management plan. The intent of the investigations is to identify illicit connections and sources of fecal contamination in the drainage system to improve water quality in the region's surface waters.	87.62%
City of Everett	**CW**	**$500,000**	The proposed project consists of a variety of planning measures associated with operation and maintenance of the stormwater and sanitary sewer systems. Work will include elements such as the assessment of existing stormwater quantity for various storm event scenarios, development of a	100.00%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
			stormwater conveyance model based on the existing record information and other sources, flow monitoring, physical inspection of systems including manhole inspection, condition assessment, television inspection, outfall inspection, illicit discharge detection, infiltration and inflow investigations, sewer system evaluation surveys, compliance with Stormwater regulations including implementation of programs, mapping of systems, enhancement of geographic information systems, and all other related work. Environmental benefits from this project will result from elimination of public health impacts from flooding, contaminated stormwater, surcharging and sanitary sewer overflow, reduction of I/I, improved stormwater and wastewater collection system operation, improvement of stormwater quality and management, elimination of illicit connections, improved stormwater recharge and treatment, and implementation of best management practices.	
Town of Falmouth	**CW**	**$20,869,482**	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 recommends 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 have septic systems newer than 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.	71.93%
Town of Falmouth	**DW**	**$15,320,673**	The Town of Falmouth currently relies on Long Pond Treatment Facility for 50% to 60% of its water supply needs. Increasing algae blooms in Long Pond and organic loading from the surrounding forest are resulting in degraded water quality. The Town has exceeded a trihalomethane (THM) Locational Running Annual Average under Stage 2 of the Disinfection By-Products Rule. The Town needs to invest significant money to comply with drinking water requirements, which will not solve its THM problems. A proper surface water treatment facility is required to provide a long term solution to the Town's water quality problems.	100.00%
City of Fitchburg	**CW**	**$1,231,951**	The City is undertaking a series of projects to separate its sanitary sewers from its storm drainage sewers. The City of Fitchburg owns and operates a wastewater collection system and treatment facility that serves the City of Fitchburg, Town of Westminster, and a portion of Town of Lunenburg. The Easterly wastewater treatment facility (WWTF) treats an average daily dry weather flow of about 6 million gallons per day (MGD), but receives under peak wet weather flows of up to 40 MGD due to inflow and infiltration. The WWTF discharges its treated effluent through an outfall to the North Branch of Nashua	98.69%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
			River, which is currently being studied for excessive nutrient levels. The Nashua River is a tributary for both the Lowell and Lawrence drinking water supplies. The wastewater treatment facility frequently activates a secondary treatment bypass during wet weather flow due to excessive inflow and infiltration from the collection system. The general scope of work for the projects consists 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.	
City of Gardner	**CW**	**$4,433,242**	The city of Gardner is upgrading their wastewater treatment plant which will address aging infrastructure and take proactive measures to meet future discharge permit limits. The projects include modifications to the headworks and grit removal system, upgrade to the sludge handling system, and improvements to the nutrient removal system.	65.62%
Town of Grafton	**CW**	**$14,613,300**	The construction project includes modifications and additions to the existing Grafton wastewater treatment facility including the replacement of aged systems that have exceeded their useful life as well as the addition of new treatment systems. To achieve compliance with nutrient discharge limits, improvements include modification of the secondary treatment system to create a system for advanced nitrogen removal and the construction of a new tertiary treatment system and superstructure with cloth disk filters for phosphorus removal.	100.00%
Town of Great Barrington	**CW**	**$4,579,305**	This project is part of the long-term solution for consistently meeting all wastewater treatment requirements, including phosphorous removal. It addresses aging infrastructure and improves pumping efficiency and control of the chemical treatment process. This project will include an overhaul of the headworks, replacement of the plant water pumps, and electrical system improvements.	77.18%
City of Haverhill	**CW**	**$8,366,419**	In this project the city will address combined sewer overflow (CSO) discharges to the Merrimack and Little Rivers. The City submitted the Phase II CSO Long Term Control Plan (LTCP) in 2011 which included the implementation of system maximization improvements (i.e., eliminate some CSO outfalls and modification of some of the remaining CSO regulators) to increase the percent capture within the combined sewer system and to reduce the frequency and volume of overflow events. The latest	96.69%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
			project includes CSO improvements based on recommendations from the LTCP. Capital improvements include: – Closing and eliminating 9 existing CSO regulator/ outfalls to combine discharges to 14 remaining CSO outfalls; – Raising the regulator/ diversion weir elevations at 5 of the 14 remaining CSO regulator/ outfalls to minimize CSO discharges; – 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; – 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 – 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.	
City of Lawrence	**CW**	**$3,840,000**	This two-phase project will focus 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 is also 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.	99.52%
City of Lawrence	**CW**	**$8,978,897**	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. The current project, sewer system rehabilitation and high priority pipe replacement, includes cast-in-place-pipe lining and replacement of sewer main in areas across the City.	49.12%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
Lynn Water & Sewer Commission	**DW**	**$1,297,810**	The project includes the rehabilitation of the Low Service Reservoir by replacing its cover and lining to address potential public health concerns due to the aging system.	100.00%
Town of Manchester by the Sea	**CW**	**$234,450**	The objective of this project will be to supplement a 1998 Town-wide Wastewater Needs Assessment analysis 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 in Manchester-by-the-Sea will be included. The CWMP document will present recommendations for wastewater management in the identified areas of the Town of Manchester-by-the-Sea where existing onsite wastewater disposal systems are shown to be inadequate for wastewater disposal. Specific recommendations by Study Area will consider 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.	100.00%
Town of Manchester by the Sea	**DW**	**$1,440,000**	The project includes the replacement of 5,400 feet of main and lead service lines and is intended to improve capacity and water quality. The existing 6-inch diameter water main will be 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 will be on Pine Street from Pleasant to Central Streets and from Rockwood Heights to Moses Hill Roads.	100.00%
Town of Mashpee	**CW**	**$79,966**	This project is for the development of a watershed Nitrogen Management Plan for the Town of Mashpee. The plan will recommend measurers and facilities to comply with the total maximum daily load issued for Popponesset Bay and Waquoit Bay East.	97.59%
Town of Middleborough	**CW**	**$24,346,341**	This is a nutrient management project which will upgrade the wastewater treatment facility to address the more rigorous National Pollutant Discharge Elimination System permit limits, reduce nutrient discharges and protect the waters downstream, specifically cited as impacts to the Taunton River estuary, as well as Mt. Hope Bay and Narragansett Bay waters in Rhode Island.	86.11%
Massachusetts Water Resources	**CW**	**$3,038,178**	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. This loan is	100.00%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
Authority (MWRA)			part of a larger project that will be applied to 10 sewer separation projects, 3 sewer/hydraulic relief projects, one stormwater detention treatment facility, one storage conduit installation, one CSO facility upgrade, one gate and siphon project, two floatables control projects, and construction of pumping facilities in North Dorchester Bay.	
MWRA	**CW**	**$2,031,614**	The purpose of the Caruso Pump Station Improvements Project is to replace the standby power generator system and to improve the HVAC, fire detection/suppression, and security systems to significantly improve the pump station reliability, operations, safety and efficiency.	100.00%
MWRA	**CW**	**$2,496,267**	After extensive alternatives analysis and pilot testing, MWRA has 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 is for the installation of the full-scale disk filter phosphorous removal system at the WWTP.	100.00%
MWRA	**DW**	**$12,404,988**	This project is the construction of an emergency pump station from the Wachusett Aqueduct to the Carroll Water Treatment Plant (CWTP). The pump station will provide redundancy in the event of failure at the Cosgrove Tunnel or Intake and for the inspection/rehabilitation of the Cosgrove Tunnel. The pump station will be able to 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.	100.00%
MWRA	**DW**	**$519,897**	The work includes 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 aqueduct and replacement of existing valves.	100.00%
MWRA	**DW**	**$7,474,691**	This project is for the construction of a 20 million gallon potable water storage tank in the Town of Stoneham at its terminal reservoir at the northeastern extremity of the MWRA water service to metropolitan Boston. The project will provide 16-20 million gallons of storage but, will also provide surge relief, protect MWRA and community mains, allow efficient use of the existing MWRA distribution system, and provide emergency backup to 21 communities.	100.00%
MWRA	**DW**	**$4,419,689**	MWRA will be conducting improvements to the distribution system necessary for constructing a redundant main to prevent the loss of water to several communities.	87.22%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
City of New Bedford	**DW**	**$4,466,812**	This project includes 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 consists of installing new valves, blow offs, air release assemblies, hydrants and temporary piping.	100.00%
Town of Norwood	**CW**	**$2,212,267**	The project consists of a variety of planning measures associated with operation and maintenance of the sanitary sewer and stormwater systems. Work will include 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 implementation of programs, mapping of systems, development of geographic information systems, sampling of outfalls, performing illicit discharge detection programs and all other related work.	98.36%
Town of Plainville	**DW**	**$666,593**	This project aims to address deficiencies in the East Bacon Street Tank relating to its overflow structure. The tank is due for recoating to extend its useful life. This project will include tank recoating and modifications to the vent and overflow structures.	95.41%
City of Revere	**CW**	**$300,000**	The main objective of this project is 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 will be customized for the City of Revere and will allow the City to proactively handle day to day collection system operation and maintenance requirements, improve wastewater transport service City wide.	100.00%
City of Revere	**CW**	**$1,200,000**	Phase VI Field Investigations and Supplemental Comprehensive Wastewater Management Plan will support activities needed to prioritize sewer improvements.	100.00%
City of Revere	**CW**	**$700,000**	This planning project focuses on the identification of sources of direct inflow to the sanitary sewer system and planning and coordination activities for inflow removal. This project will cover the public information program, and inflow removal prioritization. The effort will also monitor methods currently being applied under the construction phase. House to house inspections will utilize access provided through the drinking water meter replacement project.	100.00%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
City of Revere	**CW**	**$1,700,000**	Revere has 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 will include supplemental flow isolation, closed circuit television inspection, dye testing, smoke testing, and house-to-house inspections. The resulting information will be integrated into the existing GIS based sewer system mapping and database program.	93.94%
City of Revere	**CW**	**$10,902,107**	The Comprehensive Infrastructure Improvements Program is part of Revere's on-going effort to comply with the 2010 consent decree. As part of an ongoing infrastructure improvement program, this project includes the repair of existing pipe, sewer spot repairs, sewer replacements, new sewer lines, pump station and sewer cleaning, wastewater and stormwater pump station improvements and rehabilitation, drainage improvements, and additional wastewater metering. Additionally, depth sensors (Smart Covers) may be installed at key wastewater to monitor potential sanitary sewer overflow (SSO) locations and take proactive corrective action. Additional flow meters may also be installed. The work locations and activities for this construction season will be based on the most current cumulative Sanitary Sewer Evaluation Survey (SSES) and system operational data.	77.91%
City of Revere	**CW**	**$800,000**	This is a planning project for the continuing effort to reduce inflow to the wastewater collection system. The planning tasks will include: – Administration of the sump pump removal; – Review hydraulic modeling results to aid in prioritization of removal locations, development of a data base for integrating removal status with GIS, and development of a public web based tracking application; – Conduct a public information program to support the sump pump removal program; – 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 – Coordinate the sump pump removal program.	100.00%
City of Revere	**DW**	**$6,370,373**	The Automatic Meter Reading (AMR) system will fully replace the aging residential water meter system throughout the City with approximately 10,000 new residential meters, plus a city-wide fixed based AMR system. The system will provide automated readings of every new meter in the system which will minimize or eliminate the need for mobile or hand readings. This program is vital for Revere in order to improve the city's water conservation. The city of Revere has unaccounted-for water of 18.6%, well above the Massachusetts Standard of 10%. The current metering system uses handheld meter reading	83.40%

Borrower	Program	Amount to be Financed	Project Description	Percentage of Loan Drawn
			equipment that was installed in 1993-1994. The handheld equipment is somewhat labor intensive for city employees and only allows for meter readings biannually. The handheld readers may be contributing to this high unaccounted-for water. Under the current system, the city is unable to reach the meters at certain commercial locations due to the location of the meter. Estimating the water usage at these locations may also be a contributing factor to the high unaccounted-for water. The new AMR program will be a more sophisticated and reliable system for the city. Revere will have the capabilities of retrieving daily (or hourly) readings of all meters without the labor of meter reading. The city can also receive leak detection indication, meter tampering warnings, meter malfunction warnings and unaccounted-for water percentages. Based on a customer's usage profile, customers have the option of receiving an email notification when using an atypical amount of water. These notifications will enhance the ability for the city to respond to customer inquiries.	
Town of Stockbridge	**DW**	**$1,800,000**	Stockbridge uses 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 indicate that the older steel tanks have coating failure and corrosion. This project involves replacement of the two steel tanks with a single 300,000 gallon concrete tank. This project will also include replacement of the Church Street Water Main which is known to be severely corroded.	42.85%
City of Taunton	**CW**	**$4,416,167**	The Phase 10-12 Sanitary Sewer Evaluation Survey (SSES) is a continuation of work begun during previous phases. The objectives of the SSES are to remove infiltration and inflow (I/I) from the sanitary collection system, with the goal of reducing and eliminating Combined Sewer Overflows (CSO) in the City. Previous SSES Phases and investigations have revealed that there are widespread problems within the City's wastewater collection system. This phase of the project will entail both investigation and rehabilitation efforts in the eastern portion of the City's system, which has not been the focus of previous investigations due to its younger age and lower flows than the core area. This project is part of a cost effective, targeted plan to assess operations and remove sources of I/I in the City's collection system. It is expected to greatly reduce or eliminate the public health problem of combined and sanitary sewer overflows to the Taunton River.	83.58%
Town of Uxbridge	**DW**	**$3,186,000**	This 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.	77.61%