MASSACHUSETTS
CLEAN WATER TRUST

2016
Annual Report

Office of the State Treasurer
Executive Office of Administration and Finance
Massachusetts Department of Environmental Protection

MassDEP
Massachusetts Department of Environmental Protection

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MESSAGE FROM THE CHAIR

September 30, 2016

The Massachusetts Clean Water Trust (the Trust) is pleased to submit its Clean Water and Drinking Water State Revolving Fund (SRF) Annual Report for State Fiscal Year (SFY) 2016.

The Trust is a collaborative effort between the Office of the State Treasurer, the Executive Office for Administration and Finance, and the Massachusetts Department of Environmental Protection (MassDEP). The Trust's leveraged financing program maximizes the impact of available funds throughout the Commonwealth. To date, the Trust has used approximately $2.3 billion in federal grants and state matching funds to finance nearly $6.7 billion in clean water and drinking water planning and construction projects.

As our water infrastructure continues to age, there is no better time for municipalities to invest in protecting the health of their citizens and the environment, while simultaneously creating economic development within their communities. In order to achieve these goals, easy access to financing is essential. The Trust continues to do its part by providing subsidized loans backed by its AAA credit.

In SFY 2016, the Trust provided approximately $241 million in commitments for low interest rate loans to cities and towns in the Commonwealth. This commitment amount will support an estimated 1,440 construction and engineering jobs. The financing improves the quality of the state's waterways and protects public health through such projects as combined sewer overflow removal, wastewater treatment plant upgrades, sewer system construction and rehabilitation, septic system repairs, drinking water treatment facilities, treated water storage and water main replacement and rehabilitation.

This year, in addition to issuing its second Green Bond series, the Trust has taken an active role assisting public schools in eliminating lead in drinking water. The Board of Trustees has authorized $2 million be set aside for testing and technical training for school districts to identify any lead contamination that might exist. Allocating these funds is the first step in ensuring that the drinking water in public schools in Massachusetts is safe for our children. Once results are received the Trust anticipates being part of the solution going forward.

I would like to take this opportunity to thank the staff of the Environmental Protection Agency Region 1 for all of their efforts during SFY 2016. I would also like to thank the staff of the Trust and at MassDEP for a job well done. Without the combined efforts of these organizations, these important projects we are doing in the Commonwealth would not be possible.

Finally, I would like to thank our borrowers, the cities and towns. Without their dedication to protecting the environment and public health of their citizens, the program would not be a success.

Thank you and I look forward to continuing this essential work.

Sincerely,

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

Introduction

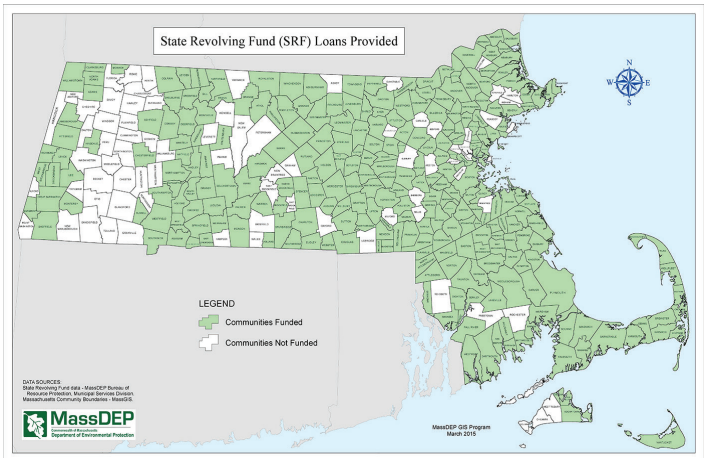
This report covers the State Fiscal Year ending June 30, 2016

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 low interest 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 (SRF) and the Drinking Water State Revolving Fund. The EPA requires reporting on both of the programs through the Clean Water SRF Annual Report and the Drinking Water SRF Biennial Report. These reports have been combined into this report, which covers the State Fiscal Year (SFY) ending June 30, 2016.

An estimated 97% of Massachusetts citizens have benefited from these essential projects. In SFY 2016, the Trust provided binding commitments for 36 clean water projects, including the Community Septic Management Program (CSMP), totaling $191 million and 14 drinking water projects totaling $49 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. In addition, the Trust issues bonds guaranteed by pledged assets that are funded by federal and state grants. 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 "SRF Financial Summary" section provides additional details on the financial management activities and most recent bond issue of the SRF program.

Since its inception in 1989, the SRF loan program has provided over $6 billion in loans to nearly 300 borrowers to improve and maintain the quality of water in the Commonwealth.



Clean Water SRF Annual Summary

Massachusetts continues to finance projects that focus on rehabilitation of wastewater infrastructure, which promotes sustainability and smart growth principles. The SRF program provides additional subsidies to designated low-income environmental justice communities, and continues to perform outreach activities to help borrowers realize opportunities to implement energy efficiencies and alternative energy projects.

2016 Clean Water Program Results

In 2016, the Trust continued to expand its program by providing new commitments of $191 million in financing for 36 loans to communities across the Commonwealth. Of the 36 loans, 5 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.

Clean Water Grant Awards		
	SFY 2016 Grant Awards	Program to date Grant Awards
Federal	$47,360,000	$1,420,610,761
State	9,472,000	257,510,692
Total	$56,832,000	$1,678,121,453

Interim Loans

The Trust makes funds available to eligible projects on the IUP through its Interim Loan Program year round. Borrowers can enter into a short term loan that enables projects to proceed prior to a Trust bond sale. The Trust is capable of funding a project prior to a bond sale by extending the use of program equity funds as a source of capital. The interest is accrued monthly on the basis of the balance drawn on the construction account. The interest rate is set at one-half of the one year Massachusetts Municipal Depository Trust (MMDT) rate. The average interest rate charged in SFY 2016, accruing only on drawn funds, was 0.13%. During SFY 2016, the Board of Trustees voted to eliminate the interest rate as of April 1, 2016. All interim loans approved from that date on will not accrue interest, making borrowing from the Trust even less expensive. In the SFY, 93 projects had drawn $144.0 million of interim loan funds.

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. The term can be extended to a maximum of thirty years.

Disbursements

During 2016, the Trust disbursed $215.7 million for clean water projects to various local governmental entities through the program project funds and interim loans. Of this amount, $3.3 million was disbursed in the form of additional subsidy with repayment not required, to either "Renewable Energy" projects or "Environmental Justice" communities.

SFY 2016 Clean Water Disbursements		
	Amount	# of Loans
Interim Loans	$144,028,419	93
Program Project Funds	71,683,411	44
Total	$215,711,829	137

Administrative Expenses

For SFY 2016, $3.4 million of annual Clean Water SRF grant administration funds were spent by MassDEP. This consisted of $3.2 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 $3.5 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. Clean Water Trust Chair Treasurer Goldberg, along with Trustees Secretary of Administration and Finance Lepore and MassDEP Commissioner Suuberg, voted to fund a MassDEP-led effort to test for lead and copper contamination in the drinking water of public schools across the Commonwealth. The Board approved $2.0 million to provide technical assistance to train school personnel to identify drinking water sources in their facilities, to collect samples under a specified protocol, and to transport the samples to approved laboratories for analysis. The intent of the survey is to identify at-risk buildings and student populations, and work toward mitigation measures to eliminate the contamination sources.

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 Sub-award 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.

Green Project Reserve

For 2014, Congress required that at least 10 % of the federal grant be dedicated to Green Infrastructure (GI) projects or components as defined by USEPA. For Massachusetts, this required that an estimated $4.8 million be allocated towards GI projects. Twelve projects had 'green' components that would potentially count toward that goal. Eight of those projects are under construction, with $1.5 million in Green Infrastructure realized thus far.

In 2015, the 10% Green Infrastructure target is $4.6 million. Three projects have proposed GI components with a total value of $52 million. One of those projects, an 'organics to energy' facility, is entirely Green, with an estimated project value of $25 million. The 2015 projects are not yet under construction.

Under the Fiscal Year 2016 Omnibus Appropriations Bill, Congress again requires that at least 10% of the federal grant be used to fund GI. For Massachusetts, this requires that an estimated $4.4 million be allocated towards GI 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 that EPA requires be allocated towards Green Infrastructure projects.

Until each construction cycle is completed, the true GI costs cannot be calculated for any one year. Acknowledging that these are Local and not State projects, we stipulate that not all IUP-listed projects go forward and not all projects that propose Green components at the outset end up incorporating GI into the final construction. The final decision on whether to proceed with a project, or whether to pursue green infrastructure elements, rests with the local Borrower. The State has no ability to compel the Local government to accept SRF financing.

Additional Subsidy

The Water Resources Reform and Development of 2014 (WRRDA) allowed States to use up to 30% of the 2015 CWSRF grant to enhance the subsidy of loans. Massachusetts chose to apply these funds to communities that meet the Environmental Justice (EJ) income threshold of below 65% of the state's median household income and for renewable energy projects. This targets the subsidy to lower income communities across the Commonwealth as well as providing subsidy for renewable energy projects that would typically have lengthy payback periods without the subsidy. Massachusetts provides the subsidy to the communities in the form of principal forgiveness. During the reporting period, Massachusetts provided the subsidy to thirteen clean water projects. Each project received an equivalent of 3.2% of the project cost as additional subsidy. Greater Lawrence received a bonus subsidy in consideration of the proposal being both an environmental justice and renewable energy project.

The funds used as additional subsidy are the first dollars drawn against the project. As of SFY 2016, $0.2 million of the additional subsidy from the 2015 grant has been disbursed. The remaining funds should be disbursed within the next few months. As a follow up to the 2015 Annual Report, all of the additional subsidy funds from the 2014 grant have been fully expended.

2016 Federal Grant Projects Receiving Additional Subsidy

Borrower	Project	Loan #	Project Cost	Principal Forgiveness	Expended Amount
Brockton	Sewer Rehab	CWP-15-22	$ 1,401,693	$ 44,999	$ -
Chicopee	Sewer Separation-Area 5 Ph A	CWP-15-23	12,405,179	398,251	-
Gardner	WWTP Upgrade	CWP-15-21	4,580,286	147,044	-
GLSD	Organics to Energy	CWP-15-15	24,888,064	798,997	28,830
GLSD(RE)	Organics to Energy	CWP-15-15	24,888,064	798,997	-
GLSD	CSO Abatement Program	CWP-15-16	9,029,369	289,875	-
Great Barrington	WWTF Upgrades&Sewer Improv.	CWP-15-24	4,731,194	151,888	-
Lynn Water and Sewer Commission	WWTP Incinerator Upgrade	CWP-15-01	5,268,266	169,130	-
Norwood	Underdrain Area Sewer Rehab	CWP-15-08	2,285,644	73,377	-
Quincy	Pump Sta. Renovation	CWP-15-06	3,754,561	120,535	120,535
Revere	Sewer Rehab	CWP-15-29	11,263,713	361,606	-
Saugus	SSO Reduction Subsystem 4	CWP-15-07	1,855,109	59,556	59,556
Worcester	Lake Ave. Sewer Rehab	CWP-15-02	2,670,821	85, 743	-
Total			**$ 109,021,963**	**$ 3,500,000**	**$ 208,921**

2016 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 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, may have a subsidized interest rate somewhat higher than 2%. In SYF 2016, borrower principal and interest loan repayments accounted for approximately 71.5% of debt service, totaling $206.7 million. Since 2012, the Trust has pledged certain direct loans that it makes from its 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 direct loans 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, 2016, the Trust has $277.4 million of pledged direct loans outstanding.

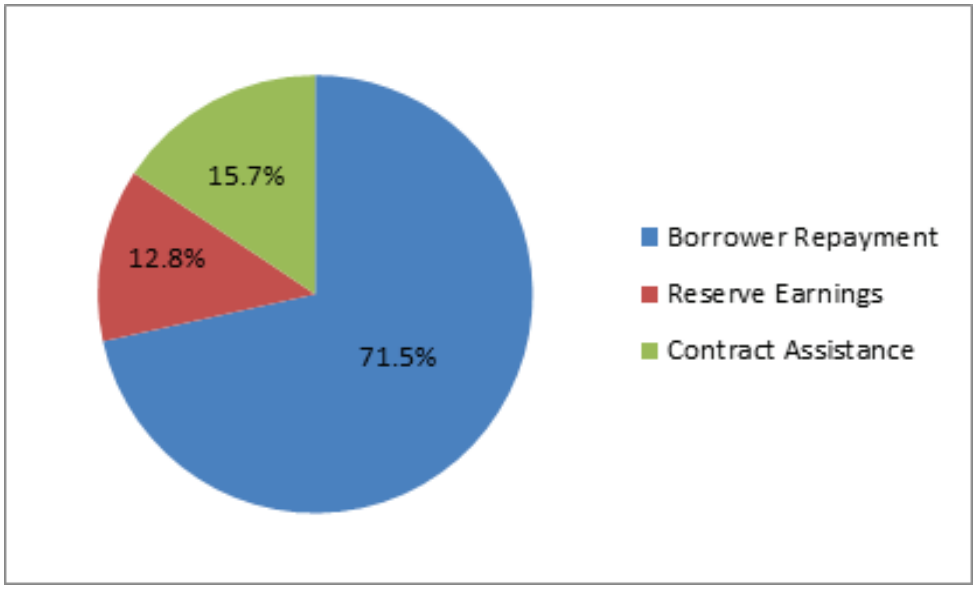
Reserve Fund Interest Earnings

Reserve funds, or pledged direct loans, are held as security for all Trust bonds at an amount between 33% and 50% of the outstanding principal. As of June 2016, the Trust held $703.8 million in clean water 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 2016, reserve fund earnings applied to current debt service payments accounted for 12.8% of debt service, totaling $36.9 million. As bonds are repaid, reserve funds are released and returned to the Clean Water Equity Fund. In SFY 2016, $69.7 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 $957.6 million in Clean Water contract assistance with a future commitment of $252.5 million, for a total commitment by the Commonwealth of $1.2 billion. In SFY 2016, Commonwealth contract assistance accounted for approximately 15.7% of debt service, totaling $45.2 million in assistance applied.

Total Sources of Revenue for CWSRF SFY 2016



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.

Greater Lawrence Sanitary District (GLSD)

Organics to energy. $24.88 mm

Massachusetts DEP recently passed a ban on disposing of commercial organic waste material in landfills or at waste incineration facilities. In June 2013, GLSD and consultant CDM Smith developed the Organics to Energy Feasibility Study, outlining a three- phase program of Wastewater Treatment Facility upgrades recommended to achieve co-digestion of organic food waste with the facility's wastewater sludge.

In October 2014, the GLSD began Phase 1 improvements intended to control digester foaming incidents, thereby allowing the anaerobic sludge digestion operation to be expanded to co-digestion in Phase 2. Phase 2 will include:

- Biogas metering system upgrade;
- Addition of a waste blending tank and mixing system to facilitate acceptance of organic material;
- Addition of high pressure digester feed pumps to handle organic material; and
- Four to five month pilot testing program for operating co-digestion system.

Phase 3 will include the installation of additional digester gas storage and combined heat and power (CHP) processes. If successful, GLSD will have the potential to produce enough electricity to virtually remove its reliance on the electrical grid, and the additional gas storage included in Phase 3 will further reduce GLSD's reliance on natural gas.

Plymouth

Emergency Repairs. $48.2 mm

This project is for emergency sewer forcemain repair and replacement in the Town of Plymouth. In the winter of 2015/2016, catastrophic failure of sewer infrastructure in several locations created a public health emergency requiring immediate action to correct excessive deterioration of the 30 inch ductile iron forcemain. The Town of Plymouth was authorized for $48.2 million in emergency funding from the Clean Water SRF. Funds are used for emergency response and creation of a bypass system, slipline and replacement of forcemain, and construction of a redundant 24" sewer forcemain.

Falmouth

Sewer Upgrades. $39.5 mm

The Maravista/Little Pond area of Falmouth has been recommended for sewering since the Town's 1981 Wastewater Facilities Plan, which was updated in 2001. The 2006 Total Maximum Daily Load Analysis (TMDL) developed under the Massachusetts Estuaries Project recommends 100% sewering of this watershed to achieve the TMDL limits for nitrogen. The area is densely developed, primarily with very small lots, and high groundwater. The Town's CWMP cites 20% of the properties have septic systems newer than 1995, and a large percentage of those are cesspools. On-site wastewater systems do not effectively remove nitrogen from effluent, and are thus considered to be significant contributors to coastal water degradation. Under this project, sewering will be done in 3 multi-year contracts, encompassing approximately 1500 parcels. Additionally, the project will address the current effluent discharge requirements of the NPDES permit, which the plant cannot currently meet. Facility upgrades and improvements are needed at the plant, primarily to meet the nitrogen limit, which requires an average annual total nitrogen effluent limit of 3.0 mg/L.

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.

2016 Drinking Water Program Results

In 2016, the Trust continued to expand its program by providing new commitments of approximately $49.0 million in funding for 14 loans to communities across the Commonwealth.

Drinking Water Grant Awards		
	SFY 2016 Grant Awards	Program to date Grant Awards
Federal	$16,333,000	$495,019,100
State	3,266,600	88,560,620
Total	$19,599,600	$583,579,720

Interim Loans

The Trust makes funds available to eligible projects on the IUP through the Interim Loan Program year round. Borrowers can enter into a short term loan that enables projects to proceed during the time prior to a Trust bond sale. The Trust is capable of funding a project prior to a bond sale by extending the use of program equity funds as a source of capital. The interest is accrued monthly on the basis of the balance drawn on the construction account. The interest rate is set at one-half of the one year Massachusetts Municipal Depository Trust (MMDT) rate. The average interest rate charged in SFY 2016, accruing only on drawn funds, was 0.13%. During SFY 2016, the Board of Trustees voted to eliminate the interest rate as of April 1, 2016. All interim loans approved from that date on will not accrue interest, making borrowing from the Trust even less expensive . In the SFY, 32 projects had drawn $60.7 million of interim loan funds.

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. This is the first time in the Drinking Water program's history that extended term financing has been available and has made financing larger infrastructure projects less burdensome on borrowers.

Disbursements

During 2016, the Trust disbursed $107.7 million for drinking water projects to various local governmental entities through the program project funds and interim loans. Of this amount, $2.8 million was disbursed in the form of additional subsidy with repayment not required to either "Renewable Energy" projects or "Environmental Justice" communities.

SFY 2016 Drinking Water Disbursements		
	Amount	# of Loans
Interim Loans	$60,650,990	32
Program Project Funds	47,037,012	35
Total	$107,688,002	67

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.

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 Sub-award 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.

Small Systems

For a number of years, the Trust has been providing financing to small systems in the amount of at least 15% of the federal grant, with the concurrence of EPA Region 1. In 2016, EPA changed its interpretation of the small systems requirement from 15% of the federal grant to 15% of the total amount of assistance provided. This change in interpretation has a large effect on the Massachusetts program.

The 2014 IUP was released before the change in interpretation of the small systems requirement. The 2014 IUP listed four projects totaling $3.58 million, which was in excess of 15% of the federal grant. Taking into account the projects on the extended PPL, the total value of all small systems applications was $5.14 million. With a total IUP cost of $126.4 million, the 15% small systems requirement is $18.96 million. Even if every project on the PPL proceeded to construction, the 15% requirement could not be met.

In 2015, MassDEP received small system applications from 7 communities totaling $20.0 million. One large project (Eastham) made up $16.0 million of the request, thus meeting the 15% requirement of $16.0 million by itself. Eastham is establishing a water distribution system for the first time with an overall expected cost of $125 million. The first phase of this project is $45.0 million, to be phased over three years. The Eastham project should provide small system expenditures to help meet the requirement for the next several years.

The total DWSRF funds expected to be available for 2016 is $124,221,000. Fifteen percent of that amount is $18,633,150. The Final IUP list contains 5 small system projects totaling $17,208,000, including one Eastham project for $17,114,000. 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. 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 was required to provide a minimum of $3.2 million in additional subsidy from the 2016 grant. This additional subsidy is provided to communities that would not otherwise be able to afford the project. Massachusetts chose to apply these funds to communities that meet the Environmental Justice (EJ) income threshold of below 65% of the state's median household income and for renewable energy projects. This targets the subsidy to lower income communities across the Commonwealth as well as providing subsidy for renewable energy projects that would typically have lengthy payback periods without the subsidy. Massachusetts provides the subsidy to the communities in the form of principal forgiveness. During this reporting period, Massachusetts provided the required minimum amount of subsidy to ten drinking water projects. Each project received an equivalent of about 4.3% of the project cost as additional subsidy.

The funds used as additional subsidy are the first dollars drawn against the project. As of SFY 2016, $0.9 million of the additional subsidy from the 2015 grant has been disbursed. The remaining funds should be disbursed within the next few months. As a follow up to 2015 Annual Report, all of the additional subsidy funds from the 2014 grant have been fully expended.

2016 Federal Grant Projects Receiving Additional Subsidy

Borrower	Project	Loan #	Cost	Principal Forgiveness	Expended Amount
Brockton	Water Main Improvements	DWP-15-06	$ 3,513,471	$ 149,175	$ -
Eastham	Water System Phase I	DWP-15-01	24,985,403	1,060,829	-
Eastham	Water System Phase I	DWP-15-01A	3,514,597	149,223	-
Eastham	Water System Phase I	DWP-16-02	10,863,982	461,262	-
Fall River	Water Main Improvements	DWP-15-10	3,365,071	142,874	-
Fall River	WTP Improvements	DWP-15-11	1,015,919	43,134	-
Falmouth	Long Pond WTF	DWP-15-02	16,000,000	679,327	679,327
Falmouth	Long Pond WTF	DWP-16-01	8,658,900	367,639	-
New Bedford	Transmission Main Improv.	DWP-15-03	4,323,792	183,579	183,579
Plainville	Tank Rehab	DWP-15-09	696,150	29,557	-
Total			**$76,937,285**	**$ 3,266,600**	**$ 862,906**

2016 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 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. In SFY 2016, borrower principal and interest loan repayments accounted for approximately 79.0% of debt service, totaling $70.1 million. Since 2012, the Trust has pledged certain direct loans that it makes from its 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 direct loans 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, 2016, the Trust has $117.4 million of pledged direct loans outstanding.

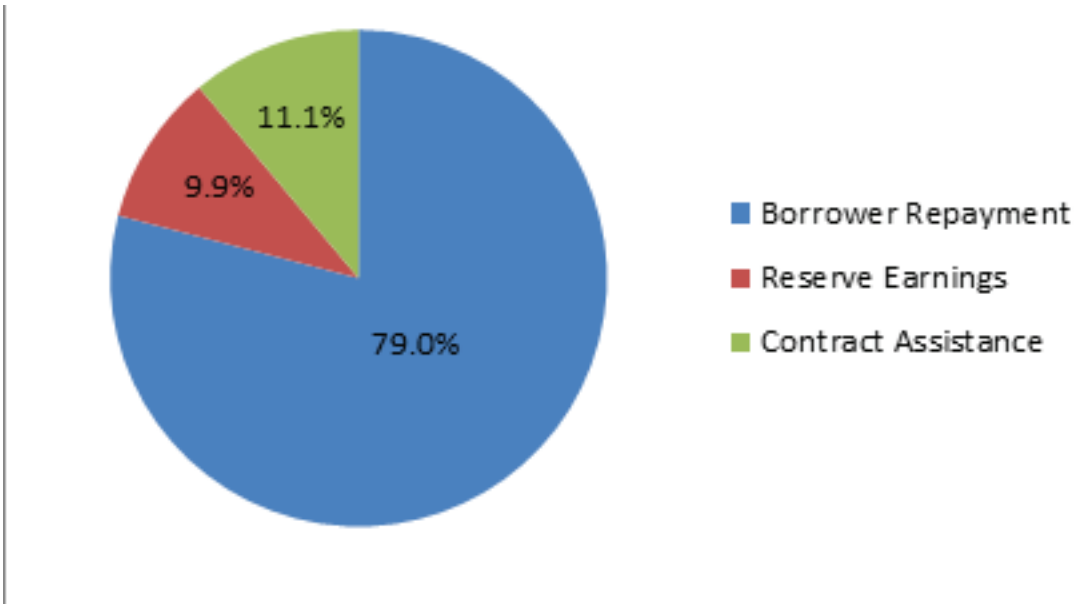
Reserve Fund Interest Earnings

Reserve funds, or pledged direct loans, are held as security for all Trust bonds at an amount between 33% and 50% of the outstanding principal. As of June 2016, the Trust held $160.8 million in drinking water 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 2016 reserve fund earnings applied to current debt service payments accounted for 9.9% of debt service, totaling $8.7 million. As bonds are repaid, reserve funds are released and returned to the Drinking Water Equity Fund. In SFY 2016, $22.5 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 $136.8 million in drinking water contract assistance with a future commitment of $70.7 million, for a total commitment by the Commonwealth of $207.5 million. In SFY 2016, Commonwealth contract assistance accounted for approximately 11.1% of debt service, totaling $9.8 million in assistance applied.

Total Sources of Revenue for DWSRF SFY 2016



Drinking Water Set-Asides

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

4% Set-Aside: Administration

MassDEP uses eight (8) 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 two (2) FTEs to support Municipal Services. These FTEs provide 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 twelve (12) 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 PWS. During the last year the drinking water staff has completed 370 evaluations on existing systems. See Figure 1 below for breakdown of system types.

Figure 1:

MassDEP Sanitary Surveys Completed SFY 2016	
Type of Public Water System	**Total # of Surveys Completed**
Community Systems	167
Non-Transient Non Community Systems	29
Transient Non Community System	174
Totals	**370**

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 1,165 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 370 sanitary surveys that were completed throughout the year.

Figure 2:

MassDEP Registration of New Small Public Water Systems SFY 2016	
Type of Public Water System	**Total # of Systems**
Community Systems	2
Non-Transient Non Community Systems	1
Transient Non Community System	6
Totals	**9**

Contract Services - MassDEP has contracted 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.

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.

Bellingham Water Treatment Facilities

Water Treatment Facility. $14.2mm

This $14.0 million project includes the construction of a new water treatment plant at Wrentham Road, improvements to the existing Harford Ave Water Treatment Plant, and 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.

Auburn Water District

Water Treatment Facility Upgrades. $2.7mm

This $2.7 million project addresses elevated levels of iron, manganese and arsenic in the source water. Arsenic levels in 2 wells exceed the MCL of 0.010 mg/L, and iron and manganese levels are above SCMLs. In 2012, samples from the West Street Wells (combined water) were 0.021 mg/L. These wells were taken off line in May 2013 until arsenic removal upgrades can be completed. The District is using pressure filtration and polyphosphate addition to sequester the metals, treating approximately 1.5 mgd.

Falmouth Long Pond WTP

Enhanced Water Treatment. $42.2mm

The construction of the new treatment facility for Long Pond is a $42.2 million undertaking. The Town of Falmouth currently relies on Long Pond for 50 to 60% of its water supply needs. The Long Pond Water Treatment Facility (WTF) operates under a filtration waiver and only provides chlorination and pH adjustment. Increasing algae blooms in Long Pond and organic loading from the surrounding forest are resulting in degraded water quality. The Town also has an extension to install a second disinfection method to comply with Long Term 2 (LT2) of the EPA's Enhanced Surface Water Treatment Rule. The Town has also exceeded a trihalomethane (THM) limit under the Disinfection By-Products Rule. The Town must invest significant money to comply with LT2, which will still 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.

SRF Financial Summary

The following discussion provides additional details on the financing 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 two to three dollars of project cost financing while assuring the perpetual nature of the revolving fund.

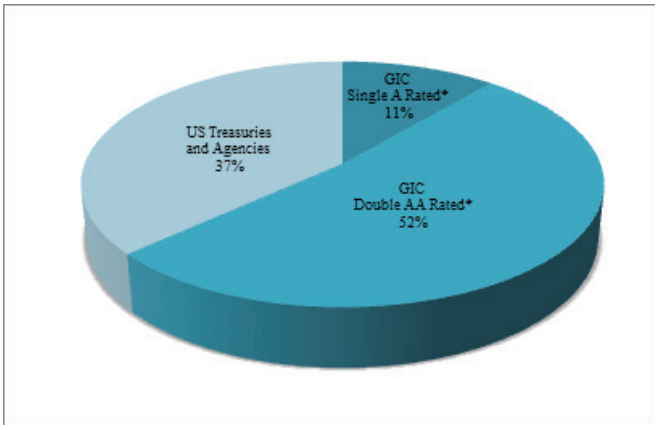
The Trust's lending and bond issuance programs are structured in such a way as to ensure adequate cash flows to fund its loans and to repay its bonds to maturity. Depending on the type of projects being financed, the terms of the loans to borrowers, and the subsidy levels to which the borrowers are entitled, 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. The Trust used the Pledged Direct Loan approach for its Series 19 SRF Bonds. The bonds are the fourth series of Trust SRF Bonds issued under the Pledged Direct Loan approach. As of June 30, 2016, the Trust has $394.8 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, 2016, the Trust has $864.6 million in DSRF reserve funds invested in guaranteed investment contracts (GIC) and US Treasury and Agency Obligations.



* based on highest rating

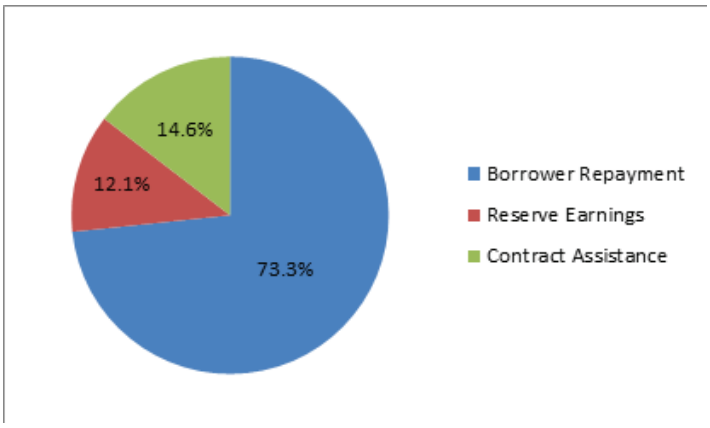
SRF Bonds Sources of Repayment

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.

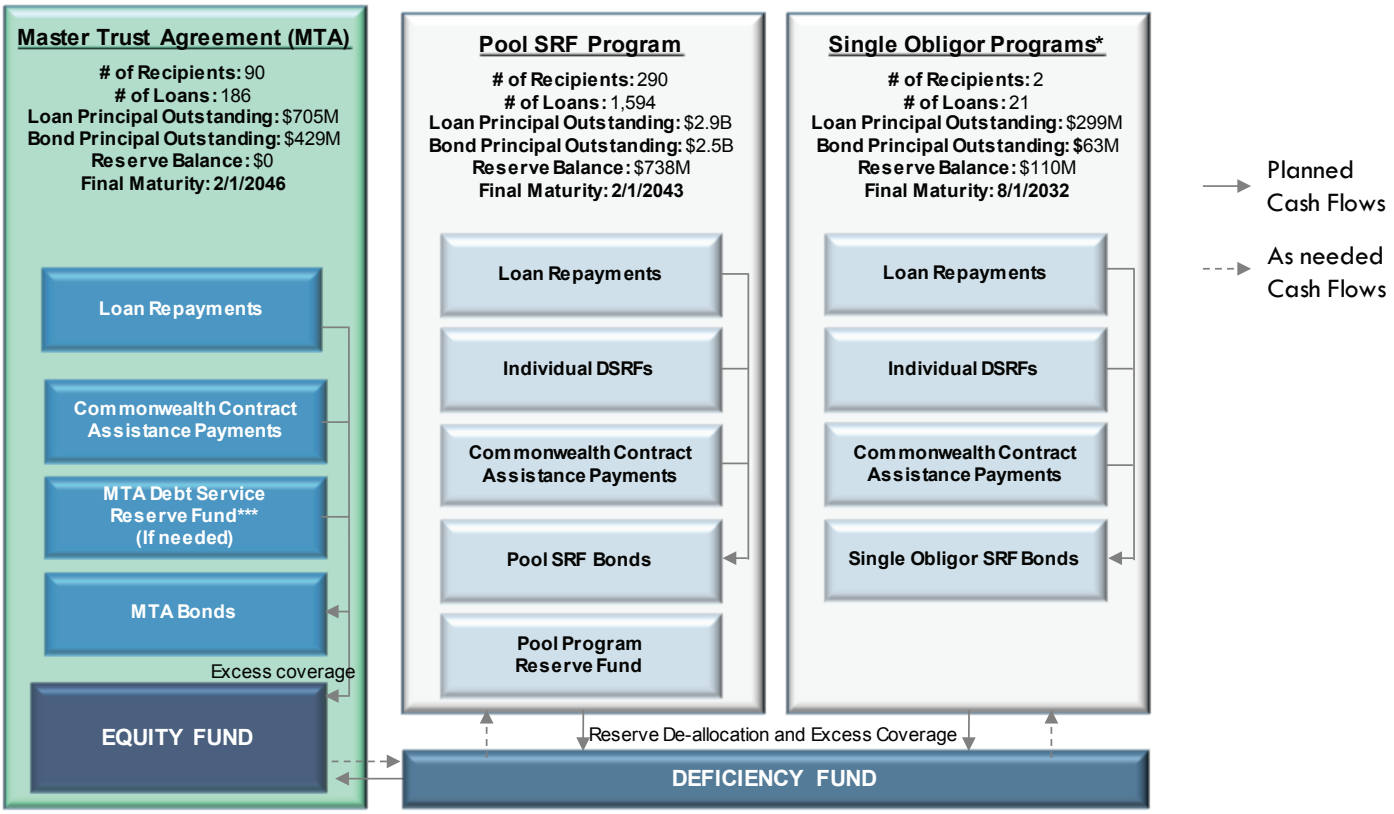
Commonwealth Contract Assistance Payments

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.

Total Sources of Revenue for FY 2016



The Commonwealth has pledged over $329.3 million in current and future assistance payments on behalf of program borrowers. The Commonwealth is currently rated "AA+/Aa1/AA+".



*Includes MWRA and SESD.

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 held in the related reserve fund is reduced proportionately, and the amounts released from each reserve fund 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 above, 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 no shortfalls, the funds are then available to be disbursed to new loans, thus assuring the perpetual nature of the revolving fund.

Series 19 Green Bonds

On February 11, 2016, the Trust issued $207.8 million in Green Bonds to fund 62 loans to 42 unique borrowers which was secured by 8 pledged direct loans totaling $94.8 million to an additional 8 borrowers. The Trust was able to borrow these funds at the true interest cost of 2.67% due to its AAA rating by all three rating agencies and the credit strength of its borrowers. The bond offering was the Trust's second Green Bond series. In the Appendix to the Annual Report the Trust is providing an update to the Green Bond Disclosures for both the Series 18 and19 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.

Appendices

Clean Water SRF	2016		2015	
Annual Grant Awards				
Federal Clean Water SRF Grant	$ 47,360,000		$ 47,603,000	
State Matching Funds	9,472,000		9,520,600	
Total Federal & State Grant Awards	$ 56,832,000		$ 57,123,600	

Annual Binding Commitments				
	$ Committed	# of Loans	$ Committed	# of Loans
Binding Loan Commitments Issued	$ 191,656,089	36	$ 246,200,432	40
Interest Earnings not for bond repayments	$ 3,001,633		$ 1,116,496	

Annual Disbursements				
	$ Disbursed	# of Loans	$ Disbursed	# of Loans
Clean Water Interim Loans	$ 144,028,419	93	$ 119,450,441	97
Pool Program Project Loans	71,683,411	44	87,772,403	57
Direct Loan Projects	-	-	-	-
Total Disbursements	**$ 215,711,829**	**137**	**$ 207,222,844**	**154**

Financial Results From Program Inception				
Federal Clean Water SRF Grant	$ 1,420,610,761		$1,373,250,761	
State Matching Funds	257,510,692		248,038,692	
Total Federal & State Grant Awards	$ 1,678,121,453		$1,621,289,453	
TOTAL Clean Water Assets	**$4,434,947,000**		**$4,396,020,000**	
TOTAL Loans Financed	**$5,185,541,235**		**$4,984,826,956**	

Drinking Water SRF	2016		2015	
Annual Grant Awards				
Federal Drinking Water SRF Grant	$ 16,333,000		$ 16,441,000	
State Matching Funds	3,266,600		3,288,200	
Total Federal & State Grant Awards	$ 19,599,600		$ 19,729,200	

Annual Binding Commitments				
	$ Committed	# of Loans	$ Committed	# of Loans
Binding Loan Commitments Issued	$ 49,817,519	14	$ 81,034,279	25
Interest Earnings not for bond repayments	$ 533,369		$ 187,348	

Annual Disbursements				
	$ Disbursed	# of Loans	$ Disbursed	# of Loans
Drinking Water Interim Loans	$ 60,650,990	32	$ 58,547,738	33
Pool Program Project Loans	47,037,012	35	24,227,038	47
Direct Loan Projects	-	-	-	-
Total Disbursements	**$ 107,688,002**	**67**	**$ 82,774,776**	**80**

Financial Results From Program Inception				
Federal Drinking Water SRF Grant	$495,019,100		$ 478,686,100	
State Matching Funds	88,560,620		85,294,020	
Total Federal & State Grant Awards	$583,579,720		$ 563,980,120	

TOTAL Drinking Water Assets	**$ 1,328,819,000**		**$1,256,935,000**	
TOTAL Loans Financed	**$ 1,476,467,070**		**$1,337,244,100**	

SFY 2016 Clean Water Commitments				
PRA#	**Government Entity**	**Agreement Date**	**Project Description**	**Commitment Amount**
CWT-15-12	Avon	07/30/2015	Community Septic Management Program	$ 400,000.00
CWT-16-02	Bellingham	04/01/2016	Community Septic Management Program	300,000.00
CW-14-21	Billerica	11/01/2015	Contract 35 Sewers	9,724,962.00
CW-14-17	Bridgewater	08/01/2015	Sewer Inspection, Cleaning and Lining	2,454,650.00
CWP-15-22	Brockton	05/01/2016	Sewer Rehab	1,401,693.00
CW-15-17	BWSC	06/01/2016	Sewer Separation	7,049,114.00
CWP-15-23*	Chicopee	06/01/2016	Sewer Separation - Area 5 Phase A	12,405,179.00
CW-13-24-A	Dracut	06/01/2016	Contract No. 32 Sewer Extensions	181,873.00
CWT-15-09	Easton	07/30/2015	Community Septic Management Program	500,000.00
CW-13-02A	Fall River	03/01/2016	CSO Abatement Program	487,150.00
CWP-12-01A	Fitchburg	09/01/2015	Combined Sewer Separation	721,648.00
CWP-15-21	Gardner	05/01/2016	WWTP Upgrade	4,580,286.00
CWP-15-15	GLSD	05/01/2016	Organics to Energy	24,888,064.00
CWP-15-16	GLSD	06/01/2016	CSO Abatement Program	9,029,369.00
CW-15-14	Grafton	01/01/2016	WWTP Improvements	14,613,300.00
CW-15-14A	Grafton	01/01/2016	WWTP Improvements	22,555,800.00
CWP-15-24	Great Barrington	06/01/2016	WWTF Upgrades & Sewer Improvements	4,731,194.00
CW-14-16*	Lawrence	12/01/2015	Sewer System Rehabilitation	3,346,107.00
CW-14-34*	MWRA	11/01/2015	CSO Phase 15	29,600,000.00
CW-14-37*	MWRA	11/01/2015	DITP Digester and Cryogenics Upgrade	6,255,873.00
CW-14-38*	MWRA	11/01/2015	DITP Electrical and Plant Upgrades	813,700.00
CWP-14-19A	New Bedford	06/01/2016	CSO Abatement	2,681,930.00
CW-14-33	Norton	12/01/2015	Sewer Extensions	2,924,728.00
CWP-15-08	Norwood	10/01/2015	Underdrain Area Sewer Rehab	2,285,644.00
CWT-16-04	Plymouth	06/01/2016	Community Septic Management Program	200,000.00
CWP-15-06	Quincy	12/01/2015	PS Renovation	3,754,561.00
CW-15-11	Revere	08/01/2015	FOG Study	250,000.00
CW-15-19	Revere	01/01/2016	Illicit Connection Detection	800,000.00
CW-13-16A	Revere	01/01/2016	Collection System Improvements	1,161,117.00
CW-15-18	Revere	04/01/2016	SSES	1,700,000.00
CWP-15-29	Revere	05/01/2016	Sewer Rehab	11,263,713.00
CWP-15-07	Saugus	10/01/2015	SSO Reduction Subsystem 4	1,855,109.00
CW-14-26A	Taunton	05/01/2016	SSES Phases 10-12	3,037,504.00
CW-15-13	UBWPAD	11/01/2015	Wet Weather Management and FP Nutrient Upgrade	831,000.00
CWT-16-01	Wareham	02/01/2016	Community Septic Management Program	200,000.00
CWP-15-02	Worcester	01/01/2016	Lake Ave Sewer Rehab	2,670,821.00
Total				$ 191,656,089.00

**Loans used for FFATA Reporting*

SFY 2016 Drinking Water Commitments				
PRA#	Government Entity	Agreement Date	Project Description	Commitment Amount
DWP-15-06	Brockton	5/1/2016	Water Main Improvements	$ 3,513,471.00
DWP-15-01A	Eastham	5/1/2016	Water System Phase I	3,514,597.00
DWP-16-02	Eastham	5/1/2016	Water System Phase I	10,863,982.00
DWP-15-10	Fall River	5/1/2016	Water Main Improvements	3,365,071.00
DWP-15-11	Fall River	5/1/2016	WTP Improvements	1,015,919.00
DWP-16-01	Falmouth	5/1/2016	Long Pond WTF	8,658,900.00
DW-16-03	Hadley	6/1/2016	Water Infrastructure Improvement	249,971.00
DW-11-21A	Lowell	8/1/2015	WTF and Pump Station Improvement & PV Installation	3,593,407.00
DW-14-03	Manchester-By-The-Sea	9/1/2015	Water System Improvements	1,440,000.00
DW-14-11*	MWRA	11/1/2015	Weston Aqueduct Supply Mains and Sec 36/101	6,876,818.00
DW-14-13*	MWRA	11/1/2015	Lower Hultman Aqueduct Rehabilitation	3,000,000.00
DW-14-14*	MWRA	11/1/2015	Low Service Storage	3,000,000.00
DWP-15-09	Plainville	5/1/2016	Tank Rehab	696,150.00
DW-12-19A	Water Supply District of Acton	10/1/2015	New Water Treatment Plant	29,233.00
Total				$ 49,817,519.00

**Loans used for FFATA Reporting*

Series 18 Green Bond Project Descriptions
Projects Financed with Green Bond Proceeds

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Barre	**DW**	$63,800	Well #3 Evaluation- The project is a planning study to provide the Town of Barre with more flexibility in operating their water supply system. While the town is not looking to increase their Water Management Act (WMA) approved rate, they are looking to increase their withdrawal rate from Well #3. In Spring 2010, Well #1 tested positive for coliform bacteria and the town was issued a NON by DEP to begin permanent disinfection at Well #1. Because the water from Well #1 has a high iron concentration, installing disinfection at the site will likely result in other water quality problems. Well #3 does not have a high iron concentration.	100%
Town of Belmont	**CW**	$2,300,000	Illicit Connection Elimination- This project will eliminate sanitary sewer illicit connections entering the storm drain system's tributary to Alewife Brook, Little Pond and Blair Pond. The objective of this project is to protect public health and improve water quality in area brooks and ponds in the Mystic River Watershed.	100%
Town of Billerica	**CW**	$1,515,186	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.	98.85%
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.	97.37%
Town of Billerica	**CW**	$4,468,535	Waste Water Treatment Facilities (WWTF) Improvements- This project will increase the physical and biological capacity of the Letchworth Avenue WWTF, which is very close to reliably treating wastewater. The project will achieve this through the implementation of the portions of the Capital Improvements Plan (CIP) which addresses capacity concerns. Improvements to the WWTF will help remediate well documented environmental impacts to the Concord River.	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Billerica	**CW**	$6,892,829	Waste Water Treatment Facilities (WWTF) Improvements- This project will increase the physical and biological capacity of the Letchworth Avenue WWTF, which is very close to reliably treating wastewater. The project will achieve this through the implementation of the portions of the Capital Improvements Plan (CIP) which addresses capacity concerns. Improvements to the WWTF will help remediate well documented environmental impacts to the Concord River.	100.00%
City of Brockton	**DW**	$1,912,312	Water System Improvement Program- This project includes multiple contracts. The project includes a contract which will replace residential water meters and implement city-wide Automatic Meter Reading (AMR). An additional contract will eliminate lead service connections on West Elm Street while another contract will update GIS program for implementation of AMR; replace air relief valves on 24" transmission mains from Silver Lake; West Elm Street service connections upgrade; install solar photovoltaic cells at Silver Lake water treatment facility and upgrade original 1950's booster station. A major reason for the meter work is an effort to comply with an Interbasin Transfer Act requirement to reduce unaccounted-for-water to 10% or less.	100%
Town of Chatham	**CW**	$3,847,853	Collection System Extension and Improvements- This sewer Collection System Extension and Improvement Project will address nitrogen loading concerns by further extending the wastewater collection system. The project is the third phase of implementing nitrogen mitigation efforts that began in 2010. The project will include sewering additional sections of Chatham and constructing two pump stations capable of handling a total of 68,000 gallons per day of sewage. The mitigation of nitrogen will help protect the health of salt and fresh water bodies in the town.	100.00%
Cherry Valley & Rochdale Water District	**DW**	$556,038	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.	94.44%
City of Chicopee	**CW**	$14,845,991	Combined Sewer Overflow (CSO)- This project includes CSO separation of Call Street area and Montgomery Street/Sheridan Street. These areas represent Phase 2 of the eight phase plan presented	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			and utilizing the existing combined sewer pipe for the conveyance of stormwater. The elimination of CSO discharge to the Chicopee River and the creation of additional interceptor capacity downstream to accommodate combined sewer flows from other areas within the city will contribute to improve water quality.	
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.	92.47%
Town of Clinton	**CW**	$120,000	Stormwater Management Plan- The project is a planning study to develop specific recommendations and improvements for the storm drain system infrastructure and associated surface waters under the Phase II NPDES requirements for the Town of Clinton. The project will substantially mitigate problems associated with stormwater contamination.	100.00%
Town of Dartmouth	**CW**	$288,057	Inflow and Infiltration (I/I) and Sewer System Evaluation Survey (SSES)- This project will consist of I/I and SSES for areas of town that are tributary to the South Dartmouth and Clarence pumping stations. These areas of the town have been experiencing excessive infiltration and inflow leading to sewer back-ups and sanitary sewer overflow. The project will be conducted in accordance with DEPs 1993 Guidelines for performing (I/I) and SSES. The project will identify the sources of the excessive I/I and recommend measures to address the deficiencies.	100.00%
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**	$9,559,545	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	96.39%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			Methuen Street and Wheeler Road Areas which are located in the eastern and southeastern sections of Dracut. The project includes the construction of approximately 40,000 lf of sanitary gravity sewer, force main and pressure sewer and one pumping station.	
City of Everett	**CW**	$661,967	Stormwater/Wastewater Capital Improvement- The objective of the Everett and Chelsea Stormwater/Wastewater Capital Improvements Project is to address the critical need for replacement of the failing Market Street culvert and the regulatory requirements for rehabilitation/replacement of the Behan Street area wastewater and stormwater infrastructure. Ultimately these projects will serve to protect the water bodies in the Mystic River and Boston Harbor basins. The Market Street culvert has experienced several failures since 1984 with various sections of the culvert being repaired and/or replaced over the last 25 years. Currently, there is a large section of the culvert that has partially collapsed and there is a significant concern that the culvert may completely fail. This project will implement an investigation and planning effort focused on identifying the financial and technical requirements for rehabilitation and/or replacement of the culvert. The Behan Street area is the subject of an Administrative Consent Order issued to the City of Everett by MassDEP to address several sanitary sewer overflows in these areas. The City of Everett is currently undertaking an investigation of this area to determine the nature and extent of the required corrective actions. Due to the difficulties encountered during the cleaning and CCTV inspections, the engineer is evaluating the following four options for pipeline rehabilitation/replacement: cured-in-place pipe lining, in-in replacement (pipe bursting), sliplining and excavation and replacement.	100.00%
Town of Fairhaven	**DW**	$789,846	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.	93.83%
City of Fall River	**CW**	$12,668,331	Combined Sewer Overflows (CSO) Abatement Program- The objective of this project is to abateCSO's in Fall River in order to achieve compliance with state and federal CSO regulations and to comply with a Federal Court Order. The work involves the construction of CSO controls for the President Avenue CSO outfall and other CSO outfalls to the Taunton River and Mt. Hope Bay. This project is part of a multi-year undertaking. Planned CSO control projects include several additional	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
City of Fall River	**DW**	$112,499	Water System Master Plan Update- This project will update the 2002 Water System Master Plan. The plan will address system improvements completed since 2002. The Hydraulic Model will be updated and recommendations will be made for continued system improvements. Updating the plan will include analyzing the overall system including water mains, tanks and water treatment plants the Water System Master Plan will help assist the city in planning, future funding and prioritization of projects as well as identifying any existing environmental or public health issues in the water system.	100.00%
City of Fall River	**DW**	$2,403,940	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.	99.17%
City of Fitchburg	**CW**	$5,575,799	Combined Sewer Separation (CSS)- This project is the continuation of the city's program to separate combined sewers to eliminate raw sewage discharges during storm events. The project eliminates combined sewers by constructing new drainage pipes adjacent to sewer pipes to convey stormwater, which will allow the city to close several Combined Sewer Overflows (CSOs). The project will realize health and safety benefits from reduced odors, improved aesthetics and better water quality in the Nashua River and affected tributaries, and allow the city to comply with the Administrative Consent Order issued by the EPA.	100%
City of Fitchburg	**CW**	$7,143,406	Chemically Enhanced Primary Treatment Upgrade- This project is the upgrade of the Easterly Wastewater Treatment Facility (WWTF) to add chemically enhanced primary treatment. The facility receives all the wastewater flows from the city as well as contributions from Westminster and Lunenburg. The facility discharges its treated effluent to the North Branch of the Nashua River. The facility has exceeded its allowable discharge limits under its NPDES permit, particularly in the amount of phosphorous and ammonia discharged. The EPA has issued an Administrative Order for Compliance to the city for the violation of the effluent limits in the permit. This proposed work will significantly improve discharge permit compliance and will improve the water quality of the Nashua River.	100.00%
Town of	**CW**	$3,515,998	East Framingham Sewer Improvements- Phase 1 of this project includes the elimination of three	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			separate major pumping stations into one and by redirecting flow by gravity from the tributary areas of two other pumping stations to a new interceptor sewer installed at a lower depth. This project represents the central project in a series of proposed projects that are recommended in the recently completed CWMP.	
City of Gloucester	**DW**	$4,482,909	Water Treatment Plant (WTP) Upgrade-The purpose of the WTP Upgrades is to improve reliability, redundancy and energy efficiency at the city's West Gloucester facility. Proposed improvements include replacement of much of the mechanical and electrical equipment which has reached the end of its useful life and is also inefficient. The upgrade will include a backwash water recycle system which will significantly reduce wastewater discharged to the Gloucester sewer system (specifically the Essex Ave Sewer and Banjo Pump Station) potentially reducing the frequency and severity of potential future SSO's. In addition, safety equipment will be updated and/or installed at both the West Gloucester and Babson WTP's. All the improvements at the West Gloucester WTP will improve reliability of the WTP's ability to provide a constant supply of drinking water especially if there is raw water contamination and/or mechanical failure at the Babson WTP.	100.00%
City of Gloucester	**DW**	$9,866,524	Water System Improvements- The project is split into three contracts. Contract 1 is for the cleaning and painting of the 0.6 MG Blackburn Water Storage Tower and the 1.0 MG Plum Cove Water Storage Tank. There will also be the instillation of hydraulic mixing systems for these tanks and the 6.0 MG Bond Hill Reservoir. This contract will also include operational updates to the Fuller Booster Pump Station. Contract 2 will include replacing approximately 2-1/2 miles of cast iron water main along Western Avenue. Contract 3 includes replacing approximately 4 miles of water main in the Commonwealth Avenue neighborhood.	100.00%
City of Gloucester	**DW**	$2,522,368	Water Transmission Improvements- This project consists of relocating approximately 2,100 feet of 20-inch water main from the Bond Hill Tank to Western Avenue to make it accessible for routine and emergency maintenance. A second aspect of the project is to relocate the two 20-inch water mains under the Blyman Canal from the Western Avenue utility tunnel to the area directly under Annesquam River.	100%
Greater Lawrence Sanitary District	**CW**	$2,296,515	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	86.25%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			anticipates the project will further reduce the number of CSO overflows and increase capture of wet weather flows.	
Greater Lawrence Sanitary District	**CW**	$721,415	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 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.	76.09%
City of Haverhill	**CW**	$5,176,671	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.	74.40%
Town of Holliston	**DW**	$2,500,000	Well No. 4 Replacement and Treatment Plant Upgrade- The Town of Holliston Well No. 4 currently experiences evaluated concentrations of iron, manganese and organic material. This project will reduce the amount of organic material in the raw water through the installation of a replacement well. The existing Well 4 Water Treatment Facility will be upgraded to address the new water quality from the replacement well. The upgrade to the Water Treatment facility will remove one of the precursors of disinfection by products (DBPs). DBPs are the result of the combination of the organic material and disinfectant. The well uses sodium hypochlorite for disinfection in the finished water of the treatment plant and with the elevated concentrations of organic material DBPs exceeding the regulatory limits may form in the distribution system. The elevated levels of iron in the distribution system may also lead to iron bacteria creating a public health theat. The project upgrades will reduce the amount of iron in the finished water preventing the formation of iron bacteria.	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Ipswich	**CW**	$2,246,791	Wastewater Solids & UV Disinfection Upgrades- This project will rehabilitate and improve the existing solids handling equipment and the existing UV disinfection system. The solids handling system upgrades are intended to replace worn out equipment, improve solids handling system performance and capacity and improve efficiency. Improved solids handling systems will also reduce performance impacts on the ultraviolet light disinfection system. The UV Disinfection System upgrades are intended to promote compliance with the effluent characteristics listed under the NPDES Permit, expressly related to fecal coliform exceedances. Based on the 2009 Wastewater Solids Handling Study, the proposed solids handling upgrades include a new 40 foot diameter thickener, refurbished sludge storage tank, new centrifuge, new dewatering solids conveyors, new truck loading hopper, and new septage receiving system.	100.00%
Town of Kingston	**DW**	$4,482,474	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.	96.51%
City of Lawrence	**DW**	$1,589,827	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.	99.32%
City of Lawrence	**DW**	$3,318,458	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.	95.34%
Lynn Water and Sewer Commission	**CW**	$907,374	Wind Turbine Project- The project will construct a wind turbine with a minimum rated capacity of 600 kW at the Regional Water Pollution Control Facility in Lynn. The LWSC WWTF consumes approximately 12,000,000 kWh of electricity per year and the estimated net energy production for the turbine is 993,400 kWh annually.	100.00%
City of Malden	**CW**	$3,844,078	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	90.02%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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 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**	$270,899	The project will update the lead service line replacement program required as part of the administrative consent order (ACO-BO-06-5D001) 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**	$6,065,116	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.	97.68%
City of Malden	**DW**	$918,658	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.	39.84%
Town of Marion	**CW**	$3,147,400	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.	83.16%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
City of Marlborough	**CW**	$20,000,000	Marlborough Easterly Waste Water Treatment Plant (WWTP) Upgrades- These projects consist of the improvements to the Easterly WWTP 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 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.	100.00%
Town of Medway	**DW**	$1,501,102	Water Main Replacement- 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.	100%
Town of Monroe	**CW**	$200,000	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.	79.73%
Massachusetts Water Resources Authority	**CW**	$2,000,000	Nut Island Headworks & Converyor Improvements- The project will replace all embedded electrical components below high-tide level and will replace key components of the screening and grit conveyor system at the Nut Island Headworks (NIH). Tidally-influenced groundwater infiltration has caused corrosion of the electrical wiring, conduits and panels that are embedded in or mounted on the walls and/or slabs and this project will correct the problem with ceiling- and surface- mounted components and have concrete surfaces treated to prevent infiltration. To improve the operation of the girt and screenings conveyor, the project will replace the belt scrapers, enclose the vertical belts with covers, add a redundant screenings conveyor, and install wider drip pans. The project will significantly improve the operations, reliability, and efficiency of these systems, particularly during wet weather and maintain the performance and reliability of the NIH as an important component of MWRS's long-term asset protection initiatives and management projects to preserve operating assets.	100.00%
Massachusetts Water Resources Authority	**CW**	$1,977,802	Electrical Upgrades- The Deer Island Sewer Treatment Plant, which treats sewage from 43 communities including Boston, was affected by two power outages at NSTAR substations that provide power to treat sewage. The outages occurred on April 3, 2004 and April 11, 2004, as a result of	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			largest of the system overflows lasted for several hours on April 11th. MWRA also conducted ongoing condition monitoring assessment work to identify equipment replacement needs. The electrical system reliability project will include the replacement of transformers, bus duct with cable duct, and variable frequency drive units. The electrical reliability project is designed to overhaul, upgrade, or replace equipment systems and is not routine CEP plant operations and maintenance needs.	
Massachusetts Water Resources Authority	**CW**	$2,912,188	Wastewater Treatment Plant and Sewer Improvements- This project includes upgrades to the Deer Island Treatment Plant automation and central control systems as well as improvements and upgrades to several existing interceptors and pump stations that are in need of replacement and/or modernization. The project is intended to extend current asset life and improve system operability.	100.00%
Massachusetts Water Resources Authority	**CW**	$5,113,812	Deer Island Treatment Plant Improvements- This project is included in the Deer Island Treatment Plant Asset Protection Program, in order to ensure that all of the structures and equipment installed at Deer Island remain in good working condition and/or are replaced with needed.	100.00%
Massachusetts Water Resources Authority	**CW**	$840,982	Nut Island Headworks Electrical & Conveyor Improvement- The project will replace all embedded electrical components below high-tide level and will replace key components of the screenings and grit conveyor system at the Nut Island Headworks (NIH). Tidally-influenced groundwater infiltration has caused corrosion of the electrical wiring, conduits and panels that are embedded in or mounted on the walls and/or slabs and this project will correct the problem with ceiling- and surface-mounted components and have concrete surfaces treated to prevent infiltration. To improve the operation of the grit and screenings conveyors, the project will replace the belt scrapers, enclose the vertical belts with covers, add a redundant screenings conveyor and install wider drip pans. The project will significantly improve the operations, reliability, and efficiency of these systems, particularly during wet weather and maintain the performance and reliability of the NIH as an important component of MWRA's long-term asset protection initiatives and management projects to preserve operating assets.	100.00%
Massachusetts Water Resources Authority	**CW**	$15,000,000	Combined Sewer Overflow (CSO) Phase 14- The primary objective of the CSO control plan is to bring CSO discharges in Boston Harbor and its tributaries into compliance with state and federal requirements. This component of the plan will involve nine sewer separation projects. All the projects will be accomplished by constructing new storm drains and allowing the existing combine sewers to function as separate sanitary sewers, or by constructing new sanitary sewers and allowing the existing combined sewer to serve as storm drains. The project will result in the elimination of CSO discharges at several outfalls.	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Massachusetts Water Resources Authority	**DW**	$5,000,000	Low Service Storage- 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 improved storage (16-20 million gallons) but will also provide surge relief, protecting MWRA and community mains; allow more efficient use of the existing MWRA distribution system; and, provide emergency backup to 21 communities in the Northern Intermediate High and Northern High systems.	100.00%
Massachusetts Water Resources Authority	**DW**	$600,000	Northern High Service(NHS)- Revere & Malden Pipeline- The project work includes the NHS improvements in Revere and Malden.	100.00%
Massachusetts Water Resources Authority	**DW**	$600,000	Northern Low Service (NLS) Area Rehabilitation- This project involves the rehabilitation of the NLS area, which consists of the replacement of a portion of Section 8; rehabilitation of Sections 37 and 46; and construction of Section 97A. Section 8, an unlined pipeline was installed between 1897 and 1920 and is currently functioning at approximately 45% of its original capacity due to the build-up of rust deposits and other matter along the pipeline wall and has experienced leaks at an above average rate. Excavations for the installation of new valves along portions of section 8 have indicated possible severe external corrosion on the pipe wall, which could affect the structural stability of the pipeline. Rehabilitations of Sections 37 and 46 will improve the service to East Boston and will allow the shutdown of Section 8 for rehabilitation.	100.00%
Massachusetts Water Resources Authority	**DW**	$1,000,000	New Connecting Mains- This project involves the construction of new connecting mains within the MWRA Distribution System between Weston Aqueduct Supply Mains 3 and 4 and the City Tunnel. These connecting mains in the Intermediate High, Northern High, Northern Extra High and Southern High service areas provide transport of water from the City Tunnel and the City Tunnel Extension to municipal meters along an 11-mile pipeline, which currently has no connecting mains and no other means available to adequately supply communities.	100.00%
Massachusetts Water Resources Authority	**DW**	$1,600,000	Lower Hultman Aqueduct Rehabilitation- 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%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			and end at the Blue Hills Reservoir in Quincy. The mains serve the Southern High and Southern Extra High System communities of Boston, Brookline, Milton, Quincy, Norwood and Canton.	
Massachusetts Water Resources Authority	**DW**	$1,800,000	Lower Hultman Aqueduct Rehabilitation- This work includes 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 the replacement of existing valves.	100.00%
Massachusetts Water Resources Authority	**DW**	$666,666	New Connecting Mains- This project involves the construction of new connecting mains within the MWRA Distribution System between Weston Aqueduct Supply Mains 3 and 4 and the City Tunnel. These connecting mains in the Intermediate High, Northern High, Northern Extra High and Southern High service areas provide transport of water from the City Tunnel and the City Tunnel Extension to municipal meters along an 11-mile pipeline, which currently has no connecting mains and no other means available to adequately supply communities.	100.00%
Massachusetts Water Resources Authority	**DW**	$2,500,000	Low Service Storage- 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 improved storage (16-20 million gallons) but will also provide surge relief, protecting MWRA and community mains, allow more efficient use of the existing MWRA distribution system and provide emergency backup to 21 communities in the Northern Intermediate High and Northern High systems.	100.00%
Town of Nantucket	**CW**	$4,999,200	Sewer Replacement for Inflow and Infiltration (I/I) Removal- This project is for the rehabilitation of a portion of Nantucket's sewer system in downtown Nantucket to remove excessive infiltration. This portion of the sewage collection system is a significant contributor of the stormwater inflow and groundwater infiltration found throughout the collection system. Illicit connections to the sanitary sewer system, backups, and overflows are all problems caused by I/I. As a direct result of overload in the Surfside Wastewater Treatment Facility, plant effluent may negatively affect area parklands, beaches and other coastal locations. The project includes instillation of sewers, installation of dead end manholes and installation of in-line manholes. The rehabilitation work will assist in maintaining compliance levels at the WWTF and fulfill the commendations in the Comprehensive Wastewater Management Plan.	100%
City of Newburyport	**DW**	$300,000	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	98.84%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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 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**	$11,416,000	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.	95.57%
Town of Pembroke	**CW**	$98,393	Capping of Hobonock Street Landfill- The proposed project consists of properly capping the Hobomock Street Landfill to prevent the spread of heavy metals and other pollutants into the groundwater and neighboring waterways. The completed project will provide a location for renewable energy facility.	100.00%
City of Pittsfield	**CW**	$4,100,000	Energy Efficiency, Photovoltaic & Combined Heat and Power (CHP) Installation- The City of Pittsfield operates an advanced, nutrient-removal treatment facility that processes approximately 10.8 million gallons of wastewater per day. The facility treats municipal and industrial wastes from Pittsfield, Dalton, Hinsdale, Lanesborough and North Lenox. The green energy upgrades to the plant will include: Upgrading the existing single-speed mechanical mixing system to a fine bubble aeration system, performing heating and lighting upgrades; Upgrading the existing anaerobic sludge digestion system by installing a 195 kW biomass (sludge) cogeneration system for on-site electric power generation; Installing up to a 1,575 kW solar photovoltaic system (roof and ground-mounted); In total, over $647,000 (89%) in annual energy savings, 1,770 kW of green power generation (solar	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			annually from these green investments. Construction of the CHP project revealed significant electrical overload conditions in the Motor Control Center (MCC) and associated transformer, and non-compliant electrical and building code conditions. The replacement of the existing MCC, transformer, stand-by power systems and associated electrical upgrades are necessary to ensure the safe, uninterrupted operation of the Waste Water Treatment Plant.	
Town of Randolph	**DW**	$2,933,623	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.	66.87%
City of Revere	**CW**	$1,273,774	SSES Phase 3 and Storm Water System Management Plan (SWSMP)- The project includes planning identified and required by a consent decree. The project scope will include the following: sewer flow metering, flow isolation, television inspection, dye testing, and smoke testing (as required) to complete the evaluation of the wastewater collection system along with support for ongoing assessment of the stormwater system including illicit discharge underway in the city.	100.00%
City of Revere	**CW**	$5,856,307	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.	97.50%
City of Revere	**CW**	$1,891,406	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.	92.47%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Saugus	**CW**	$439,369	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.	82.49%
Town of Saugus	**CW**	$1,543,200	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.	92.98%
Town of Shrewsbury	**CW**	$4,146,710	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.	92.17%
City of Taunton	**CW**	$4,688,669	Phases 8-9 Sewer System Evaluation Survey (SSES) and Pump Station Upgrades - This project is for repair and replacement of sewer mains and service laterals, removal of stormwater connections to the sanitary sewer, removal of roof leaders and sump pump connections from the sewer system, separation of combined manholes, and upgrade of vital pump stations. The project will eliminate potential public health threats and nuisances resulting from sewage discharge to the receiving waters and reduce the risk of sewer overflows.	100.00%
City of Taunton	**CW**	$552,881	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.	90.99%
Town of Webster	**DW**	$1,657,267	Water Main Construction- The project includes the construction of approximately 4,500 feet new water main along Bowser Road Reservoir Access Road, Bowser Road to Gore Road, and section of	100.00%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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.	
Town of Wellfleet	**CW**	$200,000	Comprehensive Wastewater Management Plan (CWMP)- The Town of Wellfleet proposes to create a CWMP to address town-wide wastewater management concerns. Much of the town's Central District has small lots with septic systems that have led to documented elevated nitrate levels in the groundwater and Wellfleet Harbor. The plan will identify the options available to reduce the pollution and improve water quality in the area.	100.00%
Town of West Springfield	**DW**	$566,384	Water Trasmission 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 the increased carrying capacity of the proposed transmission main, the project will also necessitate improvements at the Southwick Wellfield, including new well screens, installation of VFDs, and the installation of two additional carbon absorbers at the treatment facility. Improving the carrying capacity of the transmission main from the Southwick Wellfield will reduce the Town's reliance on the Bear Hole Reservoir, which is the Town's other source of water. The Town has had past episodes of taste and odor problems resulting from algae and turnover issues in the reservoir. The Bear Hole Reservoir WTP utilizes open slow sand filters that have no backwash capability. The project will also install variable frequency drives at each of the wells.	92.73%
Town of Westborough	**CW**	$98,280	An Infiltration/Inflow (I/I) Analysis and Sewer System Evaluation Survey (SSES) will attempt to reduce the volume of I/I in the Westborough Sewerage System, to the Westborough WWTF, and finally to the Assabet River; thereby attempting to protect the river from negative impacts. The Town of Westborough proposes to perform the I/I Analysis and SSES in the downtown area, the west end of Town, the east end of Town, the former Lyman School for Boys, and the State Hospital. These areas are the most densely populated and oldest areas of the sewer system.	100.00%
City of Westfield	**DW**	$2,352,248	Water Main Replacement- This project replaces an undersized deteriorated 14-inch raw water transmission main installed in 1895. The pipeline's hydraulic capacity has declined to less than 3 MGD, which prevents the City of Westfield from utilizing the full capacity of 4 MGD from the Sackett Water Treatment Plant. The new transmission main will restore long-term system reliability and full use of the treatment plant. The project also incorporates on-site energy generation using an	99.46%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			in-line turbine to capture excess hydraulic head to generate much of the energy needed to run the plant.	
City of Worcester	**CW**	$561,500	Lake Ave Sewer Inflow and Infiltration (I/I)- This project will implement the recommendations from the Lake Avenue Area Sewer System Evaluation Survey (SSES) to remove cost effective I/I from the Lake Avenue Area that contributes to surcharging and overflows into Lake Quinsigamond.	100.00%

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Projects Financed with Green Bond Proceeds

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Andover	**CW**	$675,000	The Project will facilitate landfill closure, groundwater source control and wetlands remediation necessary to mitigate adverse impacts to public health and the environment caused by the Ledge Road Landfill. The project scope includes: 1. Additional site investigation 2. Groundwater source control system pilot study 3. Massachusetts Environmental Policy Act Compliance 4. Landfill environmental monitoring 5. Post closure use evaluation 6. MassDEP review facilitation 7. Public involvement	100%
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.	62.06%
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.	67.61%
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	22.33%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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.	
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 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.	94.41%
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**	$19,114	The project work involves the construction of 25,200 linear feet of sanitary sewers, 2,800 linear feet of force main and two pump stations in Peters Pond West Area.	100%
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.	96.97%
City of Fall River	**DW**	$4,006,171	The project will create a high service area at the Airport Road Industrial Par. The existing tank will be replaced with a taller tank to improve pressures in the new high service area. A new booster pump station will be constructed and water mains will be replaced and upgraded to connect the new pump station and tank to the existing system.	100%
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.	93.58%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
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.	69.50%
Town of Falmouth	**CW**	$11,140,583	The Maravista/Little Pond area of Falmouth has been recommended to have sewers installed since the Town's 1981 Wastewater Facilities Plan (updated in 2001). The Massachusetts Estuaries Program total maximum daily load (TMDL), completed in January, 2006 recommends 100% sewering of this watershed to achieve the TMDL. The area is densely developed, primarily with very small lots and high groundwater. The town's Comprehensive Water 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 approximately 1,500 parcels. Additionally, a new treated water recharge site is proposed at Site 7 (north of the Waste Water Treatment Facility and outside of the West Falmouth watershed), specifically to accommodate the 0.26 million gallons per day flow from the Little Pond watershed, as required by the new flow limitations to the waste water treatment facility from outside the West Falmouth Harbor watershed (800,000 gallon per day flow limit, with no more than 570,000 gallons per day from outside the West Falmouth Harbor watershed and 230,000 gallons per day from inside the West Falmouth Harbor watershed).	100%
Town of Falmouth	**DW**	$16,126,207	The Town of Falmouth currently relies on Long Pond for 50 to 60% of its water supply needs. The Long Pond Treatment Facility operates under a filtration waiver and only provides chlorination and pH adjustment. Increasing algae blooms in Long Pond and organic loading from the surrounding forest are resulting in degraded water quality. The town also has an extension to install a second disinfection method to comply with the EPA's Long Term 2 of the Enhanced Surface Water Treatment Rule (LT2). As of September, the town has exceeded a trihalomethane Locational Running Annual Average under Stage 2 of the Disinfection By-Products Rule. The town needs to invest significant money to comply with the LT2 rule which will not solve its trihalomethane problems. A proper surface water treatment facility is required to provide a long term solution to the Town's water quality problems.	100%
City of Fitchburg	**CW**	$721,426	This project is the continuation of the city's program to separate combined sewers to eliminate raw sewage discharges during storm events. The project eliminates combined sewers by constructing new drainage pipes adjacent to sewer pipes to convey storm water, which will allow the city to close combined sewer overflows. The project will realize health and safety benefits from reduced odors,	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			improved aesthetic and better water quality in the Nashua River and affected tributaries. The project will also allow the city to comply with the Administrative Consent Order issued by the EPA.	
Town of Framingham	**CW**	$2,114,587	This project is a component of the Capital Improvement Program for the town's collection system that includes elimination of the two siphons under the Sudbury River and rehabilitation of the Sudbury River interceptor from Central Street continuing south along the Sudbury River to Worcester Road.	100%
Town of Framingham	**CW**	$84,190	The planning project proposes to continue investigations into the status of the wastewater collection system employing closed circuit TV inspections, manhole inspections, site specific flow monitoring, house-to-house inspections and smoke testing and easements investigations.	100%
City of Gloucester	**DW**	$474,127	This project will improve reliability, redundancy and energy efficiency at the West Gloucester and Babson Water Treatment Plants (WGWTP). Improvements at the WGWTP include replacement of the high lift pumps and variable frequency drives, flocculation equipment, sedimentation basin chains and flights, electrical service and equipment load center and a backwash water recycling system to reduce the amount of water drawn from the reservoir system.	100%
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.	99.73%
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%
Town of Holden	**DW**	$525,000	This project includes the replacement of approximately 4,500 linear feet of existing water main to improve water quality, system pressure, and reliability. Also included in the project are water supervisory control and data acquisition system improvements (hardware, software and a programmable logic controller for system monitoring).	100%

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.	83.93%
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.	88.51%
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 Ludlow	**CW**	$503,676	The main objective of this project is the separation of a combined sewer system existing in the Hubbard Street area of the Town of Ludlow. The Hubbard Street sewer separation will reduce environmental stresses placed on the Chicopee River due to discharged, untreated sanitary waste. The new sewer system will also address dangers to public health by decreasing backups of the combined storm water and sanitary waste. The recreational uses of the Chicopee River, which include boating swimming and fishing, will also be protected	100%
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	77.97%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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.	
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.	64.93%
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.	95.55%
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.	85.02%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Merrimac	**DW**	$860,000	The Town of Merrimac, in conjunction with MassDOT is reconstructing a one mile segment of Main Street (Route 110) through the State Transportation Improvement Plan. Running beneath the roadway is an aging 12 inch diameter water main in need of replacement in order to ensure stability and improve water distribution. This project will replace that water main as a part of the larger MassDOT roadway and infrastructure improvement project.	100%
MFN Regional Wastewater District	**CW**	$1,012,310	This project is for the purchase of two parcels of land that will be used for groundwater disposal for the Mansfield, Foxboro and Norton Regional Wastewater District. The plant presently has a surface water discharge. The plant needs additional treatment capacity for expanded growth in the three communities based upon findings from their comprehensive wastewater management planning efforts. The expanded plant will receive a combination of groundwater and surface water discharges. The town purchased the first parcel in December 2010 and has reached an agreement for the second parcel.	100%
Massachusetts Water Resources Authority	**CW**	$2,611,847	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 component of the plan will involve nine sewer separation projects. All the projects will be accomplished by constructing new storm drains and allowing the existing combine sewers to function as separate sanitary sewers, or by constructing new sanitary sewers and allowing the existing combined sewer to serve as storm drains. The project will result in the elimination of CSO discharges at several outfalls.	100%
Massachusetts Water Resources Authority	**CW**	$6,255,873	This project is for upgrades to the digester and cryogenic systems at the Deer Island Treatment Plant (DITP). The digester upgrade involves replacing the pumps that send the sludge from DITP to the Fore River Pelletizing Plant. The pumps will be replaced with centrifugal pumps with higher flow rates, reducing potential grit settlement. In addition, during digester pipe cleaning, deterioration was noted of the glass lining in the pipes feeding sludge material to the digesters. The cast iron piping is significantly degraded and will be replaced in order to maintain regulatory requirements.	100%
Massachusetts Water Resources Authority	**CW**	$813,700	This project is for upgrades to Deer Island Treatment Plant (DITP) that are directly related to waste water processing or control of the processing and are focused on long-term plant reliability. These projects are indented to prevent equipment/system failures that could result in odor problems for the Town of Winthrop and the inability of DITP to meet discharge permit requirements. The facility improvements include: upgrades to the Process Instrumentation and Control System to assure its continued operation, which is essential for environmental compliance reporting and plant optimization efforts, replacement of obsolete, unreliable and inefficient components of the Motor Control Centers in the North Main Pumping Station and Variable Frequency Drive Replacement Construction to replace obsolete Variable Frequency Drives ranging from 50 through 300 horsepower.	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Massachusetts Water Resources Authority	**DW**	$806,874	This project requires cleaning, rehabilitation and repair of 20 miles of old water mains which are currently functioning at 50% of their original capacity. In addition, there is need to replace many inoperable values in the system. The mains begin in Brookline and end at the Blue Hills Reservoir in Quincy. The mains serve the Southern High and Southern Extra High System communities of Boston, Brookline, Milton, Quincy, Norwood and Canton.	100%
Massachusetts Water Resources Authority	**DW**	$6,876,818	MWRA will be conducting improvements to the distribution system necessary for constructing a redundant main to prevent the loss of water to several communities, including Waltham, in the event the primary main fails.	100%
Massachusetts Water Resources Authority	**DW**	$3,000,000	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 aqueducts and replacement of existing valves.	100%
Massachusetts Water Resources Authority	**DW**	$3,000,000	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 northeast extremity of the MWRA water service to metropolitan Boston. The project will provide improved storage (16-20 million gallons) but will also provide surge relief, protecting MWRA and community mains, allow more efficient use of the existing MWRA distribution system and provide emergency backup relief to 21 communities in the Northern Intermediate High and Northern High Systems.	100%
Town of Needham	**CW**	$78,491	This project consists of replacing the existing Reservoir B Pump Station building and pumps. Construction includes addition of a new building to house the three new highly efficient pumps, new wet wells, control system, alarms and new backup generator.	100%
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 mains are critical components which would cause catastrophic consequences to the city should they fail.	91.49%
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	21.32%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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.	
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.	98.48%
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).	95.61%
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%
City of Quincy	**CW**	$2,787,004	The objective of the Fort Square Pump Station Rehabilitation Project is ultimately to avoid sanitary sewer overflows (SSO's), which are a threat to public health. The Fort Square Pumping Station is one of Quincy's larger wastewater pumping stations. The pump station was constructed in 1985, and although some upgrades have been made over the year, the station is still using most of its original	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			equipment. Due to the deteriorating condition of the Fort Square Pumping Station, a complete rehabilitation has been recommended in order to avoid a SSO.	
City of Quincy	**DW**	$233,275	The project consists of four contracts: 1. Replacement of water meter and installation of automated meter reading system 2. Replacement of existing 6 inch and 8 inch diameter water distribution mains and service connections 3. Installation of a supervisory control and data acquisition system and security improvements 4. Improvements to the Penns Hill, Riccuiti Drive, West Street and Roosevelt Booster Pump Stations	100%
City of Revere	**CW**	$767,322	This project will allow the city of Revere to continue to identify, assess, prioritize and complete improvements to the city's sewer and storm drain systems. The sewer system evaluation survey activities will include field investigations and desktop evaluation of the city's municipal wastewater and storm water systems. The field investigations include TV Inspection, dye water testing and smoke testing, which will help to complete the evaluation of the wastewater collection system along with support for ongoing assessment of the storm water system including illicit discharge detection and elimination in addition to routine maintenance programs currently underway in the city.	100%
City of Revere	**CW**	$1,500,000	This project is comprised of two construction contracts which will include wastewater and storm drain system improvements to address deficient sewer piping and reduce infiltration and sources of extraneous inflow. The work will drastically reduce the volume of infiltration and inflow within the system. The work will also reduce the amount of storm water entering the city's wastewater collection system and unnecessarily being treated at the Deer Island Sewage Treatment Plant. In addition, the projects will also serve to improve the performance of the city's collection system and reduce or eliminate sanitary sewer overflows during wet weather events	100%
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	97.79%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
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.	98.09%
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.	88.64%
City of Taunton	**CW**	$180,526	This multi-year project is for repair and replacement of sewer mains and service laterals, removal of storm water connections to the sanitary sewer, removal of roof leaders and sump pump connections from the sewer system, separation of combined manholes and upgrade of vital pump stations. The project will eliminate potential public health threats and nuisances resulting from sewage discharge to the receiving waters and reduce the risk of sewer overflows.	100%
City of Taunton	**CW**	$6,295,244	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 (CSOs) 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). 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	100%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
			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	**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). 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.	87.34%
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.	93.80%
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%

Borrower	Program	Amount Financed	Project Description	Percentage of Loan Drawn
Town of Westborough	**CW**	$302,305	The Westborough Wastewater Treatment Plant discharges its effluent to the Assabet River under an NPDES Permit. Westborough is a member of the Assabet River Consortium. The Assabet River is distressed due to severe eutrophication as a result of excessive nutrients such as Phosphorous and Nitrogen. The new 2005 discharge permit EPA issued to the town imposes stringent phosphorus and copper limits. This project will implement a construction upgrade of the WWTP that will enable it to achieve compliance with the permit.	100%
City of Worcester	**CW**	$1,048,196	This project will implement the recommendations from the Lake Avenue Area Sewer System Evaluation Survey to remove cost effective inflow/infiltration from the Lake Avenue Area that contributes to surcharging and overflows into Lake Quinsigamond.	100%

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