2022

# Annual Report

## Massachusetts Clean Water Trust


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

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# Let's Get in Touch


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# A Note from the Treasurer

***The Massachusetts Clean Water Trust (the Trust) is pleased to submit our Clean Water and Drinking Water State Revolving Fund (SRF) Annual Report for State Fiscal Year (SFY) 2022. The Trust's loan program is a collaborative effort between the State Treasurer's Office, the Executive Office for Administration and Finance, the Massachusetts Department of Environmental Protection (MassDEP) and communities across the Commonwealth.***

With its **AAA credit rating,** the Trust finances vital infrastructure projects that enhance ground and surface water resources, ensures the safety of drinking water, protects public health, and develops resilient communities. Access to below-market rate financing and the nearly **$312.1 million** of loan forgiveness provided makes improvements to water infrastructure more feasible while reducing the overall budgetary impact on communities and ratepayers. To date, approximately **$2.8 billion** in federal grants and state matching funds have supported over **$8.1 billion** in water infrastructure planning and construction projects through a leveraged financing program.

## *SFY 2022 Highlights:*

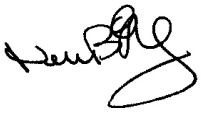
- The **SRF Programs** provided communities approximately $471.5 million in commitments for low interest rate loans on 68 projects, which will support an estimated 2,829 construction and engineering jobs.
- The third round of the **Asset Management Planning (AMP)** grant program was completed resulting in nearly $1.5 million in grants supporting $2.5 million in total project costs. The 15 AMP projects assist communities in creating plans for asset repairs, replacements, or rehabilitation.
- The **Zero Percent Interest PFAS Mitigation Loans** program has committed funding to 19 projects, saving communities an estimated $29.5 million in loan interest beyond the already below-market rate offered for all projects.
- The **School Water Improvement Grant (SWIG)** program kicked off a new round of financing that expanded the program to private schools, early education facilities and non-residential daycares. This expansion was made possible through a US Environmental Protection Agency $3 million grant. The Trust has awarded $435,000 in grants to 57 facilities serving over 25,000 students throughout the Commonwealth in SFY 2022.
- The Massachusetts Legislature approved $100 million in **American Rescue Plan Act (ARPA)** funding to the SRF program to be used as grants.

As the Commonwealth continues to recover from the COVID-19 Pandemic, I am proud to say the activities of the Trust and MassDEP have been constant, committed, and innovative. While not fully reflected in this annual report, during SFY 2022, the Infrastructure Investment and Jobs Act of 2021 was signed into law. This funding will provide extensive additional funding resources that the Trust will be able to improve and innovate the Commonwealth's SRF programs in the years to come.

I would like to sincerely express my appreciation for the EPA Region 1 staff for their efforts during SFY 2022, and congratulations to the Trust and MassDEP for a job well done. To communities in the Commonwealth, thank you for your commitment to this vital mission. Without your dedication, our program would not be a success.

I look forward to continuing this critical work together.

Thank you,



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

# Introduction

***The Massachusetts Clean Water Trust (the Trust), in collaboration with the Massachusetts Department of Environmental Protection (MassDEP), helps communities build or replace water quality infrastructure that enhances ground and surface water resources, ensures the safety of drinking water, protects public health, and develops resilient communities.***

It accomplishes these objectives by providing **low-interest loans and grants** to cities, towns, and water utilities through the Massachusetts State Revolving Funds (SRFs). The SRF programs are partnerships between the United States Environmental Protection Agency (EPA) and the Commonwealth of Massachusetts. SRFs function like an environmental infrastructure bank by financing water infrastructure projects in cities and towns across the Commonwealth.

The Trust and MassDEP administers the two SRFs, the Clean Water (CW) and Drinking Water (DW) SRFs. The CWSRF was established in 1987 under the Clean Water Act and the DWSRF was established in 1996 under the Safe Drinking Water Act. The Trust manages the flow of funds to borrowers while MassDEP manages the development and oversight of projects.

The SRFs receive funding from the EPA in the form of annual capitalization grants, supplemented by state matching grants, and the repayment of loans. When loans to local governments are repaid, the funds are then loaned out again, which is how the fund "**revolves.**"

The Trust uses a "leveraged model" to provide funding in excess of the federal and state grants. Bonds are issued in the capital markets and are secured by borrower repayments and reserve funds. The proceeds from bonds provide capital for new below market rate loans to borrowers for water infrastructure. This model has allowed the Trust to finance approximately **$8.1 billion** in water infrastructure projects from nearly **$2.8 billion** in federal grants and state matching funds.

The Trust is administered by a **three-member board of trustees** that is chaired by the Treasurer and Receiver General of the Commonwealth. The Secretary of the Executive Office for Administration and Finance and the Commissioner of MassDEP serve as trustees. The Board of Trustees approves all financial commitments and program decisions during monthly meetings. All Board of Trustees materials can be found on the Trust's website along with all pertinent information for borrowers, investors, and residents of Massachusetts.

## About this Report

The EPA requires **reporting** on both programs through the CWSRF Annual Report and the DWSRF Biennial Report. The federal reporting requirements for the two programs have been combined into this report, which covers the state fiscal year (SFY 2022) ending June 30, 2022. The content of this report is divided into **four sections.** To comply with the federal reporting requirements[1], each section will label reported information by the specific SRF program.

The first section, **Financial Report**, covers loans made and financial assistance provided through both the CWSRF and DWSRF programs throughout the SFY. The second section, **Grant and Incentive Programs**, provides updates on programs the Trust is proud to be offering Commonwealth communities. The third section, **State Revolving Fund Financial Summary**, explains how the Trust finances these projects. The fourth section, **Program Specific Reporting**, discusses EPA grant requirements and outlines how the Trust and MassDEP meet those federal requirements. In addition, **program highlights** have been placed throughout the report to provide context and insight on the operations of the SRF programs.

**Footnotes**

[1] 40 CFR § 35.3570(a)(4)

# Financial Report

## Clean Water and Drinking Water Annual Summary

The Trust continues to provide subsidized financing for projects that focus on the development and rehabilitation of wastewater and drinking water infrastructure with the aim of promoting sustainability, green infrastructure, and to protect the environment and public health. The CWSRF and DWSRF programs provide additional subsidies to designated Disadvantaged Communities. The Trust and MassDEP perform outreach activities to help communities realize opportunities to implement energy efficient and alternative energy projects. These activities are balanced with the promotion of cost-effective projects that maximize the protection of the environment and public health.

### *Loan Programs*

A majority of the Trust's loans are subsidized at a 2% rate of interest, as set by statute. However, recent legislative changes have allowed for identifying priority projects or priority policy goals to receive a higher amount of subsidy. The subsidies used for interest rate reduction are supplied by the Commonwealth through contract assistance, the loan forgiveness for the lead remediation programs comes from the federal Water Infrastructure Funding Transfer Act (WIFTA) and neither are counted as additional subsidy for the purposes of federal reporting. The following loan programs work to further various program or state goals by incentivizing projects to move forward by providing either a subsidized 2% interest rate loan or a higher amount of subsidy.

### *0% Interest Rate Nutrient Enrichment Reduction Loans*

This loan program is for CWSRF loans. Due to Massachusetts' geographic location and population distribution, many communities are coastal or on rivers that flow into saltwater bodies. This leads to wastewater pollution and additional nitrogen being deposited into saltwater areas. An increase in nitrogen in affected saltwater bodies can create algae blooms which negatively affect animal habitats, cause fish kills, and cause a reduction in shellfish. The decrease in water quality is both an environmental and economic issue for coastal communities. This 0% interest rate loan program helps further incentivize communities to move forward with these projects by providing access to low-cost financing. See Appendix B for SFY 2022 projects.

### *0.5% Housing Choice Community Loan Reduction*

The Baker-Polito Administration have focused on creating affordable housing in the Commonwealth. The Trust has joined other state agencies in providing incentives to communities to participate in the Housing Choice Initiative by providing a 0.50% interest rate reduction to both CWSRF and DWSRF loans. Loans cannot have less than 0% interest rate. From 2017 to 2020, the Commonwealth produced 51,434 new housing units; a 26% increase compared to the last 8 years. See Appendix B for SFY 2022 projects.

### *0% Interest Rate PFAS Remediation Loans*

In SFY 2020, the Board of Trustees approved a 0% interest rate loan program for projects that remediate per- and polyfluoroalkyl substances (PFAS) in public water supplies. PFAS are a family of chemicals widely used to manufacture common consumer goods and can be found in some legacy firefighting foams. Adverse health effects in humans exposed to elevated levels of PFAS may include hepatic, cardiovascular, endocrine, immune, reproductive, and developmental effects. These CWSRF and DWSRF loans help communities that have identified PFAS in their water to complete the remediation projects that are vital to providing clean drinking water to residents. Eligible projects as of SFY 2022 total over $135 million and will save participating communities an estimated $29.4 million in loan interest from the already subsidized interest provided by Trust loans. See Appendix B for SFY 2022 projects.

### *Lead Abatement Loan Forgiveness Program*

This program will provide additional loan forgiveness to Disadvantaged Communities for projects that include planning and construction for lead removal, corrosion control capital improvements, and full replacement of lead pipes and service lines. The subsidy funds for lead removal projects will be in addition to the annual loan forgiveness provided by the Trust. This program is allowed under the federal Water Infrastructure Funding Transfer Act (WIFTA) passed in 2019 and allows a one-time transfer from the CWSRF to the DWSRF for loan forgiveness to lead projects $30 million in loan forgiveness will be distributed to eligible projects that must have applied or will apply to MassDEP starting on the 2021 and no later than the 2023 DWSRF Intended Use Plans (IUPs). See Appendix B for SFY 2022 projects.

### *Community Septic Management Program (CSMP)*

The CSMP provides loans to the Commonwealth's cities and towns for assisting homeowners in the repair or replacement of failed septic systems. Through the CSMP, the Trust issues low-interest rate loans to communities who, in turn, issue loans directly to homeowners for up to 20 years. Loans to homeowners are secured through a betterment on their properties. This program was originally funded through a onetime appropriation by the State Legislature. Those funds have been fully expended, and the program is incorporated as a non-point source program within the CWSRF program. See Appendix B for SFY 2022 projects.

| Comparison of Loan Interest Rates | CWSRF | DWSRF |
|---|---|---|
| **Standard Interest Rate** | 2% | 2% |
| **Extended Term (up to 30 Years)**[2] | 2.20% | 2.20% |
| **Housing Choice** | 1.50% | 1.50% |
| **Nutrient Enrichment Reduction Loans** | 0% | N/A |
| **PFAS Loans** | 0% | 0% |

### *Interim Loans*

Through the Trust's interim loan program, funds are available to projects throughout the year to provide construction financing, similar to a bond anticipation note. Borrowers can enter into a short-term loan with the Trust that enables projects to proceed prior to a Trust bond sale. The Trust can operate this program by extending the use of funds that have revolved back from loan repayments along with its state and federal grants (SRF Program Funds) as a source of capital. To make Trust financing even more appealing to borrowers, the Board of Trustees removed the interim loan interest rate and any associated fees. This change to the program makes interim loans from the Trust the least expensive way for local communities to access capital during construction.

### *Binding Commitments*

A binding commitment for a project is defined as a legal obligation by the Trust to a community that defines the terms and timing for assistance through the SRF program. In SFY 2022, the Trust continued to expand its programs by providing binding commitments for 47 CWSRF projects totaling $354.4 million and 21 DWSRF projects totaling $117.1 million. Please see Appendix B for a complete list of SFY 2022 binding commitments.

## Binding Commitments by Program and SFY

*Dollar amounts in millions*

| | CWSRF | | DWSRF | |
|---|---|---|---|---|
| **SFY** | **Amount** | **Loan** | **Amount** | **Loan** |
| **2022** | $354.4 | 47 | $117.1 | 21 |
| **2021** | $252.5 | 48 | $149.6 | 28 |

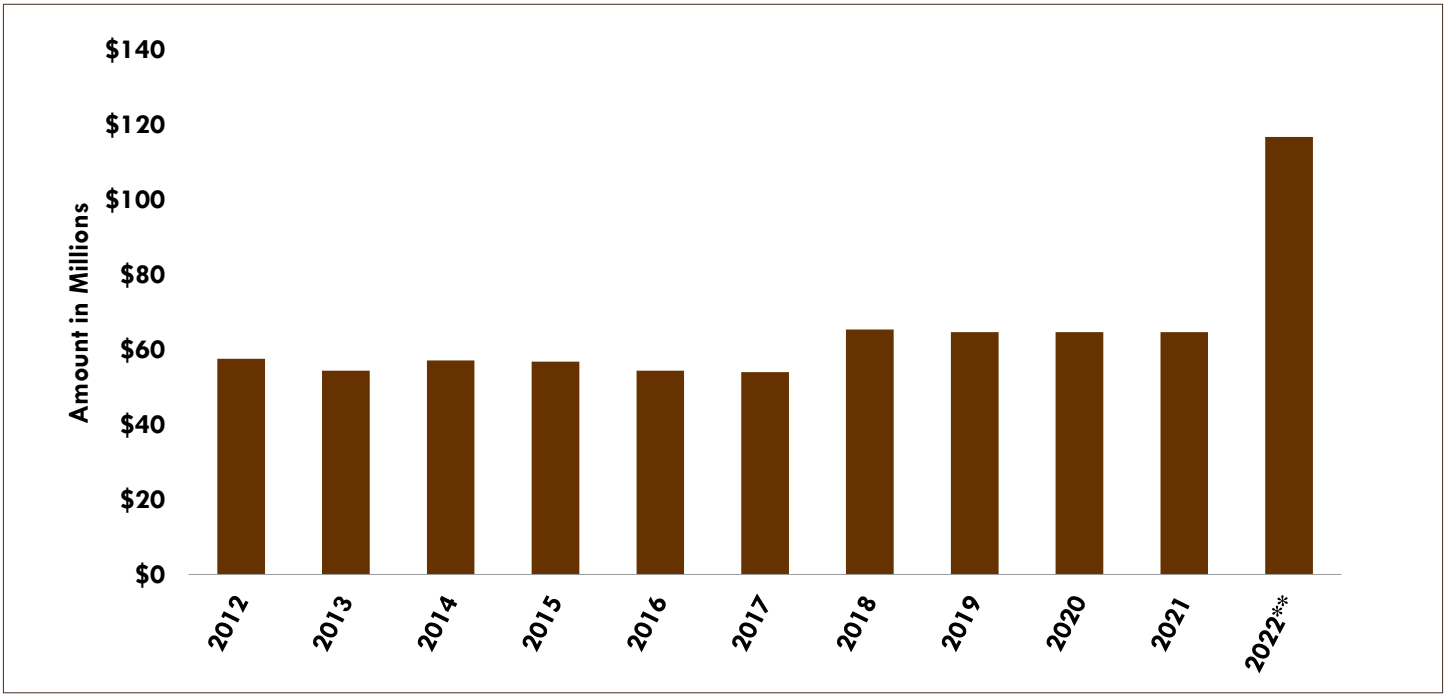
**Footnotes**

[2]Rate current as of the closing of Series 23, May 11, 2021.

## Average Interest Rate for Loans Closed, by Program and Term for SFY 2022

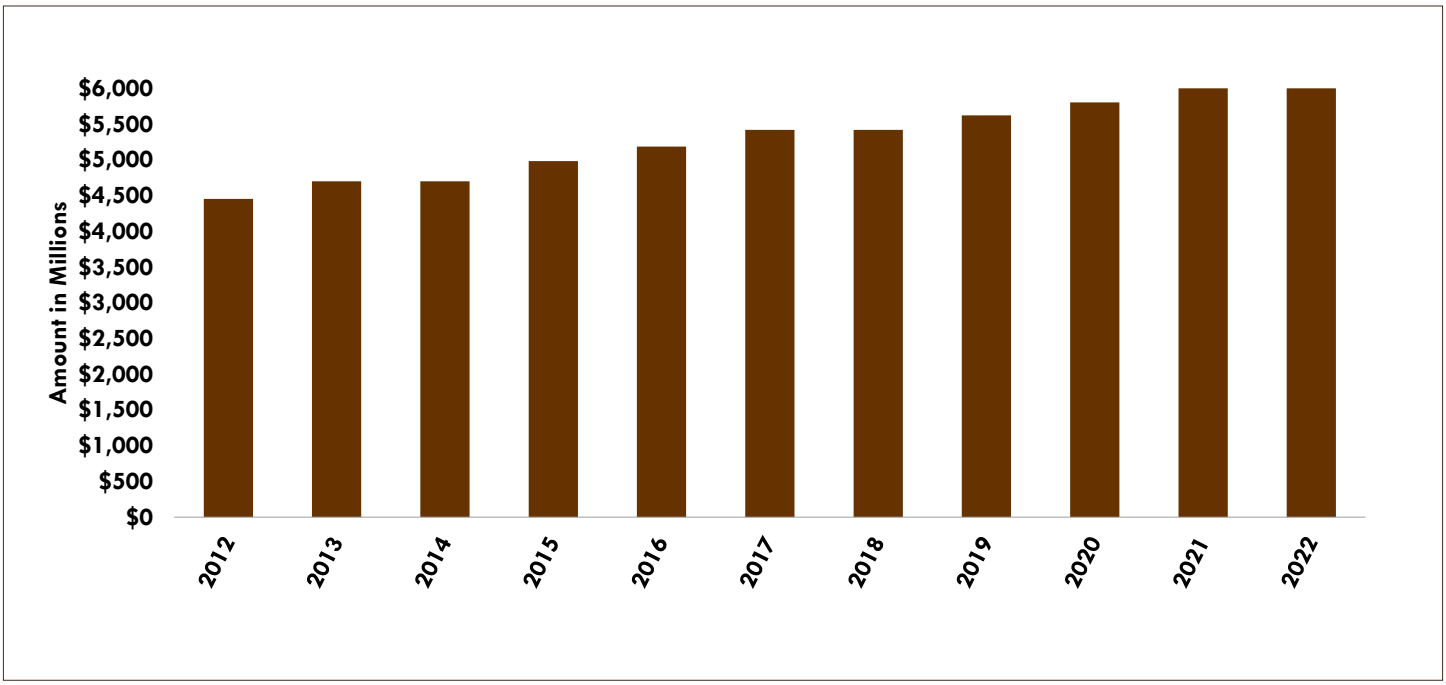
| Average Interest Rate | CWSRF | DWSRF |
|---|---|---|
| All Loans (Includes Extended Term Loans - Up to 30 Years) | 1.83% | 1.07% |

## CWSRF Grant Amount by Year

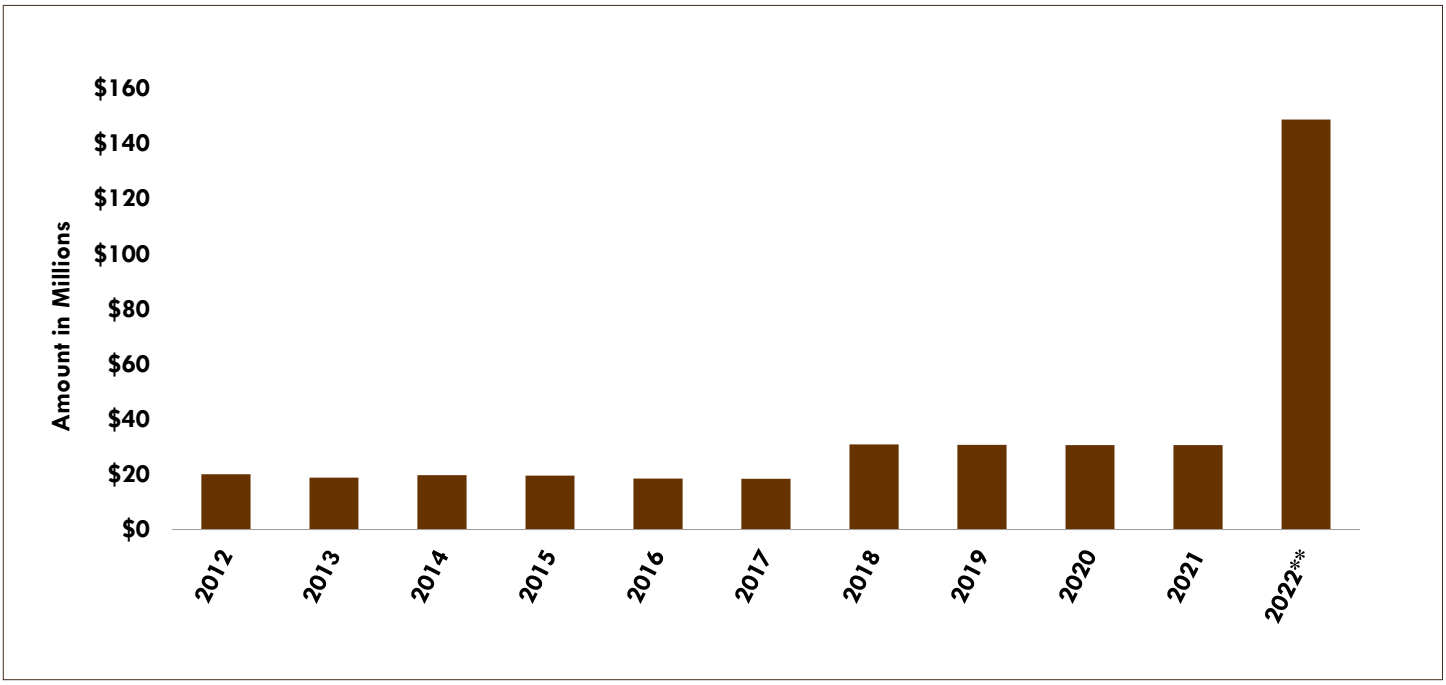



| **Additional Bipartisan Infrastructure Law Grant in FFY 2022 | |
|---|---|
| 2022 | $47.1 |
| *2022 BIL | $69.7 |
| Dollar amounts in millions | |

## CWSRF Cumulative Loans by Year

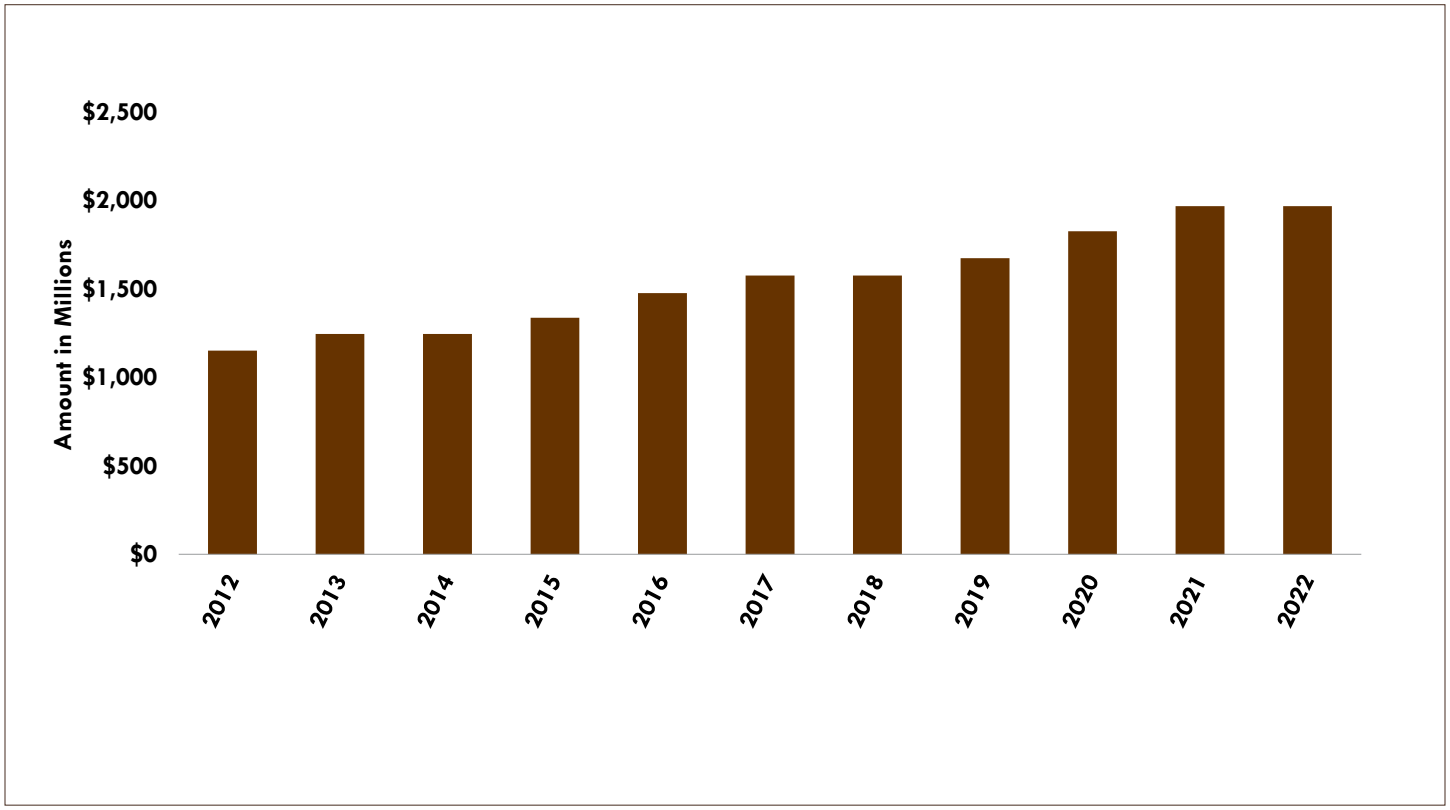



## DWSRF Grant Amount by Year




| **Additional Bipartisan Infrastructure Law Grant in FFY 2022 | |
|---|---|
| **2022** | $19.5 |
| ***2022 BIL** | $129.2 |
| **Dollar amounts in millions** | |

## DWSRF Cumulative Loans by Year




### *Disbursements*

During SFY 2022, the Trust disbursed the following amounts for projects to borrowers through program project funds and interim loans.

## Amount Disbursed and Number of Projects by Program and SFY

*Dollar amounts in millions*

| | CWSRF | | DWSRF | |
|---|---|---|---|---|
| **SFY** | **Amount** | **Loan** | **Amount** | **Loan** |
| **2022** | $220.8 | 130 | $118.7 | 58 |
| **2021** | $158.6 | 147 | $113.4 | 76 |

### *Additional Subsidy*

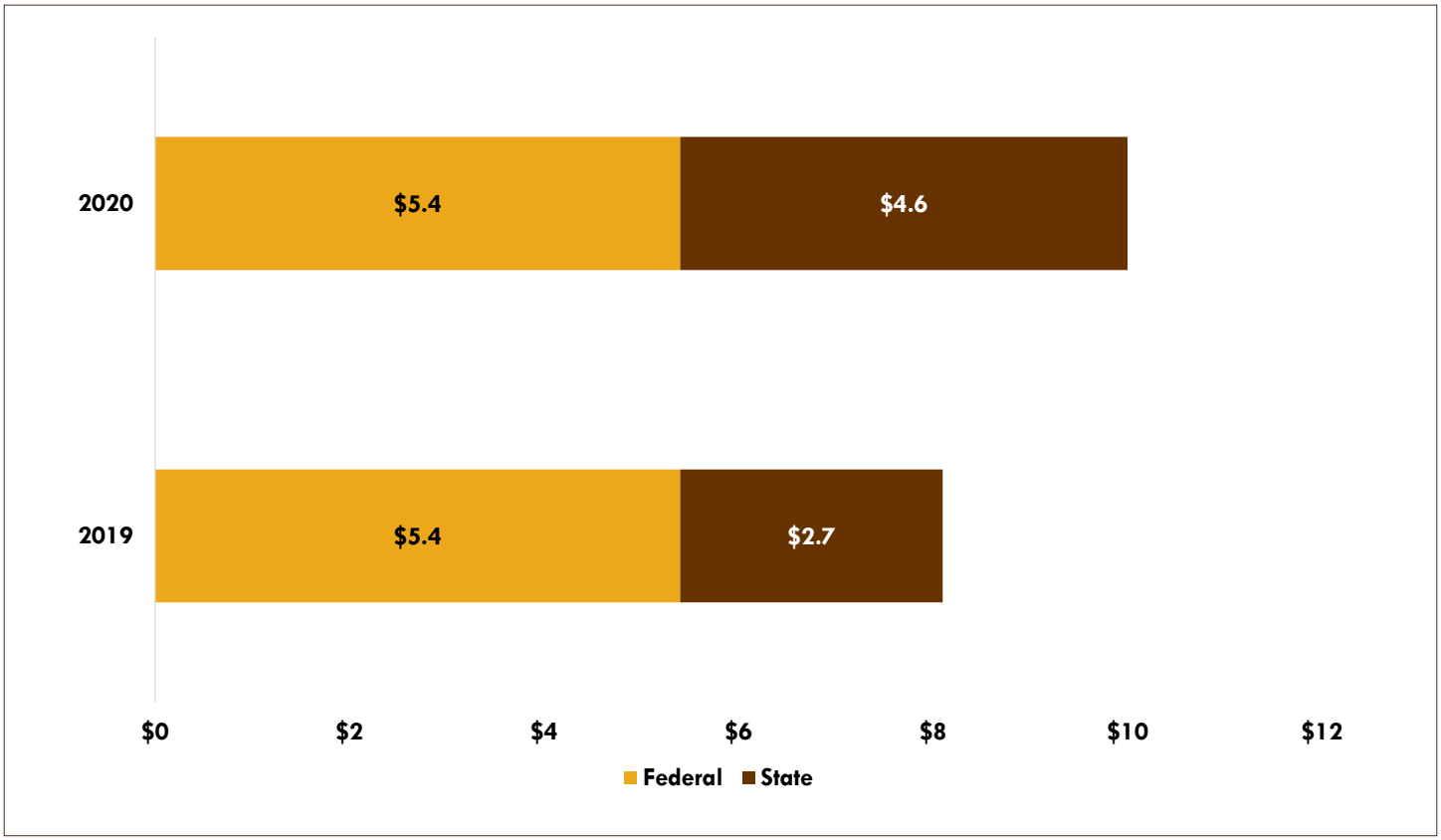
In 2020, Governor Baker declared a state of emergency for the Commonwealth of Massachusetts to respond to COVID-19. Though the official state of emergency terminated on June 15, 2021, the Commonwealth extended many of the state of emergency provisions with the passage of Chapter 20 of the Acts of 2021.

To provide flexibility to our local partners dealing with COVID-19 state and local health restrictions, and growing supply chain and labor issues, MassDEP and the Trust extended the deadline for qualifying projects to execute construction contracts beyond the traditional June 30th deadline. This made it impossible to report on SFY 2022 projects associated with the 2021 EPA grant. The Trust expects to meet the additional subsidy requirements and be in compliance with the EPA 2021 grant and the related congressional appropriations requirements.

Due to the same deadline extension as this year, the Trust was unable to report on SFY 2021 projects in last year's Annual Report. The Trust awarded approximately $23.9 million in loan forgiveness in compliance with EPA grant requirements and congressional appropriations. Federal grants covered $10.5 million in loan forgiveness, while the Commonwealth contact assistance made up the additional $13.5 million. The Trust's loan forgiveness program regularly exceeds the minimum required by the federal grants, and funding is augmented with Commonwealth contact assistance as noted in the tables below.

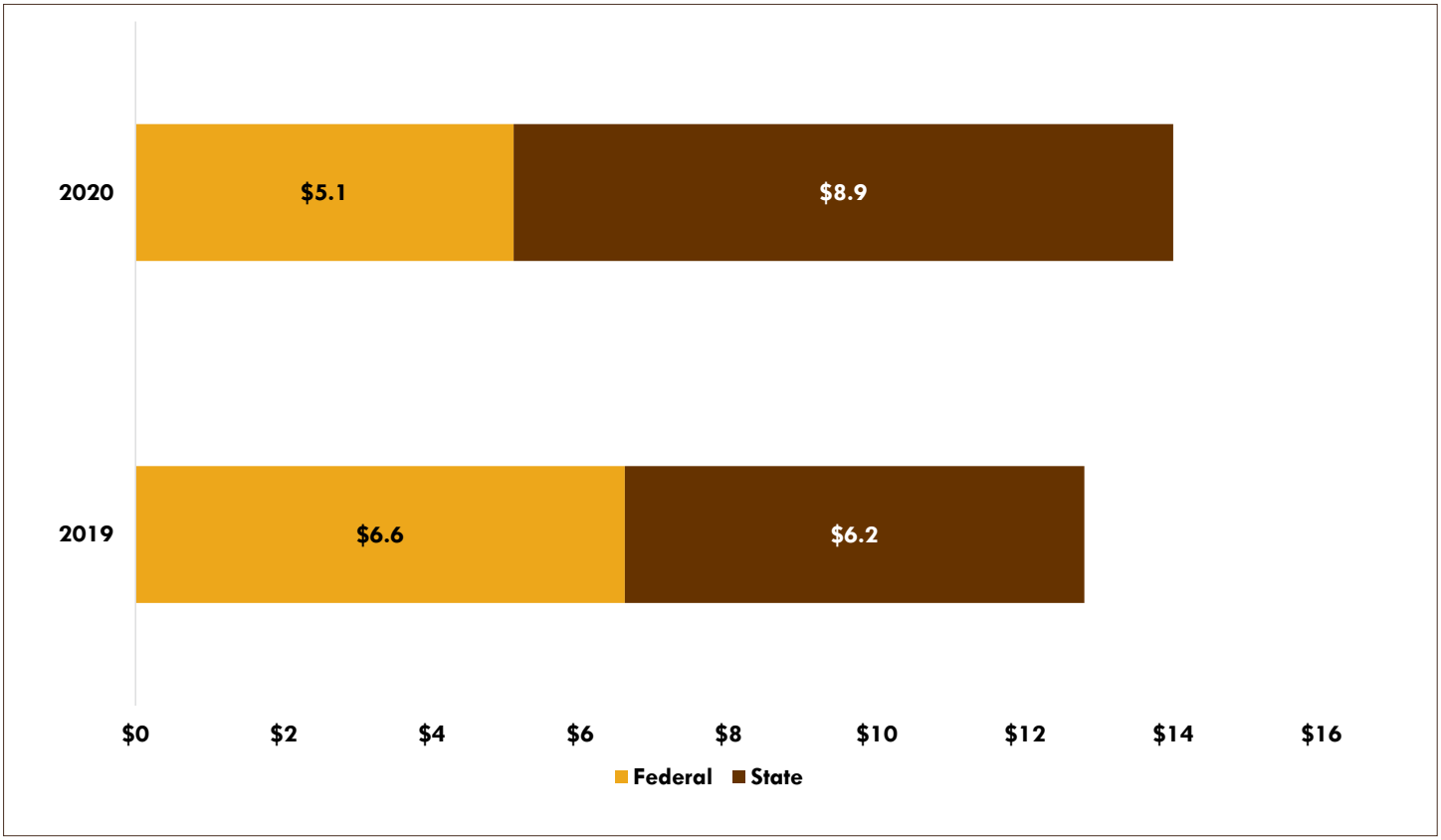
## CWSRF Additional Subsidy by Source by Grant Year

*Dollar amounts in millions*




## DWSRF Additional Subsidy by Source by Grant Year

*Dollar amounts in millions*



## Additional Subsidy Committed and Expended by Grant Year

*Dollar amounts in millions*

| | CWSRF | | | DWSRF | | |
|---|---|---|---|---|---|---|
| **EPA Grant Year** | **Awarded** | **Expended** | **% Expended** | **Awarded** | **Expended** | **% Expended** |
| **2020** | $9.9 | $9.7 | 97% | $14.0 | $11.7 | 83.6% |
| **2019** | $8.1 | $8.0 | 99% | $12.8 | $12.8 | 100% |
| **2018** | $16.2 | $16.2 | 100% | $5.2 | $5.2 | 100% |

Additional subsidy in the form of loan forgiveness is dedicated to communities that would not otherwise be able to afford projects. Loan forgiveness reduces the total principal cost and interest costs paid over the life of a loan. The Trust chooses to apply all subsidy funds to communities that are deemed Disadvantaged Communities. The Trust uses the methodology detailed below to identify Disadvantaged Communities, as outlined by the Water Resources Reform and Development Act (WRRDA) of 2014 for the CWSRF, and the America's Water Infrastructure Act of 2018 (AWIA) for the DWSRF.

The Trust's formula, which was approved by EPA Region 1, considers the per capita income, population trend from 2010-2020 and the employment rate for each municipality to develop an adjusted per capita income (APCI). Each municipality is then ranked against the State's APCI. Communities that fall below the State APCI are sorted into three tiers.

| Disadvantaged Community Tier Designation | |
|---|---|
| **Tier 1** | APCI equal to or more than 80% of the State APCI, but less than 100% of the State APCI |
| **Tier 2** | APCI equal to or more than 60% of the State APCI, but less than 80% of the State APCI |
| **Tier 3** | APCI less than 60% of the State APCI |

| Loan Forgiveness by Program and Affordability Tier | | |
|---|---|---|
| **Tier** | **CWSRF** | **DWSRF** |
| **1** | 3.3% | 6.6% |
| **2** | 6.6% | 13.2% |
| **3** | 9.9% | 19.8% |
| **These percentages are only for projects appearing on and after the 2019 IUP** | | |

| Number of Eligible Communities by Affordability Tier and SFY | | |
|---|---|---|
| **Tier** | **2022** | **2021** |
| **1** | 64 | 75 |
| **2** | 93 | 89 |
| **3** | 83 | 75 |
| **Not Eligible** | 111 | 112 |
| **Total** | **351** | |

## Grant Projects Receiving Additional Subsidy

| 2020 CWSRF Grant Projects Receiving Additional Subsidy | | | | | |
|---|---|---|---|---|---|
| **Borrower** | **Tier** | **Loan #** | **Eligible Project Cost** | **Loan Forgiveness** | **Loan Forgiveness Percentage** |
| **Barnstable** | 1 | CWP-20-18 | $1,226,751 | $40,483 | 3.30% |
| **Barnstable** | 1 | CWP-20-43* | 10,521,805 | 347,220 | 3.30% |
| **Barnstable** | 1 | CWP-20-43-A* | 792,000 | 26,136 | 3.30% |
| **Barnstable** | 1 | CWP-20-24 | 1,731,512 | 57,140 | 3.30% |
| **Barnstable** | 1 | CWP-20-23* | 11,939,531 | 394,005 | 3.30% |
| **Barnstable** | 1 | CWP-20-23-A* | 350,000 | 11,550 | 3.30% |
| **Barnstable County** | 1 | CWP-20-44 | 1,402,431 | 46,280 | 3.30% |
| **Brockton** | 3 | CWP-20-17* | 1,355,227 | 134,167 | 9.90% |
| **Brockton** | 3 | CWP-20-17-A* | 277,000 | 27,423 | 9.90% |
| **Chicopee** | 3 | CWP-20-31* | 3,925,900 | 388,664 | 9.90% |
| **Chicopee** | 3 | CWP-20-31-A* | 355,660 | 35,210 | 9.90% |
| **Chicopee** | 3 | CWP-20-32 | 4,963,150 | 491,352 | 9.90% |
| **Dudley** | 2 | CWP-20-14 | 924,097 | 60,990 | 6.60% |
| **Fitchburg** | 3 | CWP-20-03* | 7,498,408 | 742,342 | 9.90% |
| **Fitchburg** | 3 | CWP-20-03-A* | 1,170,000 | 115,830 | 9.90% |
| **Gloucester** | 2 | CWP-20-40 | 2,400,700 | 158,446 | 6.60% |
| **Lynn Water Sewer Commission** | 3 | CWP-20-50 | 10,216,710 | 1,011,454 | 9.90% |
| **New Bedford** | 3 | CWP-20-22* | 4,068,890 | 402,820 | 9.90% |
| **New Bedford** | 3 | CWP-20-22-A* | 235,700 | 23,334 | 9.90% |
| **Revere** | 3 | CWP-20-27* | 4,762,058 | 471,444 | 9.90% |
| **Revere** | 3 | CWP-20-27-A* | 932,000 | 92,268 | 9.90% |
| **South Essex Sewer District** | 1 | CWP-20-35 | 12,383,265 | 408,648 | 3.30% |
| **Taunton** | 3 | CWP-20-21 | 29,983,598 | 2,968,376 | 9.90% |
| **Taunton** | 3 | CWP-20-19 | 6,000,000 | 594,000 | 9.90% |
| **Tyngsborough** | 1 | CWP-20-11 | 466,057 | 15,380 | 3.30% |
| **Wareham** | 3 | CWP-20-09 | 9,000,000 | 891,000 | 9.90% |
| **Total** | | | **$128,882,450** | **$9,955,962** | |

**Loans counted as one project* -- *Barnstable CWP-20-43 & CWP-20-43-A; Barnstable CWP-20-23 & CWP-20-23-A; Brockton CWP-20-17 & CWP-20-17-A; Chicopee CWP-20-31 & CWP-20-31-A; Fitchburg CWP-20-03 & CWP-20-03-A; New Bedford CWP-20-22 & CWP-20-22-A; Revere CWP-20-27 & CWP-20-27-A*

| 2020 DWSRF Grant Projects Receiving Additional Subsidy | | | | | |
|---|---|---|---|---|---|
| **Borrower** | **Tier** | **Loan #** | **Eligible Project Cost** | **Loan Forgiveness** | **Loan Forgiveness Percentage** |
| **Ayer** | 2 | DWP-20-04 | $6,052,983 | $798,994 | 13.20% |
| **Barnstable Fire District** | 1 | DWP-20-30 | 1,458,444 | 96,257 | 6.60% |
| **Blackstone** | 2 | DWP-20-20 | 6,210,000 | 819,720 | 13.20% |
| **Brockton** | 3 | DWP-20-24 | 1,471,261 | 291,310 | 19.80% |
| **Deerfield Fire District** | 1 | DWP-20-09 | 736,928 | 48,637 | 6.60% |
| **Dracut Water Sewer District** | 1 | DWP-20-18 | 19,223,697 | 1,268,764 | 6.60% |
| **Dudley** | 2 | DWP-20-25 | 4,092,776 | 540,246 | 13.20% |
| **East Brookfield** | 2 | DWP-20-22 | 4,000,000 | 528,000 | 13.20% |
| **Eastham** | 2 | DWP-20-23 | 12,291,758 | 1,622,512 | 13.20% |
| **Fall River** | 3 | DWP-20-13 | 2,338,551 | 463,033 | 19.80% |
| **Holyoke** | 3 | DWP-20-11 | 2,623,924 | 519,537 | 19.80% |
| **Leominster** | 2 | DWP-20-26 | 6,557,600 | 865,603 | 13.20% |
| **Springfield Water Sewer Commission** | 3 | DWP-20-01 | 15,000,000 | 2,970,000 | 19.80% |
| **Springfield Water Sewer Commission** | 3 | DWP-21-03 | 10,089,000 | 1,997,622 | 19.80% |
| **West Boylston Water District** | 2 | DWP-20-17 | 8,760,000 | 1,156,320 | 13.20% |
| **Total** | | | **$100,906,922** | **$13,986,555** | |

# Project Highlight - Springfield

## Springfield Water & Sewer Commission

**NUTRIENT REMOVAL UPGRADE AND RELATED FACILITY IMPROVEMENTS**
**LOAN NUMBER:** CWP-21-11
**LOAN AMOUNT:** $33,692,134

The Springfield Water and Sewer Commission (SWSC) is in the process of upgrading the Springfield Regional Wastewater Treatment Facility (SRWTF) which was constructed in 1977. It provides treatment services to 260,000 customers in seven communities, including the City of Springfield. SWSC has made huge efforts to improve the facility's processing capacity and reduce combined sewer overflows in line with updated National Pollutant Discharge Elimination System (NPDES) permit limits related to treated and untreated water discharged directly into the Connecticut River.

The Connecticut River is New England's longest river at 411 miles. Its largest watershed is over 11,000 square-miles in four states with 38 major tributaries. It stretches from northern New Hampshire down to Connecticut where it discharges into the Long Island Sound. The river has been dramatically impacted by development and industry. The EPA has madethe clean up of the river and Long Island Sound a priority.

SWSC has determined major upgrades to components that are reaching the end of their useful life that will need to be upgraded. This is especially important for SWSC to remain in compliance with NPDES permit requirements to aggressively reduce the nitrogen level total maximum daily load and improve dissolved oxygen in the Connecticut River.

To that end, SWSC will be performing upgrades to the biological nutrient removal process at the SRWTF to make major improvements to the overall facility. The upgrade includes the conversion of the aeration system to a hybrid step feed process capable of removing nitrogen from the waste stream. The process improvements will reconfigure the aeration basins for enhanced nitrogen removal while preserving the step feed influent flow arrangement to manage higher flowrates.

Completing this upgrade will include replacing the diffused aeration distribution system, upgrades to the plant electrical system, and rehabilitation of the ventilation system in the grit and screenings building. The project will provide new pumps in the aeration basins to return 120 million gallons a day for optimal energy efficiency. The design uses high volume low head variable frequency drive pump/mixers for this application. High efficiency equipment, including a new electronic system, will increase treatment effectiveness and provide significant energy savings.

The objective of these improvements is to increase the effectiveness of the SRWTF to continue meeting its current and anticipated future NPDES permit limits as well as replace and increase the reliability of critical infrastructure onsite.

*Aeration nozzles in the secondary treatment basin at the SRWTF*

*Existing grit cyclone in the SRWTF*

*A 1970s era electrical panel in the SRWTF*

# Grant and Incentive Programs

## American Rescue Plan Act Funding (ARPA) Water Infrastructure Grants

In December 2021, the Baker-Polito Administration and the Massachusetts Legislature approved $100 million in ARPA funding to the Clean Water Trust (the Trust) as grants for water infrastructure projects. The funding was provided by the line item 1599-2032 of Chapter 102 of the Acts of 2021. Included in the line item was over $12 million in earmarks that will not be administered by the Trust and is not included in the following reporting.

At its February 2, 2022, Board Meeting, the Trust's Board of Trustees approved $66.8 million in grants to 52 projects beginning construction later in 2022. The grants are one portion of subsidy being provided to total project costs of $661.7 million. Many of these projects also qualify for a loan forgiveness subsidy as Disadvantaged Communities. The following table shows how the funds are being distributed to specific types of projects. The ARPA funds listed here are preliminary and subject to change. Once all project regulatory agreements are submitted the Trust's Board of Trustees will provide a final approval of subsidy funds.

### Loan Forgiveness Percentage by Project Category

| Loan Categories | Grant Percentage |
|---|---|
| **PFAS Remediation Projects** | 20% |
| **Loans to Small Drinking Water Systems** | 15% |
| **All Other Drinking Water Projects** | 10% |
| **Combined Sewer Overflow (CSO) Projects** | 15% |
| **All other Wastewater Projects** | 7.5% |

### Total ARPA Funds Committed

*Dollar amounts in millions*

| Program | Number of Projects | Total ARPA Funds |
|---|---|---|
| **Clean Water State Revolving Fund** | 32 | $39.5 |
| **Drinking Water State Revolving Fund** | 20 | 27.3 |
| **Total** | **52** | **$66.8** |

## Asset Management Planning (AMP) Grant Program

Asset management for water, wastewater, and stormwater utilities is a systematic approach to physical infrastructure cataloging, process management and criticality tracking that allows the utility to make informed financial decisions that are most likely to achieve long-term sustainability and deliver consistent cost-efficient service.

The AMP Grant program originally offered up to $2 million annually beginning with the 2019 IUP. Due to expanding interest in the program, the Trust's Board has authorized an increase in funding to meet the demand. The purpose of this grant program is to assist eligible applicants with completing, updating, or implementing an asset management program for wastewater, drinking water, stormwater utilities or any combination of the three. Finally, the program is aimed at assisting applicants with meeting federally required Fiscal Sustainability Planning.

The Trust provides a maximum grant award of $150,000 or 60% of the total estimated planning cost, whichever is less. The applicant provides the remaining amount with a cash contribution or a cash contribution along with an in-kind services (IKS) contribution as a local match. The IKS contribution is limited to 50% of the total local match., Small systems may use an IKS contribution of up to 70% of the local match. Projects may use CWSRF or DWSRF loans with a maximum term of five years to finance the entire local contributions.

In SFY 2022, the Trust and MassDEP updated the program eligibility to include cybersecurity assessments. This will allow communities to have a professional review of their infrastructure's network security and make recommendations and policy changes. Additionally, the Trust updated the AMP grant's list of prequalified engineers to include new recipients and has changed the policy to allow firms to apply on a rolling basis. This will better serve the program by allowing the list of prequalified engineers to expand as needed.

AMP grants applications are requested through the annual SRF project solicitation. The Trust offered 18 grants totaling nearly $1.72 million in the 2021 IUPs. Of these, the Trust executed 16 agreements totaling approximately $1.48 million in grants which helped to fund $2.5 million in asset management project activities. The Trust has continued this program in its 2022 IUP, offering 34 grants totaling nearly $3.65 million.

| Community | Loan or Grant Number | Agreement Date | Project Cost | Grant Amount |
|---|---|---|---|---|
| **Adams** | CWA-21-26 | 12/1/2021 | $100,000 | $60,000 |
| **Ayer** | CWA-21-15 | 10/6/2021 | 121,250 | 72,750 |
| **Canton** | CWA-21-19 | 11/3/2021 | 250,000 | 150,000 |
| **Dudley** | DWA-21-08 | 12/1/2021 | 150,000 | 90,000 |
| **Greater Lawrence Sanitary District** | CWA-21-12 | 9/1/2021 | 263,020 | 150,000 |
| **Medway** | CWA-21-14 | 10/6/2021 | 125,000 | 75,000 |
| **Methuen** | CWA-21-20 | 11/3/2021 | 250,000 | 150,000 |
| **North Attleborough** | CWA-21-27 | 11/3/2021 | 183,750 | 110,250 |
| **Norwood** | CWA-21-30 | 1/5/2022 | 100,000 | 60,000 |
| **Pepperell** | CWA-21-47 | 12/1/2021 | 150,000 | 90,000 |
| **Southampton** | DWA-21-07 | 11/3/2021 | 109,788 | 65,738 |
| **Swampscott** | CWA-21-05 | 7/7/2021 | 250,000 | 150,000 |
| **Tyngsborough** | CWA-21-31 | 1/5/2022 | 101,250 | 60,750 |
| **Wellesley** | CWA-21-29 | 6/1/2022 | 119,200 | 71,520 |
| **Westborough** | CWA-21-08 | 8/4/2021 | 133,407 | 80,044 |
| **Winthrop** | CWA-21-23 | 12/1/2021 | 65,000 | 39,000 |
| **Total** | **16 Projects** | | **$2,471,665** | **$1,475,052** |

The below case study from the City of Haverhill illustrates the types of projects being completed through the AMP program.

# AMP Case Study • City of Haverhill

## Community Profile

***Utility***
City of Haverhill Department of Public Works (DPW)

***Systems***
Drinking water, stormwater, and wastewater

***Total Project Cost***
$250,000

***Grant***
$150,000

## Utility Profile

- Serves approximately **68,000** people
- **181** miles of sewer collection system piping – ranging from 6 to 84-inches in diameter
- **16** pump stations
- **95** miles of stormwater gravity pipes – ranging from 6 to 60-inches
- **350** stormwater outfalls
- **7,814** sewer and stormwater manholes

## Activity Summary

- **Updated and improved** the City's existing GIS data through inventory and location of assets
- **Connected** GIS to the Utility Cloud and Computerized Maintenance Management Software
- Performed a **Criticality Analysis** on drinking water distribution, stormwater collection, and wastewater collection systems
- Evaluated **level of service** in terms of quality, quantity, reliability and environmental standards
- Planned for future short-term, immediate-term, and long-term **Capital Improvement Projects** for horizontal assets
- Determined **long-term funding strategies** to ensure high-level performance and pipe integrity

## Case Study

Prior to receiving the Asset Management Planning Grant, Haverhill's Asset Management Plan was virtually non-existent. After being awarded the grant, the city started taking steps toward gaining inventory and developing a risk-based approach to repair and replacement.

Through the AMP Grant, Haverhill was able to determine the criticality of major infrastructure in drinking water, stormwater, and wastewater to determine which components were most likely to fail and needed to be addressed with utmost importance. Having this foundation in place presented the opportunity to then consider what other infrastructure had similar characteristics and could serve to be repaired or replaced.

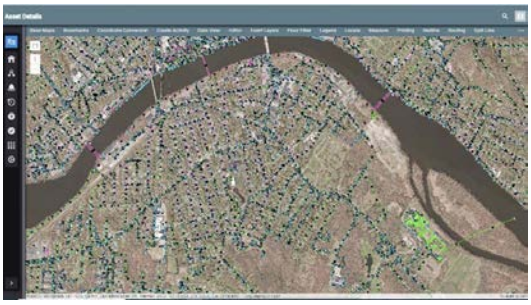
James Conte, Project Manager for the 2020 Haverhill AMP Grant, expressed that he was surprised by the amount of information the city gathered during this process. It allowed the DPW to identify the correct location of a water main that was noted in records on the opposite side of the street, thus requiring a spatial correction. Fixing these errors was a substantial improvement in their data.

Mr. Conte noted the budgetary impact of being awarded this grant, saying that it has given Haverhill the ability to replace critical infrastructure before it required emergency repair, thus allowing the city to stay ahead of failures that can cost millions. Further, this risk-based approach has allowed the DPW to communicate the need more effectively for infrastructure and investments in rehabilitation and maintenance.

## Technology

### *Geographic Information System (GIS) and Computerized Maintenance Management System (CMMS)*

Haverhill has historically maintained and updated their GIS system, which keeps inventory for drinking water, stormwater, and wastewater assets. After receiving the AMP Grant, Cityworks, a Computerized Maintenance Management System (CMMS) which tracks CCTV work, scheduling, and maintenance, was integrated with GIS. They also incorporated Esri mobile field mapping and GPS units to do spatial corrections in the field. They now use a combination of these technologies to conduct work. Data retention through technology use is a key component of the updated AMP, as the city had previously relied on the individual knowledge of employees or retired DPW workers. Now, long-term retention of asset data such as pipe size, material, and year of installation are readily available and can be accessed by current and future DPW employees.



*Cityworks Map*

## Evaluation and Analysis

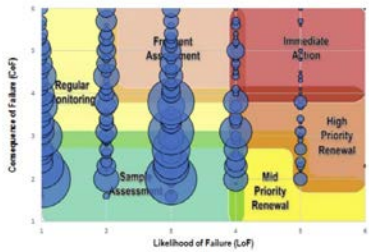



Figure 5-4: Sanitary Sewer Action Level Distribution

### *Criticality*

Utilizing a criticality-based methodology within an AMP allows the DPW to manage system risk and provides an analysis framework for allocating future operational resources and focusing capital improvements. The criticality of the city's system components was determined by two specific factors:

- **Likelihood of Failure (LoF):** Determines the likelihood of an asset failing, assigned to each pipe based on condition and estimated useful life remaining
- **Consequence of Failure (CoF):** Determines the severity of the consequences of a specific asset failing

Failure is defined as an asset that is not performing its designated purpose or operating at the desired level. Modes of failure include mortality, capacity, level of service and financial inefficiency. Woodard & Curran assigned a Total Risk score to define criticality by multiplying LoF by CoF. Results for LoF were ranked in one of six categories, ranging from very low to severe. Results for CoF were ranked into six categories, including sample assessment, regular monitoring, frequent assessment, mid-priority renewal, high priority renewal, and immediate action.

### *Prioritization and Future Cost*

The Haverhill DPW team and Woodard & Curran utilized the results of the criticality analysis to develop a priority list of assets (PLA) and secondary list of assets (SLA).

- **Priority List of Assets (PLA)** are assets that require an action level of Immediate Action or High Priority Renewal
- **Secondary list of Assets (SLA)** are assets that are identified as Mid Priority Renewal action categories

The PLA developed by Woodard & Curran included approximately 32% of the water main, 9% of the sanitary sewer main, and 25% of the stormwater main on the PLA, meaning these assets require immediate action or high priority renewal.

## AMP Sustainability and Development

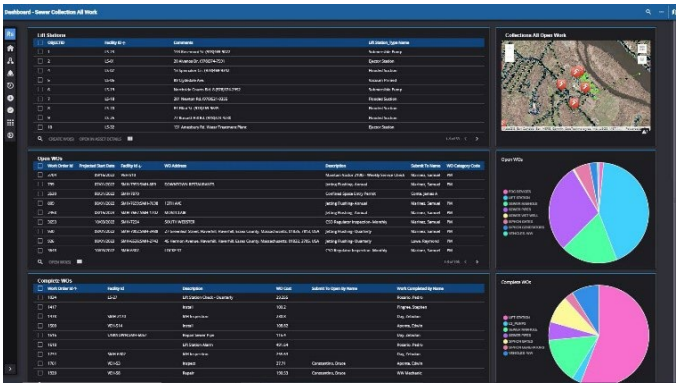
### *Training*

Haverhill's updated AMP requires technical training to go along with the increased use of software and applications. For instance, Cityworks and Esri require training to learn how to use work management components such as executing work orders and inspections. Woodard & Curran provided an initial system training in a "train-the-trainer" format, to ensure the city has the means to utilize this technology moving forward.

These systems are now maintained at all levels of the DPW, with field staff assisting with the collection and input of attribute data for utilities and upper management maintaining quality assurance and quality control. This work is done in compliance with the EPA's Municipal Separate Storm Sewer System (MS4) regulations.

### *Future AMP Activities*

Haverhill's AMP is operationally sustainable and has laid out a foundation to incorporate maintenance and repairs into the Capital Improvement Plan (CIP), while maintaining flexibility where necessary. For instance, if higher risk pipes are found, they adjust the CIP as needed. In the future, the Haverhill's DPW plans to continue conducting asset inventory to assist with unknown utility information. The city will apply for the AMP Grant Program again and plan to use future grant funds toward more inspections to gain more information on present unknowns. Overall, Haverhill aims to maintain efficient and cost-effective infrastructure.



*Sewer Collections Dashboard*

## The School Water Improvement Grant (SWIG) Program

On **January 8, 2020**, the Trust's Board of Trustees approved the pilot round of the SWIG program. The goal of the SWIG program is to reduce lead in school drinking water to the lowest levels possible by incentivizing public and private schools, early education facilities and non-residential daycares to test their drinking water fixtures then remediate any lead exceedances that are detected. It accomplishes this by providing funds to purchase and install point-of-use filtered water bottle filling stations to replace drinking water fixtures that tested above the remediation lead action level of 1 part per billion.

MASSACHUSETTS SWIG SCHOOL WATER IMPROVEMENT GRANTS

SWIG provides **$3,000 per fixture** that tests positive for lead that is eligible to be replaced. The funding covers the purchase of bottle filling stations, installation, and post installation testing of the units. It allows the organization to use the remaining funds for future operation and maintenance costs. SWIG was launched in concert with MassDEP's expanded version of the Assistance Program for Lead Testing in School Drinking Water using funds from the EPA's Lead Testing in School and Child Care Program Drinking Water Grant.

In April 2022, the Trust's Board of Trustees voted to reserve **$400,000** to fund sampling and testing in private schools throughout the Commonwealth. These funds will be used to offer free technical assistance and sampling to facilities that were originally not included in the previous and current free water sampling programs. With this investment, the Commonwealth has shown its commitment to ensuring safe drinking water in facilities the serve those most at risk of health problems from consuming lead in drinking water.

In SFY 2022, the Trust offered up to **$2 million** in SWIG grants and has awarded **$435,000** in grants to **57** facilities serving over **25,000** students throughout the Commonwealth. SWIG has transitioned to a rolling application process and expects to award additional funds in SFY 2023. This is in addition to **$954,000** grants awarded in SFY 2021 to **128** facilities.

| Organization | Award Fixtures | Grant Amount | Date Awarded |
|---|---|---|---|
| **Amherst Pelham Regional School** | 10 | $30,000 | 6/1/2022 |
| **Christ Church Parish Day School** | 1 | 3,000 | 6/1/2022 |
| **Easton Public School** | 1 | 3,000 | 6/1/2022 |
| **Giving Tree School** | 1 | 3,000 | 5/4/2022 |
| **Harbor City School** | 1 | 3,000 | 5/4/2022 |
| **Hampden Wilbraham Regional** | 1 | 3,000 | 6/1/2022 |
| **Holyoke Community Charter School** | 8 | 24,000 | 5/4/2022 |
| **Lowell Public School** | 3 | 9,000 | 5/4/2022 |
| **Lunenberg Public Schools** | 2 | 6,000 | 6/1/2022 |
| **Maynard Public Schools** | 8 | 24,000 | 6/29/2022 |
| **Medway Public School** | 12 | 36,000 | 6/1/2022 |
| **MetroWest Jewish Day School** | 1 | 3,000 | 6/1/2022 |
| **Nashoba Regional School** | 14 | 42,000 | 6/29/2022 |
| **New Bedford Public School** | 32 | 96,000 | 6/29/2022 |
| **Worcester Public Schools** | 50 | 150,000 | 6/29/2022 |
| **Total** | **145** | **$435,000** | |

# Cape Cod and Islands Water Protection Fund (CCIWPF)

The CCIWPF was started by a recommendation from the update to the 208 Plan funded by the Trust and developed by the Cape Cod Commission to address nitrogen flowing into the watersheds on Cape Cod. The CCIWPF was created pursuant to Chapter 337 of the Acts of 2018 "Act Regulating and Insuring Short Term Rentals (the "Act"). The legislation added an optional 2.75% local excise tax on traditional lodging and short-term rentals for communities on Cape Cod. This excise tax may only be collected by communities participating in the CCIWPF and may only be deposited to the fund managed by the CCIWPF Management Board. The Board is comprised of representatives from each Cape Cod community. The Trust acts as custodian for this fund and moves funds at the direction of the Board.

Monies from the fund may be used to provide loan forgiveness to eligible CWSRF projects financed by the Trust or to pay for debt service for pre-existing debt incurred outside the Trust for certain Cape Cod communities. In SFY 2022, the CCIWPF Management Board approved commitment amounts for $108,264,500 of eligible projects and $52,105,112 for debt service for pre-existing debt incurred outside the Trust for certain Cape Cod communities. These commitment amounts for the pre-existing debt will be provided over a period of ten years while the other commitments will be paid over four years. In SFY 2022, the Trust received instructions from the CCIWPF Management Board to transfer $1,302,628 from the fiduciary account to a designated account at the Trust. These funds were disbursed to the respective communities for debt service on pre-existing debt.

| IUP Year | Borrower | Loan Number or SRF ID | Project Description | Project Cost | Subsidy Awarded | Payment / Set Aside |
|---|---|---|---|---|---|---|
| **2022** | Barnstable | 6953 | Wastewater Pump Station Replacement | $5,540,000 | $1,385,000 | $- |
| **2022** | Chatham | 7074 | Taylors Pond/Mill Creek Sewer | 14,696,000 | 3,674,000 | - |
| **2022** | Chatham | 7079 | Chatham Stage Harbor Sewer Extension | 11,010,500 | 2,752,625 | - |
| **2022** | Chatham | 7072 | Chatham Mill Pond Pumping Station Upgrade | 2,268,000 | 567,000 | - |
| **2022** | Chatham | 7129 | Water Pollution Control Facility Sludge Processing Upgrades | 4,750,000 | 1,187,500 | - |
| **2022** | Falmouth | 6986 | Falmouth Wastewater Treatment Facility Improvements | 20,000,000 | 5,000,000 | - |
| **2022** | Orleans | 7150 | Meetinghouse Pond Area Collection System Improvements | 32,906,000 | 8,226,500 | - |
| **2022** | Orleans | 7118 | Permeable Reactive Barrier Implementation | 17,094,000 | 4,273,500 | - |
| **N/A** | Barnstable | N/A | Pre-Existing Debt | 4,842,300 | 1,210,575 | 121,058 |
| **N/A** | Chatham | N/A | Pre-Existing Debt | 24,606,410 | 6,151,603 | 615,160 |
| **N/A** | Falmouth | N/A | Pre-Existing Debt | 7,675,200 | 1,918,800 | 191,880 |
| **N/A** | Provincetown | N/A | Pre-Existing Debt | 14,981,202 | 3,745,301 | 374,530 |
| | | | **Total** | **$160,369,612** | **$40,092,404** | **$1,302,628** |

# Project Highlight - Hudson

## Hudson, MA

**CHESTNUT STREET PFAS TREATMENT SYSTEM**
**LOAN NUMBER:** DWP-21-04
**LOAN AMOUNT:** $5,608,461

The Town of Hudson's Chestnut Street Per- and Polyfluoroalkyl Substances (PFAS) Treatment System project involves expanding the existing temporary PFAS removal system at the Chestnut Street Water Filtration Plant (WFP) to include a third treatment train in addition to the two existing trains in response to elevated levels of PFAS in the Town's groundwater supply.

The third treatment train will include two additional ion-exchange vessels in a lead-lag configuration. The resulting system will consist of three treatment trains, each with a design capacity of 50% of the plant's maximum flow. The treatment process expansion will include piping modifications, expansion of the existing concrete support slab and foundation, and the installation of a building with all associated electrical, lighting, and HVAC systems.

*Vessels at Chestnut Street PFAS Treatment System*

The Town of Hudson supplies drinking water to approximately 19,864 residents using a blend of 91% groundwater from five wells and 9% surface water. Sources include two groundwater wells located on Chestnut Street Wells 2 and 3, the Kane Well located on Main Street, the Cranberry Well located off Parmenter Road, and surface water from the Gates Pond Reservoir.

The groundwater from Chestnut Street Wells, Kane Well, and Cranberry Well is combined and treated at the Chestnut Street WFP. The plant was primarily designed to remove iron and manganese from the raw water through unit processes. These processes include chemical addition and greensand filtration as well as to provide residual disinfection in the distribution system.

In 2019, two additional full-scale treatment facilities were added in response to a sudden increase in PFAS concentrations in the Town's groundwater supply. A granular activated carbon (GAC) filtration system was installed at the Cranberry Well, the Town's most PFAS impacted supply. In addition, an ion-exchange (IX) treatment system was installed at Chestnut Street to treat the blended water from the pre-existing greensand facility.

*Building Installation*

The IX treatment system was installed and permitted as a temporary system to be utilized until a permanent system could be designed and constructed. Both the GAC filtration system at the Cranberry Well and the IX treatment system at the Chestnut Street WFP are currently in operation. These systems have both been effective at removing PFAS in treated water delivered to the Town's customers.

The project is aimed at reducing the concentrations of PFAS to below detectable levels, and therefore below 10 parts per trillion. In response to the elevated levels of PFAS in the Town's groundwater supply, the Town obtained MassDEP's approval to install a centralized emergency PFAS removal treatment system, the IX system, at the site of the previously existing Chestnut Street WFP. This full-scale PFAS treatment system was installed concurrently with an ongoing, small scale pilot study aimed at evaluating the removal effectiveness of granular activated carbon and ion exchange resin. All tested treatment technologies have been effective at removing PFAS to non-detect levels.

# Financial Report

## Annual Financial Summary

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

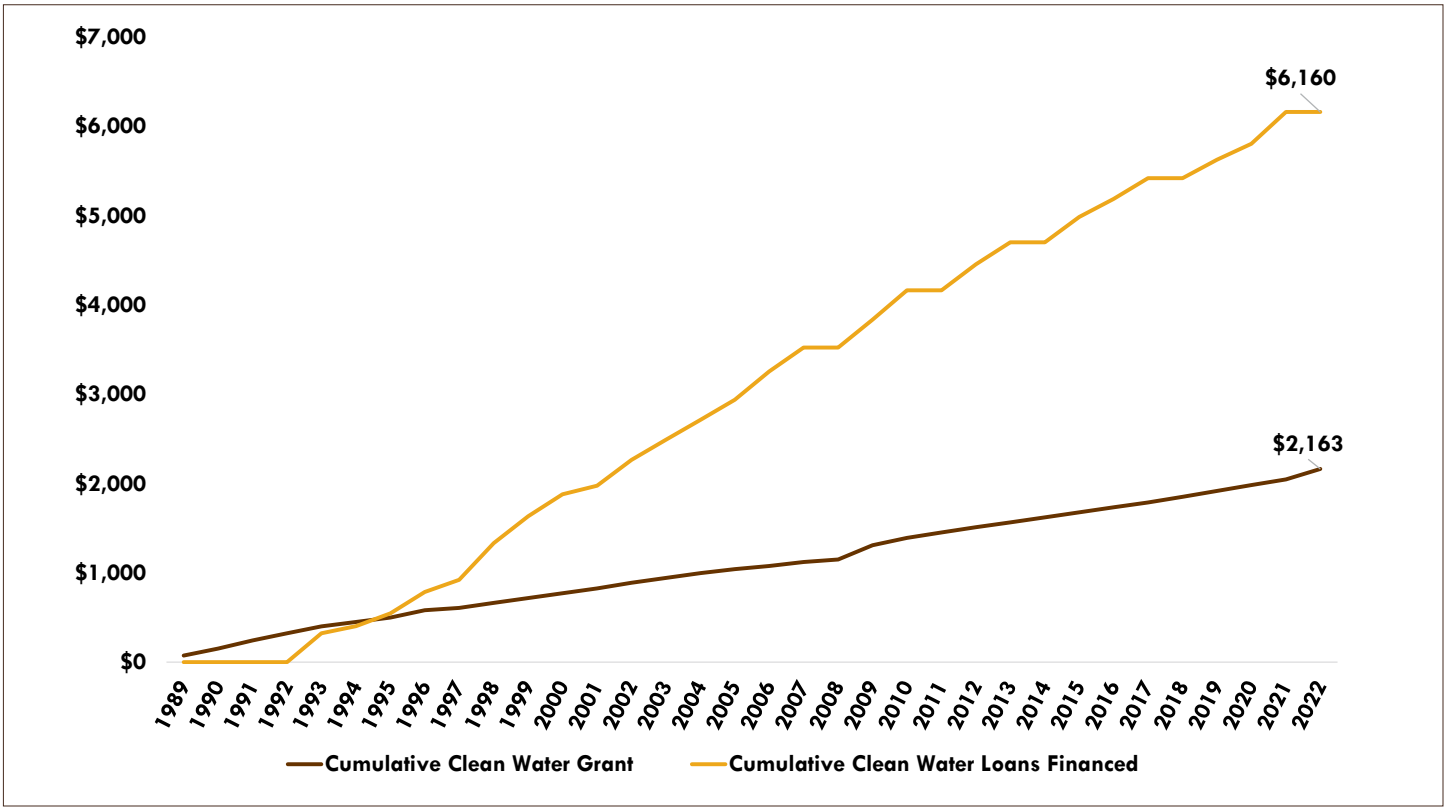
### *Leveraged Financing Model*

The SRF loan program receives funding from the EPA in the form of an annual grant, supplemented by a 20% state matching grant and the repayment of funds from borrowers. The Trust's SRF loan program utilizes a "leveraged" financing model, under which SRF Program Funds are used as a source of security for revenue bonds (SRF Bonds) issued by the Trust. Proceeds from the SRF Bonds are used to finance loans to local cities, towns, and other eligible borrowers for project costs.

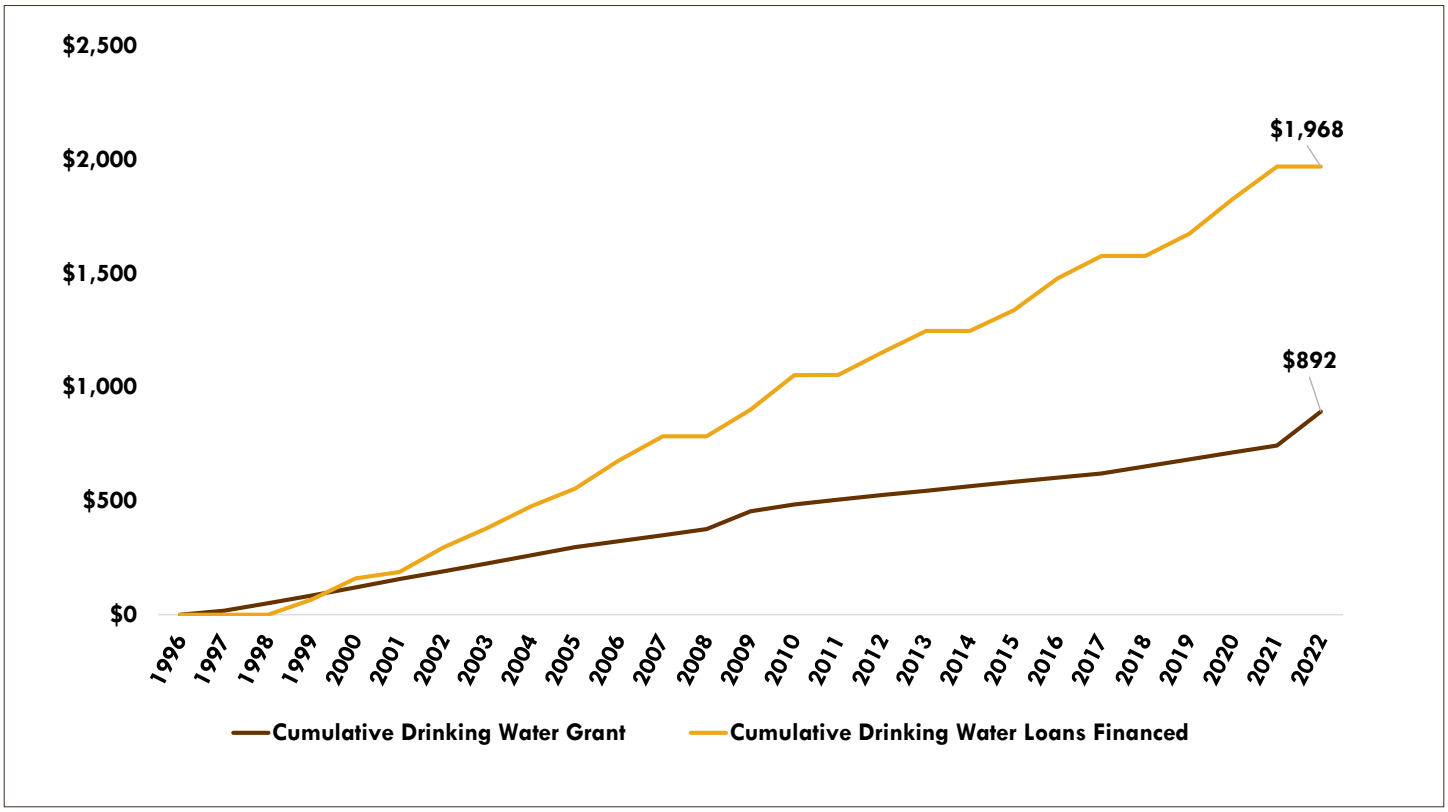
The leveraged structure of the Trust's program permits the Trust to substantially increase the amount available to finance eligible project costs across the Commonwealth. Each federal grant and associated state matching grant dollar contributed to the program results in at least three dollars of project cost financing while assuring the perpetual nature of the revolving fund.

The following charts demonstrate the lending ability of the Trust by comparing state and federal grants received throughout the life of the program to total loans provided.

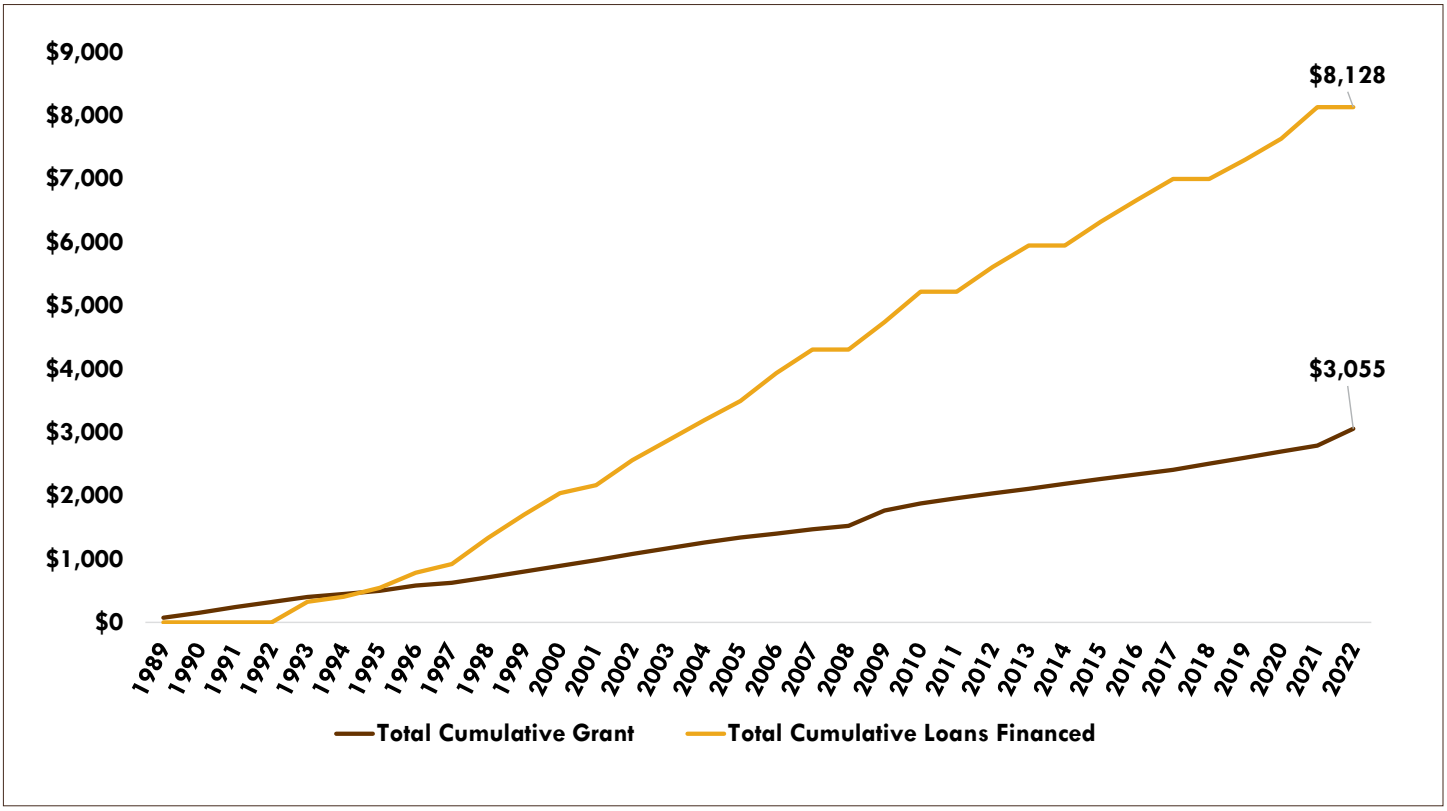
### CWSRF Grant Amount Compared to Cumulative Loan Amounts by SFY




## DWSRF Grant Amount Compared to Cumulative Loan Amounts by SFY




## Combined Cumulative Loan Compared to Cumulative Grants Combined



The Trust's lending and bond issuance programs are structured to ensure adequate cash flows for financing its loans and repaying 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 finance either direct loans to borrowers or invests in reserve funds. Direct loans are then pledged as a source of payment and security for the SRF Bonds.

### *SRF Bonds: Sources of Repayment*

The sources of repayment for the Trust's SRF Bonds are made from loan repayments from borrowers, interest earnings on debt service reserve funds pledged to secure such bonds, and subsidy payments provided by the Commonwealth in the form of contract assistance.

### *Pledged Loans*

The Trust uses its SRF Program Funds rather than bond proceeds to finance certain loans to borrowers. These loans are pledged as additional security to SRF Bonds. As the loans are repaid, the interest payments on those loans are applied to debt service on the bonds, thus providing the borrowers' interest rate subsidy. Since 2012, the Trust has used the pledged loan approach. As of June 30, 2022, the Trust has $586.6 million in pledged direct loans outstanding.

**CWSRF**

As of June 30, 2022, the Trust has $437.0 million of pledged loans outstanding

**DWSRF**

As of June 30, 2022, the Trust has $149.6 million of pledged loans outstanding

### *Commonwealth Contract Assistance Payments*

The Commonwealth makes assistance payments for borrowers by paying a portion of debt service on the related series of the Trust's SRF Bonds, and by augmenting annual additional subsidy in the form of loan forgiveness. This reduces the borrower's overall loan repayment obligation. For more information about Commonwealth contract assistance for loan forgiveness see the Financial Report section titled "Additional Subsidy."

Commonwealth contract assistance for interest rate reduction pays the difference between the market rate of the bonds and the subsidized interest rate on the loans of 2% or less. 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. Contract assistance is appropriated annually in the Commonwealth's operating budget.

**CWSRF**

As of June 30, 2022, the Trust has received $1.3 billion in contract assistance with a future commitment of $138.0 million, for a total cumulative commitment by the Commonwealth of $1.4 billion. Revenue from Commonwealth contract assistance contributed 8.8% toward SFY 2022 debt service, totaling $23.6 million in assistance applied.

**DWSRF**

As of June 30, 2022, the Trust has received $192.7 million in contract assistance with a future commitment of $27.6 million, for a total cumulative commitment by the Commonwealth of $220.3 billion. Revenue from Commonwealth contract assistance contributed 6.7% toward SFY 2022 debt service, totaling $6.9 million in assistance applied.

### *Deallocation of Funds*

As the Trust makes principal payments on its SRF Bonds, the amount of its program assets pledged to the bonds are reduced proportionately, or deallocated, according to each bonds' scheduled cash flows. These released funds are available to cure borrower payment defaults, if any. If not needed to cure a default, the deallocated funds are released to the program equity funds and are then available to be disbursed to new loans, thus assuring the perpetual nature of the revolving fund.

### *Borrower Repayments*

Each borrower is obligated to repay the principal amount of its loan at a subsidized interest rate of 2% or less. Those with extended term financing, greater than 20 years, receive a subsidized interest rate that is the general equivalent of 2%. Series 23 which closed May 2021, had a subsidized interest rate of 2.2% for extended term financing loans.

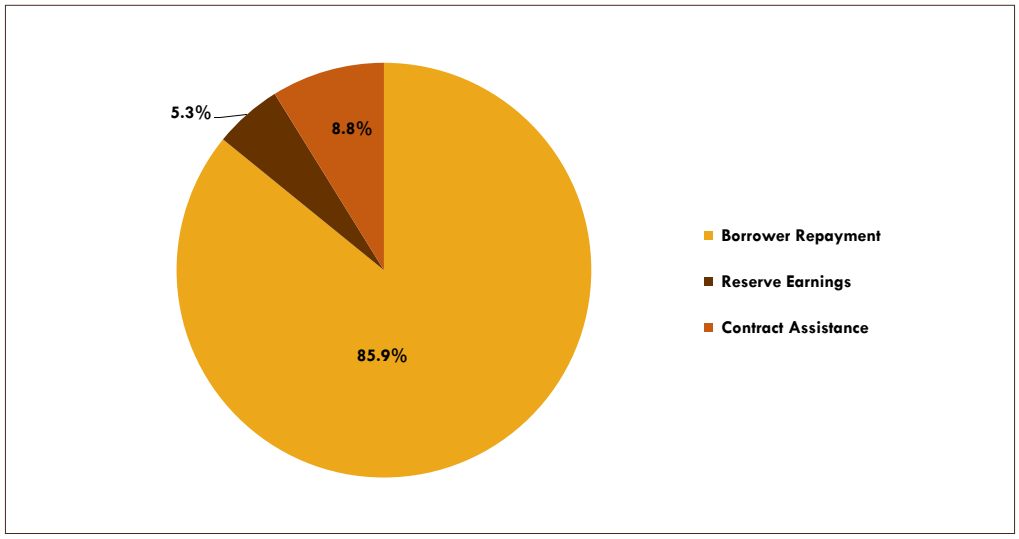
**CWSRF**

In SFY 2022, borrower principal and interest loan repayments accounted for approximately 85.9% of debt service, totaling $229.3 million

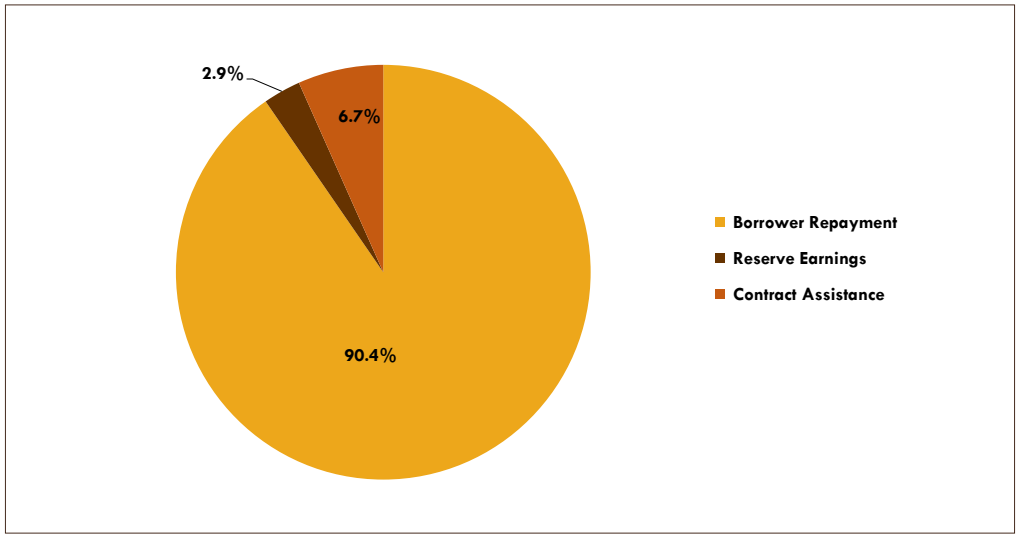
**DWSRF**

In SFY 2022, borrower principal and interest loan repayments accounted for approximately 90.4% of debt service, totaling $93.8 million

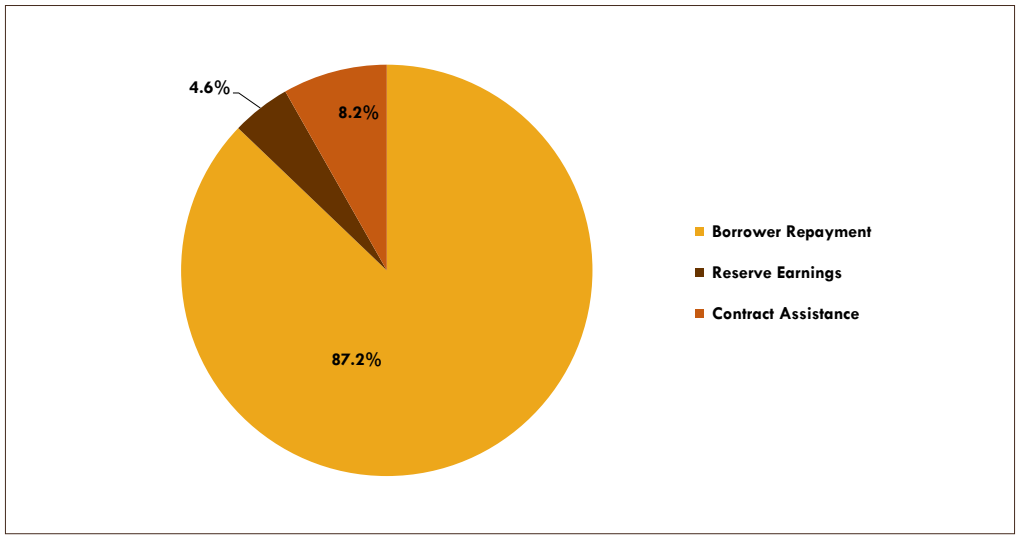
## Total Sources of Debt Service Payments for CWSRF SFY 2022




## Total Sources of Debt Service Payments for DWSRF SFY 2022




## Total Sources of Debt Service Payments for SFY 2022



### *Reserve Funds*

In the past, the Trust had pledged a portion of its SRF Program Funds to establish debt service reserve funds to secure a series of its SRF Bonds. The investment earnings from these reserve funds are used to pay a portion of the debt service on the related SRF Bonds while the fund balances are available as additional security and recycled back to the SRF Program Fund after debt service obligations have been met.

## Summary of Debt Service Reserve Fund Balance for SFY 2022

*Dollar amounts in millions*

| | CWSRF | DWSRF | Total |
|---|---|---|---|
| **GIC Investments** | $212.5 | $34.7 | $247.2 |
| **US Treasury Investments** | 88.2 | 25.8 | 114.0 |
| **Total** | **$300.7** | **$60.5** | **$361.2** |

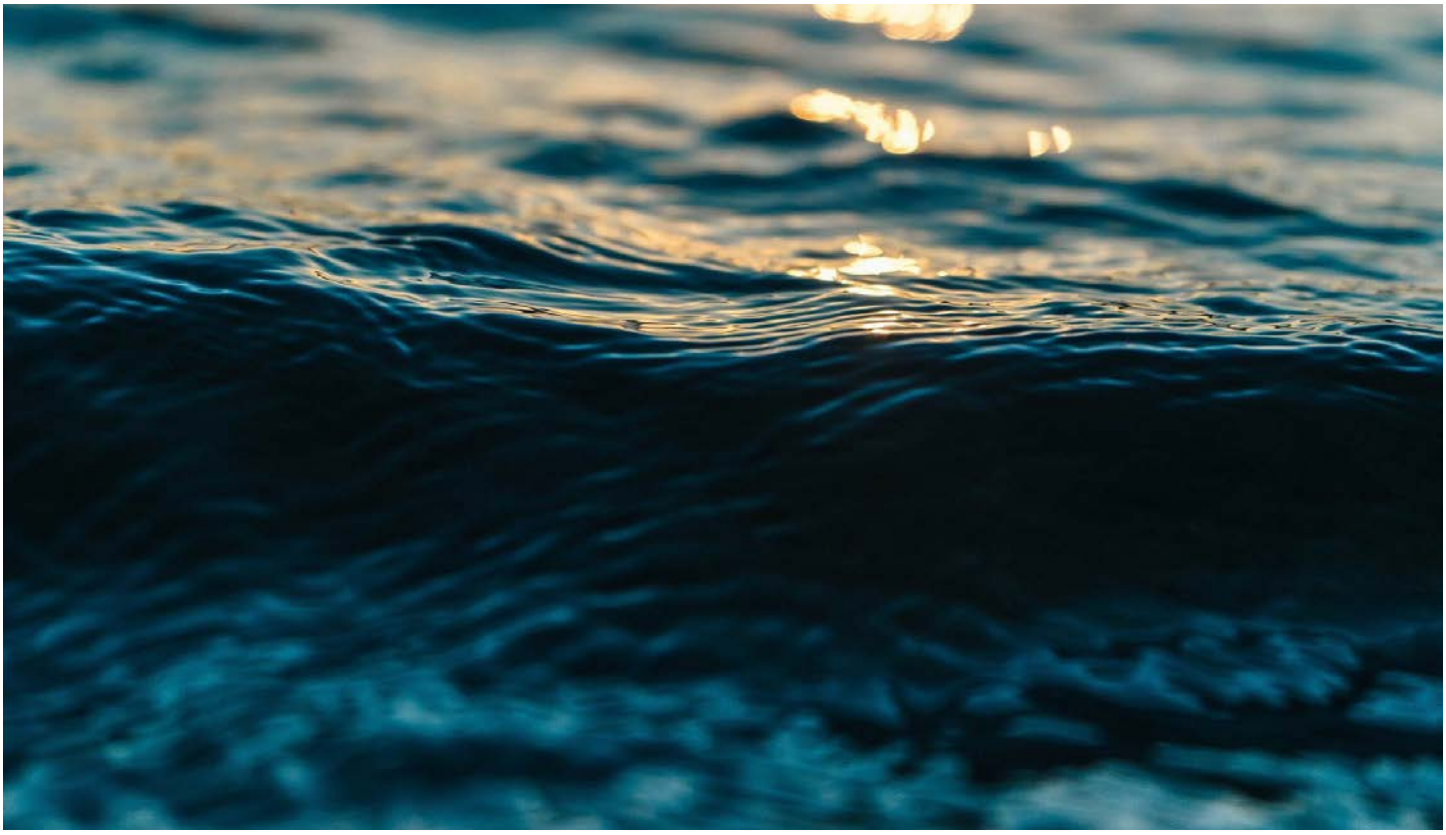
### *Interest Earnings*

Earnings on these investments are applied to pay a portion of the debt service on the related series of SRF Bonds. Reserve fund earnings applied to current debt service payments are listed in the table below. As bonds are repaid, reserve funds are released and returned to their respective program equity fund.

## Debt Service Reserve Fund Interest Earnings

*Dollar amounts in millions*

| | CWSRF | | DWSRF | |
|---|---|---|---|---|
| **SFY** | **Percent of Debt Service** | **Total Amount** | **Percent of Debt Service** | **Total Amount** |
| **2022** | 5.3% | $14.2 | 2.9% | $3.0 |
| **2021** | 6.9% | $18.4 | 4.6% | $4.9 |



# Program Specific Reporting

## Clean Water State Revolving Fund (CWSRF)

The following discussion provides additional details that are specific to the CWSRF program and its related activities.

### *Administrative Expenses*

For SFY 2022, $1.7 million of annual CWSRF grant administration funds were spent by MassDEP. This consisted of $1.7 million in federal funds and none of the funding was state matching funds. These costs were associated with construction management of the CWSRF program. An additional $3.8 million was spent from the Trust's Administrative Fund to supplement MassDEP administrative costs for both the CWSRF and DWSRF programs.

### *Green Project Reserve (GPR)*

For the 2021 CSWRF grant, Congress required that at least 10% of the grant be used to finance "green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities." In its 2021 CWSRF IUP, MassDEP identified 4 projects totaling $113.6 million that are considered to be either entirely or partially green. Given the project advancement timeline, and that many construction projects are only partially green, MassDEP is now working to review the schedules of values to extract the green portions of the projects. Once these values are calculated, they will be reported in the Office of Water State Revolving Funds (OWSRF) Database and in the next Annual SRF Report.

For the 2020 CWSRF Grant, Congress required that at least 10% of the grant be used to fund green projects, requiring a minimum of $5.2 million. MassDEP confirmed 10 projects with a total project cost of $92.3 million and green project value of $24.8 million: MassDEP has confirmed that the Massachusetts CWSRF has met or exceeded the 2020 CWSRF Grant Green Project Reserve requirements. It will continue collaborating with communities to meet this annual requirement in the future.

| Borrower Name | State Tracking Number | Project Names | Current Agreement Amount | Total Current GPR Amount | % Green Funding |
|---|---|---|---|---|---|
| **Brockton** | CWP-20-17 | Sewer Rehabilitation Project | $1,355,227 | $1,336,353 | 99% |
| **Dudley** | CWP-20-14 | Dudley I/I Mitigation Construction Project | 924,097 | 799,567 | 87% |
| **Fitchburg** | CWP-20-03 | CSO 007, 011, 039, 048 Separation/ Rehabilitation | 7,498,408 | 5,407,064 | 72% |
| **Lynn Water and Sewer Commission** | CWP-20-50 | West Lynn Sewer Separation | 53,643,989 | 7,896,266 | 15% |
| **New Bedford** | CWP-20-22 | Wastewater Collection System Improvements | 4,068,890 | 3,392,075 | 83% |
| **New Bedford** | CW-20-20 | Sewer and Stormwater System IDDE | 1,750,000 | 723,011 | 41% |
| **Revere** | CWP-20-27 | Phase 11 Construction- I/I, IDDE, P.S. & Drainage | 4,762,058 | 4,072,303 | 86% |
| **Revere** | CW-20-29 | Alternative Wastewater Connections(s)/ Storage Eval | 750,000 | 487,500 | 65% |
| **Revere** | CW-20-28 | Phase 12 Investigations | 1,300,000 | 530,000 | 41% |
| **Tyngsborough** | CWP-20-11 | I and I Rehabilitation | 466,057 | 139,170 | 30% |
| | | **Total** | **$76,518,726** | **$24,783,309** | |

### *Transfer of Funds to the Drinking Water State Revolving Fund (DWSRF)*

Section 302 of the 1996 Safe Drinking Water Act Amendments allows states the flexibility to move funds between CWSRF and DWSRF programs to better address specific state priorities. The EPA allows an equivalent of up to 33% of the DWSRF grant to be transferred between the SRF programs.

The level of DWSRF grant funding for Massachusetts is insufficient to meet the state's demand for project financing. Massachusetts' DWSRF annual grant is more than 50% less than its CWSRF annual grant. The DWSRF grant requires that 20% of the annual amount be given away as additional subsidy and provides 31% as set-aside funds to be used: 4% for program administration, 2% for small system technical assistance, 10% for state program management, and 15% for local

assistance. As a result, a sizable portion of the DWSRF does not revolve back into the Trust, which limits the program's capacity growth.

In contrast, the CWSRF annual grant requires 10% of the annual amount to be given away as additional subsidy and 4% to be used for program administration. This has allowed a substantial portion of the CWSRF to revolve annually thereby, increasing program capacity. In fact, the capacity within the CWSRF has allowed the Trust to finance all the projects on the CWSRF Intended Use Plan (IUP) that request financing each year. In contrast, one third to one half of the proposed projects go unfunded each year for the DWSRF IUP.

In an attempt to address some of this funding insufficiency, the Trust transfers the limited amount allowed from the CWSRF to the DWSRF annually allowing for modest increases in the capacity of the DWSRF and reducing the imbalance in the ability to provide financing.

**Transferred Funds by FFY Grant**

| Grant Year | Transfer Amount | Transfer Date |
|---|---|---|
| **2021** | $8,501,790 | 10/8/2021 |
| **2020** | 8,431,170 | 10/08/2020 |
| **2019** | 8,425,890 | 11/7/2019 |
| **2018** | 8,505,420 | 11/15/2018 |
| **2017** | 5,055,270 | 9/21/2017 |
| **2016** | 5,098,830 | 12/15/2016 |
| **2015** | 5,389,890 | 12/3/2015 |
| **2014** | 5,425,530 | 12/4/2014 |
| **2013** | 5,180,670 | 6/12/2014 |
| **Total** | **$ 60,014,460** | |

Additionally, the Trust has elected to fund the 10% set-aside for state program management with its administrative funds rather than its DWSRF grant funds, thereby increasing funds available for project capacity instead.

# Drinking Water State Revolving Fund (DWSRF)

The following discussion provides additional details that are specific to the DWSRF program and its related activities.

### *Small Systems*

A requirement associated with the DWSRF program establishes that states are required to commit 15% of total available funds for loan assistance to small systems. The EPA defines a small system as a "public water system that regularly serves 10,000 or fewer persons." The total DWSRF funds available for the 2021 IUP was $195 million, of which approximately $29 million would be required for small system loan assistance. As reported in the DWSRF National Information Management System (NIMS), the Trust committed to $76.9 million in small system financing.

### *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% Administration*

MassDEP uses ten fulltime equivalent (FTE) staff members to administer the DWSRF 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 payments, data management and administrative support functions.

### *2% Small System Technical Assistance*

MassDEP uses three FTE staff members for municipal services support. These FTEs provide training and technical assistance (compliance and operational issues) to small systems throughout the Commonwealth. MassDEP also worked with outside training and technical assistance providers, such as the Massachusetts Rural Water Association, New England Water Works Association, and EPA's Environmental Finance Center. The DWSRF program uses significant outreach efforts for small system projects throughout the Commonwealth. The 2% Small Systems Technical Assistance set-aside is used to emphasize the SRF as a low-cost source of financing. Highlights from MassDEP and its partners from SFY 2021 include:

- Provided **in-person or virtual assistance** to approximately 30 public water suppliers (PWS) on topics such as permitting, emergency response, PFAS, and cybersecurity
- Conducted **trainings on cybersecurity,** water operation career exploration, PFAS, and well operations
- Developed initial **self-paced online training course** for water operators

### *10% State Program Management*

MassDEP used approximately 14 FTE staff members to administer the DWSRF program. These FTE's were involved in the following programs: sanitary survey, source and 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, MassDEP and data management, engineering and construction supervision, compliance supervision, and other DWSRF program activities. Highlights of the programs in SFY 2022 include:

### *Sanitary Survey Program*

MassDEP's Drinking Water Program (DWP) is responsible for evaluating the technical, financial, and managerial capability of community, non-transient non-community, and transient non-community PWSs. During last year, the DWP completed 308 evaluations on existing systems.

**Sanitary Surveys Completed in SFY 2022**

| Types of Public Water Systems | Total # of Surveys Completed |
|---|---|
| Community Systems | 157 |
| Non-Transient Non-Community Systems | 114 |
| Transient Non-Community Systems | 37 |
| **Totals** | **308** |

### *Operator Certification*

DWP has a regularly active operator certification program. The program activities have been integrated into daily staff activities. Program activities range from chairing the Board of Certification of Operators of Drinking Water Supply Facilities to providing general and specialized assistance for drinking water operators at all levels. There are over 3,000 licensed operators in Massachusetts holding over 5,400 licenses. All licensees renewed their licenses prior to December 31, 2021.

### *Lead in Schools and Early Education and Care Facilities*

The DWP has a longstanding program to support the voluntary testing of drinking water in schools and childcare facilities for lead. The most recent iteration, the Expanded Assistance Program was launched in January 2020 and continued through SFY 2022. The program offers testing services to over 1,000 schools and 6,000 childcare facilities. In addition, the Trust provided $400,000 in funding to support testing in private schools.

The program receives partial support through an annual USEPA grant. It has involved significant outreach to environmental justice communities. The program works closely with the Trust's SWIG program. Finally, MassDEP has launched a pilot program with select PWSs (those serving communities most impacted by lead exposure) to support comprehensive testing of schools and childcare facilities ahead of requirements of the USEPA Lead and Copper Rule Revisions.

### *PFAS*

The DWP supported the implementation of a private well water PFAS testing grant program. Meetings and outreach were conducted with town and state officials in the 85 selected communities with more than 60% residents served by private wells. The program ended on June 30, 2022, with 1,688 homeowners participating. Results showed that 95% were below the Maximum Contaminant Level (MCL) of 20 parts per trillion (ppt) of the six specific PFAS. The six PFAS are: perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); perfluoroheptanoic acid (PFHpA); and perfluorodecanoic acid (PFDA). MassDEP abbreviates this set of six PFAS as "PFAS6."

DWP continued to aid PWS as they sampled water. By June 30, 2022, 1,171 of 1,468 PWS (80%) took advantage of the free sampling program. Results showed that 95% of the population are drinking water from a Community PWS that currently meets the PFAS6 drinking water standard, while 154 PWS (Community, Non-Transient Non-Community, and Transient Non-Community) detected one or more finished water sources above the PFAS6 MCL.

Finally, DWP supported the implementation of a multi-million-dollar PWS grant program for PFAS treatment from state appropriated funds - resulting in $10.8 million of grants.

### *Wellhead Protection Program*

Technical assistance was provided to PWSs for wellhead protection compliance, the development of protection plans, and determining monitoring waiver eligibility. In addition, MassDEP obtained a 2-year grant from the United States Geological Survey to identify and locate all wells in the state (irrigation, monitoring, domestic, thermal, etc.) by reviewing the Massachusetts well driller database. The well driller program includes well completion reports for all 200,000 plus wells in its database. Old wells often have erroneous well locations. This grant is to assist with updating geographic information. Accurate well location data will benefit a number of programs (e.g., PFAS), with the goal to protect groundwater quality and quantity.

### *Capacity Development*

While conducting sanitary surveys on public water systems, MassDEP staff identified 722 technical, financial, or managerial deficiencies and provided corrective action assistance to ensure compliance. MassDEP developed an updated capacity development strategy which was approved by EPA in SFY 2022. The strategy was based on information from a survey of hundreds of PWS and focuses on improving the technical, financial, and managerial operations of both new and existing PWS operations.

### *15% Local Assistance*

MassDEP used 21 FTEs from the 15% local assistance set-aside to support the public water system supervision programs. These programs include 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. Highlights of the programs in SFY 2022 include:

### *Source Protection Support*

The registration of 18 new public water systems, along with continuing the implementation and monitoring of the chemical monitoring waiver program has incentivized source protection. It has also promoted preparedness and sustainability. Source protection technical assistance was provided during the 308 sanitary surveys that were completed throughout the year. DWP staff represent MassDEP on the State Pesticide Board, Vegetation Management Panel and as an alternate on State Reclamation and Mosquito Control Board. In addition, MassDEP participates as a

member of the New England Interstate Water Pollution Control Commission (NEIWPCC) Source Water Protection workgroup and the Joint ASDWA/GWPC National Source Water Protection workgroup.

| Registration of New Small Public Water Systems in SFY 2022 | |
|---|---|
| **Types of Public Water Systems** | **Number of Systems** |
| Community Systems | 4 |
| Non-Transient Non-Community Systems | 1 |
| Transient Non-Community Systems | 13 |
| **Totals** | **18** |

### *Internships*

MassDEP, working with the University of Massachusetts - Amherst, placed over ten interns in working environments related to drinking water treatment, including several interns who were high school students participating in vocational programs related to water treatment or plumbing. Other interns included college students studying engineering, environmental science, or public health. This project has allowed MassDEP and UMass to develop relationships with several vocational high schools and community colleges to enhance future internship opportunities throughout the commonwealth.

## Program Certifications

### *Extended Term Financing*

The Trust continues to offer extended term financing up to 30 years for construction projects to its borrowers. Extended term financing is available for CWSRF and DWSRF projects that can demonstrate the project's useful life is at least as long as the term of the loan. By offering extended term financing, the Trust provides an equivalent interest rate subsidy for a 30-year loan, as it does for a 20-year loan, based upon current market conditions near the time of the loan closing.

### *American Iron and Steel (AIS)*

MassDEP has incorporated the AIS requirements into its Loan Application and Plans and Specifications Preparation Package. The necessary language has also been added in the Project Regulatory Agreement and the Financing Agreement for loans. 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 (FFATA)*

In compliance with the FFATA, the Trust reports recipient or subrecipient awards for any amount equaling $25,000 or greater in the FFATA Subaward Reporting System (FSRS) at www.fsrs.gov. The loans used by the Trust for FFATA Reporting can be found in Appendix B of this report.

### *Davis-Bacon*

The amendments to the Clean Water Act, as part of WRRDA, apply the Davis-Bacon Act requirements to all treatment works projects going forward. The Davis-Bacon requirements do not apply to nonpoint source or decentralized wastewater treatment projects. MassDEP ensures that the required Davis-Bacon language is included in contracts and conducts field verifications of project compliance with the wage rate requirements.

### *Disadvantaged Business Enterprise (DBE) Certifications*

In October 2019, EPA issued a Recipient/Applicant Information Notice (RAIN-2019-G10) that temporarily waived the requirements of Subpart D of 40 CFR Part 33, and permanently suspended the EPA DBE certification program. The Trust's Board of Trustees determined to maintain the DBE goals previously approved by EPA Region 1. The current DBE goals are 4.2% for minority-owned business enterprises (MBE) and 4.5% for women-owned business enterprises (WBE). Projects receiving SRF financing must meet those goals. Proponents unable to meet the targets may seek a waiver for the requirement, if it can be demonstrated that a 'good faith effort' was undertaken by the proponentto achieve those goals.

### *Compliance with Federal Crosscutters*

The loan contract requires that loan recipients comply with applicable federal crosscutting authorities. The state is required to comply with applicable federal crosscutting authorities by the assistance and operating agreements it signs with the EPA and by applicable federal regulations.

### *Compliance with Grant Conditions*

By signing the CWSRF and DWSRF capitalization grants, the Trust agreed to do three things: abide by all conditions of the grant, follow the statutory authorities in the Clean Water Act Title VI and Safe Drinking Water Act Section 1452, and implement regulations in 40 CFR Parts 31 and 35.

# Appendix A

## Clean Water and Drinking Water Financial Tables

| Clean Water SRF | 2022 | | 2021 | |
|---|---|---|---|---|
| | Annual Grant Awards | | Annual Grant Awards | |
| Federal Clean Water SRF Grant | $53,946,000 | | $53,954,000 | |
| State Matching Funds | 13,899,800 | | 10,789,200 | |
| Total Federal & State Grant Awards | $67,845,800 | | $64,743,200 | |

| Annual Binding Commitments | | | | |
|---|---|---|---|---|
| Binding Loan Commitments Issued | $354,454,164 | 47 | $252,503,489 | 48 |

| Annual Disbursements | | | | |
|---|---|---|---|---|
| Clean Water Interim Loans | $181,153,202 | 91 | $143,737,218 | 98 |
| Project Loans Financed | 39,681,982 | 39 | 14,828,442 | 48 |
| Total Disbursements | $220,835,184 | 130 | $158,565,660 | 146 |

| Financial Results from Program Inception | | | | |
|---|---|---|---|---|
| Federal Clean Water SRF Grant | $1,727,328,761 | | $1,673,382,761 | |
| State Matching Funds | 332,754,092 | | 318,854,292 | |
| Total Federal & State Grant Awards | $2,060,082,853 | | $1,992,237,053 | |
| Total Clean Water Assets & Deferred Outflows | $4,128,350 | | $4,291,550,000 | |
| Total Loans Financed | $6,159,881,999 | | $6,159,881,999 | |

| Drinking Water SRF | 2022 | | 2021 | |
|---|---|---|---|---|
| | Annual Grant Awards | | Annual Grant Awards | |
| Federal Drinking Water SRF Grant | $25,763,000 | | $ 25,549,000 | |
| State Matching Funds | 7,474,400 | | 5,105,200 | |
| Total Federal & State Grant Awards | $33,237,400 | | $ 30,654,200 | |

| Annual Binding Commitments | | | | |
|---|---|---|---|---|
| Binding Loan Commitments Issued | $117,075,729 | 21 | $ 149,627,914 | 28 |

| Annual Disbursements | | | | |
|---|---|---|---|---|
| Drinking Water Interim Loans | $103,697,369 | 37 | $ 86,640,485 | 43 |
| Project Loans Financed | 14,991,171 | 21 | 26,731,284 | 33 |
| Total Disbursements | $118,688,540 | 58 | $ 113,371,769 | 76 |

| Financial Results from Program Inception | | | | |
|---|---|---|---|---|
| Federal Drinking Water SRF Grant | $628,408,100 | | $602,645,100 | |
| State Matching Funds | 122,665,420 | | 115,191,020 | |
| Total Federal & State Grant Awards | $751,073,520 | | $717,836,120 | |
| Total Drinking Water Assets & Deferred Outflows | $1,483,453 | | $1,529,537,000 | |
| Total Loans Financed | $1,967,990,125 | | $1,967,990,125 | |

# Appendix B

## SRF Binding Commitments for SFY 2022 by Program

| CWSRF Binding Commitments for SFY 2022 | | | | |
|---|---|---|---|---|
| **Loan No.** | **Borrower** | **Agreement Date** | **Project Description** | **Commitment Amount** |
| CWP-21-01 | Abington | 9/1/2021 | Summer St. Force Main Replacement Project | $6,155,564 |
| CWP-21-42 | Barnstable (H) | 6/1/2022 | Wastewater Pump Station Improvements Project | 2,761,225 |
| CWP-20-43A | Barnstable (H) | 8/1/2021 | Solids Handling Upgrade Project | 792,000 |
| CWP-20-43 | Barnstable (H) | 8/1/2021 | Solids Handling Upgrade Project | 10,521,805 |
| CWP-20-24 | Barnstable (H) | 1/1/2022 | Route 28 and Yarmouth Road Intersection Sewer | 1,731,512 |
| CWP-20-23A | Barnstable (H) | 9/1/2021 | Strawberry Hill Road Sewer Expansion | 350,000 |
| CWP-20-23 | Barnstable (H) | 9/1/2021 | Strawberry Hill Road Sewer Expansion | 11,939,531 |
| CWP-20-44 | Barnstable County (PFAS) | 8/1/2021 | Emergency Site Capping to Mitigate PFAS | 1,402,431 |
| CWP-18-42A | Brockton | 11/1/2021 | WWTP Upgrade | 939,000 |
| CWT-21-18 | Concord | 11/1/2021 | Community Septic Management Program | 512,338 |
| CWT-21-10 | Easton | 8/1/2021 | Community Septic Management Program | 500,000 |
| CWP-21-06A | Fall River (H) | 8/1/2021 | Wastewater Treatment Facility Improvements | 4,500,000 |
| CWP-21-06 | Fall River (H) | 8/1/2021 | Wastewater Treatment Facility Improvements | 20,500,000 |
| CW-21-07 | Fitchburg | 8/1/2021 | CSO 010, 032, 045, 083 Separation/Rehabilitation | 1,048,700 |
| CWP-20-40 | Gloucester | 7/1/2021 | Pump Station Upgrades, City of Gloucester, MA | 2,400,700 |
| CWT-22-01 | Lakeville | 3/1/2022 | Community Septic Management Program | 960,000 |
| CWP-21-25 | Lawrence (H) | 6/1/2022 | Sewer and Drainage System Improvements | 2,625,000 |
| CW-20-07 | Leverett | 7/1/2021 | Connection to Amherst Waterline | 1,702,914 |
| CWP-21-22 | Lynn Water & Sewer Commission | 4/1/2022 | WWTF Initial Capital Improvements | 70,328,732 |
| CWP-20-50 | Lynn Water & Sewer Commission | 7/1/2021 | West Lynn Sewer Separation | 10,216,710 |
| CW-21-56 | Massachusetts Water Resource Authority (MWRA) | 1/1/2022 | Nut Island HW Odor Control & HVAC - Contract 7548 | 15,000,000 |
| CW-21-55 | MWRA | 1/1/2022 | DITP Asset Protection Phase 3 | 1,000,000 |
| CW-21-54 | MWRA | 1/1/2022 | Facility Asset Protection | 23,000,000 |
| CWT-22-03 | Middleborough | 4/1/2022 | Community Septic Management Program | 500,000 |
| CWP-21-21 | Millbury | 4/1/2022 | Year 1 to 4 Sewer Rehabilitation Project | 1,000,000 |

| CWSRF Binding Commitments for SFY 2022 | | | | |
|---|---|---|---|---|
| **Loan No.** | **Borrower** | **Agreement Date** | **Project Description** | **Commitment Amount** |
| CW-20-13 | Nahant | 11/1/2021 | Sewer Collection System - Repair and Replacement | 9,767,852 |
| CW-20-42A | Nantucket (H) | 11/1/2021 | Sea St. Pump Station Force Main No. 3 | 2,367,871 |
| CW-20-42 | Nantucket (H) | 11/1/2021 | Sea St. Pump Station Force Main No. 3 | 25,152,107 |
| CWP-18-12C | Pittsfield (NE) | 9/1/2021 | Wastewater Treatment Plant Nutrient Removal | 2,200,640 |
| CWP-18-12B | Pittsfield (NE) | 9/1/2021 | Wastewater Treatment Plant Nutrient Removal | 3,100,000 |
| CWT-22-02 | Plymouth | 3/1/2022 | Community Septic Management Program | 300,000 |
| CW-21-09 | Quincy (H) | 1/1/2022 | Stormwater Drainage and Management Planning Study | 3,180,000 |
| CWP-20-27A | Revere | 7/1/2021 | Phase 11 Construction- I/I, IDDE, P.S. & Drainage | 932,000 |
| CWP-20-27 | Revere | 7/1/2021 | Phase 11 Construction- I/I, IDDE, P.S. & Drainage | 4,762,058 |
| CW-21-34 | Revere | 6/1/2022 | Phase 13 Investigations- I/I and IDDE | 1,500,000 |
| CW-20-28 | Revere | 3/1/2022 | Phase 12 Investigations | 1,300,000 |
| CWT-21-04 | Sharon | 7/1/2021 | Community Septic Management Program | 200,000 |
| CWP-20-35 | South Essex Sewerage District | 7/1/2021 | Primary Clarifier Concrete Restoration | 12,383,265 |
| CW-20-34 | South Essex Sewerage District | 9/1/2021 | Contract No. 20-1 Danvers Siphon Rehabilitation | 1,788,940 |
| CWP-21-11 | Springfield Water & Sewer Commission | 6/1/2022 | Nutrient Removal Upgrade and Related Facility Imp. | 33,692,134 |
| CWP-20-19 | Taunton (H) | 7/1/2021 | WWTF- Solids Handling Improvements | 6,000,000 |
| CWP-20-21 | Taunton (NE) | 10/1/2021 | Wastewater Treatment Facility Upgrade - Phase 1 | 29,983,598 |
| CWP-20-11 | Tyngsborough (H) | 7/1/2021 | I and I Rehabilitation | 466,057 |
| CWP-20-09 | Wareham | 7/1/2021 | Process Upgrades at the Wareham WPCF | 9,000,000 |
| CWT-21-13 | Westport | 9/1/2021 | Community Septic Management Program | 500,000 |
| CW-21-28 | Weymouth (H) | 2/1/2022 | Weymouth Stormwater Master Plan | 591,000 |
| CWP-21-17 | Whitman | 1/1/2022 | Replacement of 20-Inch Sewer Force Main | 12,898,480 |
| | | | **Total Clean Water Binding Commitments SFY 2022** | **$354,454,164** |

* Loans used for FFATA Reporting
(H) Housing Choice Loans
(NE) Nutrient Enrichment Reduction Loans
(PFAS) PFAS Remediation Loans

| DWSRF Binding Commitments for SFY 2022 | | | | |
|---|---|---|---|---|
| **Loan No.** | **Borrower** | **Agreement Date** | **Project Description** | **Commitment Amount** |
| DWP-20-20 | Blackstone | 11/1/2021 | Blackstone Groundwater Treatment | $6,210,000 |
| DWP-20-24 | Brockton (H) | 7/1/2021 | Transmission Main Valve Replacement Project Ph. II | 1,471,261 |
| DWP-20-25 | Dudley | 7/1/2021 | Dudley Drinking Water System Improvements Project | 4,092,776 |
| DWP-20-22 | East Brookfield | 8/1/2021 | Water Main Replacement and Wellhouse Upgrades | 4,000,000 |
| DW-21-09 | East Brookfield | 11/1/2021 | Planning for Systemwide Water Quality Improvements | 220,000 |
| DWP-20-13 | Fall River (H) | 7/1/2021 | Water Main Rehabilitation - Phase 20 | 2,338,551 |
| DWP-21-04 | Hudson (PFAS) | 1/1/2022 | Chestnut Street PFAS Treatment System | 5,608,461 |
| DW-21-02 | Mansfield (PFAS) | 10/1/2021 | Cate Springs Well PFAS Treatment System | 4,545,824 |
| DWP-22-02 | Mansfield (PFAS) | 6/1/2022 | Walsh Well PFAS Treatment System and Well Upgrades | 6,999,694 |
| DW-21-05 | Massachusetts Development Finance Agency (PFAS) | 8/1/2021 | Devens Water Treatment Plant Project | 15,000,000 |
| DW-21-29 | Massachusetts Water Resource Authority (MWRA) | 1/1/2022 | Northern Intermediate High Section 89 Replacement | 1,000,000 |
| DW-21-28 | MWRA | 1/1/2022 | Weston Aqueduct Supply Main Rehabilitation | 500,000 |
| DW-21-27 | MWRA | 1/1/2022 | SEH Redundancy and Storage | 4,500,000 |
| DW-21-26 | MWRA | 1/1/2022 | Commonwealth Ave Pump Station Redundancy | 3,500,000 |
| DW-21-24 | Natick (PFAS) | 12/1/2021 | PFAS Treatment at Springvale Water Treatment Plant | 3,000,000 |
| DW-21-12 | New Bedford | 11/1/2021 | Uni-Directional Flushing Program | 150,000 |
| DWP-22-01 | North Attleborough (PFAS) | 2/1/2022 | Adamsdale Well PFAS Treatment Facility | 4,541,545 |
| DWP-21-03 | Springfield Water & Sewer Commission (SWSC) | 7/1/2021 | Clearwell and Backwash Pump Station Replacement | 10,089,000 |
| DWP-20-01 | SWSC | 7/1/2021 | Clearwell and Backwash Pump Station Replacement | 15,000,000 |
| DWP-20-17 | West Boylston Water District | 8/1/2021 | Manganese Removal Treatment at Oakdale Well | 8,760,000 |
| DWP-21-06 | Westfield (PFAS)* | 2/1/2022 | Dry Bridge Road PFAS Water Treatment Plant | 15,548,617 |
| **Total Drinking Water Binding Commitments SFY 2022** | | | | **$117,075,729** |

* Loans used for FFATA Reporting
(H) Housing Choice Loans
(Pb) Lead Remediation Loans
(PFAS) PFAS Remediation Loans

# Appendix C

## Annual Green Bonds and Sustainability Bonds Report

SEPTEMBER 2022

# Annual Green Bonds and Sustainability Bonds Report

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# Connect

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# A Note from the Treasurer

***As Chair of the Massachusetts Clean Water Trust (the Trust) Board of Trustees, and in keeping with the Commonwealth of Massachusetts' and the Trust's policy of openness and transparency, I am pleased to submit the 2022 Annual Green Bonds and Sustainability Bond Report.***

To date, the Trust has completed six Green Bond issuances totaling approximately $1.1 billion to support 266 local water infrastructure projects, and one issuance of Sustainability Bonds totaling $209. 5 million in support of 44 projects.

The 2021 issuance of Sustainability Bonds was once again the Trust demonstrating their commitment to an innovative finance program with this first in the nation issuance by a State Revolving Fund (SRF) program. Sustainability Bonds finance projects that meet the same standards as the Green Bonds but have the additional impact of serving communities that have socio-economic challenges. This innovative designation provides investors with an Environmental, Social, and Corporate Governance (ESG) focus, an opportunity to invest in bonds that help the communities most in need within the Commonwealth.

## *Sustainability*

The Trust is one of the first to leverage the Sustainability Bonds designation for water infrastructure through the SRF program. This resulted in the Trust being awarded the 2022 **'Sustainability Bond of the Year – US Muni'** by *Environmental Finance.* As this ESG marketplace continues to mature, issuers must commit to transparent and accurate reporting for the bond label to continue to instill investor confidence. The Trust commits to this through consistent reporting now and in the future.

## *AAA Credit Rating*

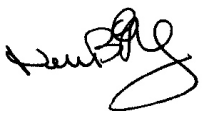
With its **AAA credit rating** by all three major credit agencies, the Trust provides low interest loans to local governments and other eligible entities for water infrastructure projects across the Commonwealth. These vital projects enhance ground and surface water resources, ensure the safety of drinking water, protect public health, and develop resilient communities. Since its establishment, the Trust has financed approximately **$8.1 billion** for nearly three hundred borrowers, serving **97%** of the Commonwealth's population. The impact of these investments may not always be visible to the public, but it is felt in every glass of water poured, in restored water bodies, and in homes and businesses that receive safe and reliable water.

## *Commitment*

We are pleased to contribute to this innovative marketplace and stay **committed** to improving our communications. We ask that you let us know if there are any additional ways that we can meet your information needs. Your feedback is much appreciated and always welcome.

Finally, I am deeply thankful to the staff of the Trust and our program partners, the Massachusetts Department of Environmental Protection and EPA Region 1, for their tireless work and commitment to the communities of the Commonwealth. The Trust has continued to manage well despite the global impact of COVID-19 on finance and supply chains while the SRF programs continue to innovate, remaining dedicated to the mission of serving our communities.

Sincerely,



Deborah B. Goldberg
Treasurer and Receiver-General
Commonwealth of Massachusetts
*mass.gov/treasury*

# Introduction to the Trust

***The Massachusetts Clean Water Trust (the Trust), in collaboration with the Massachusetts Department of Environmental Protection (MassDEP), helps communities build or replace water infrastructure that enhances ground and surface water resources, ensures the safety of drinking water, protects public health and develop resilient communities.***

It accomplishes these objectives by providing **low-interest loans and grants** to cities, towns, and water utilities through the Massachusetts State Revolving Funds (SRFs). The Trust and MassDEP administer two SRFs, the Clean Water (CW) and Drinking Water (DW) SRFs. The CWSRF was established in 1987 under the Clean Water Act. The DWSRF was established in 1996 under the Safe Drinking Water Act. The Trust manages the flow of funds to borrowers while MassDEP manages project development and oversight.

SRFs receive funding from the United State Environmental Protection Agency (EPA) in the form of annual capitalization grants. The SRFs function as an environmental infrastructure bank making loans to local governments with the federal funds and once those loans are paid back, the funds are then loaned out again, which is how the fund **"revolves**."

The Trust uses a "leveraged model" to provide funding in excess of the federal and state grants. Bonds are issued in the capital markets and are secured by borrower repayments and reserve funds. The proceeds from bonds are used to provide capital for new, below-market rate loans to borrowers for water infrastructure projects. This model has allowed the Trust to finance approximately **$8.1 billion** in projects from **nearly $2.7 billion** in federal grants and state matching funds.

The Trust is administered by a **three-member Board of Trustees** that is chaired by the Treasurer of the Commonwealth. The Secretary of the Executive Office for Administration and Finance and the Commissioner of MassDEP serve as Trustees. The Board of Trustees approves all financial commitments, agreements, and program decisions during monthly meetings. All Board of Trustees materials can be found on the Trust's website along with all pertinent investor information, including this report.

## About this Report

***This report is separated into three sections.***

### Section I

**The first section, "The Trust's Bonds," details the Trust's process for issuing Green Bonds and Sustainability Bonds. It covers program-specific project categories, project selection and an overview of the Trust's operations.**

### Section II

**The second section provides an organized list of project highlights from the Trust's Series 23 issuance.**

### Appendix A & B

**The appendices at the end of this report list all loans by Green Bonds and Sustainability Bond Series that are still being funded. Additional information, such as the percent of project funding drawn and loan numbers, is included. Readers should note that the main report sections may contain projects that may have been financed by multiple loans spanning multiple bond series.**

**Full project descriptions** for the Series 23 Bonds can be found in the 2021 Green Bond Report. For full descriptions of projects financed in previous bond series, please review previous editions of the Green Bond Report, the Trust's Annual Reports, or the specific bond series' official statements. All reports and documents may be found on the Trust's website under "Investor Resources": *www.mass.gov/orgs/the-massachusetts-clean-water-trust*

# Section I • The Trust's Bonds

In 2021, the Trust successfully issued two series of bonds — **Series 23A Green Bonds and Series 23B Sustainability Bonds.** This was the Trust's sixth issuance of Green Bonds and their first ever issuance of Sustainability Bonds. This section will describe the Trust's approach to issuing Green Bonds and how the Trust has adopted the International Capital Market Association (ICMA) 2018 Green Bond Principles framework for project selection. Further, this section details how Sustainability Bonds are designated and their distinction from Green Bonds. Finally, the section will describe how the Trust maps projects to United Nations Sustainable Development Goals (UN SDGs).

Series 23 departed from the way the Trust has traditionally issued Green Bonds. When crafting the Preliminary Official Statement for Series 23, the Trust made the decision to include all projects associated with the issuance. Previous practice limited project disclosure to those directly funded through bond proceeds. It did not include projects that were pledged to secure the Trust's bonds and not funded directly through bond proceeds. Series 23 includes all projects, whether they were bond funded or funded by Trust program equity. Tables found in this report that detail the number of projects or loans for previous issuances reflect the policy that was in place at the time of issuance and should be considered individually.

## Green Bonds

Since 2015, the Trust has issued over $1.1 billion of its bonds as Green Bonds in compliance with the federal Clean Water Act and the Safe Drinking Water Act. Consistent with the "Green Bond" classification, the proceeds are dedicated to projects that promote pollution prevention, sustainable water, wastewater management, energy efficiency or other environmentally sustainable purposes in alignment with ICMA's Green Bond Principles. The Green Bonds were issued to finance 328 loans for 266 water infrastructure projects through the CWSRF and DWSRF programs.

| Green Bonds Issued | | | |
|---|---|---|---|
| **Series** | **Year** | **Issue Amount** | **Total Loans** |
| **Series 18** | 2015 | $228,155,000 | 81 |
| **Series 19** | 2016 | 207,805,000 | 66 |
| **Series 20** | 2017 | 207,350,000 | 51 |
| **Series 21** | 2018 | 163,460,000 | 38 |
| **Series 22** | 2019 | 191,610,000 | 44 |
| **Series 23A** | 2021 | 141,945,000 | 48 |
| **Totals** | | **$1,140,325,000** | **328** |

## Sustainability Bonds

The Trust issued Sustainability Bonds due to the projects' adherence to the environmental standards of the federal Clean Water Act and the Safe Drinking Water Act and the designation of certain borrowers as "Disadvantaged Communities" under the acts. These projects represent communities that are identified as the most disadvantaged in relation to other communities in the Commonwealth.

The purpose of labeling the Bonds as "Sustainability Bonds" is to allow investors to invest directly in bonds that finance projects in Disadvantaged Communities and are environmentally beneficial projects that meet ICMA's Green Bond Principles, 2020 Social Bond Principles, 2018 Sustainability Bond Guidelines and the United Nations Sustainable Development Goals. Projects designated as "Sustainability Bonds" are made up exclusively from Disadvantaged Communities ranked as Tier 3, those most in need, according to the Trust's Annual Affordability Calculation as detailed below.

| Sustainability Bonds Issued | | | |
|---|---|---|---|
| **Series** | **Year** | **Issue Amount** | **Total Loans** |
| **Series 23B** | 2021 | $209,495,000 | 44 |
| **Totals** | | $209,495,000 | 44 |

# The Trust's Disadvantaged Community Program

The Clean Water Act and the Safe Drinking Water Act define a Disadvantaged Community as a municipality most in need as identified by a state's affordability criteria. SRFs are required to provide additional subsidies to Disadvantaged Communities, calculated as an annual percentage of the CWSRF and DWSRF capitalization grant. Massachusetts awards this subsidy in the form of loan forgiveness, reducing the principal obligation that must be repaid on eligible loans. Additionally, the Trust applies further loan forgiveness through a state matching component in addition to this federal requirement.

The Affordability Calculation is based on an adjusted per capita income (APCI) metric. This approach identifies communities that are the most in need of additional financial assistance to construct needed infrastructure improvements. In addition to determining financial need, the metric uses publicly available, transparent sources of data. Pursuant to EPA guidance, the criteria must be based upon income, unemployment data, population trends, and other data determined relevant by the state. The Trust and MassDEP use the following formula to calculate the affordability tiers.

***Adjusted Per Capita Income (APCI) = Per Capita Income * Employment Rate * Population Change***

**PER CAPITA INCOME** *(as listed on the most recent data tables of the Massachusetts Department of Revenue):* Per Capita Income is a widely accepted metric of an ability to afford the cost of infrastructure projects.

**EMPLOYMENT RATE** *(as listed on the most recent calendar year data tables of the Massachusetts Department of Revenue):* The percentage of the workforce employed. Higher employment rates suggest that a community has more residents able to afford the cost of infrastructure than a community with lower employment rates.

**POPULATION CHANGE:** The percentage of gain or loss, according to the US Census data, in a municipal population between 2010 and 2020. Increase in population suggests that the community is experiencing growth, which provides a larger rate payer base to support infrastructure costs. Loss of population suggests negative growth and leaves fewer taxpayers and rate payers to absorb the burden of the infrastructure cost.

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*Based on the APCI formula described above, the Trust calculates APCI for the state and its 351 individual municipalities annually. Communities that fall below the Commonwealth's APCI are assigned into the three (3) affordability tiers based on a community's APCI as a percentage of the Commonwealth's APCI. The table below shows how the tiers are broken down.*

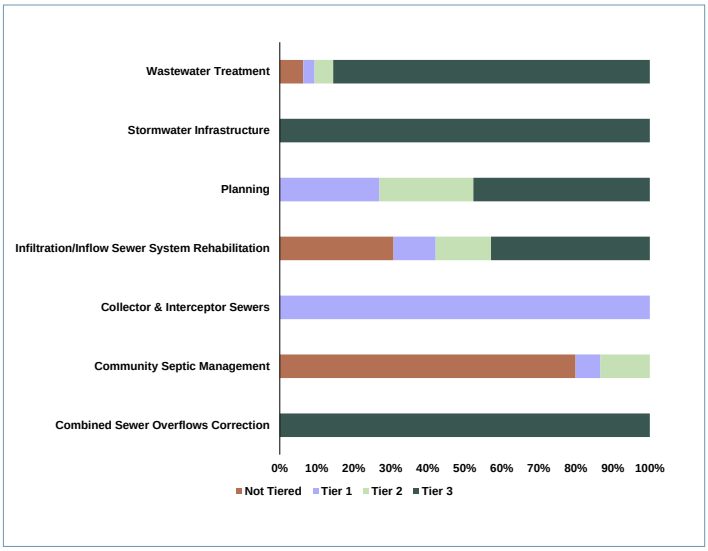
| Disadvantaged Community Tier Designation | |
|---|---|
| **Tier 1** | APCI equal to or more than 80% of the State APCI, but less than 100% of the State APCI |
| **Tier 2** | APCI equal to or more than 60% of the State APCI, but less than 80% of the State APCI |
| **Tier 3** | APCI less than 60% of the State APCI |

# Series 23 Funds Distribution by Disadvantaged Community Tier

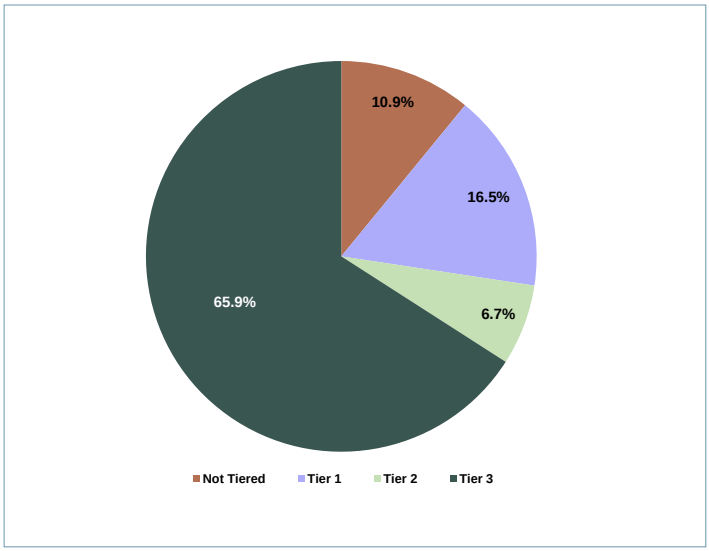
The following charts show the distribution of Series 23 funds to CWSRF and DWSRF programs by Disadvantaged Community tiers.

- **$407 million** or 82.8% of all Series 23 loans went to a Disadvantaged Community
- **Over $275 million** or 55% of all Series 23 loans to were made to Tier 3 Disadvantaged Communities.
- **$231.3 million** was allocated to CWSRF Tier 3 Disadvantaged Community projects.
- The DWSRF program allocated approximately 20% less of its total funding, compared to the CWSRF, to Disadvantaged Communities, but this is skewed by the fact that more than half of the funds allocated to non-Disadvantaged Communities went to three large projects.

**Percent Distribution of CWSRF in each Project Category by Disadvantaged Community Tier**

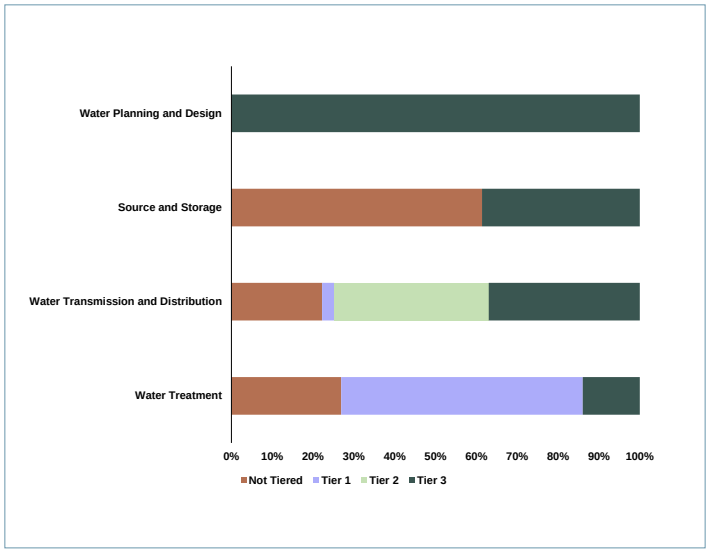



**Percent Distribution of All Series 23 CWSRF by Disadvantaged Community Tier**




The following data provides a more detailed illustration of the distribution of funds in each SRF program by Disadvantaged Community tier.

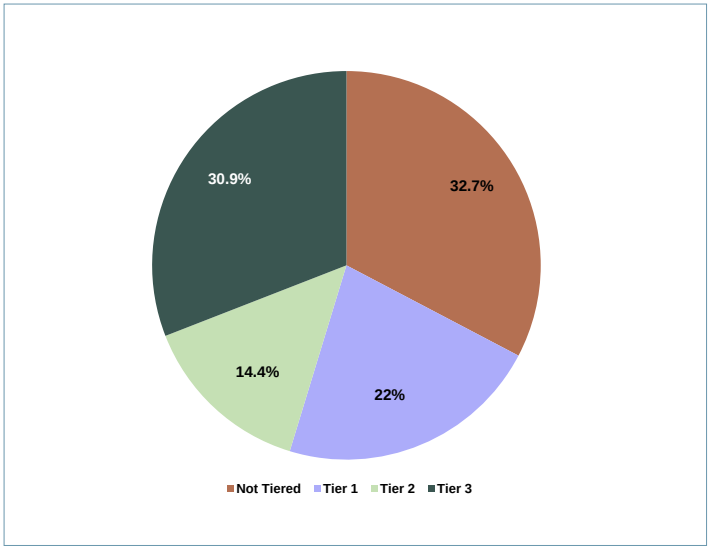
**Percent Distribution of DWSRF in each Project Category by Disadvantaged Community Tier**




- All **CSO Correction and Stormwater Infrastructure** projects target Tier 3 Disadvantaged Communities. These categories of projects are essential to public health and the environmental protection of communities. Most of the projects receiving this funding seek to reduce the amount of untreated sewage discharged into nearby rivers and water bodies. One project with the Springfield Water and Sewer Commission seeks to reduce this discharge into the Connecticut river by 40% annually.

- **85.6%** of all **Wastewater Treatment** projects went to Tier 3 Disadvantaged Communities. These projects are hugely important to the health and environmental impact of the local community. Facilities and treatment process must be upgraded, improved, and replaced to ensure that local demand is met and to reduce the amount impact the community has on local water bodies.
- Nearly **70%** of **I/I and Sewer System Rehabilitation** project funding went to Disadvantaged Communities, with 42.9% going to Tier 3 Disadvantaged Communities.
- **100%** of **Planning project** funding went to Disadvantaged Communities. These projects are integral to ensuring that communities have the information and data necessary to run sustainable to productive wastewater systems. These activities tackle everything from monitoring the performance of sewer flow to developing an improvement program for reducing CSO incidents.

**Percent Distribution of All Series 23 DWSRF by Disadvantaged Community Tier**




- **67.3%** of total DWSRF loan funds went to Disadvantaged Communities, with the exception of Drinking Water Source and Storage, a majority of funds in each category was allocated to Disadvantaged Communities.
- **61.4%** of DWSRF funding allocated to non-Disadvantaged Communities went to three Drinking Water Source and Storage projects.
- **71.3%** of Drinking Water Treatment and 77.8% of Drinking Water Transmission and Distribution project funding was allocated to Disadvantaged Communities
- **100%** of Drinking Water Planning project funds went to Tier 3 Disadvantaged Communities. These projects are intended for drinking water improvement in densely populated neighborhoods in Tier 3 Disadvantaged Communities – Brockton and Revere.

# Project Selection

The Trust's loan process is dictated by an annual list of projects the Trust commits to finance called the Intended Use Plan (IUP). MassDEP compiles two IUPs annually, one for each SRF program. Project eligibility is determined by the Clean Water Act and Safe Drinking Water Act for the CWSRF and DWSRF, respectively. Projects that apply for financing are selected during an annual solicitation process which is open July through August. MassDEP compiles the annual IUPs using this rigorous selection process that establishes the Commonwealth's priorities for the upcoming year. MassDEP engineers review detailed project specifications and rank them using an established set of criteria that measures the severity of the problem, the sensitivity of the environmental hazard, the public health risk, and the appropriateness of the proposed solution.

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

# Project Funding

The Trust, MassDEP, and EPA have entered into a Revolving Fund Operating Agreement for the CWSRF and DWSRF. These agreements establish rules, procedures, and activities to be followed by the EPA and the Trust in administering federal grants. To date, the Trust has been awarded approximately $1.7 billion in federal grants and $318.9 million in state matching funds for the CWSRF program. Approximately $602.9 million in federal grants and $115.2 million in state matching funds have been awarded to the DWSRF program. Additionally, the Commonwealth appropriated $30 million for funding or securing financing solely for local Community Septic Management Programs.

# Project Categories

The SRF programs fund or finance a wide range of projects. Eleven categories of projects are eligible to receive CWSRF assistance and six categories are eligible to receive DWSRF assistance. For the purposes of streamlining the content of this report, the Trust has consolidated similar and related categories while omitting categories with no current projects. Below is an overview of the categories listed within this report.

# Clean Water Categories

### *Wastewater Treatment Projects*

These projects involve the maintenance, upgrade or construction of wastewater treatment facilities (WWTF). A WWTF receives all the sewage from a municipality or utility district service area then treats the water before releasing it back into the environment in accordance with National Pollutant Discharge Elimination System (NPDES) permits. The goal of these projects is to reduce or eliminate pollutants and nutrients found in wastewater for cleaner water ways.

### *The Community Septic Management Program (CSMP)*

The Trust will issue loans to the Commonwealth's cities and towns which then issue loans to homeowners to assist with the repair or replacement of failed septic systems. These projects are categorized as non-point source (NPS) projects. These projects help eliminate contamination from failing septic systems which are a leading source of groundwater pollution causing contaminated drinking water, tainted shellfish beds, weed-choked lakes and ponds, and polluted beaches.

### *Infiltration/Inflow (I/I) and Sewer System Rehabilitation Projects*

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

### *Collector and Interceptor Sewer Projects*

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

### *Combined Sewer Overflow (CSO) Correction Projects*

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

### *Non-Point Source (NPS) Sanitary Landfill*

These projects involve the reduction of NPS pollution from landfills by capping, installing leachate collection systems or repairing insufficient or damaged landfill systems. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, depositing them into ground and surface waters.

### *Stormwater Infrastructure*

These projects involve techniques for managing stormwater to prevent or reduce non-point source pollutants from entering surface waters or ground waters. This includes designing and installing stormwater management systems for conveying, collecting, storing, discharging, recharging, or treating stormwater. These systems aim to reduce the overall impact of excess water on an existing system during wet weather events.

### *Planning Projects*

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

# Drinking Water Categories

### *Drinking Water Treatment Projects*

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

### *Drinking Water Transmission and Distribution Projects*

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

### *Drinking Water Source and Storage Projects*

These projects involve two distinct categories. Source water projects are related to untreated water sources – such as rehabilitating surface water in a reservoir or drilling and maintaining wells. Storage projects deal with infrastructure for maintaining and storing treated water before it is distributed into a system.

### *Drinking Water Planning and Design Projects*

These projects involve the activities needed to plan, design, and/or study drinking water infrastructure. Such projects are essential for maintaining and improving the key infrastructure that protects public health and water quality.

# United Nations Sustainable Development Goals Project Mapping

The **United Nations Sustainable Development Goals (UN SDGs)** are 17 goals adopted as part of the '2030 Agenda for Sustainable Development.' The goals were adopted by all United Nations member states in 2015. The UN SDGs are meant to provide a blueprint for combating poverty, spurring economic growth, and improving health and education while ensuring both climate and environmental sustainability. In reference to the June 2020 International Capital Market Association's Green and Social Bonds: A High-Level Mapping to the Sustainable Development Goals, the Trust intends for the proceeds from the designated bonds to be used in a manner that is expected to be consistent with the following UN SDGs.

While the Trust intends for projects financed with Green Bonds and Sustainability Bonds to adhere to the applicable UN SDGs as detailed below, the Trust does not guarantee that such criteria will ultimately be met, either in substance or with respect to any particular timelines set forth in the UN SDGs.

# Mapping Green Bonds

Consistent with the "Green Bond" classification, the proceeds from the Green Bonds will be dedicated to projects that promote pollution prevention, sustainable water and wastewater management, energy efficiency, or other environmentally sustainable purposes in alignment with ICMA's 2018 Green Bond Principles.

### *Goal 6: Ensure availability and sustainable management of water and sanitation for all*

**6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all

**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

**6.5** By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

**6.b** Support and strengthen the participation of local communities in improving water and sanitation management

### *Goal 12: Ensure sustainable consumption and production patterns*

**12.2** By 2030, achieve the sustainable management and efficient use of natural resources

**12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

### *Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development*

**14.1** By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

**14.2** By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration in order to achieve healthy and productive oceans



| Programs | Project Category | UN SDG Alignment |
|---|---|---|
| **CWSRF Eligible Projects** | Wastewater Treatment | 6.3, 6.4, 12.4 |
| | Community Septic Management Program | 6.3, 6.b, 12.4 |
| | Collector and Interceptor Sewers | 6.3, 6.4, 14.1 |
| | Combined Sewer Overflow Correction | 6.3, 6.b, 12.2, 14.1 |
| | Infiltration/Inflow and Sewer System Rehabilitation | 6.3, 6.b, 14.1 |
| | Non-Point Source Sanitary Landfill | 6.3, 6.b, 12.2, 12.4, 14.1, 14.2 |
| | Stormwater Infrastructure | 6.3, 6.b, 12.2, 14.1, 14.2 |
| | Planning | 6.3, 6.4, 6.5, 6.b, 12.2, 14.1 |
| **DWSRF Eligible Projects** | Drinking Water Treatment | 6.1, 6.4, 6.5, 12.4 |
| | Drinking Water Transmission and Distribution | 6.1, 6.4, 12.2 |
| | Drinking Water Source and Storage | 6.1, 12.2, 12.4 |
| | Drinking Water Planning and Design | 6.1, 6.4, 6.5, 6.b, 12.2, 12.4 |

# Mapping Sustainability Bonds

Projects financed as 'Sustainability Bonds' will generally adhere to the UN SDGs as detailed in this report. In addition, the projects financed by the Series 23B Bonds all fall into the Tier 3 Disadvantaged Communities as determined at the time of project approval.

### *Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation*

**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

### *Goal 10: Reduce inequality within and among countries*

**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

### *Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable*

**11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

**11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all.



# Section II • Series 23 Project Highlights

Since the Trust did not issue a new series of bonds in 2022, this section of the report will focus on the projects financed in Series 23. The section will first look at all projects financed in Series 23 and then a more detailed project narrative on a number of projects.

## The Data

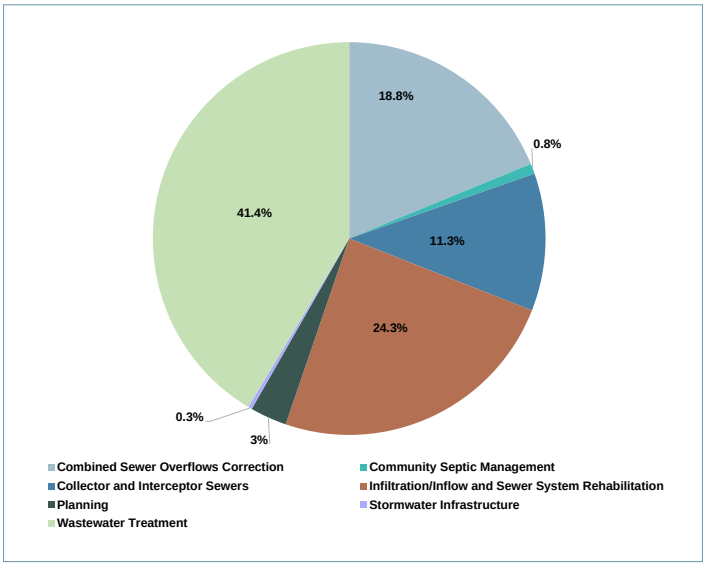
Series 23 is composed of 81 projects, represented by 92 individual loans, with 64% being CWSRF projects and 36% DWSRF projects. The following charts illustrate the distribution of Series 23 projects in each of the CWSRF and DWSRF project categories, first by financing amount and then by number of projects. When examined together, these charts provide a detailed illustration of the composition of each program in Series 23.

## CWSRF Projects

In Series 23, the Trust focused on a large variety of projects within the CWSRF, with a specific focus on: Wastewater Treatment, Infiltration/Inflow ("I/I") and Sewer System Rehabilitation, and Combined Sewer Overflows ("CSO") Correction projects.

- **Wastewater Treatment** projects received 41.4% of total funding, but only encompasses 21.2% of the total number of CWSRF Series 23 projects. This means an enormous amount of funding is dedicated to the upgrade and improvement of treatment infrastructure to continually reduce or eliminate pollutants in wastewater that is discharged into the environment.
- **I/I** and **Sewer System Rehabilitation** projects funding and project distributions are proportionate to each other, 24.3% and 26.9% respectively, meaning the average amount of funding for each project is similar but still larger than projects in other categories.
- **CSO Correction** projects account for 18.8% of CWSRF Series 23 funding and only 5.8% of the number of projects. These projects tend to be in early industrialized communities, where the cost of repair is disruptive and expensive. Based on the forementioned statistics, the projects in this category tend to receive substantial amounts of financing to help these communities reduce the amount of untreated water released into the environment
- **Collector and Interceptor Sewer** projects account for just over 11% of project funding and 7.7% of the total number of projects.
- **Stormwater Infrastructure** was the least represented category of projects in Series 23, with only one project accounting for .3% of funding. This is not a rare occurrence as stormwater infrastructure related activities are often built into almost all other categories including the largest categories of Wastewater Treatment and I/I.
- **Planning Projects** unlike the other categories are less costly per project as they do not require the procurement of physical infrastructure. While Planning projects account for a 25% of the total number of projects, they only occupy 3% of total funding.

**Series 23 CWSRF Funding Distribution by Project Category**

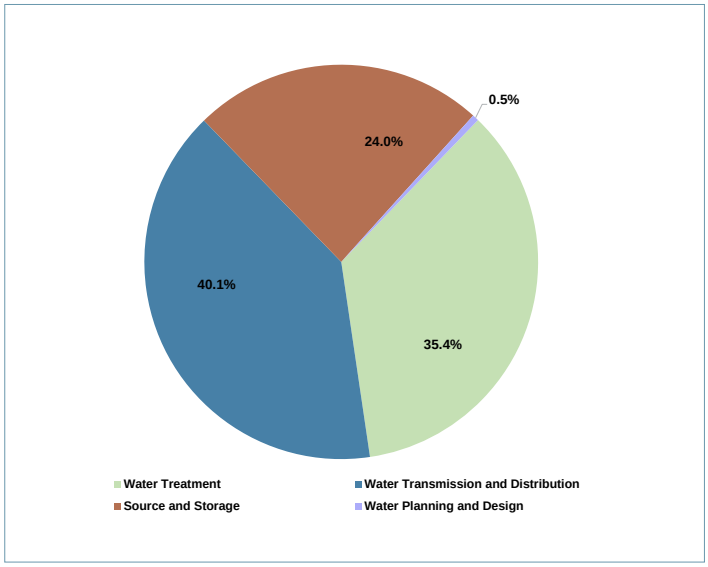


# DWSRF Projects

The primary focus of the DWSRF program is to ensure communities in the Commonwealth can affordably improve the overall quality and ensure the safety of their resident's drinking water. The following charts show that the Water Treatment and the Water Transmission and Distribution categories encompass more than 80% of the Series 23 DWSRF number of projects and three quarters of the funding.

- **Drinking Water Treatment** projects account for less than a quarter of the Series 23 DWSRF projects, whereas the
- **Drinking Water Transmission and Distribution** projects accounts for more than 58%. Thus, while both receive virtually the same amount of funding, 35.4% and 40.6% respectively the Water Treatment projects are for more costly on a per project basis.
- **Drinking Water Source and Storage** projects accounts for 10.3% of the total number of Series 23 projects and 24% of the funding. These projects focus on improving the infrastructure that maintains and stores treated water prior to its distribution back into the community, as well as rehabilitating surface water in reservoirs and wells.
- **Drinking Water Planning and Design** projects account for nearly 7% of the total number of DWSRF projects in Series 23, they only make up half a percent of total project funding. Similar to their CWSRF counterparts, Drinking Water Planning and Design is limited to non-construction related activities. Though it should be noted that many projects will build this design work into their DWSRF projects.

**Series 23 DWSRF Funding Distribution by Project Category**




As was noted earlier, Series 23 highlighted all projects connected to the issuance as opposed the previous process of only listing projects receiving bond funds. This change allows the Trust to display a larger set of projects and to demonstrate the total impact of the issuance. This issuance was different in many ways due to the issuance bifurcation and the updated language in the preliminary and final official statements. At its core, it contains the same fundamental values and elements of the Trust's five previous Green Bond issuances.

The remainder of this section details four projects that showcase the variety and impact of the projects financed through the Trust's bonds.

## Greater Lawrence Sanitary District

**ORGANICS TO ENERGY**
**LOAN NUMBER:** CWP-15-15
**LOAN AMOUNT:** $25,290,070
**LOAN FORGIVENESS AMOUNT:** $1,597,994
**DISADVANTAGED COMMUNITY TIER:** 3
**UN SDG:** 6, 9, 10, 11, 12
**PROJECT CATEGORY:** Wastewater Treatment

# Project Overview

It is hard to imagine uneaten food and cooking scraps being a source of energy sufficient to power a wastewater treatment facility (WWTF). but through innovative thinking, Greater Lawrence Sanitary District (GLSD) did exactly that. GLSD installed a codigestor facility which converts food waste into energy to power the WWTF. GLSD is a regional sewer district that operates a 52 million gallon per day WWTF. GLSD collects, manages, and treats wastewater from a host of municipalities in northern Massachusetts and southern New Hampshire.

In 2014 when MassDEP implemented a statewide ban of the disposal of commercial organic wastes from businesses, GLSD used it as an opportunity for innovation GLSD began a multi-phase retrofitting of their WWTF to modernize equipment and seize on this newly available energy source by accepting organic waste from businesses. Through this series of SRF financed projects, GLSD has reduced costs and increased efficiency.

The projects have replaced the need for reliance on the electric grid.  By generating their own power, GLSD saves almost $3 million a year compared to previous utility costs. With their new machinery and a “higher octane” waste mix producing gas, the WWTF produces enough pipeline quality natural gas and captured heat energy to power their entire operation. The energy produced by the WWTF’s modifications is done so while emitting 20% less greenhouse gases than the conventional electric grid, all while diverting food waste from landfills.

## Technical Overview

Phase 1 began in 2014, implementing improvements intended to control digester foaming incidents, thereby allowing the anerobic sludge digestion to be expanded to co-digestion in Phase 2. Phase 2 included a biogas metering system upgrade, the addition of a waste blending tank, and mixing system to facilitate acceptance of organic material. High-pressure digester feed pumps were added to manage organic material. A pilot testing program for operating the co-digestion system was implemented.

Phase 3 began in 2016 and started with the installation of underground food acceptance tanks to hold the organic waste and an additional anerobic digester to control the increased load of material entering the plant. Biogas cleaning capability and combined heat and power (CHP) processes were then installed to govern the increased volume of gas from the anerobic digesters. The CHP technology captures heat and emissions from the WWTF's existing two 1.6- megawatt cogeneration engines and increases system efficiency. These improvements in efficiency and increased production capacity are enough to virtually remove reliance on the electric grid.

The organic waste is brought from businesses to an auxiliary site where the organic waste is blended into a slurry, transported to the WWTF, and deposited into the underground holding tanks. The preprocessed organic food waste and municipal solids from wastewater treatment processing are then mixed and fed into the WWTF's anerobic digesters. The combination of the two wastes is a more potent fuel for the digesters than solely that of the municipal solids and produces biogas. The biogas is cleaned to remove impurities and moisture. It is then used to power the WWTF's generators. Heat is recovered from engines and exhaust. It is then used to heat the digesters and reduce reliance on natural gas fueled boilers and furnaces.

## Financial Impact

GLSD was issued a $25,290,070 loan with below-market 2% interest and a 20-year loan term. Interim financing before repayment and during construction was at 0% interest. By completing the organics to energy project, GLSD is no longer reliant on the electric grid, have eliminated their utility expenses, and save almost $3 million a year in energy costs.

## Environmental Impact and Resiliency

The modifications to the WWTF allow for greater resiliency to unforeseen circumstances and climate change. Not only is the WWTF fully energy self-sufficient, but it is also capable of starting up completely disconnected from the electric grid or staying on in the instance of an outage. As Executive Director of GLSD, Cheri Cousens said in March 2022 to *Treatment Plant Operator Magazine:*

***"We can start the engines in what we call island mode…We start the engines using natural gas, and we can power the whole plant without being connected to the grid. We have tested it several times…we knew [a local energy supplier] was going to be down for about five days. We proactively went into island mode and ran the engines for that period."***

## Final Analysis

The Organics to Energy project undertaken by GLSD modernized their facility, harnessed an untapped source of energy, and increased their resiliency all while diverting food waste from landfills and generating almost $3 million a year in energy savings and nearly $1.6 million savings from financing the project using the Trust.

## *Town of Littleton*

**EMERGENCY PFAS BLENDING PIPELINE PROJECT**
**LOAN NUMBER:** DW-20-07
**LOAN AMOUNT:** $899,328
**UN SDG:** 6, 12
**PROJECT CATEGORY:** Drinking Water Treatment

# Project Overview

According to the EPA, per- and polyfluoroalkyl substances (PFAS) are widely used, long lasting chemicals, components of which break down very slowly over time. PFAS are found in water, air, fish, and soil at locations across the nation and the globe. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals. Although the full extent of PFAS' public health and environmental impacts are under investigation, PFAS has been identified as an emerging contaminant action item and is being addressed through plants equipped for remediation processes.

Littleton is a town of approximately 10,141 people in the Metro West suburbs of Boston, Massachusetts. In 2019, the town discovered that their Spectacle Pond drinking water wells, the largest supplier of drinking water to the town, contained substantial amounts of PFAS. With MassDEP's newly established PFAS maximum contamination level of 20 parts per trillion (ppt), the town determined that a new treatment plant was necessary. In the meantime, the town had to find a way to supply safe drinking water to its residents and landed on a blending solution.

Blending takes water that contains the contaminant and blends it with water that is free of the PFAS. In Littleton's case, the Spectacle Pond well was taken out of service. The drinking water supply was then blended with the Beaver Brook wells to keep it under the 20 ppt for PFAS. To blend the water, the town had to run temporary water mains from the sources to blend the water.

Although this measure is temporary, it has become part of Littleton's larger effort to remediate PFAS in drinking water. Littleton is in the process of building a $24.5 million iron, manganese, and PFAS water treatment plant, another Trust financed project. The temporary pipe will remain in service until this treatment plant is placed in service for more long-term PFAS remediation. The town currently anticipates completion of the project in Spring of 2023. The majority of the project costs are for the pipe rental.

Other communities in northern Massachusetts such as neighboring Ayer and nearby Devens are also building treatment plants for PFAS remediation that are being financed by the Trust.


## City of Pittsfield

**WASTEWATER TREATMENT PLANT (WWTP) NUTRIENT REMOVAL**
**LOAN NUMBERS:** CWP-18-12 and CWP-18-12-A
**SERIES 23 LOAN AMOUNT:** $57,737,082
**TOTAL SRF LOAN AMOUNT:** $66,759,423
**LOAN FORGIVENESS AMOUNT:** $3,721.701
**DISADVANTAGED COMMUNITY TIER:** 3
**UN SDG:** 6, 9, 10, 11, 12
**PROJECT CATEGORY:** Wastewater Treatment

# Project Overview

As the third largest municipality in western Massachusetts, Pittsfield is a center for commercial and cultural activities in the Berkshires. The city's nearly 44,000 residents and many visitors are drawn to its iconic sites, like the Gilded Age Colonial Theatre, Herman Melville's historic house, and Tanglewood, the summer home of the Boston Symphony Orchestra.

All this would not be possible without the Housatonic River which flows 149 miles south from the Berkshires to the Long Island Sound. The waterway's main artery starts in southern Pittsfield, with its watershed extending east into the city. A portion of the river in Pittsfield is one of the most biodiverse areas in the state. Thirty-four types of plants and animals in the Upper Housatonic are uncommon or exemplary. The Endangered Species Act protects 161 of its native species. Yet, the river also contains nutrient byproducts from the nearby wastewater treatment plant. This pollution jeopardizes the many plants, animals, and residents that rely on it.

Industrialization in the 18th and 19th centuries augmented the river's role from subsistence farming and fishing. Cities along the Housatonic built dams, mills, and furnaces to further commercial activity. Without the water's ability to power paper mills in the 1800s, Pittsfield may not have its cultural and economic resources of today.

The Housatonic's history as an industrial site continued into the 21st century. General Electric's (GE) facility polluted the river with hazardous polychlorinated biphenyls (PCBs) between 1932 and 1977. This contamination ended when the EPA banned PCBs and entered an agreement with Pittsfield and other parties to begin cleanup. Although the decree treated 20 areas outside of the river, PCB levels will remain high until active remediation is complete in 2025.

Industrial use was only half the problem. Pittsfield's Wastewater Treatment Plant (WWTP) performs a critical function for its many residents and four surrounding towns. To do so, the plant discharges treated water into the Upper Housatonic. Its activities are regulated by a National Pollutant Discharge Elimination System (NPDES) permit co-issued by the EPA and Massachusetts Department of Environmental Protection (MassDEP). Regular examinations ensure the plant complies with the permit. However, it revealed that the Housatonic's water is no longer fishable and swimmable due to PCB contamination.

During a compliance inspection by MassDEP in 2017, certain nutrients were found entering the river in levels higher than the permit allows. Nevertheless, this problem has been documented since a 2003 water quality report supported by MassDEP and the Massachusetts Clean Water Trust. The issue was made worse by the plant releasing increasingly higher levels of aluminum into the water since 2013. Pittsfield's WWTP released an extra 298 micrograms per liter in 2014 alone. Phosphorous was also 0.13 micrograms per liter above the limit by 2016. Nitrogen removal was an additional area of concern due to Pittsfield's role as the greatest discharger of nitrogen into the Housatonic in the Commonwealth.

MassDEP required the city to create a schedule for meeting NPDES permit limits and develop an integrated water resource management plan. Upgrading the plant is just one aspect of that plan, which encompasses maintaining or improving all existing wastewater treatment infrastructure.

The three-year construction plan involved four inter-related steps to be completed. The first step was a more efficient and functional phosphorus and aluminum removal system. To process the subsequent increase in byproducts, new equipment was installed in the sludge dewatering facility. Both steps required demolition and new construction. A secondary clarifiers upgrade was completed which is critical for the aluminum and phosphorous filtration system to work. Finally, the nitrogen removal process at the plant was enhanced. Although the project experienced delays because of unforeseen complications, but the project will cost no more than which the budgeted contingency allows.

## Environmental Impact

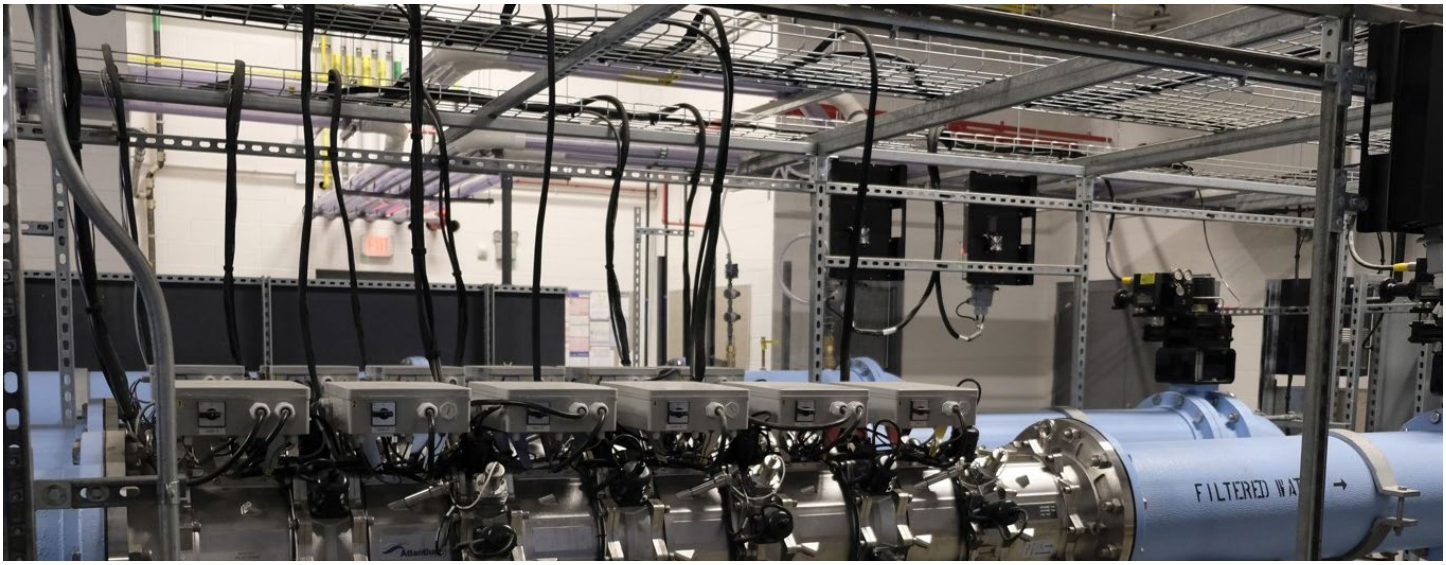
The overall impact of the upgrades is improved nutrient filtration to meet limits set by the EPA. Nutrient removal is crucial to wastewater treatment, particularly when it flows into a productive ecosystem like in Pittsfield. Although nutrients sound beneficial to plant and animal life, too much of it can damage the ecosystem and, as a result, its biodiversity. Aluminum can be toxic for gill-breathing animals like fish. Phosphorous and nitrogen, on the other hand, are a favorite food of algae. These nutrients feed surface algae to the point where they block sunlight from reaching marine life below the water. Even in death, surplus algae cause trouble when the bacteria that decompose it consume the oxygen needed by fish. In some waterways, this eutrophication leads to dead zones and masses of lifeless fish washing onto the shore.

Because the Upper Housatonic River already has two priority conservation areas, reducing excess nutrients will help decrease the ecosystem's vulnerability. Its diverse population of mussels and fish will appreciate the cleaner, more oxygenated water. Removing nutrients will also produce cleaner water for aesthetic and recreational use. Benefits even extend to the Long Island Sound, a tributary of the Housatonic, which has existing nitrogen abundance problems that the Pittsfield WWTP could ameliorate.

## Socio-Economic Impact

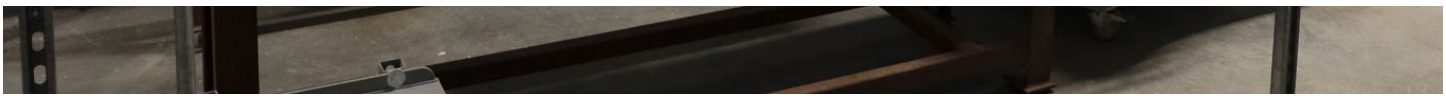
Completing this project was inspired not only by improving public and environmental health, but also the financial support provided to Pittsfield. The area's high unemployment rate combined with other tumultuous events of the past 20 years led to the Massachusetts Clean Water Trust's affordability calculation results designating the city for the highest level of assistance as a Tier 3 Disadvantaged Community. This designation means that Pittsfield's adjusted per capita income (APCI) is less than 60% of the Commonwealth's ACPI.

This multimillion-dollar undertaking, which would be difficult for any community, was assisted by $66.8 million dollars in a series of four loans from the Trust. These loans, in combination with a 0% interest rate, made this project a more realistic undertaking for Pittsfield. It is estimated that city will save over $26.4 million in interest over the next 30 years. In addition, $3.7 million in loan forgiveness was awarded due to the Tier 3Disadvantaged Community status.




## Wareham Fire District

**MAPLE SPRINGS WATER PURIFICATION PLANT**
**LOAN NUMBER:** DWP-17-09-A
**SERIES 23 LOAN AMOUNT:** $7,000,000
**TOTAL LOAN AMOUNT:** $13,346,069
**LOAN FORGIVENESS AMOUNT:** $653,904
**DISADVANTAGED COMMUNITY TIER:** 3
**UN SDG:** 6, 9, 10, 11, 12
**PROJECT CATEGORY:** Drinking Water Treatment



## Project Summary

Maple Springs is one of several wellfields that the Wareham Fire District relies on to provide water to over 18,500 people within the Town of Wareham, all of which is supplied by groundwater. With wells constructed between 1946 and 1955, Maple Springs has historically produced high iron and manganese concentrations in raw water, characterized by yellowish orange to brownish-black pigmented water.

The presence of such elements can be problematic for infrastructure and those who consume the water. Metal deposits can lead to failures in water distribution requiring costly maintenance. Though not associated with negative health outcomes, excessive amounts of iron and manganese can cause an unpleasant taste in drinking water, including a bitter, metallic, or salty taste. It can also have undesirable cosmetic effects, such as discoloration to sinks, bathtubs, toilets, laundry, and pools. According to the Well House Newsletter, residents of Wareham have long grappled with these effects, with approximately 2,000 pounds of iron and manganese finding its way into the distribution system every year for more than 20 years.

In August of 2018, the District broke ground to construct the Maple Springs Water Purification Plant (MSWPP) to combat iron and manganese concentrations in the water, thus embarking on one of the largest structural endeavors since its opening in 1907. The MSWPP was completed in April of 2021 and now filters water from five of the eight wells in operation, one of which was entirely offline prior to the plant's construction due to high concentrations of manganese. The plant was constructed adjacent to the Maple Springs Corrosion Control Facility, which utilizes lime for pH leveling purposes. The two facilities now work in tandem to ensure that the water flowing out of taps in Wareham is clean, clear, and tasty.

The MSWPP includes several features to improve the quality of water. The primary function of the plant is filtration to gradually remove iron and manganese to comply with the United States Environmental Protection Agency recommendations under the Secondary Treatment Standards. Additionally, the plant uses ultra-violet disinfection to minimize the use of chlorine, thus improving the taste and odor of water. With this, the District was the first entity in the state to meet the Ground Water Rule, a treatment and disinfection regulation to ensure the safety of public water supply sources, without the use of chlorine.

In addition to addressing water quality issues, the MSWPP aids in the District's goal of minimizing costs and cutting carbon emissions by utilizing solar power. Installed to the facility roof in June of 2020 with help from the MassDEP Gap Grant, the solar power system generates approximately 10% of the total energy needed to run the plant. Outside of the MSWPP, the District uses solar energy to power the vast majority of its system-wide water operations, generating approximately 75% of all necessary electricity through solar power.

## Future Activities

The MSWPP was constructed to treat 3 million gallons of water per day (MGD), surpassing the District's 2016 average daily consumption of 1.57 MGD. In the future, the District plans to construct a transmission main from the Seawood Springs and Southline wells to the MSWPP to expand the volume of water treated daily. Constructed to handle up to 4.5 MGD, the Plant will be ready to take on the expansion once the time comes.

## Disadvantaged Communities Status and Subsidies from the Trust

Utilizing data from 2017, when the Trust approved the initial project, the Town of Wareham's Adjusted Per Capita Income (APCI) was $ 22,114.90, or 59.2% of the Commonwealth's APCI. The District was subsequently ranked as a Tier 3 Community under the Disadvantaged Community Program, meaning they receive the highest level of loan forgiveness for projects. The construction of the MSWPP received a total of $653,904 in loan forgiveness.

## Appendix A - Series 23 Projects [1]

| Borrower | Loan No. | Project Name | Amount | Percentage Drawn | Program | Category | DC Tier | UN SDG |
|---|---|---|---|---|---|---|---|---|
| Andover | DW-19-13 | Distribution System Improvements | $4,791,300 | 74.75% | DW | Drinking Water Transmission and Distribution | | 6, 12 |
| Auburn Water District | DWP-19-19 | Prospect Street Tank Replacement | $1,623,160 | 97.32% | DW | Drinking Water Transmission and Distribution | 2 | 6, 12 |
| Avon | CWT-15-12 | Community Septic Management Program | $400,000 | 100% | T5 | Community Septic Management Program | 2 | 6, 12 |
| Barnstable | DWP-18-10 | Maher Treatment Facility Upgrade | $9,754,852 | 96.16% | DW | Drinking Water Treatment | 1 | 6, 12 |
| Barnstable | DWP-19-28 | Airport Well and Straightway Facility | $2,642,303 | 97.70% | DW | Drinking Water Treatment | 1 | 6, 12 |
| Billerica | CW-17-15 | Sewer Contract 36 | $12,842,593 | 93.45% | CW | Collector and Interceptor Sewers | 1 | 6, 14 |
| Billerica | CW-17-15-A | Sewer Contract 36 | $275,000 | 100% | CW | Collector and Interceptor Sewers | 1 | 6, 14 |
| Billerica | DWP-19-04 | Water Treatment Plant (WTP) Upgrades | $9,316,240 | 98.99% | DW | Drinking Water Treatment | 1 | 6, 12 |
| Brockton | CWP-18-42 | Wastewater Treatment Plant (WWTP) Upgrade | $5,412,841[2] | 93.38% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Brockton | DW-17-05 | 2017 Transmission Main Assessment | $500,000[2] | 100% | DW | Drinking Water Planning and Design | 3 | 6, 9, 10, 11, 12 |
| Brockton | DWP-18-11 | Water Pump Well and Clearwell Rehabilitation | $2,982,199[2] | 95.54% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Cohasset | CWT-17-07 | Community Septic Management Program | $150,000 | 100% | T5 | Community Septic Management Program | | 6, 12 |
| Dunstable | DW-19-05 | Dunstable Water Infrastructure Project | $2,640,000 | 93.83% | DW | Drinking Water Source and Storage | | 6, 12 |
| Eastham | DWP-16-02-R | Water System Phase I | $112,586 | 100% | DW | Drinking Water Transmission and Distribution | 2 | 6, 12 |
| Easton | CWT-17-06 | Community Septic Management Program | $1,000,000 | 100% | T5 | Community Septic Management Program | | 6, 12 |
| Fall River | CW-18-44 | Stafford Square Collection System Evaluation | $400,000[2] | 100% | CW | Planning | 3 | 6, 9, 10, 11, 12, 14 |
| Fall River | CWP-18-03 | Combined Sewer Overflows Abatement Program-Middle Street | $2,321,027[2] | 100% | CW | Combined Sewer Overflow Correction | 3 | 6, 9, 10, 11, 12, 14 |
| Fall River | CWP-18-35 | Hyacinth Street Drainage Improvements | $1,126,248[2] | 91.23% | CW | Stormwater Infrastructure | 3 | 6, 9, 10, 11, 12, 14 |
| Fall River | CWP-18-36 | President Avenue Sewer Pump Station Replacement | $3,930,559[2] | 97.49% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Fall River | CWP-18-38 | Wastewater Treatment Facility Improvements | $21,018,115[2] | 98.29% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Fall River | DWP-17-12 | Automatic Meter Reading and Meter Replacement | $3,336,416[2] | 92.27% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Fall River | DWP-18-15 | Phase 18- Water System Improvements | $1,135,800[2] | 84.89% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Fitchburg | CWP-16-10-B | Fitchburg Wastewater Treatment Facility Secondary Systems Upgrade | $1,691,026[2] | 100% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Franklin | DW-19-02 | Treatment Plant at Well Stations No. 3 and 6. | $12,579,500 | 97.16% | DW | Drinking Water Treatment | | 6, 12 |
| Gardner | CWP-17-23 | Gardner- Sludge Dewatering Replacement Project | $5,802,527[2] | 100% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Gardner | CWP-17-23-A | Gardner- Sludge Dewatering Replacement Project | $530,533[2] | 100% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Gloucester | CW-17-25 | Utility Master Plan | $1,200,000 | 94.79% | CW | Planning | 2 | 6, 12, 14 |
| Greater Lawrence Sanitary District (GLSD) | CWP-15-15 | Organics to Energy | $25,290,070[2] | 94.63% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| GLSD | CWP-15-16 | Combined Sewer Overflow Abatement Program | $8,739,493[2] | 94.90% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Haverhill | CW-17-14 | Haverhill Wastewater Treatment Facility Improvements | $7,408,631 | 99.82% | CW | Wastewater Treatment | 2 | 6, 12 |
| Haverhill | CW-19-12 | Combined Sewer Overflow Control Plan for the Locke Street CSO Area | $1,534,800 | 56.07% | CW | Planning | 2 | 6, 12, 14 |
| Haverhill | DWP-18-06 | Phase 2- Transmission Main Improvements | $7,448,730 | 90.27% | DW | Drinking Water Transmission and Distribution | 2 | 6, 12 |
| Hull | CW-18-20 | Facility Plan and Resiliency Plan Update | $478,890 | 100% | CW | Planning | 1 | 6, 12, 14 |
| Hull | CW-18-21 | Wastewater Treatment Facility Reliability Centered Maintenance Assessment | $332,966 | 100% | CW | Planning | 1 | 6, 12, 14 |
| Hull | CW-18-22 | Sewer System Evaluation Survey | $1,436,820 | 96.13% | CW | Planning | 1 | 6, 12, 14 |
| Hull | CWP-18-29 | Fiscal Sustainability Plan and Capacity, Management, Operations and Maintenance Upgrades | $9,831,151 | 99.36% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 1 | 6, 14 |
| Lawrence | CW-14-16-A | Sewer System Rehabilitation | $442,092[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Lawrence | CWP-18-09-A | Sewer and Drainage Improvements | $4,053,890[2] | 93.57% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11 12, 14 |
| Lawrence | CWP-18-09 | Sewer and Drainage Improvements | $9,398,438[2] | 99.96% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11 12, 14 |
| Lawrence | CWP-19-06-A | Sewer and Drainage Improvements | $468,570[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11 12, 14 |

**Footnotes**
[1] Series 23: All Amount and Percentage Completed sections are accurate as of July 31, 2022
[2] Projects associated with the Series 23 Sustainability Bonds are shaded in light green

## Appendix A - Series 23 Projects [1]

| Borrower | Loan No. | Project Name | Amount | Percentage Drawn | Program | Category | DC Tier | UN SDG |
|---|---|---|---|---|---|---|---|---|
| Lawrence | CWP-19-06 | Sewer and Drainage Improvements | $4,009,400[2] | 99.99% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Lawrence | DWP-19-03 | Distribution System Improvements | $4,817,343[2] | 98.62% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Littleton | DW-20-07 | Emergency PFAS Blending Pipeline Project | $899,328 | 76.63% | DW | Drinking Water Treatment | | 6, 12 |
| Marion | CW-18-37 | Wastewater Treatment Plant & Collection System Improvements | $7,002,294 | 96.63% | CW | Wastewater Treatment | | 6, 12 |
| Massachusetts Water Resources Authority (MWRA) | CW-19-50 | Wastewater Treatment Plant and Sewer Improvements | $2,350,379 | 100% | CW | Wastewater Treatment | | 6, 12 |
| MWRA | CW-19-49 | Facility Asset Protection | $767,671 | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation | | 6, 14 |
| MWRA | CW-19-51 | Remote Headworks Upgrade | $22,030,256 | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation | | 6, 14 |
| MWRA | DW-20-31 | Southern Extra High Redundancy and Storage | $7,271,659 | 100% | DW | Drinking Water Source and Storage | | 6, 12 |
| MWRA | DW-19-25 | Southern Extra High Redundancy and Storage | $10,896,491 | 100% | DW | Drinking Water Source and Storage | | 6, 12 |
| MWRA | DW-19-26 | Wachusett Aqueduct Pump Station | $4,103,509 | 100% | DW | Drinking Water Transmission and Distribution | | 6, 12 |
| MWRA | DW-20-32 | Commonwealth Ave Pump Station Redundancy | $3,018,669 | 100% | DW | Drinking Water Transmission and Distribution | | 6, 12 |
| Nantucket | CW-18-05 | Emergency Sewer Force Main Assessment Project | $3,801,862 | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation | | 6, 14 |
| Nantucket | CWT-19-01 | Community Septic Management Program | $1,040,600 | 100% | T5 | Community Septic Management Program | | 6, 12 |
| New Bedford | CWA-19-17 | Asset Management Plan Grant Loan | $260,000[2] | 100% | CW | Planning | 3 | 6, 9, 10, 11, 12, 14 |
| New Bedford | DWP-17-06 | Large Meter & Advanced Metering Infrastructure (AMI) Upgrade Program | $5,109,695[2] | 88.84% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| New Bedford | DWP-17-07 | High Hill Reservoir Rehabilitation | $13,093,376[2] | 91.52% | DW | Drinking Water Source and Storage | 3 | 6, 9, 10, 11, 12 |
| New Bedford | CW-17-09 | MS4 Permit Compliance and Reporting | $474,700[2] | 100% | CW | Planning | 3 | 6, 9, 10, 11, 12, 14 |
| New Bedford | CW-18-31 | Wastewater Treatment Plan (WWTP) Facilities Planning | $2,500,000[2] | 94.97% | CW | Planning | 3 | 6, 9, 10, 11, 12, 14 |
| New Bedford | CWP-17-16 | Pumping Station Improvements | $6,158,058[2] | 91.03% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| New Bedford | CWP-17-16-A | Pumping Station Improvements | $926,670[2] | 100% | CA | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| New Bedford | CWP-17-17 | Wastewater Collection System Improvements | $1,387,889[2] | 59.36% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Norton | CWP-18-43 | West Main Street Sewer Extension Project | $4,693,231 | 98.07% | CW | Collector and Interceptor Sewers | 1 | 6, 14 |
| Peabody | DWP-20-03 | Peabody Water Transmission Main and Pump Station | $5,299,756 | 79.86% | DW | Drinking Water Transmission and Distribution | 2 | 6, 12 |
| Peabody | DWP-19-11 | Peabody Water Transmission Main and Pump Station | $4,340,000 | 84.61% | DW | Drinking Water Transmission and Distribution | 2 | 6, 12 |
| Pepperell | CWP-18-08 | Pepperell Wastewater Treatment Facility (WWTF) Upgrade | $4,511,146 | 100% | CW | Wastewater Treatment | 1 | 6, 12 |
| Pepperell | DWP-19-10 | Bemis Water Treatment Plant | $7,939,000 | 96.23% | DW | Drinking Water Treatment | 1 | 6, 12 |
| Pittsfield | CWP-18-12-A | Wastewater Treatment Plant (WWTP) Nutrient Removal | $7,012,322[2] | 100% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Pittsfield | CWP-18-12 | Wastewater Treatment Plant (WWTP) Nutrient Removal | $50,724,760[2] | 100% | CW | Wastewater Treatment | 3 | 6, 9, 10, 11, 12 |
| Plymouth | CWP-16-07-B | Emergency Sewer Force Main Repairs & Rehabilitation | $13,241,047 | 100% | CW | Collector and Interceptor Sewers | 1 | 6, 14 |
| Plymouth | CWT-18-46 | Community Septic Management Program | $200,000 | 100% | T5 | Community Septic Management Program | 1 | 6, 12 |
| Revere | CW-18-19 | Illicit Connection and Sump Pump Investigation | $500,000[2] | 87.59% | CW | Planning | 3 | 6, 9, 10, 11, 12, 14 |
| Revere | CW-18-26 | Phase X Field Investigations- I/I and IDDE | $1,000,000[2] | 98% | CW | Planning | 3 | 6, 9, 10, 11, 12, 14 |
| Revere | CWP-17-27-A | Phase VIII - I/I, IDDE, P.S., & Drainage | $373,953[2] | 90.51% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Revere | CWP-18-27 | Illicit Connection & Sump Pump Removal Program | $1,564,017[2] | 84.10% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Revere | CWP-18-28 | Phase IX Construction- I/I, IDDE, P.S. & Drainage | $4,415,387[2] | 96.30% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 3 | 6, 9, 10, 11, 14 |
| Revere | DW-18-08 | Oak Island Water Main Improvements Planning Stage | $250,000[2] | 93.76% | DW | Drinking Water Planning and Design | 3 | 6, 9, 10, 11, 12 |
| Revere | DWP-17-14 | Lead Service Replacement | $2,974,273[2] | 99.19% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Revere | DWP-18-09 | Oak Island Water Main Improvements Planning Stage | $706,453[2] | 60.15% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Saugus | CWP-19-30 | Comprehensive Sewer System Rehab. Subsystem 1C | $1,310,267 | 91.94% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 2 | 6, 14 |
| Scituate | CWT-18-13 | Community Septic Management Program | $199,222 | 100% | T5 | Community Septic Management Program | | 6, 12 |

**Footnotes**
[1] Series 23: All Amount and Percentage Completed sections are accurate as of July 31, 2022
[2] Projects associated with the Series 23 Sustainability Bonds are shaded in light green

## *Appendix A - Series 23 Projects* [1]

| Borrower | Loan No. | Project Name | Amount | Percentage Drawn | Program | Category | DC Tier | UN SDG |
|---|---|---|---|---|---|---|---|---|
| Southampton | DWP-18-12 | Southampton Water System Improvement Project | $1,590,719 | 100% | DW | Drinking Water Transmission and Distribution | 1 | 6, 12 |
| Spencer | DWP-18-13 | Main Street Looping Water Main | $1,779,911[2] | 100% | DW | Drinking Water Transmission and Distribution | 3 | 6, 9, 10, 11, 12 |
| Springfield Water & Sewer Commission (SWSC) | CWP-18-18-A | York St. Pump Station & Connecticut River Crossing | $5,252,623[2] | 100% | CW | Combined Sewer Overflow Correction | 3 | 6, 9, 10, 11 12, 14 |
| SWSC | CWP-18-18 | York St. Pump Station & Connecticut River Crossing | $49,107,582[2] | 100% | CW | Combined Sewer Overflow Correction | 3 | 6, 9, 10, 11 12, 14 |
| Taunton | CW-17-19 | Main Lift Pump Station Improvements | $10,274,800[2] | 96.59% | CW | Combined Sewer Overflow Correction | 3 | 6, 9, 10, 11, 12, 14 |
| Tyngsborough | CW-15-10 | Sewer Extension Phase 1 | $9,282,500 | 100% | CW | Collector and Interceptor Sewers | 1 | 6, 14 |
| Tyngsborough | CW-19-03 | Phase 2 Infiltration and Inflow Study | $500,000 | 88.38% | CW | Planning | 1 | 6, 12, 14 |
| Wareham Fire District | DWP-17-09-A | Maple Springs Water Purification Plant | $7,000,000[2] | 100% | DW | Drinking Water Treatment | 3 | 6, 9, 10, 11, 12 |
| West Boylston Water District | DWP-19-27 | North Main St. & Laurel St. Water Main Replacement | $1,485,764 | 95.52% | DW | Drinking Water Transmission and Distribution | 2 | 6, 12 |
| West Springfield | CWP-17-30-A | Pump Station Improv and Infiltration/Inflow (I/I) Reduction Project | $974,973 | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 2 | 6, 14 |
| West Springfield | CWP-17-30 | Pump Station Improv and Infiltration/Inflow (I/I) Reduction Project | $10,645,852 | 98.67% | CW | Infiltration/Inflow and Sewer System Rehabilitation | 2 | 6, 14 |
| Westport | CW-18-30 | Integrated Water Resource Management Plan (IWRMP) | $150,000 | 100% | CW | Planning | 1 | 6, 12, 14 |

**Footnotes**
[1] Series 23: All Amount and Percentage Completed sections are accurate as of July 31, 2022
[2] Projects associated with the Series 23 Sustainability Bonds are shaded in light green

## *Appendix B - Series 22 Projects* [1]

| Borrower | Loan No. | Project Name | Amount | Percentage Drawn | Program | Category |
|---|---|---|---|---|---|---|
| Adams Fire District | DWP-18-04 | Chemical Feed and SCADA Upgrades | $745,324[2] | 100% | DW | Drinking Water Treatment |
| Brockton | CW-16-27 | Sewer Flow Monitoring Program | $1,100,000 | 100% | CW | Planning |
| Brockton | CW-16-28 | Stormwater Management Plan | $400,000 | 100% | CW | Planning |
| Brockton | DWP-17-10 | Transmission Main and Valve Replacement Project | $1,265,651[2] | 100% | DW | Drinking Water Transmission and Distribution |
| Chatham | CW-13-10-A | Collection System Extension and Improvements | $833,556[3] | 100% | CW | Collector and Interceptor Sewers |
| Chicopee | CWP-16-25 | Phase 5B Sewer Separation Project | $502,438[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| Dartmouth | CWP-16-32 | Installation of New UV Disinfection System | $1,847,652[2] | 100% | CW | Wastewater Treatment |
| Dedham-Westwood Water District | DW-16-08 | Bridge Street Water Treatment Plant Upgrades | $8,841,400 | 100% | DW | Drinking Water Treatment |
| Eastham | DW-17-01 | Phase 2A Town-Wide Water System | $7,685,012 | 100% | DW | Drinking Water Transmission and Distribution |
| Fall River | CW-17-21 | CSO Facilities Plan | $990,756[2] | 100% | CW | Planning |
| Fall River | CWP-18-07-A | Cress Brook Drainage Improvements | $699,886 | 100% | CW | Stormwater Infrastructure |
| Fall River | DWP-17-08 | Water Main Rehabilitation - Phase 17 | $2,930,713 | 100% | DW | Drinking Water Transmission and Distribution |
| Gloucester | DWP-18-03 | Babson WTP Raw Water Systems Improvements | $1,787,575[2] | 100% | DW | Drinking Water Transmission and Distribution |
| Gloucester | CWP-17-24 | Rehabilitation of DPW amd Goose Cove Sewer Pump Station | $938,642[3] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| Goshen | CWP-18-11 | Goshen Landfill Cap Repair | $601,596[2] | 100% | CW | NPS Sanitary Landfills |
| Haverhill | DWP-16-05-A | Haverhill Water Treatment Plant Upgrades | $31,094,762 | 100% | DW | Drinking Water Treatment |
| Lawrence | CW-16-14 | Sewer System Evaluation Survey | $2,700,000 | 100% | CW | Planning |
| Lawrence | DW-13-05-A | Water Main Replacement | $11,987,626[2] | 100% | DW | Drinking Water Transmission and Distribution |
| Leominster | DWP-16-13 | Rehabilitation of Pump Stations | $1,450,565 | 100% | DW | Drinking Water Transmission and Distribution |
| Lowell | CWP-16-13 | West St. Flood Protection, Storage and Stations | $11,229,703[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| Lowell | CWP-16-15 | CIP Phase - WWTF and Infrastructure Upgrades | $12,666,941 | 100% | CW | Combined Sewer Overflow Correction |
| Massachusetts Water Resources Authority (MWRA) | CW-18-39 | Facility Asset Protection | $1,070,733 | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| MWRA | CW-18-40 | Remote Headworks Upgrade | $28,727,859 | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| MWRA | CW-18-41 | Wastewater Treatment Plant and Sewer Improvements | $2,971,701 | 100% | CW | Wastewater Treatment |
| MWRA | DW-16-06-A | SEH Redundancy and Storage | $14,355,913 | 100% | DW | Drinking Water Source and Storage |
| MWRA | DW-18-16 | Wachusett Aqueduct PS | $5,363,933 | 100% | DW | Drinking Water Transmission and Distribution |
| Nantucket | CW-16-35 | Sea Street Pump Station Upgrade | $5,872,292[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| Nantucket | CW-17-01 | Shimmo & PLUS Parcels Sewer Extension | $1,574,994[2] | 100% | CW | Collector and Interceptor Sewers |
| New Bedford | CW-17-10 | Supplemental WW and SW Plan | $4,643,181[2] | 100% | CW | Planning |
| New Bedford | DWP-16-14 | Quittacas WTP Rehabilitation | $8,912,740 | 100% | DW | Drinking Water Treatment |
| New Bedford | DWP-17-03 | Lead Service Line Replacement Program - Phase I | $5,698,174 | 100% | DW | Drinking Water Transmission and Distribution |
| New Bedford | DWP-16-14 | Quittacas WTP Rehabilitation | $667,428[3] | 100% | DW | Drinking Water Treatment |
| Norton | DW-14-10 | New WTP | $10,300,000 | 100% | DW | Drinking Water Treatment |
| Revere | CW-17-28 | Illicit Connection & Sump Pump Removal Investigations | $558,900[2] | 100% | CW | Planning |
| Revere | CW-17-29 | Phase IX Field Investigations-I/I and IDDE | $1,200,000 | 100% | CW | Planning |
| Revere | CWP-17-26 | Illicit Connection & Sump Pump Removal Program | $640,013[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| Revere | DW-13-09-A | Water Meters AMR System | $513,643[2] | 100% | DW | Drinking Water Transmission and Distribution |
| Saugus | CW-16-09-A | Sewer System and Pump Station Rehab/Improvements | $823,388[2] | 100% | CW | Infiltration/Inflow and Sewer System Rehabilitation |
| Taunton | CW-17-08 | Comprehensive Water Resources Planning | $759,166[2] | 100% | CW | Planning |
| Tyngsborough | CW-18-04 | Tyngsborough I-I Program | $250,000 | 100% | CW | Planning |

**Footnote**
[1] Series 22: All Amount and Percentage Completed sections are accurate as of July 31, 2022
[2] Amount was reduced following the completion of the project. Excess funds were reallocated to additional green projects and are listed within the Series 22 table
[3] Amount reflects Series 22 Bond Proceeds reallocated from excess funds of completed Series 22 projects

## *Appendix B - Series 22 Projects* [1]

| Borrower | Loan No. | Project Name | Amount | Percentage Drawn | Program | Category |
|---|---|---|---|---|---|---|
| Upper Blackstone Water Pollution Abatement District (UBWPAD) | CWP-16-39-B | Nutrient Removal Improvements | $1,866,665[2] | 100% | CW | Wastewater Treatment |
| UBWPAD | CWP-16-39-A | Nutrient Removal Improvements | $14,993,853[2] | 100% | CW | Wastewater Treatment |
| Wareham Fire District | DWP-17-09 | Maple Springs Water Purification Plant | $6,346,096 | 100% | DW | Drinking Water Treatment |
| Wayland | DW-18-01 | Wayland 2018 Water Main Improvements | $700,000 | 100% | DW | Drinking Water Transmission and Distribution |
| Webster | DWP-17-04 | Memorial Beach Wells Water Treatment Plant | $9,653,132[2] | 100% | DW | Drinking Water Treatment |
| West Springfield | DWP-17-13 | Drinking Water System Improvements Project | $6,697,067[2] | 100% | DW | Drinking Water Source and Storage |
| Whatley | DW-16-11 | Manganese Removal | $420,487[2] | 100% | DW | Drinking Water Treatment |

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[3] Amount reflects Series 22 Bond Proceeds reallocated from excess funds of completed Series 22 projects

# Annual Report

## Massachusetts Clean Water Trust


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