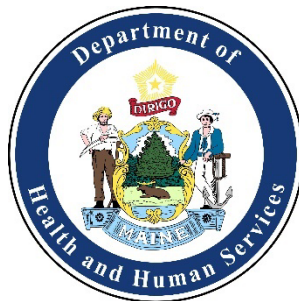


TRIENNIAL REPORT TO THE GOVERNOR

Technical, Managerial, and Financial Capacity
of
Maine's Public Water Systems



Department of Health and Human Services
Maine Center for Disease Control and Prevention
Division of Environmental and Community Health
Drinking Water Program



State Fiscal Years 2021-2023

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Executive Summary

The Maine CDC Drinking Water Program (DWP) works to ensure safe drinking water and protect public health in Maine by administering and enforcing drinking water regulations through the provision of technical, managerial, and financial assistance to public water systems.

Improving the technical, managerial, and financial capacity of a public water system increases the water system's ability to supply safe drinking water consistently and reliably to consumers. Over the past three years, the DWP has made great progress toward improving the capacity of public water systems in Maine.

A principal measure of the success of the capacity development effort is the rate of compliance with the State and Federal regulations related to safe drinking water. The DWP records indicate that public water systems are more consistent in the collection of water samples, which has resulted in improved water quality. A summary of public water system violations for the reporting period can be found in Figure ES-1.

The DWP provides financial assistance to public water systems throughout Maine to replace aging water mains, and increase the efficiency and reliability of water treatment plants. In addition, the DWP worked with public water systems to find new sources of drinking water, make improvements to drinking water quality, replace aging water mains, build new water storage tanks, and provide essential public health protection. The DWP also provides financial assistance through grant programs to assist public water systems with developing plans and studies, protecting their water source, consolidating with another public water system, and installing treatment to resolve ongoing water quality issues. Over the past three years, the DWP awarded public water systems with over 77 million dollars in loans and grants to assist with these critical infrastructure improvements.

Ongoing training is essential to ensure that water operators, owners, and other personnel are up to date with current regulations and technologies. Water operators receive training through on-site technical assistance visits, and classroom and online training sessions. The DWP staff and contractors provide direct, on-site technical assistance and education to help water operators maintain and improve their public water system operations and management. During the reporting period, over 2,400 on-site visits were made to public water systems by DWP staff and contractors. Classroom and online training help to build an operator's knowledge on the operation and maintenance of a public water system through various training topics. With the assistance of DWP funding, over 600 training classes were attended by 7,300 public water system personnel during the reporting period.

A summary of the funding used to support capacity development can be found in Table ES-1.

Additional information about capacity development activities can be found in our annual [*Drinking Water Construction Project Report*](#).

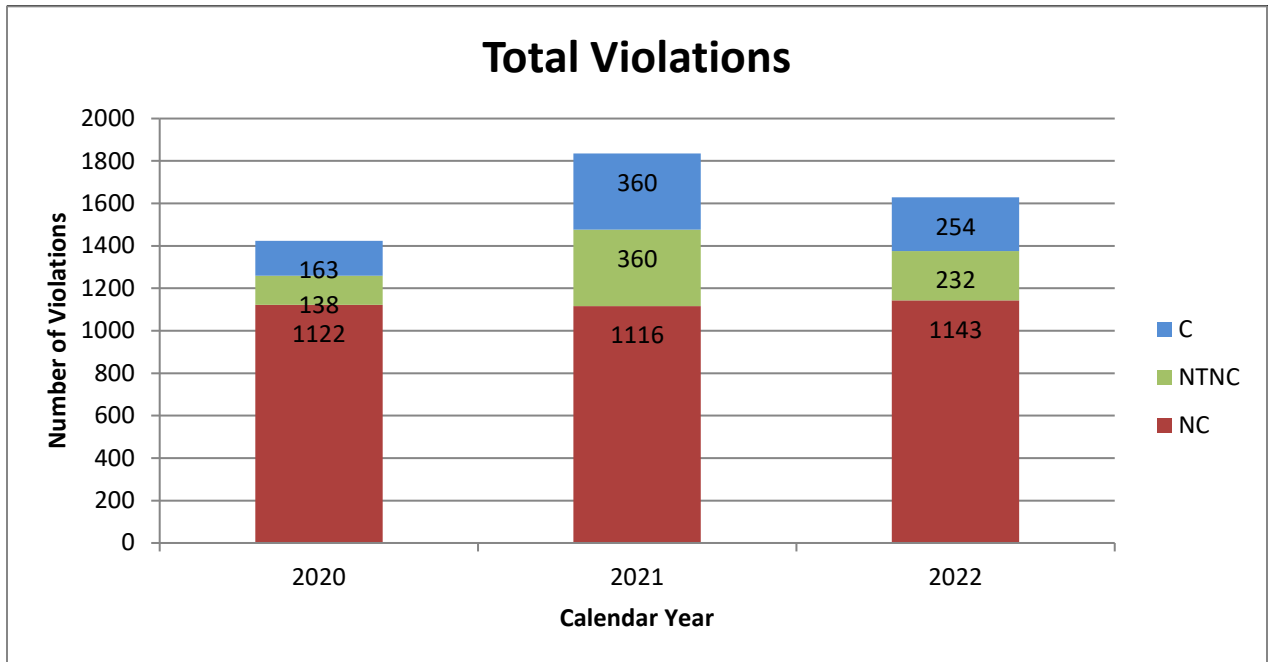


Figure ES-1. Total Public Water System Violations

Community (C): A public water system that supplies water to the same population year-round (residential population).

Non-Transient, Non-Community (NTNC): A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals, which have their own public water systems.

Transient, Non-Community (NC): A public water system that provides water in a place such as a restaurant or campground where people do not remain for long periods of time.

Table ES-1. Funding Capacity Development Summary

	SFY2021	SFY2022	SFY2023	Totals
Loans*				
Emergency Construction Fund	\$0	\$0	\$77,307	\$77,307
Project Capital Improvements	\$27,309,368	\$11,776,476	\$35,821,282	\$74,907,126
Land Acquisition	\$130,000	\$677,000	\$150,000	\$957,000
Grants*				
Capacity Development	\$175,555	\$227,433	\$394,798	\$797,786
Emerging Contaminant (PFAS)	\$0	\$0	\$177,939	\$177,939
Sanitary Seal Well Cap	\$1,031	\$711	\$487	\$2,229
Source Water Protection	\$45,501	\$40,000	\$100,831	\$186,332
System Consolidation	\$100,000	\$0	\$0	\$100,000
Very Small System Total Coliform	\$0	\$28,877	\$16,984	\$45,861
Water System Asset Security	\$0	\$69,468	\$209,797	\$279,264
Wellhead Protection	\$71,654	\$57,622	\$102,583	\$231,859
Contracted Services*				
Training Reimbursement	\$145,703	\$146,910	\$208,000	\$500,613
Maine Rural Water Association	\$443,126	\$380,416	\$355,107	\$1,178,650
Maine Water Utilities Association	\$36,000	\$124,863	\$240,308	\$401,171
Rural Community Action Program	\$75,830	\$16,000	\$12,400	\$104,230
DWP Employees				
Federal Funding	\$2,943,055	\$3,324,149	\$3,804,832	\$10,072,036
Other Special Revenue	\$1,325,845	\$1,459,094	\$1,724,021	\$4,508,960
General Fund	\$224,147	\$140,650	\$106,819	\$471,616
Total Number of Employees	38	39	47	

* Grants and Contracted Service are 100 percent funded with federal funds. Construction loans are a combination of federal funds (including grants funds by the American Rescue Plan Act), repayment funds, and “State Match.” Access to the annual federal grant requires a 20 percent State Match. The State Match is funded through revenue generated by the State Liquor Contract.

Introduction

The 1996 Amendments to the Federal Safe Drinking Water Act (SDWA) mandated the preparation of a triennial report to the Governor of each state to apprise the Governor of the efficacy of the Public Water System Capacity Development Program, and to report on the progress of improving the technical, managerial, and financial capacity operations of public water systems. This report is issued in fulfillment of that requirement. The reporting period for this report is for State fiscal years 2021-2023 (July 1, 2020-June 30, 2023).

The SDWA was established in 1974 to protect public health by regulating drinking water contaminants. The SDWA was structured to enable each state to become a primacy agency, the administrative and enforcement arm of the United States Environmental Protection Agency (USEPA) at the state level. The Drinking Water Program (DWP) is the primacy agency for the State of Maine. The DWP is located within the Department of Health and Human Services (DHHS), Maine Center for Disease Control and Prevention (CDC), in the Division of Environmental and Community Health.

The 1996 Amendments to the SDWA added a requirement for each state to establish a Capacity Development Program. Capacity development's broad goal is to assist public water systems in both maintaining and improving their technical, managerial, and financial operations, referred to as the capacity to meet federally mandated drinking water requirements. Capacity development encompasses many activities performed by the DWP and third-party organizations involved in drinking water operations. The effectiveness of a public water system's capacity depends upon the interaction of these three criteria:

- **Technical Capacity** refers to the ability of a public water system to meet standards and to provide safe and reliable drinking water. Key to technical capacity is operator expertise and infrastructure adequacy (source water adequacy and collection, storage, treatment, and distribution facilities).
- **Managerial Capacity** refers to the ability of personnel to manage and administer or to otherwise operate the public water system. Key items for managerial capacity include ownership, organization, accountability, and planning.
- **Financial Capacity** refers generally to the monetary resources of the public water system and includes cost effectiveness, creditworthiness, fiscal control, cash flow, and cash reserves.

To support each state's capacity development activities and to provide direction for those activities, each state was mandated to develop a Capacity Development Strategy (Strategy) with the input and assistance of a committee of stakeholders, known as an Advisory Committee. Based upon the recommendations of the Advisory Committee, the DWP developed 11 specific goals for Maine's Strategy. The Strategy was completed and accepted in 2000. The Strategy is designed to prevent the creation of non-viable public water systems, to identify public water systems at risk, and to assist public water systems to acquire, enhance and maintain public water

system capacity. Given that each capacity element overlaps and consequently supports the others, any weakness or failure of an individual element can lead to the collapse of the others.

In 2010, the DWP realized the need to revisit the Strategy to review and revise the goals set in 2000. The DWP and a stakeholder group reviewed and revised the Strategy.

America’s Water Infrastructure Act of 2018 (AWIA) included the requirement for states to incorporate asset management into their strategies. In 2022, the DWP and a stakeholder group reviewed and revised the Strategy to include the asset management provisions.

The DWP assists nearly 1,900 public water systems with maintaining and enhancing technical, managerial, and financial capacity. The types and sizes of public water systems regulated by the DWP is shown below in Table 1.

Table 1 Number of Public Water Systems*

	Population Served				
	25-500	501-3,300	3,301-10,000	10,001-100,000	100,001+
Community	266	84	23	12	1
Non-Transient, Non-Community	363	18	0	0	0
Transient, Non-Community	1,067	43	0	0	0
Total	1,696	145	23	12	1
<p>Community: A public water system that supplies water to the same population year-round (residential population).</p> <p>Non-Transient, Non-Community: A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals, which have their own public water systems.</p> <p>Transient, Non-Community: A public water system that provides water in a place such as a restaurant or campground where people do not remain for long periods of time.</p> <p>*The information above and throughout this report does not include bottled water facilities. Under Maine statute water bottlers are considered Transient Public Water Systems. However, federal law does not recognize water bottlers as public water systems, so they are not included in this federally mandated report.</p>					

I. Grant and Loan Programs

During the three-year period of this report, over 77 million dollars was invested into public water system improvements through loans and grants.

A. Loans

1. Emergency Construction Fund

The Emergency Construction Fund provides loans to public water systems that have experienced a recent unexpected event that poses a serious threat to public health and welfare. This may include a severe weather event, accident or sabotage that results in infrastructure damage, or another event that causes a sudden and dramatic impact to drinking water quality and/or available quantity. The DWP has the discretion to determine what constitutes an emergency.

\$77,307 was loaned to public water systems using the Emergency Construction Fund during the reporting period.

2. Drinking Water State Revolving Fund Program

The 1996 Amendments to the SDWA included allocations for the Drinking Water State Revolving Fund (DWSRF). The DWSRF program is a State operated program to provide loans and other financial assistance for public drinking water improvement projects. The SDWA requires that states provide 20 percent matching funds to federal dollars, to capitalize the DWSRF program. Therefore, every dollar invested by the State of Maine secures five federal dollars. The State Match is funded through revenue generated by the State Liquor Contract. The DWSRF provides funding to public water systems throughout Maine to improve or replace water system pipes, treatment plants, storage tanks, and sources of water to ensure safe drinking water and provide essential public health protection. Funding for drinking water infrastructure improvement projects is available as low interest loans. Disadvantaged Community Public Water Systems may receive further assistance through principal forgiveness. A disadvantaged public water system serves a community and can demonstrate that its year-round residential water consumers have a median household income of \$58,924 per year or less.

The DWP and the Maine Municipal Bond Bank (MMBB) administer the DWSRF together. The DWP is the lead administrator and is responsible for project management and technical support, as well as overseeing activities. The MMBB is the financial administrator and oversees the loan application process and tracks money to and from the fund.

A portion of the federal grant is set aside each year from the revolving project loan fund and used for non-project activities. Those activities include source water and wellhead protection programs, technical assistance to small public water systems, a revolving loan fund for land acquisitions, and public water system planning grants.

\$74,907,126 was loaned to public water systems using the DWSRF during the reporting period.

3. Land Acquisition Loan Program

Public water system ownership or legal control of the land around its source is the most effective means of protecting the source from contamination. Under the Land Acquisition Loan Program, Community Public Water Systems and non-profit Non-Community Public Water Systems may apply for low-interest loans with 20 percent principal forgiveness of up to \$20,000 for the purchase of land and/or conservation easement for drinking water source protection. Projects that demonstrate a commitment to the ongoing protection of a public water system's drinking water

source through land acquisition and/or easement are eligible for these loans. Loans may be issued for an amount greater than \$100,000. However, principal forgiveness will not be applied to the portion of the loan exceeding \$100,000. The public water system must demonstrate technical, managerial, and financial capacity. The land and/or conservation easement must be located within the watershed or wellhead protection area.

\$957,000 was loaned to public water systems using the Land Acquisition Loan Program during the reporting period.

4. Very Small System Compliance Loan Program

The Very Small System Compliance Loan Program allows Community Public Water Systems (except those regulated by the Maine Public Utilities Commission) with a population of 100 or less, and all non-profit, Non-Transient, Non-Community Public Water Systems to receive up to \$60,000 loans for infrastructure projects. Of the \$60,000 awarded, \$10,000 will be for services of a professional engineer. Projects must be necessary to achieve compliance with a current or future standard of the SDWA, excluding the Revised Total Coliform Rule. This loan program assists public water systems with repeat violations return to compliance with drinking water regulations. No public water systems applied for the Very Small System Compliance Loan during the reporting period.

B. Grants

1. Capacity Development Grant Program

Capacity Development Grant funding is available to Community Public Water Systems and non-profit, Non-Community Public Water Systems for the preparation of engineering or planning studies or reports to help public water systems maintain or improve technical, managerial, and financial capacity. The grant funding is provided on a reimbursement basis to public water systems that have completed approved plans or studies. Grants cover 75 percent of the plan or study costs, up to a maximum reimbursement amount of \$30,000.

\$797,786 was reimbursed to public water systems using the Capacity Development Grant Program during the reporting period.

2. Emerging Contaminant Grant Programs

Emerging Contaminant Grant Program

Emerging Contaminant Grants are for Community or Non-Transient, Non-Community Public Water Systems to address PFAS (per- and polyfluoroalkyl substances) contamination issues. Grants are for public water systems seeking assistance with PFAS contamination issues where costs exceed \$60,000. Grants are for up to \$1,000,000.

Emerging Contaminant Planning Grant Program

Emerging Contaminant Planning Grants are for Community Public Water Systems with a population greater than 100 to study and assess PFAS contamination issues including looking for alternative sources or aiding in selection of an appropriate course of treatment. Grants are for up to \$200,000.

Small Public Water System Emerging Contaminant Grant Program

Small Public Water System Emerging Contaminant Grants are for small Community Public Water Systems (except those regulated by the Maine Public Utilities Commission) or Non-Transient, Non-Community Public Water Systems (schools or daycares) to address PFAS contamination issues. Grants are for project costs up to \$50,000, with an additional \$10,000 for engineering expenses.

Very Small System Emerging Contaminant Planning Grant Program

Small Public Water System Emerging Contaminant Planning Grants are for very small Community Public Water Systems with a population less than 100 or Non-Transient, Non-Community Public Water Systems (schools or daycares) to study and assess PFAS contamination issues. Grants are to study and assess PFAS contamination issues including looking for alternative sources or aiding in selection of an appropriate course of treatment. Grants are for up to \$30,000.

Water Main Extension to Private Wells Containing PFAS

Water Main Extension Grants are for Community Public Water Systems to extend distribution areas to homes with PFAS-contaminated wells. Grants are for 50 percent of the cost up to \$1,000,000.

\$177,939 was granted to public water systems using emerging contaminant grant programs during the reporting period.

3. Sanitary Seal Well Cap Program

The Sanitary Seal Well Cap Program awards grants to public water systems that install sanitary seal well caps on their wells. Groundwater well contamination often results from loose fitting or poorly sealed well caps and poorly sealed electrical conduits that allow insects, small animals, or surface water to directly enter wells. A sanitary seal well cap, when installed correctly, prevents insects, small animals, and other surface contaminants from entering the top of the well and contaminating the well. All public water systems are eligible for reimbursement for up to 75 percent of the cost of the installation of a sanitary seal well cap, up to a maximum \$250.

\$2,229 was reimbursed to public water systems using the Sanitary Seal Well Cap Program during the reporting period.

4. Source Water Protection Grant Program

The Source Water Protection Grant Program awards grants to Community Public Water Systems and non-profit, Non-Community Public Water Systems for projects that will help protect their surface water source. Grants are awarded up to \$20,000, depending on the scope of the project.

\$186,332 was reimbursed to public water systems using the Source Water Protection Grant during the reporting period.

5. System Consolidation Grant Program

The System Consolidation Grant Program assists public water systems that have a technical, managerial, or financial capacity issue consolidate with a more viable public water system. The

grant will fund no more than 50 percent of the cost of consolidation for a for-profit public water system and no more than 75 percent of the cost of consolidation for a non-profit public water system. Grant awards are for up to \$100,000.

\$100,000 was granted to public water systems using the System Consolidation Grant Program during the reporting period.

6. Very Small System Total Coliform Grant Program

Very Small System Total Coliform Grants are for Community and non-profit Non-Community Public Water Systems with a population of 100 or less served by a groundwater source to install a continuous chlorination disinfection system that is needed to achieve compliance with the Revised Total Coliform Rule. Grant awards are for up to \$10,000.

\$45,861 was reimbursed to public water systems using the Very Small Total Coliform Grant Program during the reporting period.

7. Water System Asset Security Grant Program

Water System Asset Security Grants are for Community Public Water Systems and non-profit, Non-Community Public Water Systems for planning or implementing security measures to protect public water system assets. Grants are awarded up to \$20,000 depending on the scope of the project.

\$279,264 was reimbursed to public water systems using the Water System Asset Security Grant Program during the reporting period.

8. Wellhead Protection Grant Program

The Wellhead Protection Grant Program awards grants to Community Public Water Systems and non-profit, Non-Community Public Water Systems for projects that will help protect their groundwater source. Specifically, grants are awarded to projects that clearly reduce the likelihood of contamination occurring in the wellhead protection area by existing or future activities. Grants are awarded up to \$20,000 depending on the scope of the project.

\$231,859 was reimbursed to public water systems using the Wellhead Protection Grant Program during the reporting period.

9. Source Protection Grant Program

In 2023, the DWP combined the Source Water Protection Grant Program and the Wellhead Protection Grant Program. The Source Protection Grant Program awards grants to Community Public Water Systems and non-profit, Non-Community Public Water Systems for projects that will help protect their groundwater or surface water source. Specifically, grants are awarded to projects that clearly reduce the likelihood of contamination occurring in the wellhead protection area or source water protection area by existing or future activities. Grants are awarded up to \$20,000 depending on the scope of the project. No public water systems were reimbursed during the reporting period.

II. Technical Assistance to Public Water Systems by DWP Staff

A. Capacity Development Reviews

A Capacity Development Review assesses a public water system's source water and infrastructure adequacy, implementation of technical knowledge, ownership accountability, staffing and organization, effective external linkages, short-term and long-term planning, revenue sufficiency, credit worthiness, and fiscal management and controls. Before capital loans are approved by the DWP for drinking water construction projects or the purchase of land to safeguard water sources, applicants must undergo a Capacity Development Review to assure that the public water systems possess adequate technical, managerial, and financial capacity.

46 public water systems underwent a Capacity Development Review during the reporting period.

B. Sanitary Surveys

A Sanitary Survey is an on-site inspection of a public water system's water source, treatment, distribution system, finished water storage, pumps, pump facilities and controls, monitoring, reporting and data verification, water system management and operations, and operator compliance with state requirements. Sanitary Surveys are designed to identify conditions that may present a sanitary or public health risk. They help to identify public water systems that require technical or managerial capacity development assistance.

Community Public Water Systems are required to undergo a Sanitary Survey every 3 years; these public water systems serve the same population year-round. Non-Community Public Water Systems are required to undergo a Sanitary Survey every 5 years; these public water systems serve places like schools, office buildings, hospitals, restaurants, and campgrounds that have their own water source.

1,253 Sanitary Surveys were conducted at public water systems during the reporting period.

C. Source Water Assessment Program

The 1996 Amendments to the Safe Drinking Water Act required each state to develop a program for assessing the susceptibility to contamination of each public drinking water source in the State. The DWP wants to ensure that when a water supply is identified as being at risk of contamination, Maine's public water systems are made aware so that the appropriate steps can be taken to minimize or eliminate the risk. Source Water Assessments include:

- A delineation of the recharge area of a well or watershed of a surface water body;
- An inventory of land uses and potential contamination sources which exist, or could within the delineated source water protection area; and
- An evaluation of the susceptibility to contamination of the water source by the potential hazards that are identified in the inventory.

D. Emergency Preparedness Planning

The Public Health Security and Bioterrorism Act of 2002 included amendments to the Safe Drinking Water Act that required all public water systems serving more than 3,300 people to develop an emergency response plan.

In 2005, the DWP developed an Emergency Response Plan (ERP) for public water systems serving less than 3,300 to assure that all public water systems have an ERP. The DWP distributed the ERP to all public water systems with populations less than 3,300. In 2011, the DWP developed an updated Emergency Response Plan of Action for public water systems serving fewer than 3,300 people. The DWP also developed a simplified version of the Emergency Response Plan of Action for public water systems serving less than 500 people. The DWP assists with the completion of an Emergency Response Plan of Action when requested by public water systems.

The America's Water Infrastructure Act (AWIA) of 2018 required that all Community Public Water Systems serving more than 3,000 people to develop or update risk and resilience assessments and emergency response plans, and submit certification to the United States Environmental Protection Agency (USEPA) that those plans were completed. AWIA requires that these public water systems review their risk and resilience assessments, and emergency response plans every five years to determine if they need to be revised. Upon completion of such a review, the public water systems must submit certification to the USEPA that they have reviewed the risk and resilience assessments and emergency response plans and revised them, if applicable.

III. Capacity Development Services Funded All or in Part by the DWP

A. Public Water System Operator Licensing and Training

1. Operator Licensing

Operators of Maine's public water systems are the first and foremost protectors of the safety of drinking water. Maine's public water systems span a wide spectrum of complexities and sizes with every operator responsible for the same end results: safe drinking water and adequate water supply for sanitary uses and fire protection. The Board of Licensure of Water System Operators assures that operators meet certain standards. This is accomplished by evaluating experience and education in application review, and performance and successful completion of a nationally verified examination. Operator Licensing serves to assist operators in achieving and maintaining this professionalism by offering and finding appropriate training and assuring appropriate operator coverage at public water systems.

Public water systems are defined through a process of grading points, Class I to IV in both treatment and distribution categories according to complexity and population served. Operators of these public water systems must show competency by successfully completing examinations in both treatment and distribution categories. Very Small Water Systems operators are another classification that covers both treatment and distribution characteristics of public water systems with less than a population of 500.

Over the past several years, the number of licensed water operators has been decreasing due to water operators reaching retirement age. This trend is being seen nationally, and there is a concern that there will be a shortage of licensed water operators in the future.

<p><u>2020 Operator Licensing</u> 917 water operators licensed 14 water operators with Operator-In-Training license</p>
<p><u>2021 Operator Licensing</u> 875 water operators licensed 13 water operators with Operator-In-Training license</p>
<p><u>2022 Operator Licensing</u> 853 water operators licensed 16 water operators with Operator-In-Training license</p>

License holders must earn continuing education credits for license renewal. The number of training contact hours required for license renewal depends on the classification of the license. Table 2 illustrates the two-year requirements.

Table 2. Training Contact Hour Renewal Requirements

Operator Class	Contact Hours Required
Very Small Water System	6 Training Contact Hours
Class I	12 Training Contact Hours
Class II	18 Training Contact Hours
Class III	24 Training Contact Hours
Class IV	24 Training Contact Hours

2. Operator Training

The DWP Capacity Development Training Reimbursement Fund allows training providers to receive reimbursement for training public water system employees, operators, owners, trustees or volunteers, and all licensed water operators. The purpose of the Capacity Development Training Reimbursement Fund is to subsidize the costs associated with training public water system personnel and operators on topics approved by the Board of Licensure of Water System Operators.

<p>631 training classes were attended by 7,369 public water system personnel during the reporting period.</p> <p>\$500,613 was reimbursed to technical assistance providers for training during the reporting period.</p>
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B. Maine Rural Water Association Technical Assistance

Maine Rural Water Association (MRWA) provides capacity building services such as assisting public water systems with developing their annual Consumer Confidence Report, vulnerability assessments and emergency response planning, income surveys, rate cases, grant writing and loan assistance, water leak detection and line location, compliance with drinking water

regulations, and source protection. The DWP and MWRA collaborate on assisting public water systems with significant capacity issues by determining the issues and bringing them back into compliance. The DWP and MWRA work together to assist public water systems during emergency events.

1. Water Quality Specialists

The DWP funds Water Quality Specialists at the MRWA. The Water Quality Specialists provide direct, on-site technical assistance and water operation advice to small public water systems that serve a population of less than 10,000 people. They also serve as a liaison between public water systems and the DWP. The DWP also works closely with the MRWA to provide education to public water system personnel. These activities directly support technical, financial, and managerial capacity.

1,183 MRWA Water Quality Specialist on-site visits were conducted during the reporting period.

\$693,000 was provided to MRWA for technical assistance to public water systems during the reporting period.

2. Financial Circuit Riders

The DWP funds Financial Circuit Riders from the MRWA to provide technical assistance and training to build financial capacity in Community Public Water Systems serving a population of less than 10,000 people. The Financial Circuit Riders conduct personalized one-on-one, on-site training, remote assistance via phone or web, and respond to training requests for up to three regional utility meetings. The Financial Circuit Riders make pre-emptive visits, respond to public water system requests for assistance, or respond to state agency compliance directives.

\$187,861 was provided to MRWA for Financial Circuit Rider assistance to public water systems during the reporting period.

3. Benchmarking Database

The DWP funded MRWA for the development and maintenance of a benchmarking database for public water systems. The drinking water industry faces significant financial and operational challenges due to aging infrastructure. Industry leaders, policy makers, and regulators must communicate and understand the current financial and asset conditions of individual utilities and the overall drinking water industry in Maine. Standardized metrics that assess financial health, operational parameters, and asset information are needed to provide valuable insight when comparing utilities. The long-term goal is the development of a sustainable electronic rational benchmarking database containing key financial, operational, and asset metrics for Public Utilities Commission regulated public water systems. The database collects and analyzes public water system financial and operational data for access to all public water systems and the DWP to help develop, track, and prioritize long-term public drinking water infrastructure needs.

\$80,224 was provided to MRWA for development of a benchmarking database during the reporting period.

4. Emergency Response Tabletop Exercises

The DWP funded MRWA to plan and execute eleven tabletop exercises (TTX). The DWP, Maine Department of Environmental Protection (DEP), Maine Emergency Management Agency (MEMA), Maine County Emergency Management Agencies, local emergency responders, and MRWA have partnered to bring tabletop exercises to priority locations in Maine. While beneficial to all parties in each location, every TTX has highlighted critical gaps in communication, operations and/or redundancy. The primary goal of the TTX is to enhance the ability of the utilities, local first responders, DWP, the DEP, and other identified stakeholders, including the critical customers and the communities served by the water utilities, to effectively prepare for, manage, and respond to a drinking water emergency. This includes improving the understanding of the water utilities' interdependencies and impacts of loss of drinking water and fire protection services during a disaster.

\$98,137 provided to MRWA to facilitate tabletop exercises during the reporting period.

5. Vulnerability Assessments

America's Water Infrastructure Act of 2018 (AWIA) required all Community Water Systems with a population greater than 3,300 to complete a Risk and Resilience Assessment (RRA) to identify and address threats from malevolent acts and natural hazards that could threaten safe drinking water. Additionally, the United States Environmental Protection Agency (USEPA) highly recommends that very small Community Water Systems serving populations under 3,300 conduct an RRA. Maine has 86 small CWS with a population between 501-3,300. The DWP funded MRWA to work with small Community Water Systems to develop vulnerability assessments for a subset of these smaller Community Water Systems.

\$6,793 was provided to MRWA for development of vulnerability assessments during the reporting period.

6. Business Continuity Plans

The DWP funded MRWA to help public water systems develop business continuity plans to maintain financial, managerial, and functional operations following a disruptive incident. The goal is to improve the understanding of administrative vulnerabilities, which may include, staff and trustee access to accounts, insurances, emails, credit cards, websites, payment processing services, meter reading and billing software, and plan for business continuity in the event of a disruption. Disruption can be something as simple as separation of staff and/or trustees, business critical software that has failed to patch, or more complex such as the loss of critical data needed for operations.

\$19,958 was provided to MRWA for business continuity planning during the reporting period.

7. Limnological Sampling and Data Analysis

As the climate in Maine changes, the likelihood of ecosystem changes in drinking water source supply lakes grows. Without regular limnological monitoring, public water systems can be caught unprepared for shifts in water quality that could impede treatment and threaten public health. For example, chrysophytes and cyanobacterial blooms have recently occurred in several drinking water supply lakes that have surprised and confounded utility managers. Having a

robust database of limnological water quality data can help managers plan and prepare for treatment. The DWP funded MRWA to provide limnological sampling and data analysis to support planning and protection efforts for small Community Water Systems utilizing a surface source of supply.

\$45,908 was provided to MRWA for limnological sampling and data analysis during the reporting period.

C. Maine Water Utilities Association

The Maine Water Utilities Association (MWUA) represents the water supply profession through education, legislation, policy, and networking. MWUA holds bi-monthly meetings, shares knowledge, and provides mutual support. Some DWP employees serve on MWUA committees in advisory and participatory roles. DWP employee participation in these committees helps the DWP understand the current and emerging needs of Maine's public water systems, and allows the DWP opportunities to provide valuable capacity development guidance to water utilities.

1. Leadership Training

The DWP funded MWUA to develop and conduct leadership training for public water system superintendents and governing boards. The training focuses on financial, budgetary, regulatory, legislative, human resources, and other subject matters. The DWP funds one half of the cost to implement the training along with a scholarship tuition program to help reach smaller and disadvantaged public water systems.

\$110,875 was provided to MWUA for leadership training during the reporting period.

2. Trustee Training

All trustees can benefit from a guidance document with their roles, responsibilities, and duties. These can vary for each public water system, but there are many commonalities and important laws/policies for boards and trustees to be aware of. Without this knowledge, they are hampered in their ability to perform the necessary duties that their roles require. The DWP funded MWUA to develop a guidance document, specifically tailored for Maine, with training to reinforce and practice the knowledge contained within the guidance document.

\$84,975 was provided to MWUA for development of the trustee training guidance document and training during the reporting period.

3. Water Operators' Toolbox

The DWP funded MWUA to work with public water systems to determine their needs as it relates to technologies and tools for use in calculating data during their daily duties. Calculators were developed for the following categories: chemical feed pumps, disinfection and treatment, emergency, safety and security, water loss, Public Utilities Commission, and conversions. MWUA maintains the calculators on their website for public water systems to use.

\$31,500 was provided to MWUA for the operators' toolbox during the reporting period.

4. Funding Resources Guide

The DWP funded MWUA to update a previously developed funding resources guide for public water systems and put the information into an online and mobile friendly database. The information contained in the database is easily searchable and allows public water systems to quickly find funding sources relevant to their situations and needs by matching their information with different options in the database.

\$46,410 was provided to MWUA for the funding resources guide during the reporting period.

5. Helping Hand Survey

The DWP funded MWA to design a robust survey to collect information, experiences, and relevant data from public water systems about the tools, technologies, and digital systems they utilize daily to ensure safe drinking water, fire protection, and affordability for their customers. The data is collected and compiled in a centralized database so anyone can go to find the information they need to make an informed decision in choosing and maintaining their tools, technologies, and digital systems.

\$57,500 was provided to MWUA for the helping hand survey during the reporting period.

6. Mini Tabletop Exercises

The DWP funded MWUA to develop and facilitate a series of four regional mini tabletop scenario-based exercises. Different from traditional tabletop exercises, these mini exercises gather regional groups of public water system professionals together to work through multiple smaller facilitated emergencies. This style of exercise allows for increased participation and knowledge sharing. Topics could be contamination, drought, pandemic, ice storm, and/or other topics as deemed necessary by the DWP and exercise stakeholders.

\$46,410 was provided to MWUA for mini tabletop exercises during the reporting period.

7. Media Communication Guide

The DWP funded MWUA to develop media communication guidance and assistance for public water systems. The purpose of this communication may range from normal day-to-day business, rates, capital improvement projects, construction, emergencies, and more. Whether needing to communicate with the media, public, or other stakeholders, there are several ways this can be accomplished. This may include, but is not limited to, local/regional newspapers, television, and radio. Non-traditional media sources, such as social media can also be used to accomplish many of these objectives. The guidance document was followed by a series of regional exercise workshops to allow systems to work together in practicing the strategies in the guidance document.

\$23,500 was provided to MWUA for the media communication guide during the reporting period.

D. Rural Community Assistance Program Solutions Training

Rural Community Assistance Program (RCAP) Solutions provides direct assistance to communities and public water systems. The DWP has referred public water systems to RCAP Solutions for help in capacity building. RCAP specialists have assisted these public water systems by providing advice, education, and direction on water system operations, budgeting and financial analysis, asset management, strategic planning, administrative operations, and improving overseer board operations.

1. Asset Management and Capacity Development Training

The DWP funded RCAP to provide asset management and capacity development training for public water systems that are receiving principal forgiveness on DWSRF construction loans. RCAP delivers a structured onsite training to the public water systems.

\$46,130 was provided to RCAP for asset management and capacity development training of public water system personnel during the reporting period.

2. Post COVID-19 Assessments, Lessons Learned Guidance, and Training

The DWP funded RCAP to assess Maine's small to medium-sized Community Water System COVID-19 response. The COVID-19 pandemic caused multiple unprecedented challenges to Maine's public water systems. A public water system's ability to manage and overcome these challenges are directly related to their emergency pre-planning efforts, available resources, mutual aid agreements and response capabilities. RCAP assisted Community Water Systems to identify these challenges and offer recommendations to improve resiliency when faced with another pandemic. Following the assessments, the collected data was used to develop the post COVID-19 lessons learned guidance document. Training sessions were conducted summarizing the assessment findings and lessons learned. The training sessions also emphasized emergency preparedness improvement opportunities.

\$30,100 was provided to RCAP for COVID-19 assessments, lessons learned guidance, and training of public water system personnel during the reporting period.

3. Licensed Drinking Water System Operator Minimum Services Evaluation

The DWP funded RCAP to conduct an evaluation to identify factors that are adversely impacting Maine's licensed water operator environment. Through an interview-based survey, common barriers were identified, and proposed solutions were evaluated.

\$28,000 was provided to RCAP for the licensed water system operator evaluation during the reporting period.

E. Maine Water/Wastewater Agency Response Network

The Maine Water/Wastewater Agency Response Network (MEWARN) allows public water and wastewater systems to receive rapid mutual aid and assistance from other public water and wastewater systems to restore services damaged by natural or man-made incidents. MEWARN was formed in 2008 through partnerships among public and private water and wastewater utilities, key representatives from Maine's water and wastewater professional associations,

DWP, Maine Department of Environmental Protection, Maine Emergency Management Agency, and the United States Environmental Protection Agency Region 1. This collaboration facilitates pre-disaster planning and training, encourages sharing information, and lessons learned from other disasters.

The heart of MEWARN is the mutual aid and assistance agreement, which addresses members' responsibilities, procedures and protocols for providing mutual aid, legal and liability concerns, and issues related to crossing jurisdictional boundaries to provide emergency aid. MEWARN offers a practical and affordable approach with multiple benefits for utility members and Maine's communities. The MEWARN is available to all public water and wastewater systems in Maine. Participation is voluntary, is not mandated by any local, state, or federal regulation, and there is no fee to participate.

133 public water and wastewater systems have joined the MEWARN since 2010.

\$46,768 was provided to MRWA for emergency preparedness technical assistance and MEWARN administrative support during the reporting period.

IV. Compliance and Enforcement

Through enforcement activities, public water systems that have long-term violations are returned to compliance. The DWP Enforcement staff assists public water systems by negotiating settlements and guiding public water systems with required actions, to return them to compliance. Required actions may include the installation of proper water treatment or adherence to sampling schedules. DWP staff works with partnering State agencies to assure that public access to safe drinking water is available. Most notably, DWP staff works with the Maine CDC's Health Inspection Program, to coordinate efforts in confirming that lodging establishments, and eating establishments comply with the Safe Drinking Water Act. The Maine Rural Water Association works with DWP staff to provide education to public water systems, to assist in public notification, and to bring recalcitrant public water systems back into compliance.

56 public water systems were issued Administrative Consent Orders during the reporting period.

21 public water systems were issued Administrative Consent Orders and Conditional Penalty Assessments during the reporting period.

20 public water systems were issued Administrative Penalties during the reporting period.

A. Drinking Water Violations

Violations are issued to public water systems when the public water system does not meet all the regulations mandated by the Safe Drinking Water Act.

Health-based violations are issued when water sample results show the presence of contaminant(s) at numbers above a Maximum Contaminant Level (MCL) or when a treatment

technique requirement is not met. The MCL is set by the United States Environmental Protection Agency and is based on human health and safety standards. The treatment techniques are specified processes intended to reduce the level of a contaminant.

Non-health-based violations are violations that are not directly related to human health and safety. These types of violations typically arise when public water systems neglect to report water sample test results to the DWP, fail to test drinking water for a regulated contaminant, and/or fail to notify their customers of violations of the federal Safe Drinking Water Act.

The following graphs show total violations, health-based violations, and non-health-based violations over the past 10 years.

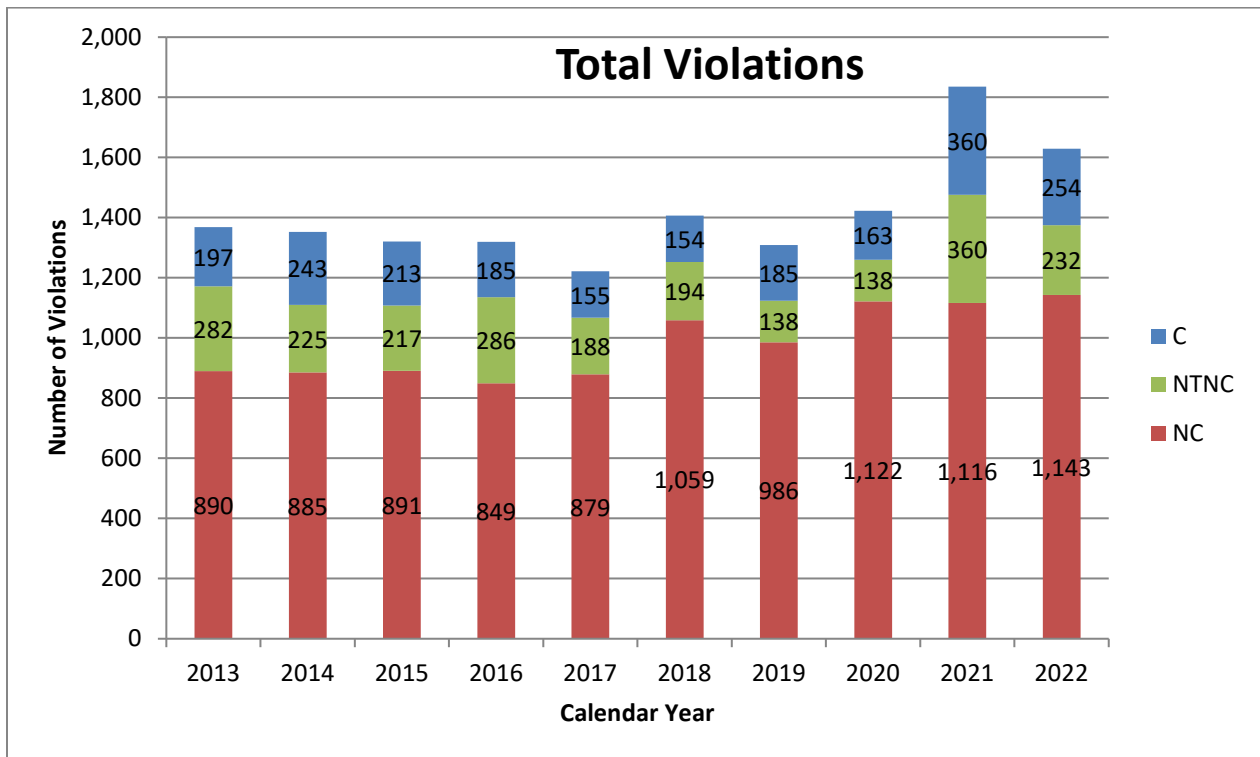


Figure 1. Total violations issued to public water systems since 2013.

Community (C): A public water system that supplies water to the same population year-round (residential population).

Non-Transient, Non-Community (NTNC): A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals, which have their own public water systems.

Transient, Non-Community (NC): A public water system that provides water in a place such as a restaurant or campground where people do not remain for long periods of time.

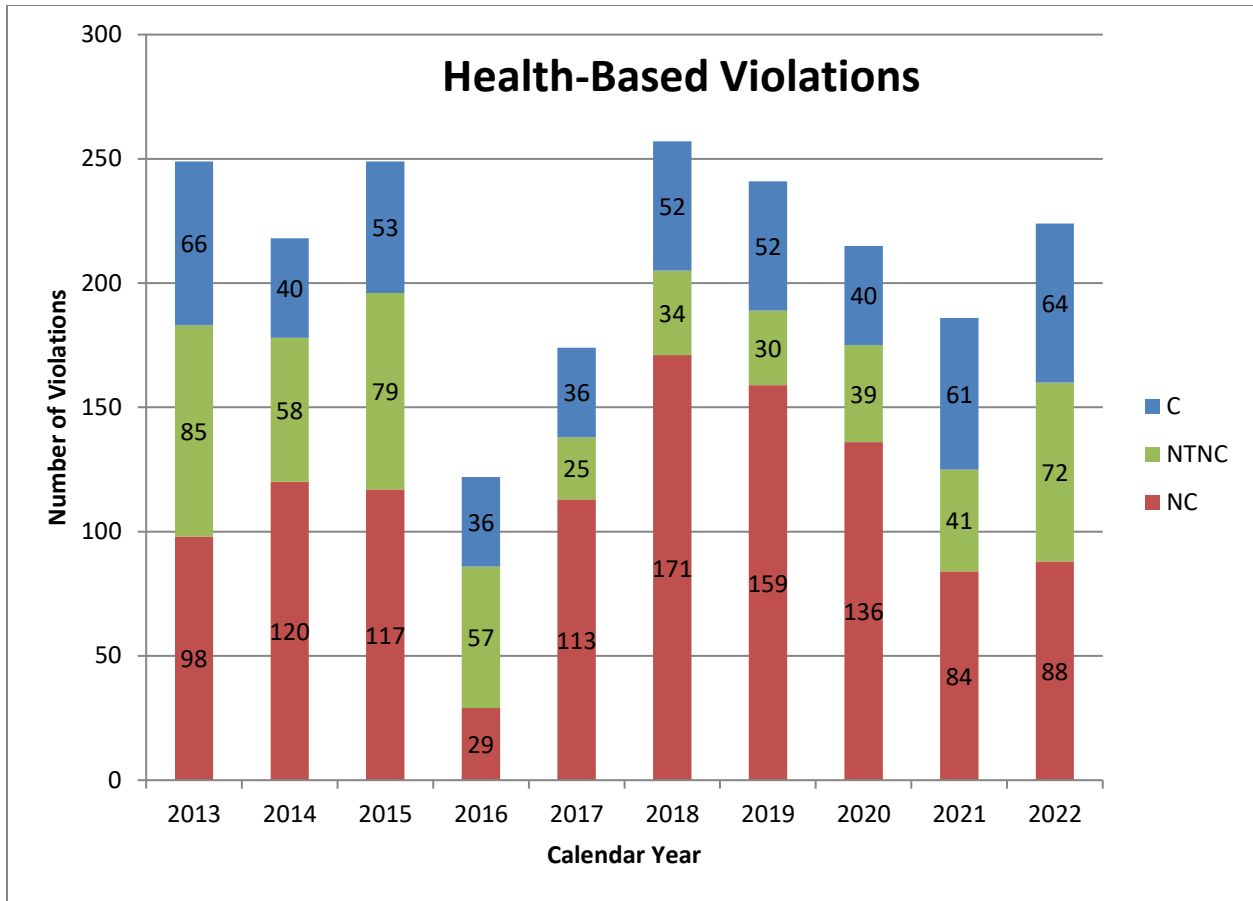


Figure 2. Health-Based violations issued to public water systems since 2013.

Community (C): A public water system that supplies water to the same population year-round (residential population).

Non-Transient, Non-Community (NTNC): A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals, which have their own public water systems.

Transient, Non-Community (NC): A public water system that provides water in a place such as a restaurant or campground where people do not remain for long periods of time.

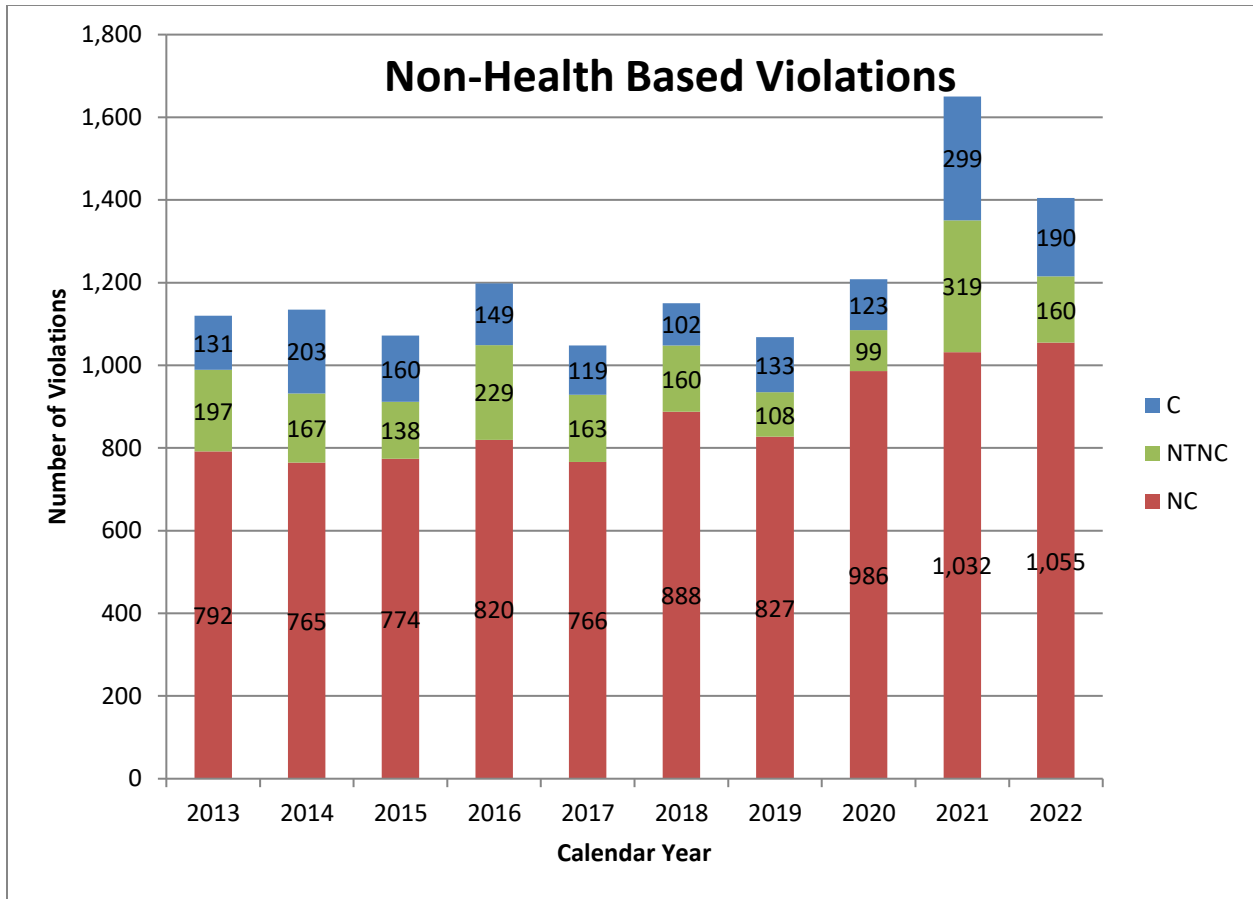


Figure 3. Non-Health-Based violations issued to public water systems since 2013.

Community (C): A public water system that supplies water to the same population year-round (residential population).

Non-Transient, Non-Community (NTNC): A public water system that regularly supplies water to at least 25 of the same people at least six months per year, but not year-round. Some examples are schools, factories, office buildings, and hospitals, which have their own public water systems.

Transient, Non-Community (NC): A public water system that provides water in a place such as a restaurant or campground where people do not remain for long periods of time.

V. Asset Management

The DWP has several activities to help promote and implement asset management to public water systems.

Asset management with principal forgiveness: The DWP maintains an annual contract with a technical assistance provider to provide training and implementation assistance in asset management any time a system receives principal forgiveness from the Drinking Water State Revolving Fund (DWSRF). In these cases, both the system staff and trustees must come to an eight-hour asset management training. In cases where the system gets principal forgiveness more than once, they are required to go to training each time they get principal forgiveness. Currently,

the training would be the same each year, but the DWP may consider revising this in the future to be introductory training the first year and a more advanced or next steps training the next year.

DWSRF ranking criteria: The DWSRF program includes ranking criteria for asset management.

Capacity Development Grants: The Capacity Development Grants described earlier can be used for asset management.

Asset management training reimbursement: Asset management training is eligible for reimbursement as part of the Capacity Development Training Reimbursement Fund described earlier.

In addition to the activities from the DWP, there are partner organizations and stakeholders who provide asset management training and assistance. These activities enhance and complement the work of the DWP.

Conclusion

The DWP continues to assist public water systems with improving technical, managerial, and financial capacity. The DWP works to ensure the provision of safe drinking water in Maine by administering and enforcing drinking water and subsurface wastewater regulations, providing education, as well as technical and financial assistance.

The existing structures and activities detailed in this report that enable progress toward capacity development will remain in effect. These approaches are proven and lend themselves well to enhancing capacity development.

The DWP loan and grant programs proved successful and will continue for as long as State and federal funding sources are available. Public water systems are appreciative of the funding assistance that they receive from the DWP, as this assistance allows them to undertake projects that they would not have been able to complete without these funding opportunities. During the reporting period, the DWP provided public water systems with over 77 million dollars in loan and grant funding.

On-site technical assistance is important in helping public water systems maintain and improve their technical, managerial, and financial capacity. Over 2,400 on-site visits were made to public water systems across Maine by DWP staff and Maine Rural Water Association Water Quality Specialists during the reporting period. On-site visits ensure that infrastructure is adequate to provide clean and safe drinking water to consumers, operators and trustees understand their roles and responsibilities, and a public water system has adequate financial oversight to be a viable business. Most of Maine's public water systems serve less than 500 people and most violations are issued to these small public water systems. Given that small public water systems have very limited resources, the efforts of DWP staff and the Maine Rural Water Association Water Quality Specialists are critical in helping these public water systems understand the current regulations and how to properly operate and maintain their public water system.

Training is also important to ensure that water operators are staying up to date with current regulations and technologies. Water operators are required to take training to renew their water operator licenses every two years. The DWP and other industry organizations strive to provide training that will build an operator's knowledge on the operation and maintenance of a public water system. All training must have a direct link to water quality, water supply, or protection of public health.

The progress over the past three years in improving public water system capacity has increased public health protection through helping public water systems reliably serve safe drinking water. Safe, reliable, and affordable drinking water is fundamental to the wellbeing and the economic prosperity of communities across the State. The efforts of those who work every day to keep safe drinking water flowing to our homes and businesses extends lives, protects our communities, and makes life more enjoyable.