



Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

June 14, 2024

Clare O'Connor
USEPA – Region 1
5 Post Office Square, Suite 100
Mail Code: OEP 06-2
Boston, MA 02109-3912

Subject: Massachusetts Certified Operator Program Annual Report for 2023

Dear Ms. O'Connor:

Attached is the Massachusetts Department of Environmental Protection (MassDEP) Annual Report for the Massachusetts Certified Operator Program for the Calendar Year from January 1, 2023 through December 31, 2023.

If you have any questions, please contact Michael Celona (michael.celona@mass.gov) or Grace Ronca (grace.ronca@mass.gov).

Sincerely,

Yvette DePeiza
Director - Drinking Water Program
Massachusetts Department of Environmental Protection
ecc: EPA: Jane Downing, Kevin Reilly, Denise Springborg
MassDEP: Kathleen Baskin

File: Y/DWPARCHIVE/BOSTON/EPA-Capacity-Annual Report-SFY23- Final - Report and Cover Letter



MASSACHUSETTS CERTIFIED OPERATOR PROGRAM 2023 ANNUAL REPORT

Table of Contents

Introduction.....	3
Anti-backsliding.....	3
Authorization	3
System Classification.....	3
Certified Operator Staffing Requirements	5
Technical Assistance.....	6
Temporary Emergency and Provisional Certification	6
Certified Operator Qualifications	7
Examinations.....	8
Education and Experience.....	9
Reciprocity	9
Certified Operator License Data	10
Enforcement.....	11
Enforcement by MassDEP	11
Enforcement by the Board	11
Certification Renewal	12
Recertification.....	12
Changes to Total Number of Operator Licenses.....	12
Training Contact Hour (TCH) Requirements	13
TCH Audits.....	14
Resources Needed to Implement Program.....	14
Stakeholder Involvement	15
Program Review.....	16

List of Tables

Table 1: Massachusetts Water System Classification Matrix.....	3
Table 2: Type of Distribution and Treatment Licenses Necessary to Operate a MA PWS.....	3
Table 3: PWS Lacking a Certified Operator.....	6
Table 4: TECs and PROs Issued by the Board	7
Table 5: Summary of WPI Exam Results in Massachusetts - 2023	8
Table 6: Comparison of 2019-2023 Pass Rates	9
Table 7: Licenses Issued via Reciprocity.....	10
Table 8: Total Number and Type of Drinking Water Operator Licenses in Massachusetts – 2019-2023.....	10
Table 9: Drinking Water Board Enforcement Actions	11
Table 10: Changes in Total Numbers of Drinking Water Licenses.....	12
Table 11: Training Classes Approved for TCHs by the Board of Certification in 2023	13
Table 12: Operator Certification Program Expenses – SFY 2023.....	15

Introduction

The following certified operator annual report covers the reporting period for the calendar year from January 1, 2023, through December 31, 2023.

The EPA-approved Massachusetts Operator Certification Program meets the public health objectives (as per EPA guidelines) and is designed to ensure that (1) customers of any public water system be provided with an adequate supply of safe, potable drinking water; (2) consumers are confident that their water is safe to drink; and (3) public water system operators are trained and certified and have knowledge and understanding of the public health reasons for drinking water standards.

The Massachusetts Department of Environmental Protection (MassDEP) Regulations that pertain to certified operators are 310 CMR 22.11B: Public Water Systems Certified Operator Staffing Requirements, which can be found at <https://www.mass.gov/doc/310-cmr-2200-the-massachusetts-drinking-water-regulations/download>.

Anti-backsliding

The State's Operator Certification Program has remained unchanged during the review period and there has been no backsliding regarding implementation or policy.

Authorization

Massachusetts is authorized to operate a certified operator program. No statutory or regulatory changes were made during the period covered by this report.

System Classification

As of the end of this reporting period, there were 1,593 PWSs in Massachusetts of which 524 are community systems (COM), 241 are non-transient non-community systems (NTNC), and 828 are transient non-community systems (TNC) (Table 1).

Table 1: Massachusetts Water System Classification Matrix

Year	Community	NTNC	TNC	Total Number of PWS
2023	524	241	828	1,593

The classification of PWS is defined in regulation section 310 CMR 22.11B(4). The PWS listed in Table 1 are further classified in Table 2 by the Distribution and Treatment classification of each system. The Distribution and Treatment classifications typically coincide with the operator license grade that an operator must have to operate that PWS.

Table 2: Type of Distribution and Treatment Licenses Necessary to Operate a MA PWS

PWS Type	Distribution Class	Treatment Class	Number of PWS
COM	1D		5
COM	1D	1T	24

PWS Type	Distribution Class	Treatment Class	Number of PWS
COM	1D	2T	2
COM	2D		15
COM	2D	1T	121
COM	2D	2T	9
COM	2D	3T	7
COM	2D	4T	3
COM	3D		18
COM	3D	1T	55
COM	3D	2T	8
COM	3D	3T	8
COM	3D	4T	71
COM	4D		10
COM	4D	1T	3
COM	4D	2T	1
COM	4D	3T	2
COM	4D	4T	15
COM	VSS		70
COM	VSS	1T	124
COM	VSS	2T	6
COM	VSS	3T	1
TNC	VSS		477
TNC	VSS	1T	317
TNC	VSS	2T	1
TNC	VSS	VND-1T	33
NTNC	VSS		95
NTNC	VSS	1T	142
NTNC	VSS	2T	4

PWS are classified by MassDEP as:

- VND (Water Vending Machines),
- VSS (Very Small Systems),
- Distribution (1D, 2D, 3D, and 4D), or
- Treatment (1T, 2T, 3T and 4T).

The increasing numerical class for distribution and treatment indicates an increasing complexity of operation, and a higher level of training, knowledge, and experience required for operation. MassDEP regulations and policies are in place to ensure that a designated certified operator is available for each operating shift.

PWS with treatment processes are categorized using a point rating system that reflects the complexity of the operation for units that are present in the facility. The point rating system is defined in the table included in regulation section 310 CMR 22.11B(4)(a).

Distribution systems are categorized according to the population served as follows, except for non-community public water systems, which are all classified as VSS regardless of the population served by the non-community system:

- systems serving 500 people or less are classified as a VSS system;
- systems serving 501-1,500 people are classified as a 1D system;
- systems serving 1,501 to 15,000 people are classified as a 2D system;
- systems serving 15,001 to 50,000 people are classified as a 3D system; and
- systems serving over 50,000 people are classified as a 4D system.

VSS systems may be given a treatment classification in addition to their VSS distribution classification. VSS systems that only use disinfection are not given a treatment classification, as disinfection is considered an integral part of the distribution system.

Free standing vending machines consisting of filters with the addition of chemicals and/or reverse osmosis systems are classified as follows:

- 2,000 gallons per day and less (VND-1T);
- 2,001 gallons per day to 5,000 gallons per day (VND-2T);
- 5,001 gallons per day to 50,000 gallons per day (VND-3T); and
- 50,001 gallons per day and more (VND-4T).

Free standing vending machines consisting of filters and/or ultra-violet disinfection systems with no chemical addition are classified as follows:

- 500 gallons per day or less (VND-1D); and
- 501 gallons per day and more (VND-2D).

PWS report affiliation/staffing data to MassDEP throughout the year using staffing plans, annual statistical reports, and contract certified operator forms. In addition, MassDEP maintains a database called eDEP, which serves as a platform for submitting environmental reports, certifications, data, and permits to MassDEP. Internally MassDEP keeps information in the MassDEP's Water Quality Testing System (WQTS) database. The WQTS database is the Department's central database for tracking water supply data and operational data, including operators, and reporting to EPA.

During this reporting period, no changes were made regarding classification of PWS.

Certified Operator Staffing Requirements

Massachusetts's regulations require that all Public Water Systems (PWS) be operated by a Massachusetts certified operator. The regulations and policies in 310 CMR 22.11B(1): Operation & 310 CMR 22.11B(2): Staffing Requirements ensure that certified operators are making process control decisions and that a designated certified operator is available for each operating shift. Some exemptions to staffing requirements are described in regulation section 310 CMR 22.11B(5).

All PWS must have a Primary Operator with a license grade at least equal to the grade of the PWS classification. Primary Operators must have a "full" license status, meaning that they meet all education and experience requirements for that license. Additionally, all COM PWS must

have a Secondary Operator with a license grade no less than one grade below that of the PWS classification. The Secondary Operator may have an “Operator-in-Training” (OIT) license status, meaning that they do not yet meet all education and/or experience requirements for that license, but have passed the applicable examination to obtain that license. Primary and Secondary Operators are designated for the Treatment System and the Distribution System of a PWS. The Primary and Secondary Operators are in direct supervision (responsible charge) of the water system. MassDEP reviews the status of PWS throughout the year to ensure that they have the required certified operators.

During this reporting period, there were 36 PWS in Massachusetts that did not have an appropriately licensed certified operator for the full year, or a portion of the year as identified in the sanitary survey scheduled actions and those that had been issued and certified operator compliance notices. This included ten (10) COM, one (1) NTNC, and twenty-five (25) TNC systems. Regional staff are continually working to verify the status of the operators for these systems. MassDEP takes compliance (including technical assistance) and enforcement actions to require these systems to obtain the appropriate grade of operator. Table 3 compares the number of PWS without a certified operator for at least a portion of the year in the past five years (2019-2023).

Table 3: PWS Lacking a Certified Operator

Year	PWS Lacking a Certified Operator			Total Number of PWS
	COM	NTNC	TNC	
2023	10	1	25	36
2022	6	7	13	26
2021	22	10	12	44
2020	7	5	16	28
2019	2	1	1	4

Drinking water operator licenses are issued and tracked by the Massachusetts Division of Occupational Licensure (DOL) (formerly the Division of Professional Licensure). All licensing information is periodically exchanged between DOL and MassDEP via electronic file transfers.

Technical Assistance

Massachusetts continued to use MassDEP capacity development staff and small system third-party technical assistance providers to assist systems to come into and maintain compliance. MassDEP recently added a Technical Assistance webpage at <https://www.mass.gov/info-details/public-water-system-capacity-development#technical-assistance->.

Temporary Emergency and Provisional Certification

Massachusetts has temporary and provisional options for certification on an emergency basis. If there is an emergency situation facing a system such as an unforeseen operator departure or a newly registered system that does not yet have an operator, the PWS may be allowed temporary and/or provisional certification.

- Systems may apply to the Board of Certification of Operators of Drinking Water Supply Facilities (Board) for a Temporary Emergency Certificate (TEC) stating the reason for

the emergency, the name of the person who is going to temporarily run the system, and the system’s plan to relieve the emergency situation. The person identified to be the operator must have practical knowledge relevant to the system.

- The Board reviews the application and either approves or denies it.
- If approved, the TEC automatically expires in 6 months. In that 6-month period, the system is expected to find a permanent certified operator for the system.
- When a TEC is going to expire and the system has not been able to hire a properly certified operator, the system may apply for a Provisional Certificate (PRO). The PRO is valid for a 6-month period and may not be renewed.

During this reporting period, Massachusetts issued 87 TECs and 1 PRO. A significant number of Treatment TECs (63) were issued to one company which manages many Water Vending Machine systems. Refer to Table 4 for a comparison of the number of issued TECs and PROs in the past five years (2019-2023).

Table 4: TECs and PROs Issued by the Board

Year	Type of Certificate				Total Number of Certificates
	VSS TEC	Distribution TEC	Treatment TEC	PRO	
2023	4	9	74	1	88
2022	2	5	5	0	12
2021	0	8	5	1	14
2020	1	5	8	0	14
2019	0	2	1	0	3

After the system is temporarily in compliance, MassDEP and/or water organization staff will work with the system, instructing them how to obtain a permanent certified operator. MassDEP staff has compiled a certified operator directory that lists all operators in the state that are willing to work on a contract basis. This directory is available at <https://www.mass.gov/info-details/certified-operator-directory>. If the system wants to hire a contract certified operator, they consult the listing and choose a compatible certified operator for their system. If a system delegate/employee wants to become a certified operator, the MassDEP and/or water organization staff will work with the system to get the individual training and help them apply for the state exam for operator certification.

Certified Operator Qualifications

A summary and description of the drinking water certification process is available at <https://www.mass.gov/how-to/apply-for-a-drinking-water-operator-in-training-certificate>. The requirements for certified operator certification are detailed in 236 CMR 4: Board of Certification of Operators of Drinking Water Supply Facilities, which is available at <https://www.mass.gov/doc/236-cmr-4-public-water-supply-operator-certification/download>.

During this reporting period, there have been no changes to the qualifications for certified operators. Massachusetts no longer accepts for approval requests for licensure from “legacy” operators based on pre-existing licensure prior to the promulgation of the current regulations.

Examinations

The VSS, Distribution, and Treatment exams are provided and validated by Water Professionals International (WPI) (formerly the Association of Boards of Certification). Information about WPI can be found at <https://www.gowpi.org/>. Examinations are administered electronically by PSI Exams testing company, which can be found at <https://test-takers.psiexams.com/abc-ma/test>. Examinations are administered at numerous PSI testing centers throughout Massachusetts and in New Hampshire and Rhode Island.

In 2010, the Board adopted two significant policy changes that impacted how drinking water exams are administered in Massachusetts. These policies, which went into effect on January 1, 2011, included requirements that exams must be taken sequentially and that applicants must complete training requirements to sit for Grade 2 or higher-level exams. These policies were intended to “raise the bar” for operators by ensuring that operators are properly trained to perform their duties and protect public health. The following are the training requirements that operators must meet in order to sit for examinations.

- Operators taking a Grade 1 or a VSS examination do not need to take a training course.
- Operators taking a Grade 2 or above distribution examination are required to take a "Basic Distribution" training course. Operators only have to take this class once (e.g. if an operator takes this training course to take the Grade 2 distribution exam, they do not have to take the course again to take the Grade 3 and 4 exams).
- Operators taking a Grade 2 treatment examination are required to take a "Basic Treatment" training course.
- Operators taking a Grade 3 or 4 treatment examination are required to take an "Advanced Treatment" training course. Operators only have to take this class once (e.g. if an operator takes this training course to take the Grade 3 treatment exam, they do not have to take the course again to take the Grade 4 exam).

Table 5 below shows the pass rates for each examination type during this calendar year. Table 6 compares the pass rates during this calendar year with pass rates from the past five years (2019-2023). Although there are many factors which impact exam passing rates, the Board continues to be encouraged by these results and feels a clear pathway is being provided for the next generation of drinking water operators.

Table 5: Summary of WPI Exam Results in Massachusetts - 2023

License Type	Total #	Total # Pass	Total # Fail	% Pass	% Fail
VSS	17	16	1	94%	6%
D1	405	188	217	46%	54%
D2	235	102	133	43%	57%
D3	111	55	56	50%	50%
D4	38	22	16	58%	42%
T1	281	152	129	54%	46%
T2	170	90	80	53%	47%
T3	67	42	25	63%	37%
T4	72	24	48	33%	67%

Table 6: Comparison of 2019-2023 Pass Rates

License Type	2019 % Pass	2020 % Pass	2021 % Pass	2022 % Pass	2023 % Pass
VSS	89%	89%	85%	83%	94%
D1	63%	66%	61%	52%	46%
D2	69%	61%	58%	45%	43%
D3	48%	56%	49%	44%	50%
D4	53%	42%	40%	44%	58%
T1	64%	59%	58%	50%	54%
T2	67%	60%	57%	62%	53%
T3	67%	69%	64%	56%	63%
T4	39%	32%	43%	27%	33%

Education and Experience

In order to become certified in Massachusetts, a person must pass the appropriate certification exam and meet education and experience requirements. Education beyond the minimum requirements or possession of a lower grade certificate with appropriate experience in a lower classified system can reduce the amount of experience required. The following reflects the minimum education requirements and corresponding experience for each grade of certification:

- VSS - A high school diploma or GED and 6 months experience in the operation of a VSS or higher system.
- 1T - A high school diploma or GED and 2 years of experience in the operation of a 1T or higher treatment system.
- 1D - A high school diploma or GED and 2 years of experience in the operation of a 1D or higher distribution system.
- 2T - A high school diploma or GED and 3 years of experience in the operation of a 2T or higher treatment system.
- 2D - A high school diploma or GED and 3 years of experience in the operation of a 2D or higher distribution system.
- 3T - A high school diploma or GED and 5 years of experience in the operation of a 3T or higher treatment system.
- 3D - A high school diploma or GED and 5 years of experience in the operation of a 3D or higher distribution system.
- 4T - One year of college and 5 years of experience in the operation of a 4T or higher treatment system.
- 4D - One year of college and 5 years of experience in the operation of a 4D or higher distribution system.

Reciprocity

Reciprocity Applications are received and processed by the Board. All applicants must meet the requirements of 236 CMR 4.05(5) & (6).

During this reporting period: there were three (3) licenses issued via reciprocity. Refer to Table 7 for details about licenses issued via reciprocity in previous years.

Table 7: Licenses Issued via Reciprocity

Year	Number of Licenses
2022	1
2023	3

Certified Operator License Data

Table 8 contains the number of current operator licenses in Massachusetts from the past five years. The table includes both full and OIT licenses. The table also includes C licenses, which are licenses that were administered before 1989 when the Distribution and Treatment license classes were first introduced. The certified operator licensing data is extracted from a dataset provided by DOL. The numbers in the table are not necessarily equal to the number of operators with a particular license type, as some operators hold multiple licenses.

Table 8: Total Number and Type of Drinking Water Operator Licenses in Massachusetts – 2019-2023

License Type	2019	2020	2021	2022	2023
C1	17	17	13	13	10
C2	30	31	22	22	17
C3	12	13	9	9	7
C4	56	62	36	36	27
D1	324	398	356	409	321
D2	570	618	568	628	526
D3	431	470	431	464	424
D4	230	247	240	257	228
D1-OIT	371	462	438	509	421
D2-OIT	256	310	289	295	269
D3-OIT	169	193	206	209	175
D4-OIT	180	195	198	208	187
T1	357	406	371	421	348
T2	331	368	335	387	350
T3	231	262	252	277	235
T4	256	277	267	286	256
T1-OIT	418	508	468	521	424
T2-OIT	272	337	343	356	291
T3-OIT	179	210	227	230	186
T4-OIT	173	188	184	183	167
VSS/VS/VT	186	211	166	181	154
Total Number	5,049	5,783	5,419	5,901	5,023

Enforcement

Enforcement by MassDEP

MassDEP has a very active compliance and enforcement strategy for systems that fail to comply with the MassDEP standards, guidelines, and policies. MassDEP issues a Notice of Noncompliance (NON) or Notice of Noncompliance and Compliance Schedule Approval (NONCSA) to any system that does not have a certified operator or that does not have an operator with the appropriate grade license. **During this reporting period, MassDEP issued three (3) NONs to systems that did not meet the certified operator requirements.**

Higher-level enforcement (HLE), with penalties in certain cases, is issued to those systems that are chronic offenders. The types of HLEs include a Unilateral Administrative Order (UAO), Administrative Consent Order (ACO), and Administrative Consent Order with Penalty (ACP). **During this reporting period, MassDEP issued five (5) HLEs to systems that did not meet the certified operator requirements as identified in the sanitary survey scheduled actions.** MassDEP staff works closely with public officials and/or owners to bring the public water system into compliance. MassDEP can also refer operators to the Board for potential discipline if the issue identified is operator specific.

Enforcement by the Board

The Board continued to review complaints against operators and take appropriate actions. Refer to Table 9 for a list of enforcement actions by the Board during this reporting period.

Table 9: Drinking Water Board Enforcement Actions

Enforcement Action	2022	2023
New case opened	2	1
Case Closed	5	1
Pending Board Action (waiting for a response from the licensee)	0	0
Pending Prosecution	0	0
Pending Investigation	0	0
License Revoked	0	1
License Suspended	0	5

The Board continues to enter into consent agreements with operators with criminal records.

In December 2004 the Massachusetts legislature enacted House Bill 5074, effective April 1, 2005. This bill provided new enforcement powers to boards under the former Division of Professional Licensure. The Board has the authority to suspend licenses immediately for serious infractions such as intentional falsification of reports that are confirmed by investigation. The Board also has the ability to fine individuals for infractions. The fines are \$100, \$250, \$1,500 and \$2,500 based on first through fourth offense. Operating without a license or a suspended license will cost \$1,500 for the first offense and \$2,500 for the second offense.

Certification Renewal

Massachusetts’s operator licenses run on a two-year cycle. The most recent two-year cycle, which includes this reporting year, began on January 1, 2022, and expired on December 31, 2023.

Operators are sent renewal notices prior to the expiration of their licenses. In order to renew a license, operators must submit an online renewal application and pay a fee. Licenses that were renewed by the end of 2023 are valid for two years until 12/31/2025.

Recertification

Applicants that fail to renew their licenses by the end of the two-year license period may renew their license during the next two-year renewal cycle by paying the application fee plus a late fee. A total of **156** operators fell into this category. Applicants that fail to renew their licenses by the end of the next two-year license period must re-take the exam and re-apply for a license. There was **one (1)** operator that fell into this category.

Changes to Total Number of Operator Licenses

Table 10 below identifies the change in the number of operator licenses from 2022 to 2023. It includes both renewed licenses and new licenses for each operator category. All licenses required online renewal on 12/31/2023. The decrease in the number of licenses between 2022 and 2023 is mostly due to the renewal cycle and operators not renewing their licenses before 12/31/2023. Some operators renew their licenses after the expiration date and pay a small administrative fee.

Table 10: Changes in Total Numbers of Drinking Water Licenses

License Type	Change in Number of Licenses
C1	-3
C2	-5
C3	-2
C4	-9
D1	-88
D2	-102
D3	-40
D4	-29
D1-OIT	-88
D2-OIT	-26
D3-OIT	-34
D4-OIT	-21
T1	-73
T2	-37
T3	-42
T4	-30
T1-OIT	-97
T2-OIT	-65
T3-OIT	-44

License Type	Change in Number of Licenses
T4-OIT	-16
VSS/VS/VT	-27
Total Number	-878*

*Note: The change in drinking water operator licenses shows a decrease in 2023 compared to 2022

Training Contact Hour (TCH) Requirements

In order to renew their certification, all operators, including operators-in-training, must demonstrate to the satisfaction of the Board that they have completed training during the previous two years in accordance with the following requirements:

- VSS and VND operators need 5 TCHs or more
- Grade 1 and 2 operators need 10 TCHs or more
- Grade 3 operators need 15 TCHs or more
- Grade 4 operators need 20 TCHs or more

To obtain TCHs, operators must take training courses approved or accepted by the Board. These courses are given by New England Water Works Association, Mass Rural Water Association, Massachusetts Water Works Association, Rural Community Assistance Program, EPA, MassDEP and various other organizations individually approved by the Board. MassDEP also co-sponsors courses at various times throughout the year. Appropriate college and university credits are accepted as well. There are also Board approved on-line training courses that operators can take for TCHs. During this reporting period, the Board approved 86 training courses for TCHs, which are listed in Table 11.

Table 11: Training Classes Approved for TCHs by the Board of Certification in 2023

Ductile Iron Pipe, Fittings, Valves and Fire Hydrants	Introduction to Water Treatment
Cybersecurity Assessment Training for Public Water Systems Webinar- Part Two	Water Quality
Confined Space Entry	Water Sources
Water Supply Planning and Flow Protection	Water Transmission & Distribution 1
LCRR & Effective Compliance	Water Transmission & Distribution 2
MA Cybersecurity Tabletop Exercise	Advanced Water Treatment
Small Systems Workshop	Applied Chemistry
Asset Management	Applied Hydraulics
Advancing PFAS Tools & Technology	Lead and Copper Rule Sampling Plan and Change Forms Updates - Training for Public Water Suppliers
PFAS in Drinking Water / Tools for Water Utilities	Hazard Communications
Distribution I - Session 1	Confined Space Entry
Water Treatment 1 -- Session 2	Safety and Tanks
Management/Finance - Session -3	Cybersecurity
Emergency Preparedness / Safety - Session -4	NEWWA/RIWWA Joint Member Meeting
Customer Service - Session -5	Managing Your Water System into the Future
Distribution II - Session 6	Groundwater/Water Resources
Water Treatment II - Session 7	Management & Finance

Young Professionals - Session 8	Distribution
SCADA and Operational Tech-Session 9	Organizational Diversity
Water Resources-Session 10	Water Treatment
Distribution/Storage-Session 11	Asset Management & Data Integration
Water Treatment III - Session 12	Town Hall Discussion- Regulatory Focus
Dams- Session 13	Emergency Response Plan Training
Regulatory- Session 14	Chemical Feed Pumps 101
Distribution III- Session 15:	Principals of Air Operated Double Diaphragm Pumps
Water Treatment IV- Session 16	Achieve & Maintain Compliance with SDWA
Asset Management Data - Session 17	Distribution Maintenance and Repair Techniques to Avoid System Shutdowns
Groundwater - Session 18	Cybersecurity for Water Systems
Cross Connections - Session 19	Cybersecurity
Diversity & Allyship Breakfast	Cybersecurity Basics for Drinking Water Sector
Treatment Plant Maintenance Optimization	Major Changes in the Lead and Copper Rule
Leveraging Remote Sensing to Optimize Source Water Management and Protection	Water Resources Symposium
Annual Water Quality Symposium	Ladders
Water Treatment Exam Prep - Grade 1	Very Small Drinking Water and Wastewater System Resilience CEU Program
Water Treatment Exam Prep - Grade 2	IT and Asset Management Fair
Water Treatment Exam Prep - Grade 3	DLS Safety Inspections
Water Treatment Exam Prep - Grade 4	December Member Meeting
Water Treatment Math	December 2023 - Incidents Involving Snow Removal
Water Treatment Review (4 hours)	February 2023 - Recent Incidents
Water Treatment Review (8 hours)	March 2023 - Trench and Excavation Safety
Water Treatment Review (12 hours)	NEWWA/NHWWA Joint Membership Meeting
Water Treatment Review (16 hours)	2024 Virtual Operator Conference
Electricity for Water Industry	Chemical Safety in Your Plant

TCH Audits

The Board periodically audits approximately 5% of all renewal applications to make sure applicants have obtained the required TCHs. The Board is performing an audit for the most recent two-year renewal cycle (January 1, 2022, through December 31, 2023).

Resources Needed to Implement Program

The operator certification program in Massachusetts has been working successfully for many years. The Board continues to utilize the resources of the Division of Occupational Licensure to implement the licensing and operator enforcement portion of the operator certification program. MassDEP chairs the Board and MassDEP Drinking Water Program staff provides training, compliance, and technical assistance to certified operators. MassDEP also refers certified operators with compliance issues to the Board for review and potential disciplinary action.

MassDEP has a very active operator certification program which has been integrated into the daily activities of drinking water program staff (includes staff in Boston and the four (4) regional offices). Program activities include (but are not limited to) working with the Board of Certification of Operators of Drinking Water Supply Facilities and the Division of Occupational

Licensure, providing technical assistance to operators, completing sanitary surveys, assisting in the completion of accurate staffing plans, taking enforcement actions, investigating complaints, providing technical assistance and other operational and administrative tasks. It is estimated that three (3) FTEs are needed to implement the Operator Certification program. The cost per FTE is approximately \$198,356. See Table 12 below for cost estimate for implementing the Operator Certification Program. The program and staff are funded through a variety of funding sources; including but not limited to PWS Supervision (PWSS), State account (0100), Massachusetts Safe Drinking Water Act Assessment funds, and SRF set-asides. The number of FTEs has not changed.

Table 12: Operator Certification Program Expenses – SFY 2023

FTEs to Implement Operator Certification Program	3
Cost per FTE	\$198,356
Total Cost	\$595,068

Stakeholder Involvement

Stakeholder involvement is important to the public health objectives of the program. It helps to ensure the relevancy and validity of the program, and the confidence of all interested parties. MassDEP includes ongoing stakeholder involvement in the revision and operations of the operator certification program.

The Board meets monthly to review applications and conduct other business. The Board is comprised of seven members, three of whom are ex-officio members (Department of Environmental Protection, Department of Public Health, and Department of Conservation and Recreation). The four remaining members, who are appointed by the governor, represent a labor organization (vacant), New England Water Works Association, Massachusetts Water Works Association, and the Professional Engineer community. All meetings are open to the public, except when the Board sits in executive session for permitted instances.

The MassDEP Chairman of the Board provides the Board with the opportunity to have direct input in MassDEP policies and programs.

The Chairman also serves on the New England Water Works Association Operator Certification Committee, which has representatives from each of the New England states. This committee discusses certified operator issues, concerns, policies and programs. Meetings were held on April 28, 2023, September 1, 2023, and December 15, 2023.

The Board plays an active role at Water Professionals International (WPI). Board members have served on WPI committees as well as New England Water Works Association and Massachusetts Water Works Association committees. The MassDEP Chairman attended the WPI Annual Conference in Clearwater, Florida from January 9-12, 2023.

MassDEP held three meetings of its Safe Drinking Water Act Advisory Committee (SDWAAC) on February 28, 2023, May 23, 2023, and August 22, 2023. SDWAAC works with MassDEP to provide recommendations and general input on the administration of the Safe Drinking Water

Act. Attendees routinely include the Massachusetts Water Works Association, the Massachusetts Water Resources Authority, the New England Water Works Association, US EPA, and several public water systems and environmental consulting firms. At the meetings, Board Chairman or other MassDEP staff provided updates on operator certification issues, such as upcoming trainings, volume of license applications, etc., and answered questions.

The Board Chair and assigned MassDEP Drinking Water Program staff also participate in the USEPA Capacity/Certification program. Staff attended the quarterly USEPA Region 1 program meetings.

Program Review

The Board continues to investigate all complaints of impropriety by operators in Massachusetts and take appropriate actions. The Board and MassDEP remain committed to protecting public health by ensuring that drinking water operators are properly trained and certified; and that they properly perform their duties.

In 2014, MassDEP contracted with ABC (now named Water Professionals International) to conduct a third-party review of the Massachusetts Operator Certification Program. ABC was provided with copies of MassDEP's drinking water regulations and policies, as well as the Board's regulations and policies. Additionally, ABC visited Massachusetts in June 2014 and conducted interviews with MassDEP staff and Board staff. ABC compared the Massachusetts Operator Certification Program with ABC's Model Standards of Certification, 1st Edition. ABC reported the results of its finding in a report dated September 18, 2014, which included recommendations. The Board and MassDEP used the findings to update appropriate aspects of the program. The Board has updated its applications to require proof that applicants meet the education and experience requirements. Additionally, the Board developed a Code of Conduct that all applicants must agree to sign as part of their application. The Board continues to review issues related to the findings of this report as well as additional issues identified by the Board and its stakeholders.

MassDEP has continued efforts to building a workforce of water quality professionals. The initiative is modeled after a previous initiative entitled "Green Jobs Training Initiative" and includes an environmental justice and diversity component. It is an on-going program. Below is a short list of some of the activities providing support for workforce development:

- Vocational/Technical School Outreach- Provide students with an understanding of drinking water operations and expose them to careers in the field drinking water. Offer information on basic operator certification training classes and certification opportunities.
- Community Colleges- Bristol Community College offers drinking water operator curriculum with operator certifications and onsite training opportunities. Work to build it into the existing Massachusetts Education requirements.
- Continuing Education- Continued efforts to work with and partner with workforce development and night life stakeholders to promote Drinking water careers.
- Work with regional planning organizations/universities to develop a drinking water operator "circuit rider" that could provide services to a number of systems.

- Work with public water systems to facilitate inclusion of technical high school students and others as interns or entry-level part-time operators after completion of basic certified operator training and certificate.
- MassDEP/DWP has utilized the bi-weekly PWS *In the Main* newsletter to provide regular information on recruiting new operators, showcasing PWSs with successful in-house training and recruitment programs for new operators.

At the Board meeting on April 1, 2022, members of several contract operator firms and the Massachusetts Water Works Association attended to discuss potential policy changes that would support the licensing of contract operators. These included counting weekend and overtime hours towards the required experience and creating a standard spreadsheet for contract operators to list their systems and time spent at each. The Board continues to discuss these possible changes as well as other policy changes to memorialize Board processes for application review and other activities.