State of Connecticut

Department of Public Health Drinking Water Section

Capacity Development Strategy Status Report

For the Period of July 1st, 2021 – June 30th, 2022

September 30, 2022

Table of Contents

Executive Summary

The Connecticut Department of Public Health (DPH) is the state primacy agency for implementing and enforcing the Federal Safe Drinking Water Act (SDWA). The 1996 SDWA Amendments requires that primacy states develop a Capacity Development Strategy (Strategy) that addresses the technical, managerial, and financial (TMF) needs of public water systems (PWSs). Primacy states are required to provide annual state capacity development program reports to the U.S. Environmental Protection Agency (EPA). This report covers capacity development activities during July 1, 2021 through June 30, 2022. A copy of this report is sent annually to EPA Region 1 and is also available to the public on the DPH Drinking Water Section (DWS) website under the publications and reports quick link.

This report discusses the ways in which DPH works with new PWSs and existing PWSs in accordance with the tenants of the Strategy to create and sustain viable systems that can maintain compliance with regulatory requirements and provide their customers with safe and adequate water supplies. It also serves as a review of the Strategy and its implementation.

The Strategy strives to develop TMF capacity for new and existing PWSs within four focus areas; 1) Source Protection and Planning, 2) Compliance and Enforcement, 3) Operator Certification, and 4) Drinking Water State Revolving Fund (DWSRF). The Strategy utilizes components of all four of the focus areas together to develop and maintain viable PWSs. No one focus area will give a PWS all it needs to be successful. Maintaining a close working relationship between the different functional units within the DPH DWS, which mirror the four focus areas, is vital to the success of the Strategy.

The DPH's Strategy identifies the creation of new PWSs as a key component. DPH has regulations to incorporate capacity development elements into the Certificate of Public Convenience and Necessity (CPCN) process which governs the creation of new PWSs. Integrating the CPCN process with DPH's work with the statewide Water Utility Coordinating Committee (WUCC) regional planning process provides an established process to prevent the proliferation of new PWSs without first examining all service options and demonstrating adequate TMF capacity. This approach has proven to be successful in establishing new PWS with adequate capacity.

The DPH, as the Primacy Agency and technical expert on the SDWA, works closely with all its existing PWSs to address issues through prevention and hands-on technical assistance within each of the Strategy focus areas. Early detection of water quality problems, promoting the sustained use of high-quality sources for public drinking water and educational offerings for PWS owners and operators are critical aspects. The DWS spent a large amount of resources during SFY22 working on revising the state's Capacity Development Strategy in accordance with the requirements of the American Water Infrastructure Act (AWIA) of 2018.

This report will outline the major activities undertaken by the DPH DWS during this reporting period to implement the Strategy to create and maintain sustainable PWSs that can reliably serve safe and adequate water to the public now and into the future, even during a worldwide pandemic.

Introduction

There are 3 types of public water systems that are regulated in the State of Connecticut:

Community Water Systems (CWS): Water systems that provide service to 25 or more residents at least 60 days per year. Systems can range widely in size from large municipal or privately owned systems to small rural neighborhoods that share a common water supply.

Non-Transient Non-Community (NTNC) Systems: Non-residential water systems that serve 25 or more of the same people at least 6 months out of the year that include schools, daycare centers, factories, and office buildings.

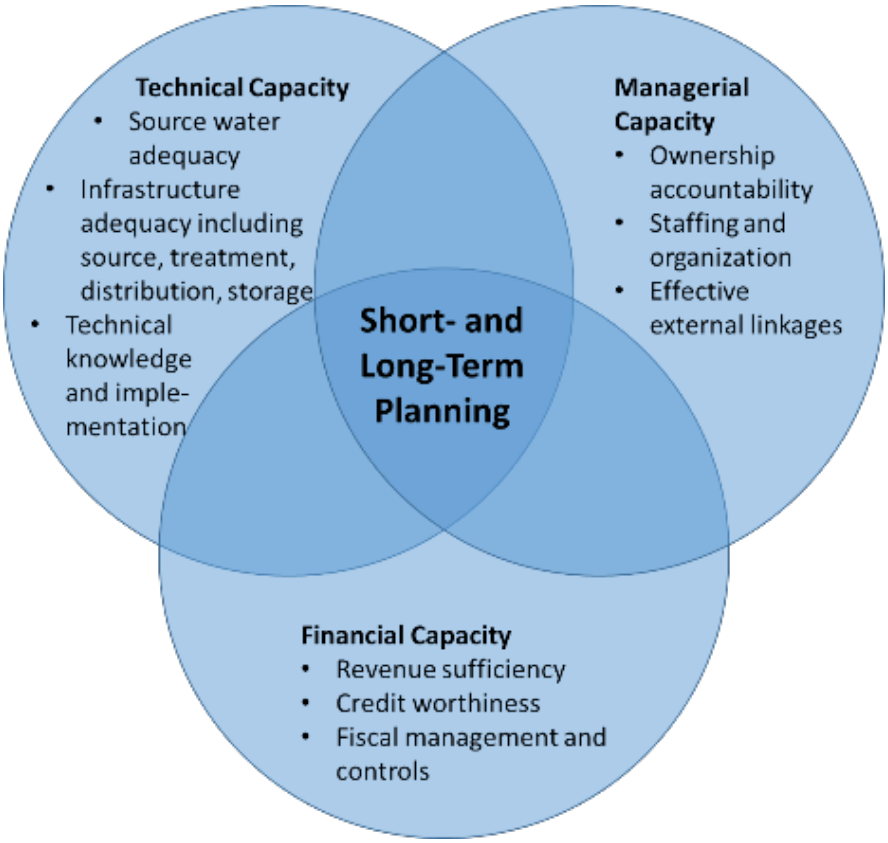
Transient Non-Community (TNC) Systems: Non-residential water systems that serve 25 or more people, but not necessarily the same people each day, for at least 60 days out of the year that include restaurants, parks, churches, campgrounds, and gas stations.

Connecticut's relatively small geographic footprint contains a large number of public water systems (PWSs), as 501 community water systems (CWSs) serve residential populations and 505 non-transient non-community (NTNC) systems, and 1,428 transient non-community (TNC) systems serve non-residential populations. The DPH, as a SDWA primacy agency, must implement a Capacity Development Strategy (Strategy) that addresses PWSs technical, managerial, and financial (TMF) needs as described below and depicted on the following page:

Technical capacity refers to a PWS's ability to operate and maintain water system infrastructure and includes elements such as source water adequacy, infrastructure condition and the technical knowledge of its operators.

Managerial capacity refers to a PWS's ability to properly administer water system operations and includes elements such as organizational structure, asset management programs, capital improvement planning, operator training, record keeping, customer service and an understanding of regulatory responsibilities.

Financial capacity refers to a PWS's ability to properly manage system financial obligations while generating sufficient reserve funds to maintain infrastructure and includes elements such as rate structure, budget preparation, collection services and credit worthiness.



This Capacity Development report identifies accomplishments during the period of July 1st, 2021–June 30th, 2022, as well as provides information on effectiveness of the components of the DPH's Capacity Development Strategy. The DPH submitted the state's initial Strategy to the EPA Region 1 on August 4th, 2000 and became the first state in New England to have an accepted Strategy. The Strategy consolidates the DWS's programmatic activities into cohesive and consistent efforts and focuses on the proactive protection of public health by attempting to identify and prevent PWS capacity weaknesses before formal enforcement actions are required. In establishing the directive to support sustainable systems and to eliminate systems unable to sustain acceptable levels of capacity, the Strategy defines where resources can be effectively applied to achieve the best results. This report is formatted to include all the required annual reporting criteria which has been included as Appendix A.

Capacity Development Activities for New Public Water Systems (PWSs)

Authority

Connecticut is required by the federal SDWA Section 1420(a) to have the authority to implement a program that assesses the TMF capacity of all new CWS and NTNC systems. The primary mechanism in DPH's Strategy to prevent the proliferation of new small PWSs is the Certificate of Public Convenience and Necessity (CPCN) process. Pursuant to Connecticut General Statutes (CGS) section 16-262m, all applicants must obtain a CPCN prior to construction of a new PWS. The CPCN regulatory review process requires that prospective new systems must first evaluate feasible interconnection with existing PWSs. This is conducted through coordination with the Water Utility Coordinating Committees (WUCC)s.

Section 25-33i of the CGS states that no public water supply system may be approved within a public water supply management area after the Commissioner of Public Health has convened a water utility coordinating committee unless: (1) an existing public water supply system is unable to provide water service or (2) the committee recommends such approval. CPCN applications are routed through the respective WUCC region for review and potential action early in the CPCN process. The statutes and regulations are silent as to the specific procedures of WUCC approval, leaving it up to the individual WUCCs as to how to process, review, and act on an application, including when in the CPCN process the WUCC takes action. The WUCCs, in practice, evaluate each submission and consider it against local and regional development and water supply availability to determine the best long-term viable water supply for the proposal.

If an interconnection is not feasible, the CPCN regulations establish minimum design standards for new water systems and require new systems to demonstrate acceptable levels of TMF capacity prior to the issuance of a CPCN. The CPCN regulatory review process is conducted by the DPH. When a designated Exclusive Service Area (ESA) provider exists, the CPCN process requires a designated ESA provider to own any new CWS system created in the approved service area (which is determined during the WUCC approval) pursuant to CGS 25-33g. The WUCC regions and ESA boundary maps, as well as the program flyer, are included as Appendix B.

Public Act No. 16-197 which became effective on October 1, 2016 was the most recent change in our authority which expedites the review of CPCN applications. Under PA 16-197, the DPH reviews CPCN applications and issue CPCNs for community (residential) water systems as is currently done for non-community (non-residential) water systems. For those systems that are regulated by the Public Utilities Regulatory Authority (PURA) or when ownership is not being assigned to an ESA provider, PURA will conduct the financial capacity review of the proposed system. Under the old statute, DPH and PURA jointly reviewed CPCN applications and issued CPCNs for every community water system. The new process has reduced redundancies in the CPCN process by ensuring there is no duplication of efforts between the two agencies. No new changes have been made to the authority during this reporting period.

Control Points

The DPH's Strategy lists the CPCN process as the primary mechanism to manage the TMF Capacity of New PWS. The following control points are components of the four Strategy focus areas and are included as part of the CPCN process:

- WUCC/ESA Review and Approval
- Source Review and Approval
- Operator Certification
- TMF Capacity Review
- System Construction Approval
- Cross Connection Program

No changes were made to the control points during the reporting period, however, as discussed above, the DWS continues to work to strengthen its ability to minimize the creation of new PWS, as well as streamline the process to make it easier for new PWS to understand and therefore comply. Work on a new user-friendly and updated CPCN phase applications began during this reporting period and will continue through to completion. The DPH recognizes that early identification of potential new systems is critical. To achieve success requires coordination and involvement at the local community level. Local health departments use forms developed by the DWS to screen development projects to determine if a CPCN may be required. In 2019, DPH

began utilizing the revised PWS Screening Form which incorporates a local health sign off to ensure all developments that can potentially create new PWS are appropriately captured before they proceed too far with the development. During this reporting period all new PWS created through the CPCN are transient non-community systems.

The WUCC and ESA process has worked well to encourage new developers to use smart planning concepts and interconnect with viable public water systems with access to demonstrated TMF capacity when feasible. All planners, municipalities and developers understand the process better now that the WUCCs have been established statewide. In SFY22, work began on an effort to implement the recommendations in the WUCC Coordinated Water System Plans by targeting outreach and interaction at local decision-makers. Specifically, a workgroup was convened to develop standard operating procedures, guidance, and outreach to encourage local municipalities to consider the following in local Plans of Conservation and Development: public water system Exclusive Service Areas (ESAs), future water service extension potential, desired public water service areas, and water management through zoning regulations. Outreach and guidance materials have been completed that will provide municipalities and developers with information necessary to make informed planning decisions and to avoid the duplication of small public water systems whenever possible. Future efforts will include developing a roadmap for municipalities to incorporate smart water planning concepts into revisions of their local plans of conservation and development.

Table 1

List of New PWS - July 1st, 2019 – June 30th, 2022

PWS ID	PWS NAME	PWS CLASS	ETT SCORE	REASON	STATUS
CT1099264	FLATS BUSINESS PARK	NC			
CT1699114	TAYLOR BROOKE BREWERY	NC			
CT0419244	STAEHLY FARMS CIDER BARN	NC			
CT1219134	DOLLAR GENERAL SALEM	NC			
CT1129094	WATERCURE FARM, LLC	NC			
CT0787094	LENARD HALL	NC			
CT0999084	STEWARDS OF THE LAND BREWERY	NC	6	M&R	has returned to compliance
CT0286034	HOP CULTURE FARMS & BREW CO.	NC			
CT0429224	13 NORTH MAIN STREET	NC			
CT0055074	DOLLAR GENERAL BARKHAMSTED	NC			

CT1669164	DOLLAR GENERAL WOLCOTT	NC			
CT0286044	9 LOOMIS ROAD, LLC	NC			
CT0979444	AQUILA'S NEST VINEYARDS	NC			
CT0321264	DOLLAR GENERAL, COVENTRY, CT	NC			
CT0481034	BACKROADS SMOKIN' BBQ	NC			
CT0798064	BESTWAY FOOD & FUEL	NC	1	M&R	has returned to compliance
CT0081144	KRIZ FARM ICE CREAM	NC			
CT1259144	2 ROUTE 7 BAKERY	NC			
CT1299034	WORTHINGTON POND FARM	NC			
CT0310284	WEST CORNWALL DEVELOPMENT	NC			
CT0121104	DOLLAR GENERAL - BOLTON	NC			
CT0699244	BLACK POND BREWS	NC			
CT1099274	JOEY'S SEAFOOD	NC			
CT0709133	M&M REALTY HOLDINGS LLC	C			
CT0470031	WINDSORVILLE WATER ASSOCIATION	C			
CT0509123	BOLDERDASH	NTNC			
CT1410432	NUTMEG CONTAINER CORPORATION	NTNC			
CT0960184	ELLIOT PRATT EDUCATION CENTER	NTNC			
CT0410194	LITTLE VILLAGE PRESCHOOL	NTNC	2	M&R	has returned to compliance
CT0549073	CANDLEWICK KENNELS	NTNC			
CT1419114	LITTLE FOOT DAY CARE & PRESCHOOL	NTNC			

CT0960183	PHOENIX INVESTMENT GROUP	NTNC	3	M&R	referred to enforcement
CT1300472	GYRE9	NTNC	8	M&R	referred to enforcement, have started monitoring again, but still need to complete M&R PN requirement
CT0719113	PRIDES CORNER-JADERLOON/PROPAGATION	NTNC			
CT1419124	EPIC ADVENTURES CHILDCARE	NTNC			
CT1429133	U.S. DEPARTMENT OF AGRICULTURE - TOLLAND	NTNC			
CT0121114	ABLE COIL AND ELECTRONICS	NTNC			
CT0570194	BACK COUNTRY KIDZ KORNER	NTNC			
CT1059334	LYME SENIOR CENTER	NC			
CT1355044	GR ART AND CARE BUILDING	NC	2	PN	referred to enforcement
CT1341374	STAFFORD SPRINGS KINGDOM HALL	NC	2	PN	referred to enforcement
CT1670204	BROOKSIDE FARM MARKET	NC			
CT1355013	ST PETER AND ST ANDREW COPTIC ORTHODOX	NC	2	PN	referred to enforcement
CT1500254	INSTITUTE FOR AMERICAN INDIAN STUDIES	NC			
CT1501164	INSTITUTE FOR AMERICAN INDIAN S RESEARCH	NC			
CT0598064	GR COMPANIES, INC.	NC			
CT0380074	22 NEW HAVEN ROAD	NC			
CT0100184	PAINTED PONY RESTAURANT	NC			
CT1669154	WOODTICK PAVILION	NC			

CT1615154	CANNONDALE RAILROAD STATION	NC			
CT0050064	OLD RIVERTON INN	NC			
CT1419104	THOMPSON SPEEDWAY-GARAGE	NC			
CT0235094	CANTON CONGREGATION OF JEHOVAH'S WITNESS	NC			
CT0120094	PARKSIDE PIZZA & ICE CREAM	NC			
CT0429234	NELSON'S CAMPGROUND REC HALL WELL	NC			
CT0080084	BILLY'S ICE CREAM & MARKETPLACE	NC	5	M&R	has returned to compliance
CT0610294	HIGGIES FOOD AND ICE CREAM, LLC	NC			
CT0230094	310 ALBANY TURNPIKE	NC			
CT0220094	WRIGHTS MILL FARM - LODGE	NC			
CT1435053	FIVE POINTS CENTER FOR THE VISUAL ARTS	NC			
CT0399064	DOLLAR GENERAL - EASTFORD	NC			
CT0420294	81 NORTH MAIN STREET	NC	7	M&R	referred to enforcement has started monitoring again, still needs to complete M&R PN requirement
CT0710094	MARKET ON THE GREEN	NC			
CT0300164	COLUMBIA'S KITCHEN	NC	6	M&R	has returned to compliance
CT0410424	GETAWAY HOUSE	NC			
CT1020464	THE TIN PEDDLER	NC			

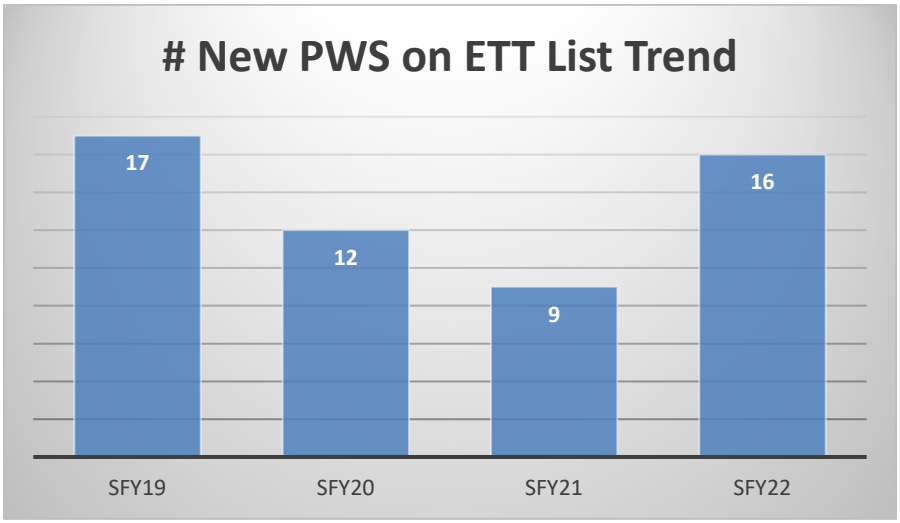
CT0430014	EAST HARTFORD BREWING COMPANY	NC			
CT1020014	LITTLE MAN'S BAKERY	NC			
CT0410384	12 RAE PALMER ROAD - EAST HADDAM	NC			
CT1500284	LAKE WARAMAUG/MAINTENANCE TENNIS & BEACH	NC	10	MCL	Source EC+, has returned to compliance
CT1269094	278 LEAVENWORTH RD, BUILDING B	NC			
CT1430274	823 NEW HARWINTON ROAD	NC	10	M&R	has returned to compliance
CT1350024	DOROTHY HEROY RECREATION COMPLEX	NC	5	TT	has returned to compliance
CT0970204	HAWLEYVILLE DELI	NC			
CT1280144	TOWER RIDGE COUNTRY CLUB	NC			
CT0189864	L'UVA RISTORANTE	NC			
CT1430964	TORRINGTON CITGO	NC			
CT0220134	PRUDENCE CRANDALL MUSEUM	NC			
CT0581064	1130 VOLUNTOWN ROAD	NC			
CT0780334	POUR HOUSE	NC			
CT0460184	SILVERMAN'S FARM - ANIMAL FARM WELL	NC	5	M&R	has returned to compliance
CT1479024	144&166 MAIN STREET	NC	6	M&R	has partially returned to compliance, Working with Enforcement
CT1660494	MAHANS LAKEVIEW FINE CATERING LLC	NC			
CT0209334	TONN'S MARKETPLACE	NC			

CT1301164	CALVARY FELLOWSHIP SOUTHBURY	NC			
CT0429204	D'ELIANA	NC			
CT0709254	RUNNING BROOK FARMS	NC			
CT1059344	LONG RIVER LOCAL	NC			
CT0560104	GRANBY JEHOVAH'S WITNESSES	NC			
CT0321284	CASSIDY HILL VINEYARD	NC			
CT0920304	CAMP SEQUASSEN (SOUTH SHOWER - WELL #6)	NC			

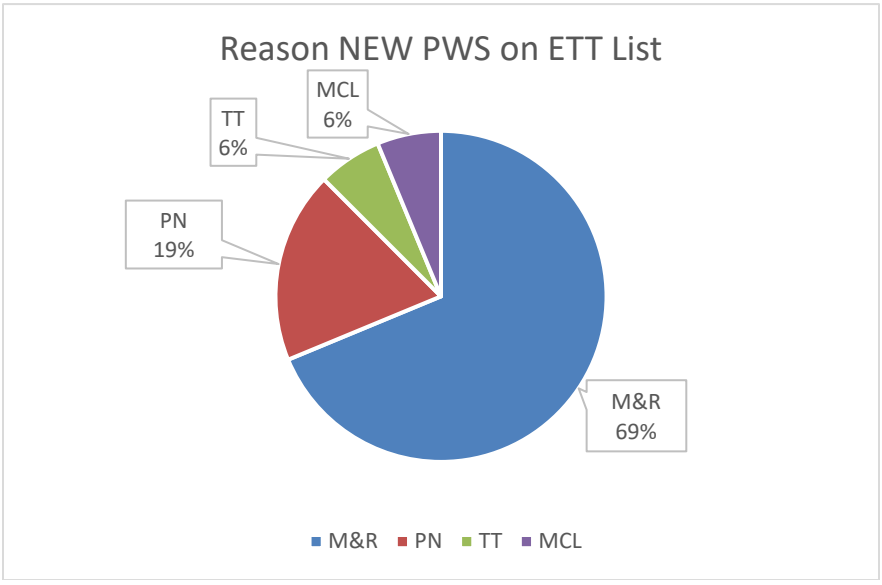
Twenty-nine (29) new PWS highlighted in green were created through the CPCN process during the last three fiscal years which included a TMF Capacity review, as well as the other control points discussed previously, prior to the final approvals being granted. The remaining sixty-eight (68) PWS were newly discovered systems which were existing and, in instances, had been operating for years, or were systems that had been inactivated and reactivated, with new owners. These PWS started being regulated by DPH as referrals from local health departments, expansion of business operations that increased system population over the thresholds, or the aforementioned change in ownership. Each of the 68 discovered systems received a letter of regulatory compliance information upon their activation.

The Drinking Water Section (DWS) uses the EPA's Enforcement Targeting Tool (ETT) point-based system to identify compliance problems. Any PWS that scores eleven (11) or more points are prioritized for enforcement actions under the EPA's Enforcement Response Policy which also aligns with DWS's Strategy. None of the new PWS created through the CPCN process scored 11 or more points on the latest ETT list. As is indicated on Table 1, two of the new PWS created through the CPCN process (6.9%) are on the current EPA Enforcement Targeting Tool (ETT) list with lower point values, primarily due to water quality monitoring & reporting (M&R) issues. This is compared to fourteen of the newly discovered PWS (20.5%) on the ETT list with scores ranging from 2-10 points.

The numbers of new PWS on the ETT list with any points increased as compared to the previously declining trend. This may be due to reduced staffing resources due to several staff departures during the SFY21 and SFY22 reporting periods which DWS is working hard to replace and train new staff. Knowledgeable DWS staff is one of the most critical resources to help develop and maintain TMF capacity at new PWS.



An evaluation of what caused each PWS to have points assigned as part of the ETT strategy was also conducted as part of this report. As shown below, the majority of the PWS with an ETT score can be primarily attributed to managerial issues such as water quality monitoring & reporting violations and public notification rule violations similar to last year's analysis. This year there was also a new PWS with an MCL violation for a source water E Coli positive (groundwater rule) and a treatment technique violation for failure to conduct a Level 1 assessment. DWS will continue to investigate new ways to clearly communicate the roles and responsibilities for new PWS (especially for transient non-community systems). A goal for the future years will be to modify the CPCN process to further elaborate on/incorporate sampling plans, contracting certified laboratories and other elements required for a successful water quality monitoring program as the majority of the new PWS ETT points stem from monitoring & reporting. For the newly discovered PWS, an idea to create a plain language new PWS guide would be helpful to include with the initial PWS responsibilities paperwork or even a follow up call to ensure these PWS get off on the right foot. The majority of new systems are Transient Non-Community PWS which are not required to have a certified operator. It is proven that a competent certified operator can be a valuable asset to a PWS and reduce the potential for violations.



Capacity Development Activities for Existing Public Water Systems

Authority

Connecticut is required by the federal SDWA Section 1420(c) to develop and implement a Capacity Development Strategy (Strategy) that addresses PWSs technical, managerial, and financial (TMF) needs to maintain viable water systems that can reliably provide safe and adequate water. The DPH submitted the state's initial Strategy to the EPA Region 1 on August 4th, 2000 and became the first state in New England to have an accepted Strategy on December 1st, 2000.

Control Points

Building capacity for PWS is interwoven with all of the DWS functional units, programs, tools and activities as is evidenced in the Strategy focus areas and associated SFY22 accomplishments conducted within those areas highlighted on the next page. The Strategy strengthens the TMF capacity of PWSs by identifying and correcting weaknesses early through close regulatory oversight, technical assistance and ultimately enforcement. A comprehensive review of a PWS's performance is evaluated when isolated compliance problems are discovered and also during routine sanitary surveys. Most times, this process helps to identify and correct the root causes of compliance problems before more serious problems develop. Long term sustainability of PWSs is the Strategy's main objective when the functional units of DWS work in concert. The Strategy has worked well in Connecticut and is consistent with EPA's Sustainability Policy released in 2010.

It should also be noted that during SFY21 and SFY22, several staff departures took place within the compliance section which handles a significant portion of the work that helps develop PWS capacity. While CT DPH has been lucky to be able to replace some of the tenured departed staff positions, the new staff come in at entry level and must be trained to come up to speed on the regulations and processes. Currently the DWS is in a rebuilding period to ensure consistent regulatory oversight now and into the future. Funding from the new Bipartisan Infrastructure Law (BIL) is helping with these staffing needs.

In addition to the four focus areas, DWS realizes the value of partnerships and training opportunities to build increased capacity for PWS. Some of the many partnerships DWS worked on during SFY22 included continuation of the monthly DWS Webinar Series; and partnerships stemming from various initiative committees, task forces and workgroups like WUCCs, State Water Plan, The Governor's Council on Climate Change (GC3), cybersecurity with the Department of Homeland Security, Interagency Drought Workgroup, National Oceanic and Atmospheric Administration's (NOAA's) Northeast Regional Climate Center, emerging contaminants and regionalization/interconnection projects.

A DWS policy change enacted in SFY22 will improve capacity for small CPWS when they are sold. As part of the permitting process for a sale of a small CPWS, the buyer is now required to, as a condition of the permit, develop a new fiscal and asset management plan for the newly acquired system. The seller is required to provide a copy of the existing fiscal and asset management plan to the buyer (or develop one and provide it if none exists).

STRATEGY FOCUS AREAS - SFY22 ACCOMPLISHMENTS

Source Protection and Planning

- 31 Watershed Surveys encompassing 210 drinking water watersheds completed
- Maintained and enhanced an internal GIS using an agency-developed portal that allows staff to view and analyze up-to-date PWS planning and source protection data from any device.
- Continued to maintain and update a public GIS to assist local government, water systems and the public making decisions with water supply planning and source protection implications.
- Maintain High Quality Source List and continued PFAS testing for all new sources of supply.
- WUCC- Continued Implementation and outreach of water supply planning strategies
- Water Supply Plans (WSP) –continued to review plans as resources allowed.
- 5 CPCN Projects Reviewed and Approved

SDWA Compliance and Enforcement

- 559 Sanitary Surveys Conducted; Approx. 80 PWS Infrastructure Projects Reviewed
- 436,712 WQ sample results processed and reviewed for compliance
- Review of Asset & Fiscal Management Plans for small CWS
- Enforcement Unit issued 5 Consent Orders/Agreements & 24 Administrative Orders
- Continue work to build Environmental Laboratory Certification Program which certifies environmental laboratories and works on data integrity and laboratory issues affecting PWS.

Operator Certification

- 73 Operator CEU Course Approvals for a sum total of 270.5 training contact hours (TCH)
- Developed criteria for remote/distance learning and approved 37 courses for total of 114.5 TCHs23 PWSs with operator issues who lacked operator oversight returned to compliance by through technical assistance – no formal enforce.
- Maintained a list of over 2,200 active water operators' certifications, more than 300 of which that are available and/or training for contract work.

Drinking Water State Revolving Fund

- TMF checklist used to better document DWSRF required capacity review
- Continued the Disadvantaged Community Assistance Program which makes available additional federal subsidy to projects in distressed communities.
- 9 new loans and one loan amendment for 10 infrastructure projects totaling approximately $18.5M (4 loans to small systems)
- Provided approximately $288,000 in Water Infrastructure Improvements for the Nation grant funds to aid a small and disadvantaged community

Partnerships

- Partnerships stemming from Drinking Water Vulnerability Assessment & Resilience/GC3/BRACE including the establishment of the DPH Office of Climate and Public Health
- NOAA Northeast Regional Climate Center to develop website for PWS source capacity tracking
- Worked with US Dept. of Homeland Security to introduce PWS to CISA cybersecurity experts

Identification of PWS in Need of Capacity Development Assistance

DPH uses all the information at its disposal to identify and prioritize existing PWSs that need capacity development assistance. Some of the most typical means of identifying PWS in need are through 1) Water Quality and Compliance Data; 2) Sanitary Survey/Capacity Assessment Tool Data; 3) DWSRF Capacity Review; and 4) Other PWS data.

1) Water Quality Compliance Data: DWS identifies systems in need of capacity development assistance by the system's ability to respond to the compliance requirements for prescribed regulations and to report this compliance data to the DWS. Compliance data is managed in the Safe Drinking Water Information System (SDWIS) database and compliance determinations are run on a continual basis. In addition, the Rule Implementation Unit has created publicly available water quality monitoring and compliance schedules for each individual PWS in compliance with applicable federal rules and state regulations. Examples of data that may identify a system in need of assistance would include MCL violations, M&R violations and Treatment Technique (TT) violations among others. Greater than one monitoring and reporting violation in a 12-month period is used as an indicator of possible deficiencies in managerial and possibly financial capacity and technical assistance and/or formal enforcement actions are initiated. This approach attempts to avoid systems from being placed on the ETT list. Systems that are, or become placed on, the ETT list are given priority technical assistance consistent with Connecticut's existing Strategy.

2) Sanitary Survey/Capacity Assessment Tool (CAT) Data: Another mechanism used is the sanitary survey process and the resulting compliance determinations. During a sanitary survey the physical infrastructure of the water system as well as other elements including monitoring and reporting, operator certification, management and operations and security are assessed to determine if there are significant violations or deficiencies that could present long and/or short-term sustainability problems. The DWS continuously modifies elements of the question sets into the sanitary survey process to determine if systems are adequately employing sustainability concepts with their physical assets. Sanitary surveys are conducted at least every three (3) years for CWSs and every five (5) years for Non-Community systems. The small system capacity assessment tool (CAT) has also been incorporated into the sanitary survey process. All CWS are required to complete a capacity questionnaire that will update the baseline CAT at the time of the survey (included as Appendix C). The CAT data has been an integral part of developing capacity through the WUCC process and keeping the data updated and relevant is key. Work to create the real time CAD module has yet to be completed due to staffing limitations, however this is still something DWS plans to complete in the coming years.

3) DWSRF Program Capacity Review: All PWS that apply for DWSRF funding must demonstrate adequate TMF capacity in order to obtain a loan. Reviews of financial qualification are conducted by the OTT and, if the PWS is a privately owned rate-regulated utility, by the PURA. Technical and managerial reviews are performed by the DWS and include a historical review of regulatory compliance as well as infrastructure deficiencies that were identified during the most recent sanitary survey. Any financial issues that are identified must be addressed before a PWS is qualified to receive a loan. Any technical or managerial violations that are identified must be addressed either prior to receiving a loan or as part of the project that receives a loan. Since 2011, the DWSRF Program has placed additional incentives for PWS to enhance TMF capacity

through asset management (AM) planning. PWS with existing AM plans are provided additional priority points in the priority ranking system to increase project(s) ranking on the DWSRF Project Priority Lists. Additionally, the DWSRF Program provided incentives beginning in SFY19 for small PWS to implement AM plans by offering 25% subsidization towards project(s) if systems had existing AM plans or would undertake AM planning as part of the project(s). During the SFY20, a "TMF Capacity Review Checklist" (included as Appendix D) was developed to better document the capacity review completed for DWSRF funding recipients. This checklist ensures that all available aspects of capacity are reviewed, including routine compliance, formal enforcement, ETT score, most recent sanitary survey, and fiscal and asset management planning. Any PWS which is found to not have sufficient capacity will be referred for technical assistance. This checklist continued to be used on all SRF projects during SFY22.

4) Other PWS data: The PWS capacity needs can also be realized through many different types of interactions that provide data to the DWS. Lack of a certified operator or operators with large amounts of violations cited at the systems they operate, water service interruptions resulting in frequent outages or bulk water hauling, catastrophic infrastructure failures (see Figure 1), cross-connection issues and/or customer complaints can help raise capacity issues to the surface resulting in prioritization for technical assistance and/or formal enforcement actions. Also, in CT, PWS serving 250 or more connections or 1,000 people or more are required to prepare and update water supply plans. During SFY21, all survey compliance staff were trained on a streamlined review process for water supply plans and DWS attempted to catch up on the backlog of plan reviews. The plans incorporate planning items, available water and safe yield, unaccounted for water, emergency plans and much more. It is hopeful that reviewing the plans will make the survey more dynamic and help to incorporate planning and asset management since the same person will do both the plan review and the sanitary survey. Additionally, the transfer of water quality land permit process has been partnering with the capacity develop workgroup to incorporate a review of the fiscal and asset management plan during the review process so that institutional knowledge from owning and operating a water system is transferred to the new owners as part of the property transfer process. During this reporting period, work to replace staff in the compliance section as well as bring on new staff to the Operator Certification Unit was conducted. Replacing staff that had retired or resigned as well as fully staffing the operator certification program will continue to enhance the many types of interactions we have with PWS on a daily basis that lead to our determination of when PWS are in need of assistance.

Fig. 1 Catastrophic hydropneumatic tank explosion in June 2015 that left 3,000 CWS customers without water and precipitated the passage of the new asset and fiscal plan with prioritized hydropneumatic tank assessment requirement for small CWS.

Capacity Development Approach for PWS in Need

DWS continued to use concepts and tools identified within the four focus areas in the Strategy to help PWS of all classifications increase their technical, managerial and financial capacity in order to remain sustainable and capable of delivering a safe and adequate supply of water to customers now and into the future. Routine examples of these include sanitary surveys, trending water quality data, M&R compliance data, operator certification, source water protection and permitting, engineering reviews of new treatment and PWS infrastructure projects, enforcement and individual technical assistance meetings. The DWS also uses its website, frequent circular letters and online water quality monitoring and compliance schedules to provide a broad range of information to PWSs to assist in achieving compliance and provide access to important information. These actions continue to be some of the primary mechanisms to develop capacity for Non-Community (NTNC and TNC) PWS. Further, DWS has maintained its monthly webinar series with PWSs, environmental laboratories, certified laboratories and other stakeholders, and have proven an effective mechanism to conduct important and time-sensitive outreach.

Since the storms in 2011 and 2012 that greatly impacted our small community PWS, a large portion of the technical assistance and capacity development initiatives/outreach have been geared toward smaller community systems. A copy of the Three Storm Strategy prepared by DWS is included as Appendix E for reference. Some of the past initiatives that came about after the

storms were the passage of regulations for emergency power provisions and response plans for all CWS, continuing the WUCC planning process statewide, a technical assistance contract with RCAP Solutions to provide financial capacity assistance and $20 million in state grant funding for the DWSRF to be reinvested in small CWS consolidation or interconnection projects, as well as passage of state statutes requiring fiscal and asset management plans for small community water systems as well as a capacity implementation plan.

DWS has learned over the years that the approach to develop TMF capacity must be different for small CWS versus the largest CWS, however there is a commonality: education. For smaller CWS, getting the PWS owners and managers engaged and interested in learning about their systems and responsibilities is the first hurdle. DWS has been working on trying to update website and standard forms/applications to create more easily understood processes. Feedback gained from the review of the small CWS fiscal and asset management plan reviews has also provided many opportunities for individual education during the sanitary survey process and will continue. For large CWS DWS strives to maintain a presence in the state training forums by frequently presenting on regulatory and capacity developing topics as well as organizing and hosting our own trainings. Additionally, work to revamp and re-energize the water supply plan process for our large CWS is an important initiative that should continue to be a priority with emphasis on topics such as regionalization/partnerships, cybersecurity, emerging contaminants, climate change resiliency and lead and copper rule revisions. With increased funding from the Bipartisan Infrastructure Law (BIL) DPH is working hard to attract and train new staff to help all PWS with these important initiatives and more.

The following are summaries of work conducted during SFY22 on many important initiatives show how DWS functional units work together to develop capacity for all PWS.

CT DPH Capacity Development Strategy: During SFY22, DWS worked on a revision of its original capacity development strategy (circa 2000). The revision was required pursuant to the American Water Infrastructure Act (AWIA) of 2018 to encourage the development of asset management plans and training for certified operators on asset management. A draft is currently available on the program's website and DWS is moving forward with public comment and stakeholder feedback with a goal to finalize the revised strategy by the December 31, 2022, deadline.

Fiscal and Asset Management Plan Requirement: DPH proposed a bill which passed during the 2018 legislative session requiring small community public water systems to prepare a fiscal and asset management plan of their systems' assets, including a prioritized assessment review of their hydropneumatic pressure tanks, if applicable. The bill was codified into the Connecticut General Statutes as CGS 19a-37e. The prioritized fiscal and asset hydropneumatic storage tank assessment for all small CWS was conducted during SFY19 and the findings were summarized in past annual capacity reports. During SFY20, DWS worked to help PWS meet the second due date of the statute by developing a fiscal and asset management plan template with instructions, a guidance document, an appendix to be included for CWS who also want to apply for a DWSRF loan, a completed example plan and a training webinar. The template is included as Appendix F and was formatted to include all information that is needed to meet the statute including PWS General Information Section, Asset Management Section with asset inventory, assessment and prioritization, capital improvement plan, level of service goals, a Financial Management Section

with rates, rate structures, current and future budgets and other financial questions, and finally an Unaccounted for Water (UAW) Section with amount of UAW, causes and ways to reduce UAW.

Approximately 291 small CWS were required to create this plan by the end of the 2020 calendar year. DWS asked all CWS to submit a certification that they had developed their fiscal and asset management plan. To date, DWS has received 194 certifications from small CWS that their plan was developed (66.7% compliance rate), with 97 outstanding. DWS is reviewing the plans as part of the routine sanitary survey and issuing deficiencies to PWS that have not completed the plan, so it will take a 3-year cycle of conducting community sanitary surveys to get to all of the small systems required to create the plan. In general terms, the asset portion of the plan is more complete than the financial portion. This may be due to lack of charging separate fees for water, poor recordkeeping, certified operator or person preparing plan does not have access to financial information, or reluctance to share private financial information. Despite the reason, getting PWS to understand the money required (full cost pricing) to run a community water utility as well as account for depreciation and proactive reinvestment will be a challenge DWS will continue to work on.

Capacity Implementation Plan Requirement: To further impress upon CWS the need to implement the findings of the Fiscal and Asset Management Plan, DWS was able to pass another statutory requirement during the 2021 legislative session (language included as Appendix G) aimed at demonstrating that these small CWS have adequate technical, managerial and financial capacity and shall implement the fiscal and asset management plan. The initial capacity implementation plan is required to be completed by all small CWS by July 1, 2025 and updated annually. There are 11 required items including financial capacity information, water production and consumption, capital improvement schedule for five- and twenty-year periods, ownership and management information and description of various maps, plans and programs required to be maintained by the small CWS. DWS will be working during the upcoming year to develop the capacity implementation plan template and associated guidance documents and training to aid small CWS in meeting this new requirement.

WUCC: The WUCCs have identified small community public water systems as needing significant capacity development assistance to combat some common problems such as uncoordinated planning among PWSs, competition between PWSs for expansion of service areas, increasing regulatory requirements, aging and substandard infrastructure, inadequate source protection, difficulty in developing new water sources, inadequate financing, poor management, and a significant lack of adequate communication between water companies and with local elected officials of the communities serviced. The WUCCs have assessed these issues and more in their published Coordinated Plans. In each region, factors considered in the evaluation of small CWS included CAT score; whether the CWS is within 1,000 feet of another CWS; actual distance to another CWS; and limitations related to sources, storage, or pumping. Moving forward the Coordinated Plans developed a toolbox of options to ensure that each CWS has at least two options available to them to help correct the identified weaknesses. The options are:

A. Conduct internal improvements and remain a small independently-owned CWS
B. Pursue acquisition by larger CWS and remain a satellite system owned and operated by the larger CWS
C. Interconnection with larger or more viable CWS

D. Interconnection and eventual consolidation with larger or more viable CWS

This analysis was conducted for all three WUCCs. The analyses are available at the following link: https://portal.ct.gov/DPH/Drinking-Water/WUCC/Water-Utility-Coordinating-Committee. These documents were developed and published in SFY18. The WUCCs are now working on implementation of the recommendations outlined in the three Coordinated Water System Plans. A statewide WUCC implementation committee has been formed (https://portal.ct.gov/DPH/Drinking-Water/WUCC/Water-Utility-Coordinating-Committee-Implementation-Workgroup) that currently meets quarterly to improve public water system planning and resiliency. Several of the priorities are related to the capacity of small public water systems.
(https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/drinking_water/pdf/WUCC-Statewide_10pager-final-3-20.pdf)

In SFY22 work continued on implementation of these efforts. A WUCC Implementation Group is working to ensure that these systems have pathways to viability. Specifically, the workgroup worked on implementation of the following:

- Finding solutions to facilitate the connections of new/existing small public water systems to viable Community PWSs rather than development of duplicative small public water systems. One concept is to delineate areas in local plans where new development would be expected to interconnect to existing infrastructure rather than creating another public water system.
- Encouraging public water systems with the potential to develop emergency interconnections to do so; an interconnection roadmap was developed to assist public water systems, municipalities, and regional planners in understanding the analysis and process of developing redundancies via interconnections.

- Developing sustainable rate structure models that could be used by small water systems

State Water Plan: The Connecticut State Water Plan (SWP) was prepared under the direction of the Water Planning Council (WPC) to help planners, regulators and lawmakers make decisions about managing the state's water in a manner that is consistent throughout the state with stakeholder-defined principles and available scientific data. The SWP is a broad, over-arching document which includes hundreds of recommendations, including a recommendation to develop a method to monitor and report on implementation of the Plan's recommendations to ensure compliance with the requirements of the statute.

The WPC is advised by two main subgroups, the Water Plan Council Advisory Group (WPCAG) and the State Water Plan Implementation Work Group (IWG). Under the IWG, multiple implementation sub-workgroups have been made to research and recommend action items back to the WPC on how to address a wide range of recommendations from the SWP. Over the last couple years, the IWG has held multiple sub-workgroups which have focused on Private Well location/data, SWP Tracking Implementation/reporting, Water Efficiency, SWP Education and Outreach, and Drought.

- One of the most notable successes from these sub-workgroups that relate to public water capacity is the review and improvement to the Connecticut State Drought Plan; which has evolved over the last several years to better prepare the water industry in times drought conditions. Improved drought monitoring and forecasting, better data collection on capacity levels, and most importantly better communication among the water industry and the State as a whole.
- Another successful sub-workgroup has been the research and recommendations on the private well side of water capacity. While private wells in Connecticut are regulated differently from a large public water system, the sub-workgroup identified the need to better track all current/ future private well locations and data to better identify water quality on a local level. The result of the information could better inform local communities, potential homebuyers, as well as neighboring large public water systems of the water quality and water quantity in the area. The result of the private well sub-workgroup assisted the Department (DPH) in crafting legislation during the 2022 session to address private wells in Connecticut which later successfully passed as Public Act 22-58 in which Section 60 addresses 'Private And Semipublic Well Testing'.

NOAA Northeast Regional Climate Center: The DWS collaboration with NOAA's Northeast Regional Climate Center to create a website where reservoir and groundwater capacity measurements can be entered or uploaded by public water systems is nearing completion. The final phases of internal testing will be completed, and then begin an initial testing phase by volunteer public water systems to ensure proper functionality before being made available to all water systems. This website will enable easier reporting by PWS and electronic receipt of data by DPH will create a more efficient drought tracking mechanism for DPH to better help PWS prepare and navigate during periods of drought.

DWSRF Program: The DWSRF continues to grow and be an attractive financing option for important drinking water infrastructure projects that provide essential public health protection and help achieve long term infrastructure sustainability. The pace of loan executions during SFY 22 is still rebounding after being slowed down during SFY20 as a result of the COVID-19 pandemic and the reluctance of several PWS to place new construction contracts out to bid due to many uncertainties. The demand for DWSRF loans still remains strong and is expected to increase, with the interest rates in the municipal bond market beginning to increase above the 2% currently offered by the DWSRF. In addition, the significant funding from the Bipartisan Infrastructure Law (BIL), its focus on lead service line replacement and emerging contaminants such as PFAS, along with the requirement to provide high levels of subsidy to qualifying PWS and projects, will make the funding more attractive and increase demand further.

The DWSRF program continues to look for ways to strengthen the capacity of loan recipients, particularly small systems. Since 2014, the DWSRF has subsidized loans to small systems that have developed asset management plans or agree to develop these plans as part of their loan project. The incentive to develop these plans to receive a subsidized loan has increased the recognition of asset management planning as an important and essential tool for small systems to understand and implement essential utility management concepts including capital improvement planning, rate structure, annual budget preparation and the importance of capital reserve funds. A Disadvantaged Community Assistance Program (DCAP) was also created within the DWSRF during SFY20 and an additional 35% of DPH's annual capitalization grant was made

available for DWSRF projects located in disadvantaged communities. In addition, the policies for subsidy were modified so that all projects are eligible for some level of federal subsidy. During SFY22 more than $3.3 million was provided as subsidy in project funding agreements, which was approximately 17% of all funding provided. The BIL funding will also significantly increase the amount of subsidy available for DCAP projects over the next several years.

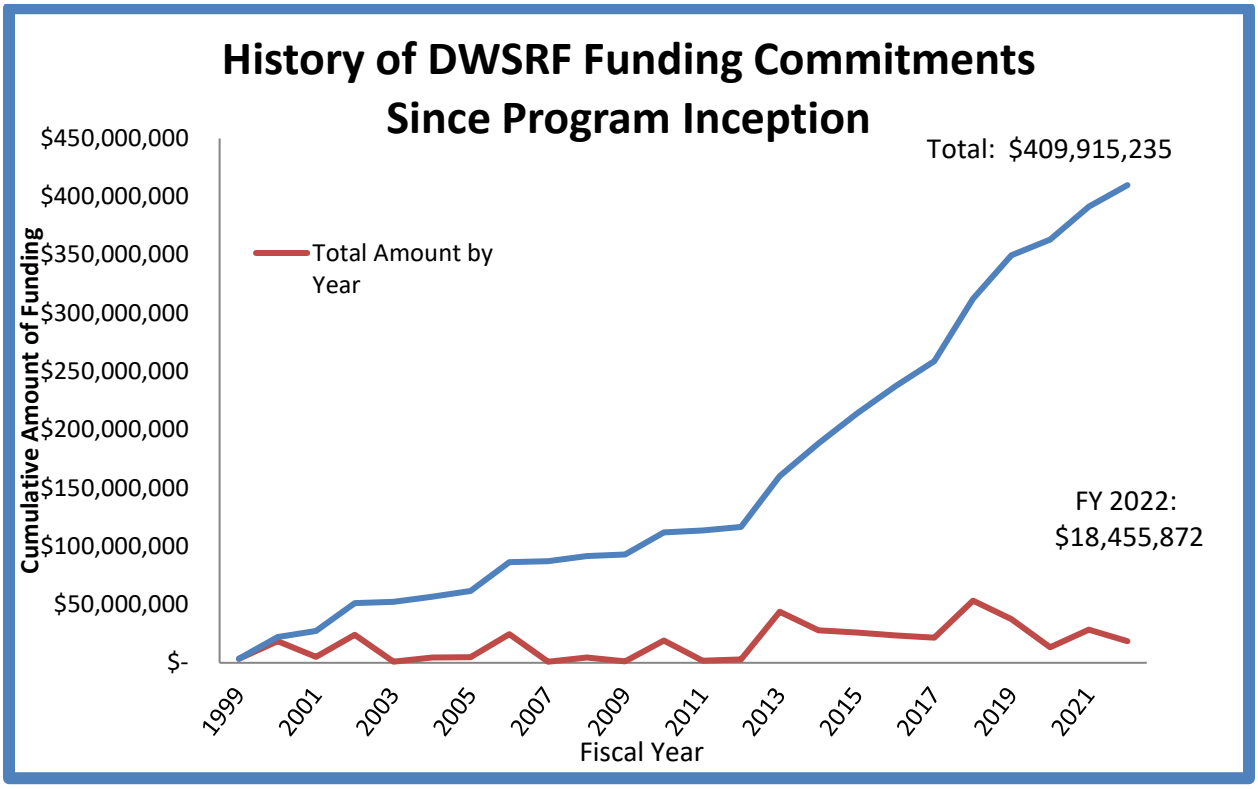


Fig.2 Historical Funding of the DWSRF Program

DWSRF Small System Programs: DWS created an Emergency Power Generator Program during SFY12 and a Small Loan Program during SFY19. These programs streamline the procurement procedures for non-construction projects costing less than $100,000 in an effort to make it easier for small PWSs with qualifying projects to proceed through the DWSRF process. This program is only available for the purchase and installation of generators for emergency back-up power, new equipment, or the replacement of equipment installed for an existing facility that does not involve the construction, alteration or repair (including painting or decorating) of that facility. No loans were executed under this program during SFY22, but it will continue to be offered.

These programs are designed to work in concert with the Fiscal and Asset Management Plan process. Small PWS that have identified the need for infrastructure repair and/or replacement as part of their fiscal and asset management plan will be better prepared to attain funding through this streamlined program. During SFY22, one SLP loan was executed totaling more than $50,000 for wellhouse, storage, treatment, and pumping improvements. Overall, the DWSRF executed 4 funding agreements for small water systems, including one under the Small Loan Program, totaling over $3.9 million.

Fig. 3 New water storage tanks which were installed at the Candlewood Knolls Water Authority small public water system to replace aging infrastructure. The project was funded by the DWSRF.

State Grant Funding for DWSRF Projects: State grant funding under the Public Water System Improvement Program contained in CGS 22a-483f provides grants-in-aid, in the form of loan principal forgiveness for DWSRF projects. A project which is eligible for any subsidy from the DWSRF must execute a loan for the remaining amount of principal in order to receive the grants-in-aid. Eligibility criteria for these grant funds are identified in the DWSRF's annual Intended Use Plan to reflect the top drinking water infrastructure priorities for the State of Connecticut. During SFY21 these priorities continued to include regional interconnections, small system consolidations, lead service line replacements and treatment for emerging contaminants; however, there were no new appropriations for this program during SFY20. During the SFY20 legislative session the legislature did appropriate $24 million in grant funding to support this program during SFY21 and the DWSRF has been working closely with several current/potential applicants on eligible projects to utilize these funds. During SFY22, the DWSRF continued to evaluate the best use for these funds.

Operator Certification Work: During SFY21, to validate the competency of CT Certified Operator applicants more thoroughly CT DPH DWS changed to the ABC Standardized Examinations, which were more recently validated through an updated job task analysis. Operator exams are now administered at remote computer-based test sites, which increases availability to certification applicants. CT DPH processed 71 initial certification examination results from the CT DPH newly designated computer-based administrator. The DWS operator certification staff also participated in 6 stakeholder/utility board meetings that provide guidance for administration of the CT DPH Operator Certification Program and assessed PWS Operator designations of record and made 196 modifications to Safe Drinking Water Information System.

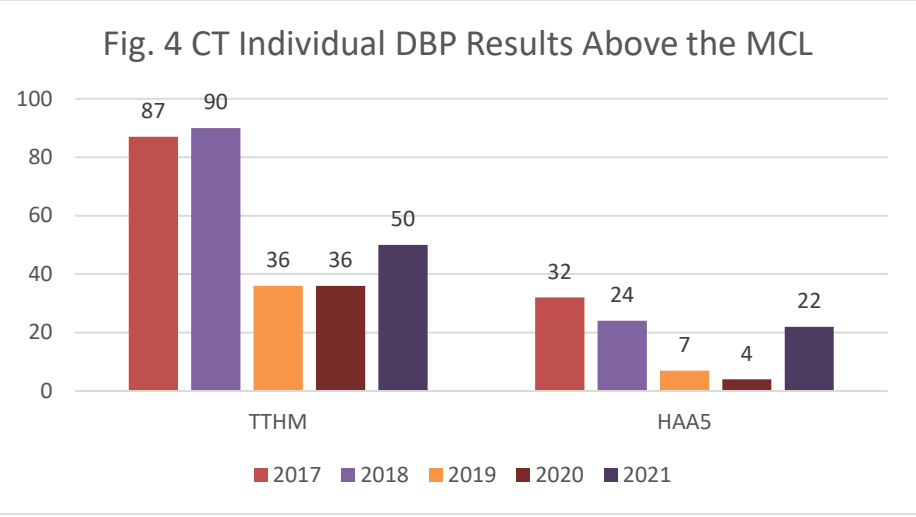
Climate Change Initiatives: DPH participated in CWS resilience initiatives throughout SFY2022. This work builds upon the findings and recommendations of the 2018 Drinking Water Vulnerability Assessment and Resilience (DWVAR) Plan with the Connecticut Institute of Resilience and Climate Adaptation (CIRCA). These recommendations include actions to increase resilience at small community water systems across Connecticut. CWS resilience efforts conducted during this period include membership in the Governor's Council on Climate Change (GC3) Public Health and Safety (PH&S) Work Group, participation in the CDC's Building Resilience Against Climate Effects (BRACE) program, and State Agencies Fostering Resilience (SAFR). The goal of these efforts is to develop and implement adaptation strategies to assess and prepare for the impacts of climate change thereby enhancing capacity at many of Connecticut's public water systems. During SFY 2022, the GC3 focused on near-term actions and has begun scheduling meetings to reconvene the full PH&S working group to further explore the recommendations of the 2020 report. Our accomplishments for the BRACE program include the establishment of the Office of Climate and Public Health (OCPH) within the Connecticut Department of Public Health. The OCPH is working with partners throughout the state, including the Yale Center on Climate Change and Health, to implement actions that enhance health equity, increase resiliency, and ensure Connecticut communities are prepared for the health impacts of climate change. The Office of Climate and Public Health focuses on populations most vulnerable to the health effects of climate change and seeks to address social determinants of health in the context of climate change. As a member of the SAFR Working Group, DWS assisted partners at CIRCA in identifying vulnerable drinking water infrastructure (primarily within distressed communities) to be included within "zones of shared risk" which help prioritize climate related resiliency projects for the Resilient Connecticut program. Resilient Connecticut's guiding principle is to establish resilient communities through smart planning that incorporates economic development framed around resilient transit-oriented development, conservation strategies, and critical infrastructure improvements. CIRCA has completed Phase II of the Resilient Connecticut project and is working on Phase III. Throughout the entire fiscal year 2022, the Drinking Water Section actively participated in numerous climate related meetings and presentations for the GC3, BRACE, OCPH, SAFR, and CIRCA initiatives described above.

Sanitary Survey Program: During SFY22, a key compliance activity was merged into the duties of the sanitary survey staff: the review and process of all Level 1 and Level 2 assessments as triggered by the revised total coliform rule (RTCR). The sanitary survey staff know the PWS very well and understand the various system components from having worked with the PWS in the field. That knowledge enables the DWS to better evaluate and work with PWS to identify sanitary defects and get them corrected. Further, the survey staff worked together to update and will soon finalize the revised RTCR level 1 and level 2 assessment forms in order to address common mistakes made by assessors. One area of improvement will be to improve communication between survey staff, rule staff and enforcement to ensure timely resolution of RTCR Assessment triggers and findings as the regulatory oversight of this process includes many different units within DWS and we must work together effectively to help PWS address issues without getting violations.

Cybersecurity Initiatives: DPH recognizes that threats to drinking water infrastructure pose significant risk to the safety of our water supplies. Throughout SFY22 DWS staff continued to

communicate with PWS owners and operators the importance of adequate security measures. A total of nine DWS Circular Letters dedicated to the subject of cybersecurity were sent to PWS owners and operators during this reporting period. These communications were used to inform systems of potential threats and to share information on available training opportunities. Two big initiatives that occurred during SFY22, was the development and finalization of a Cybersecurity Self-Assessment Checklist for PWS which was rolled out to water system owners and operators in DWS Circular Letter 2021-0085. A copy of the Self-Assessment is included in Appendix H. The second initiative is that a standard recommendation was drafted and included in all SS reports starting in the 2022 sanitary survey season directing PWS to review and complete the Cybersecurity Self-Assessment Checklist. DPH acknowledges that we do not have cybersecurity experts within our staff, however, have been advocating strongly on how to obtain resources to help with cybersecurity if they are needed.

Area Wide Optimization Program Participation: DWS continued its participation in the EPA-sponsored Area Wide Optimization Program (AWOP) which provides tools and approaches for drinking water systems to meet water quality optimization goals. The primary goal is to maximize public health protection through optimization of existing water treatment and distribution facilities (i.e., without major capital improvements) to achieve higher levels of compliance through optimization. During SFY22, DWS staff participated in three remote Region 3 AWOP meetings during this reporting period as well as the first in person AWOP meeting on membrane treatment optimization. Due to the remote nature of the meetings, there were limited technical topics. Prior to Covid-19 many of the workshops were centered around resolving elevated disinfection by -product (DBP) levels. We have utilized that knowledge in order to help CWS achieve and maintain compliance with the Stage 2 DBP Rule. DWS saw a concerning increase in the number of DBP results above the corresponding maximum contaminant level (MCL) during 2017 and continue for TTHMs in 2018. Analysis of the DBP results over past five years shows trend toward improvement, however this year, there was an increase in high results. This could be attributed to an extremely hot and dry spring and summer season this year. DPH will continue to closely monitor and help these PWS maintain compliance with the MCL. Developing technical expertise in this area through participation in AWOP and working to deliver the training to PWS who struggle with compliance in this area aligns with the goals of the Strategy to achieve technical compliance and therefore capacity through optimization.



Federal Technical Assistance Provider Partnerships: DWS renewed its partnership with federal technical assistance contractors, Connecticut Rural Water and Wastewater Association (CTRWWA) and Environmental Finance Center Network (EFCN). As discussed at the beginning of the operating period, EFCN coordinated a two-part training webinar for small water systems financial planning and rates including Basic Financial Planning and Benchmarking and Funding Your Water System with User Rates. These topics were selected as follow up training for PWS based on DWS staff review of the small CWS Fiscal and Asset Management Plans. CTRWWA had a change in leadership and a charter change to provide a singular focus within the state of CT. During this reporting period, their technical assistance specialists provided direct technical assistance to a handful of small community PWS on lead and copper rule, asset planning, leak detection and PWS regulatory compliance.

Emerging Contaminants Work Highlights: An Emerging Contaminants Unit (ECU) was established and continued important work to directly address non-regulated contaminants of growing concern in both public drinking water and private wells. This group deals with contaminants like per- and polyfluoroalkyl substances (PFAS), Chloride, Dieldrin, Manganese, 1-4 Dioxane, Harmful Algal Blooms and the associated Cyanotoxins, and others. The ECU staff has continuously presented a segment of the Monthly Drinking Water Webinar Series for Public Water Systems, Certified Water Operators and Environmental Laboratories devoted to emerging contaminants.

PFAS - On June 15, 2022, the DWS and Environmental Health Section set new Action Levels for four individual PFAS: **Perfluorooctane sulfonic acid** (PFOS) at 10 parts-per-trillion or ppt, **Perfluorononanoic acid** (PFNA) at 10 ppt, **Perfluorooctanoic acid** (PFOA) at 16 ppt, and **Perflurohexane sulfonic acid** (PFHxS) at 49 ppt. These are more protective of public health than the previous Action Level, which was the sum of five PFAS greater than or equal to 70 ppt. Subsequent outreach and education activities, such as updating the DPH PFAS webpage and presenting a public Webinar, were conducted to inform the public about these new PFAS Action Levels. Additionally, the ECU implemented a Memorandum of Agreement with the University of Connecticut (UCONN) for a PFAS Outreach and Education project to further assist communities and small public water systems in addressing PFAS.

Staff from the DWS and EHS continue to work with colleagues at the Department of Energy and Environmental Protection to implement the recommendations in the CT Interagency PFAS Task Force, PFAS Action Plan. Several recommendations in the Final PFAS Action Plan support public water system capacity including: support measures that provide financial assistance to public water systems for infrastructure improvements, including treatment and/or interconnections to nearby public water systems; procure laboratory instrumentation for PFAS analysis at the State Department of Public Health Laboratory; and continue to provide technical assistance, education, and outreach to local health departments and other officials through publications and in-person and web-based training. The DPH acquired dedicated PFAS analytical equipment, installed it in a dedicated clean-room and is in the process of calibrating it to perform EPA Method 533 by the State Public Health Laboratory staff. Public water systems serve vulnerable populations, schools, and daycare facilities in communities with a high (>0.50) CDC Social Vulnerability Index will be

prioritized for sample analysis through the State Public Health Laboratory. The DWS is also requiring PFAS testing at all new sources of public drinking water prior to receiving approval for use. New public drinking water sources, both for new and existing public water systems continued to be sampled for PFAS. Community public water systems continue to voluntarily sample for PFAS and notify the DWS of the results. The DPH is providing technical assistance to two school systems with detections of PFAS above the newly established drinking water action level along with several larger community systems. The DPH continues to work with the municipality identified with PFAS contamination in the previous fiscal year to educate, provide guidance and explore options to provide sustainable solutions for the impacted areas.

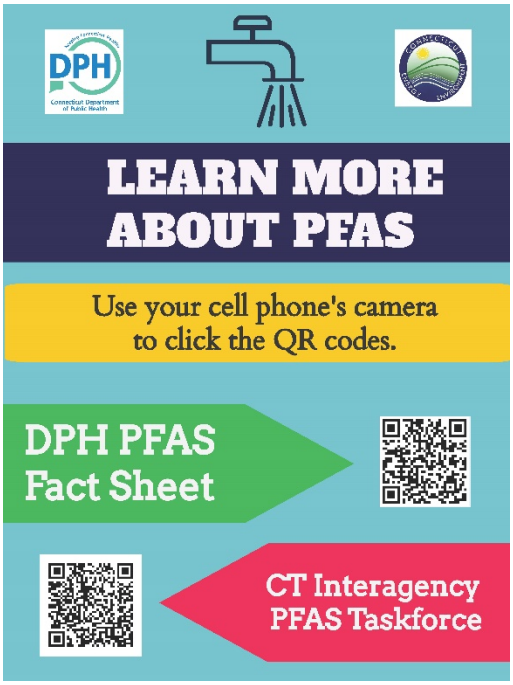


Fig. 5 Providing the Public with Agency PFAS Information

Legionella **–** The Drinking Water Section (DWS) continued to work with the DPH Agency Legionella Response Team aimed at evaluating legionella defined cases and assist involved facilities in understanding the environmental assessment needed to address and curb the presence of legionella in water ready for consumption. The DWS representatives on the Agency Legionella Response Team facilitate communications between the public water systems and the healthcare facilities they serve to assure measures are taking on both sides to minimize legionella growth and minimize the proliferation of legionella growth. DWS formed an internal workgroup to develop subject matter expertise on Legionella control and educating PWSs on best available practices to improve water quality in distribution systems to minimize bacterial growth. During the most recent legislative session Public Act 22-58 established a Legionella Working Group comprised of representatives from hospitals, nursing homes, water companies, and regulators. The group is tasked with proposing by December 31, 2022, recommendations for legislation, regulations, or other changes concerning the prevention and mitigation of legionella in hospitals, nursing homes, and other health care facilities. The group has been actively meeting every other week.

Manganese **-** The DWS worked with the DPH EHS to reassess the action level based on data released by EPA citing the need to set a manganese health advisory level (HAL) of 0.3 mg/l. This new level is considerate of the health implications to infants and nursing mothers. The DPH manganese fact sheet was updated to reflect the new HAL, and efforts started to inform public water systems on measures to be taken when manganese is found above the HAL of 0.3 mg/l. In FY 2022, public water systems that serve populations over 10,000 concluded are monitoring for manganese under EPA's Fourth Unregulated Contaminant Monitoring Rule. Final results from the UCMR program were provided to the DPH and are currently under review by the Emerging Contaminants Unit. The DWS reviews the results from this monitoring and is providing technical and financial assistance to those PWS that approach or exceed the HAL. DWS also is providing a DWSRF loan for a PWS for the installation of treatment for manganese.

Lead – The DWS lead team continues to meet weekly to foster methods and suggestions aimed at reducing public exposure to lead in drinking water. Several circular letters and educational materials were developed and dispensed in the past year. Of note, information related to flushing and reducing lead levels (and other potential contaminants) as part of PWS reopening due to Covid-19 shutdowns. To date, 196 Administrative Orders have been issued to PWS who have exceeded the 90% lead action level to shorten the timeframes for compliance and installation of optimal corrosion control. One hundred and four (104) of these orders have been closed out as of the time this report was written.

Sodium and Chloride **-** The Sodium/Chloride Stakeholder Workgroup, met every two weeks to share regular updates and discuss concerns with sodium and chloride contamination, as well as shares actions each organization is taking to address the overuse of road salts during winter storm events. Legislation supporting a training program for private winter maintenance contactors was adopted in the 2022 session. The DWS is collaborating with the Departments of Energy and Environmental Protection and Transportation and the University of Connecticut's Technology Transfer Center to enhance their training program to focus on private applicators. A key incentive for private applicators, liability protection, was not included in the legislation. The workgroup has been discussing other ways to incentivize private applicators to adopt winter maintenance practices that protect drinking water supplies. Additionally, the connections made through stakeholder engagement has resulted in municipal public water systems encouraging their fellow public works departments to participate in the existing municipal education program and at least one public water system agreeing to be a test subject and pilot the private applicator education program that is awaiting legislation for implementation.

Cyanotoxins **-** The DWS is partnering with the Connecticut Council on Soil and Water Conservation to accelerate the implementation of source water protection in Connecticut by the implementation of the Connecticut Source Water Protection Project (CSWPP). An increasing number of drinking water supply sources in Connecticut, including the Farm River in Regional Water Authority's watershed, are experiencing algal blooms raising serious public health concerns. There is a need to bring the expertise and resources of those traditionally involved in Farm Bill, EPA 319, and LISS watershed management programs to the source water protection effort. Stakeholders need to embrace a One Water concept to better leverage technical and financial resources. This specific project, intended to improve this collaboration, began on August 1, 2019 and will offer specific stakeholder trainings on harmful algal blooms and will develop a statewide Geographic Information System that will assess, at a parcel level, areas that

may contribute to source water impairments due to introducing algal bloom causing nutrients into drinking water watersheds. In FY 2022, public water systems that serve populations over 10,000 concluded monitoring for certain cyanotoxins under EPA's Fourth Unregulated Contaminant Monitoring Rule. The DWS is reviewing the finalized results provided by EPA this monitoring and is providing technical and financial assistance to those PWS that have detected cyanotoxins it their source water.

Capacity Development Strategy Review

The preparation of this Annual Capacity Development Report for EPA serves as a review on the implementation of the existing systems strategy during the previous year. Additionally, capacity development implementation is ongoing and much of the work within the four focus areas are incorporated into many routine work tasks within the DWS including weekly Compliance Section meetings, quarterly and annual meetings with TA providers and development and evaluation of PWS and Certified Operator training materials and classes.

There have been no formal modifications to the core tenets of the existing system strategy, however as the DWS has been working to prepare a revised Strategy to provide to the EPA Region 1 for review and comment by the end of 2022. The revised strategy will incorporate changes resulting from the American Water Infrastructure Act (AWIA) of 2018 such as the consideration of asset management planning in the strategy and address the unique needs of the state, as well as bring the strategy into the twenty-first century.

Conclusion

The DWS continued to implement the tenets of the Strategy to meet the needs of Connecticut's PWSs during SFY22. When a new PWS is created using the focus areas within the Strategy combined with existing laws, it is more likely to remain viable. Additional work is needed to educate newly discovered PWS to establish and maintain acceptable levels of TMF capacity. For existing systems, it is demonstrated that capacity development is intrinsic to all of the DWS functional units, and routine interactions with PWSs is the primary mechanism used to develop and maintain TMF capacity. This is extremely important with all the new regulations PWSs are facing as part of the SDWA and a variety of emerging contaminants and technological threats. The DPH DWS will continue to effectively apply resources to remain supportive of sustainable systems and will advocate for the elimination of systems unable to maintain acceptable levels of capacity utilizing the takeover process and/or assistance from the WUCCs. In accordance with the Strategy, as issues present themselves, DWS works internally and with external partners to address issues. Capacity needs and possible solutions for small CWS ownership and operations for the future has also become a focus of the WUCCs which has transitioned to the implementation of the Coordinated Plans. The Drinking Water Section (DWS) effectively regulated and protected public health at five hundred and one (501) CWSs, five hundred and five (505) NTNC systems, and one thousand four hundred twenty-eight (1,428) TNC systems during the reporting period. The implementation of capacity development is proven and will remain consistent with Connecticut's current EPA-approved Strategy.

Appendix A - Annual Capacity Development Reporting Criteria

Attachment
Reporting Criteria for Annual
State Capacity Development Program Implementation Reports

It is EPA's intent that the reporting criteria should in no way hinder the inclusion of additional information or data, such as programmatic highlights and challenges. Reporting of additional information is encouraged so that EPA may have a detailed understanding of State implementation efforts. Further explanation has been provided to assist in developing responses to each question.

I. State Capacity Development Program Annual Reporting Criteria

A. New Systems Program Annual Reporting Criteria

The following questions ask States how they are ensuring that all new community water systems and new nontransient noncommunity water systems demonstrate technical, managerial, and financial (TMF) capacity with respect to each national primary drinking water regulation in effect or likely to be in effect on the date of commencement of operations. (The definition of a new system can be found on page 16 of the *Guidance on Implementing the Capacity Development Provisions of the Safe Drinking Water Act Amendments of 1996* (EPA 816-R-98-006)).

1. *Has the State's legal authority (statutes/regulations) to implement the New Systems Program changed within the previous reporting year? If so, please explain and identify how this has affected or impacted the implementation of the New Systems Program (additional documentation, such as an Attorney General (AG) statement or a statement from a delegated department attorney, may be required.) If not, no additional information on legal authority is necessary.*

   Explanation: This information will help identify whether States have maintained the necessary authority to implement the new systems program. Information provided may include programmatic changes or approaches as well as statute and/or regulation modifications, which can affect the implementation of the new systems program. Since some changes (such as statutory changes) could affect the legal authority, a statement from a State AG or delegated department attorney may be required. States should check with their EPA Regional Coordinator to determine if a new AG statement is required.

2. *Have there been any modifications to the State's control points? If so, describe the modifications and any impacts these modifications have had on implementation of the New Systems program. If not, no additional information on control points is necessary.*

   Explanation: Each State's New Systems Program identified a set of Control Points, which is an integrated feature of a State's program. A control point identifies a place where the Primacy Agency (or other unit of government) can

exercise its authority to ensure the demonstration of new system capacity. States should provide a discussion or a list that explains the modification(s) of control points for new systems, followed by an explanation of how and why the modification(s) have been identified. The explanation should include how the modification(s) is projected to affect the new systems program.

3. *List new systems (PWSID & Name) in the State within the past three years, and indicate whether those systems have been on any of the annual* Significant Non-Compliers *(SNC) lists (as generated annually by EPA's Office of Enforcement and Compliance Assurance).*

Explanation: The intent of compiling compliance data is to identify whether there are noncompliance patterns during the first three years of a new system's operation. States may refer to other forms of violations data in addition to the SNC lists. For instance, compliance tracking has been identified by 41 States as an indicator, or a component of an indicator, in implementing the new systems program. States may elect not to provide this new system data to EPA. In this case, EPA Regional Coordinators will utilize the SDWIS/FED database to gather the information. EPA Regional Coordinators will verify this information with States for accuracy. An examination of any trends (e.g., sanitary survey results, capacity assessments, etc.) may also trigger States to revisit program implementation.

B. Existing System Strategy

The following questions will ask States to demonstrate how they are implementing strategies to assist public water systems (PWS) in acquiring and maintaining TMF capacity.

1. *In referencing the State's approved existing systems strategy, which programs, tools, and/or activities were used, and how did each assist existing PWS's in acquiring and maintaining TMF capacity? Discuss the target audience these activities have been directed towards.*

Explanation: States should describe the broad range of programs and activities employed in their approved strategies, and discuss what role those programs and activities played in building or maintaining capacity of various types of systems. The response could include a brief explanation of how each activity is used in program implementation.

2. *Based on the existing system strategy, how has the State continued to identify systems in need of capacity development assistance?*

Explanation: This question refers to the method(s) prescribed within State strategies for identifying, selecting or prioritizing PWS's in need of assistance. States should describe the method(s) used and the frequency at which this process may have been performed (annually, semi-annually, continuously, or as otherwise identified within the strategies).

3. *During the reporting period, if statewide PWS capacity concerns or capacity development needs (TMF) have been identified, what was the State's approach in offering and/or providing assistance?*

Explanation: States should describe the method(s) that have been utilized to identify system capacity concerns, and how such situations have been addressed. For example: If statewide reviews of sanitary surveys yielded common trends, or if they have identified a need for a specific type of operator training, discuss what actions have been performed to address these issues. Discussion of this process from planning to execution should answer the following:

- What method was used to identify this need?
- How has the need been addressed?

4. *If the State performed a review of implementation of the existing systems strategy during the previous year, discuss the review and how findings have been or may be addressed.*

Explanation: This information is not intended to address program efficacy (effectiveness), but whether a review of implementation has been performed. If no review was conducted, no further information on this question is necessary.

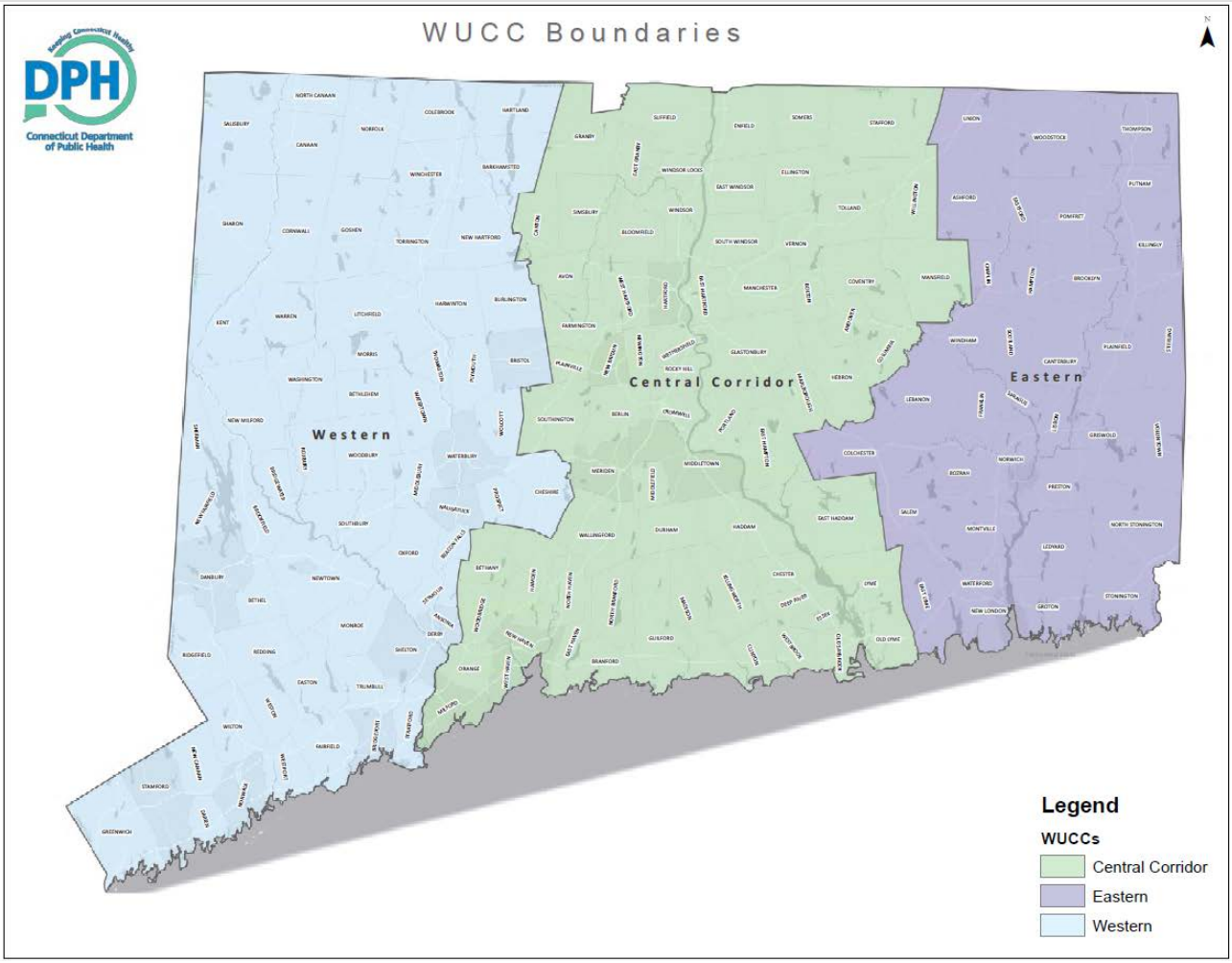
5. *Did the State make any modifications to the existing system strategy? If so, describe.*

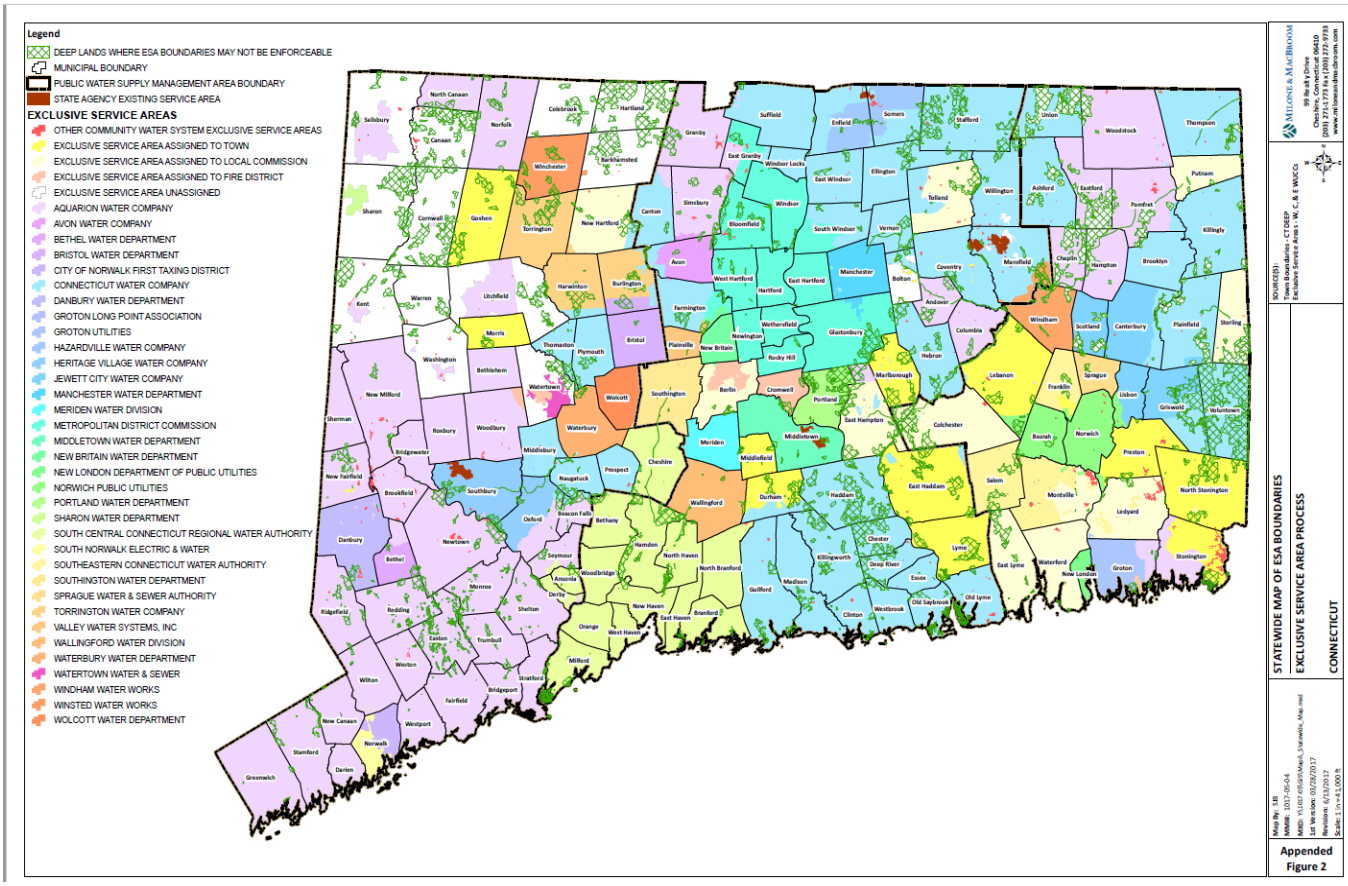
Explanation: A response to this question may include program modification, wording, or approach. States should identify the reasons for the modification(s), how these modifications were identified, and how they will affect the implementation and future goals of the program.

II. Reporting Period and Submittal Dates

The annual implementation reporting period must consistently reflect either the previous State or Federal fiscal year. The report must be submitted to the appropriate EPA Regional Office within 90 days of the end of the reporting period.

Appendix B - WUCC Maps and Flyer

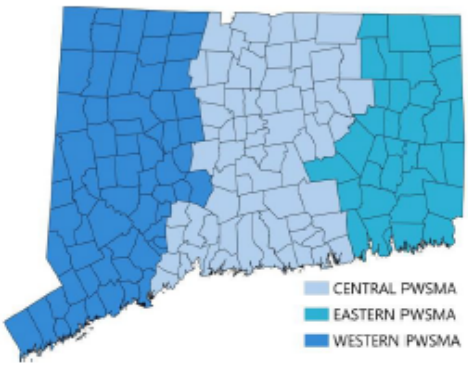

WUCC Boundaries
DPH
Connecticut Department of Public Health
Western
Central Corridor
Eastern
Legend
WUCCs
Central Corridor
Eastern
Western


Legend
DEEP LANDS WHERE ESA BOUNDARIES MAY NOT BE ENFORCEABLE
MUNICIPAL BOUNDARY
PUBLIC WATER SUPPLY MANAGEMENT AREA BOUNDARY
STATE AGENCY EXISTING SERVICE AREA
EXCLUSIVE SERVICE AREAS
OTHER COMMUNITY WATER SYSTEM EXCLUSIVE SERVICE AREAS
EXCLUSIVE SERVICE AREA ASSIGNED TO TOWN
EXCLUSIVE SERVICE AREA ASSIGNED TO LOCAL COMMISSION
EXCLUSIVE SERVICE AREA ASSIGNED TO FIRE DISTRICT
EXCLUSIVE SERVICE AREA UNASSIGNED
AQUARION WATER COMPANY
AVON WATER COMPANY
BETHEL WATER DEPARTMENT
BRISTOL WATER DEPARTMENT
CITY OF NORWALK FIRST TAXING DISTRICT
CONNECTICUT WATER COMPANY
DANBURY WATER DEPARTMENT
GROTON LONG POINT ASSOCIATION
GROTON UTILITIES
HAZARDVILLE WATER COMPANY
HERITAGE VILLAGE WATER COMPANY
JEWETT CITY WATER COMPANY
MANCHESTER WATER DEPARTMENT
MERIDEN WATER DIVISION
METROPOLITAN DISTRICT COMMISSION
MIDDLETOWN WATER DEPARTMENT
NEW BRITAIN WATER DEPARTMENT
NEW LONDON DEPARTMENT OF PUBLIC UTILITIES
NORWICH PUBLIC UTILITIES
PORTLAND WATER DEPARTMENT
SHARON WATER DEPARTMENT
SOUTH CENTRAL CONNECTICUT REGIONAL WATER AUTHORITY
SOUTH NORWALK ELECTRIC & WATER
SOUTHEASTERN CONNECTICUT WATER AUTHORITY
SOUTHINGTON WATER DEPARTMENT
SPRAGUE WATER & SEWER AUTHORITY
TORRINGTON WATER COMPANY
VALLEY WATER SYSTEMS, INC
WALLINGFORD WATER DIVISION
WATERBURY WATER DEPARTMENT
WATERTOWN WATER & SEWER
WINDHAM WATER WORKS
WINSTED WATER WORKS
WOLCOTT WATER DEPARTMENT
MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com
SOURCE(S):
Town Boundaries - CTDEEP
Exclusive Service Areas - NC, CA & F WUCCs
STATEWIDE MAP OF ESA BOUNDARIES
EXCLUSIVE SERVICE AREA PROCESS
CONNECTICUT
Map By: SJB
MXD: Y:\107-05\GIS\Maps_Statewide_Map.mxd
1st Version: 05/26/2017
Revision: 6/13/2017
Scale: 1 in = 4.1 miles
Appended
Figure 2

Connecticut's Water Utility Coordinating Committee (WUCC) Process

A Coordinated Planning Approach for the State's Public Drinking Water Supply

WHAT ARE THE WUCCs? The Western, Central, and Eastern WUCCs are comprised of one representative from each public water system and one representative from each regional council of government (COG) within three Public Water Supply Management Areas (PWSMAs) established by the Department of Public Health (DPH) pursuant to CGS § 25-33f.



WHY DO THE WUCCs EXIST? Connecticut's regional public water supply planning process was prompted by the State's extended drought in the early 1980s. Public Act 85-535, *"An Act Concerning a Connecticut Plan for Public Water Supply Coordination,"* directed the DPH to administer a procedure to coordinate the planning of public water supply systems in an effort to maximize their efficient and effective development and to promote public health, safety, and welfare. The legislative finding associated with this Public Act was codified in CGS § 25-33c.

WHAT ARE THE WUCCs DOING? In June 2016, the DPH convened the Water Utility Coordinating Committee (WUCC) for each PWSMA and directed each WUCC to implement the 2-year planning process established by CGS §§ 25-33g and 25-33h.

The Regulations of Connecticut State Agencies (RCSA) § 25-33h-1(d) requires each WUCC to prepare a CWSP consisting of the following elements in addition to the utilities' individual *Water Supply Plans* prepared for systems within the PWSMA:

- Completion of a *Water Supply Assessment* of regional water supply conditions and problems;
- Establishment of exclusive service area (ESA) boundaries delineating each public water system's potential service area;
- Completion of an *Integrated Report* providing an overview of public water systems and addressing area-wide water supply issues, concerns, and needs to promote cooperation among public water systems; and
- Completion of an *Executive Summary* to serve as an abbreviated overview of the CWSP.

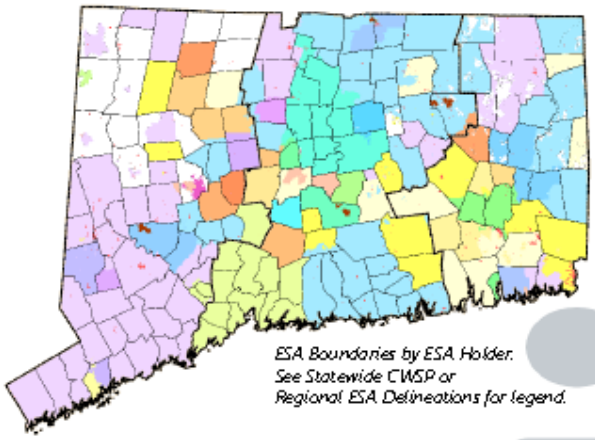
The WUCCs were required by RCSA § 25-33h-1(f) to submit each of the four components of its CWSP to the DPH within specified timeframes spanning a two-year planning process. Each WUCC held monthly meetings that were open to the public to facilitate this work. Efforts were made throughout this process to be inclusive of diverse viewpoints from water utilities, state and local government, stakeholders, and the public.

Each WUCC prepared its CWSP and submitted the plan to DPH in May (Western and Eastern regions) and June (Central region) of 2018. The CWSPs are required to be updated as necessary or at least every 10 years.

Eastern WUCC Meeting, June 2018

WHAT IS THE IMPACT OF THE WUCC PROCESS? Each of the three regional CWSPs evaluates current water supply conditions and problems in the PWSMA, establishes ESA boundaries assigning responsibility for providing future public water supply to areas where it may be needed, and presents current and projected water demands for public water systems.

WHAT IS THE VISION FOR THIS PLANNING PROCESS? As envisioned in Connecticut General Statute (CGS) § 25-33c, *"an adequate supply of potable water for domestic, commercial and industrial use is vital to the health and well-being of the people of the state. Readily available water for use in public water systems is limited and should be developed with a minimum of loss and waste."* This vision statement guided the Coordinated Water System Plan (CWSP) process and requires sustained vigilance by state agencies and public water systems to ensure adequate water quality and quantity is maintained. The CWSP prepared by each WUCC evaluates current public water supply conditions and future needs at a regional scale and provides guidance towards improving regional coordination and the technical, managerial, and financial capacity of public water supply systems.



ESA Boundaries by ESA Holder. See Statewide CWSP or Regional ESA Delineations for legend.

ESA boundaries delineate existing and potential future service areas of public water systems, identify responsible parties to own and operate "community" (residential) public water systems developed through the Certificate of Public Convenience and Necessity process (CGS § 16-262m), and resolve competing future service area claims by public water systems resulting from the assignment of overlapping franchise areas over time by the state legislature. When municipal land use and development goals result in the need for the creation of a new public water system, the designated ESA provider will be part of that process.

The CWSPs identify potential regional projects to encourage system resiliency and redundancy, provide a desktop review of potential environmental impacts of new supply sources identified in water supply plans that may meet regional needs, and quantifies how water conservation may reduce projected water demands. The CWSPs identify regional needs as opposed to site-specific capital improvement projects, leaving such decisions to the individual utilities to evaluate with assistance from the respective WUCC. Several potential projects are identified in order to facilitate further discussion and possible funding.

Each CWSP contains more than 60 recommendations for the WUCC to pursue in order to improve public water supply conditions through the year 2030. These recommendations fall into the topic areas of responsible planning, drought management, source protection, water conservation, resiliency, and funding. Some recommendations will require action by DPH or other state agencies, while others will rely on action by COGs or by individual public water systems. These recommendations provide the basis for discussion and action by each WUCC and its members over the next 10 years.

WHAT IS THE OUTCOME OF THE WUCC PROCESS? The DPH has interpreted the primary messages of the each CWSP into the following top needs for public water systems in the state, which are intended to serve as guiding principles for future regulations, water planning, capital improvement projects, and funding goals. They are:

1. Regionalization and Interconnections
   Ensure redundant and environmentally responsible supplies.
2. Water Conservation and Water Efficiency
   Reduce future demands and unnecessary water use.
3. Reduce Clustering of Small Water Systems
   Encourage consolidations and ensure responsible planning to mitigate proliferation of adjacent small systems.
4. Assistance to Small Public Water Systems
   Ensure proper technical, managerial, and financial capacity of small public water systems.
5. Investment in Infrastructure
   Replace aging infrastructure, including mains a century old.
6. Funding
   Provide grants and loans for planning, projects, and small systems in line with the above needs.
7. Drought Management and Resilience
   Increase awareness of drought impacts and standardize responses to the extent practicable.
8. Resiliency to Storms and Climate Change
   Reduce recovery time and adapt to future conditions.
9. Protection of Watersheds and Supplies
   Continue to ensure adequate water supplies with high water quality.
10. Improvements to Water Demand and Water Quality Planning
    Avoid the development of unnecessary new sources and ensure proper consideration of regulated and unregulated contaminants.

WHAT ARE THE NEXT STEPS? Each WUCC will work to implement the recommendations of their CWSP, including ensuring that water demand and projection data in the CWSPs are updated sooner than is required to facilitate regional planning, and working with DPH to provide assistance to small water systems. DPH plans to hold workshops in 2019 to educate public water systems on the outcome of the planning process and to work towards implementation of regional and statewide public water supply projects.

WHAT IF I WANT MORE INFORMATION? Visit the WUCC webpages located on the DPH website at https://portal.ct.gov/DPH/Drinking-Water/WUCC/Water-Utility-Coordinating-Committee/

MILONE & MACBROOM

DPH Connecticut Department of Public Health

Appendix C - Sanitary Survey Capacity Questionnaire - Current Version put into Online Form

State of Connecticut Department of Public Health
Drinking Water Section
Sanitary Survey Capacity Questionnaire

Your PWS is due for a routine sanitary survey this calendar year. As a regulated PWS, you have regulatory responsibilities* associated with the survey. Completing the brief questionnaire below will fulfill several of these requirements and should only take a few minutes. Your answers will also enable DWS to provide better technical assistance to your PWS based on your individual needs. Please email the completed survey to DPHCapacity@ct.gov **within 30 days of receipt**. Any questions can also be emailed to that address. You will be contacted by a DPH Engineer to schedule a sanitary survey of your PWS this year.

PWS Name: PWS ID:

Please list the correct current owner/legal contact for this PWS. The Legal Contact is the system owner or person(s) who is authorized to bind and act on behalf of the owner of that system.

Name		**Address**	
Title		**City, State, Zip**	
Signature		**Daytime Phone**	
Email		**Emergency Phone**	

	Technical Capacity Questions	Yes	No	Comment
T1	a) Has your system had instances where demand exceeded your supply (e.g. low pressure or no pressure)?			
	b) Has your well(s) pumping rate decreased or system demand increased in the last 5 years?			
	c) Does your PWS regularly read meters and promptly addresses leaks?			
T2	Does your PWS own or control the sanitary radius** for each groundwater source of supply?			If no, please explain:
T3	a) System has emergency power capability for all critical facilities?			If no, please explain:
T4	System has an up to date DPH-approved Sampling Site Plan? (Sampling Point Inventory with Location Map)			

	Managerial Capacity Questions	Yes	No	Comment
M1	a) Does your PWS have a Certified Operator?			
	b) Does your PWS ownership meet routinely with the certified operator to review water system operations and needs?			Please elaborate:
M2	Does your PWS have by-laws, resolutions, or ordinances and are reviewed at least biennially			
M3	Individuals deemed in direct responsible charge are clearly defined and legally empowered in by-laws or by ordinances to act on behalf of the system?			

Managerial Capacity Questions Cont'd		Yes	No	Comment
M4	Does your PWS have an up-to-date map showing all water system facilities?			
M5	a) Does your PWS track and have a program to reduce unaccounted for water loss?			
	b) Does your PWS have metered service connections?			
	c) Does your PWS conduct leak detection surveys?			Frequency:
M6	Is there a process to address water emergencies 24 hours a day for the PWS?			Please elaborate:
M7	Does your PWS maintain water system records per applicable record retention schedules?			

Financial Capacity Questions		Yes	No	Comment
F1	Does your PWS calculate the annual costs of operating and maintaining the system, including depreciation, reserve funds for capital improvements, and other expenses?			
F2	a) Do you bill customers for water? If yes, please explain the method for billing customers.			Briefly explain:
	b) Does the customer billing cover all annual costs including depreciation, future expenses and infrastructure replacement?			
F3	Does your PWS have rules, regulations, and/or by-laws that cover billing and address delinquent payments?			
F4	Does your PWS have a Fiscal and Asset Management (F&AM) plan? (for PWS serving >1,000 these may be separate plans)			
F5	Has your PWS set up a reserve fund for emergency costs or if not, does the PWS have the legal authority to levy special assessments on customers for unexpected large expenses?			
F6	Does your PWS have fiscal controls to ensure monies are collected and spent appropriately?			Briefly explain:
F7	Does your PWS have an insurance policy that covers the water system assets and/or board liability?			Please elaborate:

* Your responses to this survey are part of this public water system's regulatory and statutory requirements, specifically RCSA Section 19-13-B102(l), (o), (p), (r), (s) and (w) and CGS 19a-37e

** Sanitary Radius Requirements for Groundwater Sources of Supply

Well pump Withdrawal Rate in gpm:	<10	10-50	>50
Sanitary Radius	75'	150'	200'

Reset Form

Appendix D - DWSRF TMF Capacity Review Checklist

State of Connecticut, Department of Public Health
Drinking Water Section, Drinking Water State Revolving Fund (DWSRF)
Technical Managerial Financial Capacity Review Checklist

Clear Form (temporary)

Applicant PWS Name: _____ **PWSID:** _____

Project Name: _____

DWSRF Project Number: _____ Pop Served by PWS: _____

DWSRF funding assistance requires the applicant to have adequate technical, managerial, and financial capacity in order to be eligible to receive funding. The Office of the State Treasurer (OTT) reviews the financial capacity of each borrower (item #12). This form documents the Technical and Managerial Capacity review by the Drinking Water Section.

The technical, managerial, and financial capacity review is considered complete when all applicable items have been reviewed. Add comments as necessary.

---

1. Current Overall Capacity Assessment Tool (CAT) Score: ☐ Date run: ☐

   Managerial Score ☐ Technical Score ☐ Financial Score ☐

2. Is this PWS under any formal enforcement action by DPH? ☐ Yes ☐ No

3. Is this PWS listed on the current Enforcement Targeting Tool (ETT) list? ☐ Yes ☐ No

   If yes, how many points: ☐ Date of List: ☐

4. Is PWS in compliance with Certified Operator requirements? ☐ Yes ☐ No

5. Does this PWS have any unresolved deficiencies from the most recent sanitary survey inspection? ☐ Yes ☐ No

   If yes, is the PWS actively working towards resolving the deficiencies? (i.e. has TRFA accepted their proposed resolution?) ☐ Yes ☐ No

6. Has this PWS completed its Sanitary Survey Capacity Questionnaire? ☐ Yes ☐ No

   If submitted with DWSRF FAA-Part I, give to Cap. Dev. Unit for CAD input

7. Does this PWS have a current Water Supply Plan (WSP)? ☐ Yes ☐ No ☐ N/A

   If so, is the project(s) submitted for DWSRF supported by the WSP? ☐ Yes ☐ No

   If so, and the WSP is >5 years old, is project(s) on current Capital Improvement Plan? ☐ Yes ☐ No

8. Does this PWS have an Asset Management plan? ☐ Yes ☐ No

9. Does this PWS have a Fiscal Management plan? ☐ Yes ☐ No

10. If a Small PWS serving <1,000, do they have a Fiscal and Asset Management Plan? ☐ Yes ☐ No ☐ N/A

    Has this plan(s) been reviewed? ☐ Yes ☐ No

    Which, if any, have been found acceptable? ☐ AM ☐ FM

    (If the AM plan is acceptable for small PWS, this PWS is eligible for federal subsidy)

11. Has DWSRF staff met with TRFA/survey staff to discuss overall system? ☐ Yes ☐ No

    Are there any Technical or Managerial Capacity issues? ☐ Yes ☐ No

    Are there any water system issues? ☐ Yes ☐ No

    Are there other needs which should/must be prioritized over the proposed DWSRF project(s)? ☐ Yes ☐ No

12. Has OTT conducted the financial viability review of the applicant? ☐ Yes ☐ No

    If yes, was it found to be acceptable? ☐ Yes ☐ No

State of Connecticut, Department of Public Health
Drinking Water Section, Drinking Water State Revolving Fund (DWSRF)
Technical Managerial Financial Capacity Review Checklist

Does this PWS need assistance with Technical capacity? ☐ Yes ☐ No
Does this PWS need assistance with Managerial capacity? ☐ Yes ☐ No
Does this PWS need assistance with Financial capacity? ☐ Yes ☐ No

Assistance provided/Actions taken:

Summary of Capacity Review

Item	Reviewed Y/N or N/A	Technical Managerial & Financial Capacity Items	Acceptable Y/N or N/A
1		Compliance Assessment Tool Scorecard	
2		DPH Formal enforcement action	
3		ETT list (Enforcement Targeting Tool)	
4		Certified Operator Requirements	
5		Deficiencies from most recent sanitary survey	
6		Sanitary Survey Capacity Questionnaire	
7		Water Supply Plan / Capital Improvement Plan (if applicable)	
8		Asset Management Plan (if PWS has one)	
9		Fiscal Management Plan (if PWS has one)	
10		Fiscal and Asset Management Plan (small <1,000 pop only)	
11		Met with TRFA/Survey Staff	
12		OTT Financial Viability Review	

Does this PWS have sufficient Technical Capacity for a DWSRF loan? ☐ Yes ☐ No
Does this PWS have sufficient Managerial Capacity for a DWSRF loan? ☐ Yes ☐ No
Does this PWS have sufficient Financial Capacity for a DWSRF loan? ☐ Yes ☐ No

All applicable items MUST be determined to be Acceptable for applicant to be eligible for DWSRF funding.

Attached: Capacity Assessment Tool CAD report

Comments:

(Signature of DWS Staff) (print name) (Date)

Date Technical, Managerial & Financial Capacity Review Completed:

Appendix E - Three Storm Strategy

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Jewel Mullen, M.D., M.P.H., M.P.A.
Commissioner

Dannel P. Malloy
Governor
Nancy Wyman
Lt. Governor

DPH Drinking Water Section Strategy to Address the Effects of Storms Irene, Alfred and Sandy on Connecticut's Community Public Water Systems
Original draft December 2011, last update April 2018)

Following the three storms that impacted Connecticut in 2011 and 2012, the Department of Public Health Drinking Water Section developed a strategy to address emergency preparedness for the state's community public water systems (CPWS). This public health strategy was developed in order to assure a safe and adequate water supply to the 2.9 million Connecticut residents served by CPWS. The strategy has the following objectives that address vulnerabilities, preparedness, resiliency and system capacity:

1. Assure sustained water supply for all CPWS,
2. Provide current and accurate large system status shared across WebEOC,
3. Work to develop mechanisms to prioritize restoration of street power to CPWS and priority facilities,
4. Assure that small community public water systems are well prepared to proactively address emergency situations.
5. Assure system capacity
6. Assure adequate certified operator oversight
7. Assure adequate review and oversight of public water systems
8. Work toward more resilient CPWS through enhanced water supply planning

Storms Irene, Alfred and Sandy brought different challenges, however affected small satellite CPWS (systems that serve under 1,000 people) in a similar way due to lengthy power outages that impacted large regions of Connecticut. Further, while large CPWS (systems that serve over 1,000 people) were able to sustain water supply and system pressure, some experienced lack of priority to regain street power with multiple large scale pump stations and surface water treatment plants on generators for more than 7 days.

On average for all three storms, over 100 small CPWSs were on boil water advisory due to loss of system pressure caused by loss of street power. These systems represent a significant percentage of Connecticut's 450 small CPWS. Many small CPWS were ill prepared, lacked planning, and lacked adequate technical, managerial and financial capacity to address loss of street power for an extended period of time. Below is a summary of the effects of the three storms on the state's public water systems:

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- Storm Irene (tropical storm on August 29, 2011) –

    - 137 small cpws on Boil Water Advisory (30% of small cpws), these systems are shown in red on the attached map
    - 16,624 CT residents served by these 137 small cpws (19% of population served by small cpws)
    - Majority of small cpws that were on Boil Water Advisory were due to loss of system pressure caused by power outage (on average it was 5 to 6 days until power restoration)
    - Majority of sources and systems were not affected by flooding due to requirements to locate wells outside flood zone.
    - Majority of large cpws on shoreline area lost street power, however operations were not affected due to their emergency generator capacity, street power restored to these systems within a few days
    - 2.688 million CT residents retained their safe public drinking water (99% of CT residents served by cpws)
    - 51 small cpws (6,300 population served) affected by both storms shown in purple on map

- Storm Alfred (early season snow storm on October 29, 2011) –

    - 121 small cpws on Boil Water Advisory (26% of small cpws), these systems are shown in blue on the attached map
    - 20,212 CT residents served by these 121 small cpws (23% of population served by small cpws)
    - Majority of small cpws that were on Boil Water Advisory was due to loss of system pressure caused by power outage
    - Majority of large cpws along and north of the I-84 corridor lost street power, however operations were not affected due to their emergency generator capacity, street power restored slowly to these systems with some generators operating 8 to 9 days straight
    - 2.674 million CT residents retained their safe public drinking water (98% of CT residents served by cpws)

- Storm Sandy (hurricane category 1 on October 30, 2012) –

    - 100 small cpws on Boil Water Advisory, these system are shown in green on the presentations map
    - Majority of small cpws that were on Boil Water Advisory was due to loss of system pressure caused by power outage
    - Many large cpws lost street power, however operations were not affected due to their emergency generator capacity, street power restored very slowly to these systems with some generators operating 8 to 9 days
    - 2.7 million CT residents retained safe public drinking water

CTDPH believes that it is important for all community public water systems to have the capacity to sustain their system's water supply throughout extended loss of street power and therefore avoid the need to issue a boil water advisory to their customers. Public water systems that have emergency power capacity will avoid potential negative impacts to water quality, lengthy boil water advisories and unnecessary increased risk to public health due to potentially impacted drinking water quality. Currently in CT, small CPWS have no requirements that address the need for emergency planning or to have back-up power capacity.

The State's large CPWS had the capacity to supply water and sustain system pressures even with loss of street power due to their existing emergency power capacity. This capacity included emergency power generators not only in place for sources of supply and treatment systems, but also in place for pump stations in remote areas of their system. One challenge and vulnerability following each storm for the large CPWS included the need to capture the attention and understanding of local and state emergency managers to prioritize restoration of street power to large CPWS components including surface water treatment plants. Adding a system status component for these large CPWS to WebEOC will directly assist to meet this challenge as well as develop information to share with power companies to address street power restoration to critical public water facilities and critical public health facilities.

Based upon the above storm related effects and system vulnerabilities, the following DPH action items were developed in November 2011 and then updated following Storm Sandy in 2012 to meet the above objectives:

DPH Action Items:

1. **Emergency Power Requirement** - Require small CPWS to have emergency power capacity; ***regulations drafted in 2012 and passed 2014, Compliance Required December 2018***

2. **Funding Assistance for Generators** - Develop and provide for subsidized DWSRF loans to assist in purchasing generators; ***DWSRF program initiated 2012, over 50 generators funded, program continues in 2018 with up to 45% subsidy***

3. **Emergency Plan Requirement** - Require small CPWS to develop an emergency plan; ***regulations passed in 2014, compliance required December 2018***

4. **Training for Plan Development** - Develop and provide workshops to assist to develop an emergency plan; ***Workshops held in 2016 and 2017, as well as planned Fall 2018***

5. **WebEOC & Large CPWS** - Work with large CPWS to develop WebEOC templates and implement active use, hold annual tabletops; ***Templates drafted in 2015, Workshop planned June 2018***

6. **Critical Facilities List** - Work with state's power companies and the water industry to promote critical facility priority power restoration, develop critical facilities list to include all primary care hospitals, nursing homes and dialysis centers, keep up to date and share annually with DEMAS; ***List produced in 2014 following June 2014 Workshop, Workshop held with hospitals and large PWS 2016, annual list updates provided to DEMAS***

7. **Certified Operators** - Revise and update certified operator regulations to address direct responsibility including emergency response; **Regulations drafted 2014, and recently shared with Cert Op CT Section committee in 2018**

8. **Small System Capacity Tracking Tool** - Develop a scorecard as a Capacity Assessment Tool (CAT) for small CPWS to fully understand system capacity and initiate change as needed, promote use of CAT during sanitary surveys; ***Tool developed from state of MS in 2014, CATs completed in 2016, part of WUCC process 2016 to 2018, plan to update during survey process and plan to publish in 2019***

Appendix F - Small CWS Fiscal & Asset Management Plan Template

Connecticut Department of Public Health Drinking Water Section

Fiscal and Asset Management Plan for Community Public Water Systems (PWS) Serving less than 1,000 Residents

This plan was created as a tool for use by Small Community PWS to assist PWS in meeting the new statutory requirement of Connecticut General Statutes (CGS) §19a-37e; and help provide safe and adequate drinking water to its customers now and into the future. Small community water systems serving less than 1,000 people are often run by volunteer home or condominium association boards, property management companies or by a sole owner of a complex. These groups may not have a background in the water industry and/or be familiar with all regulations pertaining to the ownership and operation of Community PWS. Owning and maintaining a PWS is a large responsibility and all customers of Community PWS deserve access to safe and adequate water regardless of the type of PWS ownership.

Fiscal and Asset Management is a **fundamental component of PWS ownership and a comprehensive Fiscal and Asset Management Plan (F&AM) is essential for the long-term success of any PWS.** Hopefully, PWS will find this template useful as a tool to assist PWS in organizing and assessing their water system finances and assets. It is anticipated that Small Community PWS can populate this template themselves based on their records and in working with their certified operator. The physical condition of the water system and financial decisions the system makes can have a direct impact on your customers' health as well as impact other factors such as property values. In addition to providing safe and reliable water, PWS that maintain a comprehensive F&AM Plan can boost PWS efficiency, save PWS staff time, improve customer service, tackle increasing costs of infrastructure and support budget discussions with facts to make informed decisions. Fiscal and Asset Management Plans will be required for all small Community PWS by **January 1, 2021**. While this template was designed for small Community PWS, this template may also be used by larger Community PWS and/or Non-Community PWS at their discretion. Further, if PWS wish to expand upon this template, there are many asset management services available to continue their asset management journey.

Date Plan Created	
Signature of PWS Owner/Legal Contact	
Printed Name PWS Owner/Legal Contact	

SECTION 1: PWS GENERAL INFORMATION

Public Water System Name: _____ **PWSID:** _____ **Town Served:** _____

Type of Ownership:
(check appropriate box)

☐ Private Owner
☐ Homeowners Association / Condominium Association
☐ Other (specify): _____
☐ Municipality / Water Authority
☐ Incorporated, Investor-Owned

Public Water System Description

Source Type:
(Check all that apply) ☐ Ground Water ☐ Surface Water ☐ Surface Water (Purchased) ☐ Ground Water (Purchased)

Number of Service Connections:		Total Population Served:	
Number of Metered Service Connections:		Interconnections (list, if applicable):	
Number of Lead Service Lines:			

Contact Information

Contact Type	*Name*	*Phone*	*Email*	*Current Address*
Owner				
Manager				
Financial Contact				
Chief Certified Operator				
Sampler				
Head Maintenance Personnel				

Fiscal and Asset Management Team

Name	*Responsibility*

Water System Schematic & Distribution System Map

Use this space to draw a detailed schematic of the water system including as many of the system assets as possible; an existing copy may be attached in lieu of a drawing. Additionally, an up-to-date distribution system map should be attached to the plan to show all distribution system assets.

SECTION 2. ASSET MANAGEMENT INFORMATION

Asset Inventory Worksheet

Asset Component	*Asset ID*	*Size, Length, Diameter and / or Capacity, and Location (Where necessary, list each individual component separately)*	*Year Constructed or Installed*	*Estimated Life Expectancy (Yrs)*	*Condition (1-5)* [1]	*Estimated Remaining / Adjusted Service Life*[2] *(Yrs)*	*Probability of Failure (1-5)* [3]	*System Impact (1-5)* [4]	*Risk Score (1-25)* [5]
Well									
Well Pump									
Source Meter									
Well/Pump House									
Atmospheric Tank									
Booster Pumps									
Bladder Tank									
Hydropneumatic Tank [6]									
Distribution Pipe and all in-line valves and boxes									
Treatment System									

Asset Component	Asset ID	Size, Length, Diameter and / or Capacity, and Location (Where necessary, list each individual component separately)	Year Constructed or Installed	Estimated Life Expectancy (Yrs)	Condition (1-5)[1]	Estimated Remaining / Adjusted Service Life[2] (Yrs)	Probability of Failure (1-5)[3]	System Impact (1-5)[4]	Risk Score (1-25)[5]
Hydrants and Blow-offs									
Back-up Generator									
Customer Meters									
Electrical Service									
Telemetry/SCADA or other Remote Monitoring System									
Other									

[1]

Score	Condition	Description
1	Excellent	New or relatively new condition. Asset has required little to no preventative or corrective maintenance.
2	Good	Acceptable condition. It still functions and requires minor preventative or corrective maintenance.
3	Fair	Deterioration of the asset can be seen. It needs preventative or corrective maintenance frequently to be able to function.
4	Poor	Failure of the asset is likely and will need to be replaced in the next few years.
5	Very Poor	Failure has occurred or is going to occur. Major maintenance is required, or replacement needs to occur.

[3]

Score	Probability of Failure
1	Highly Unlikely
2	Unlikely
3	Likely
4	Very Likely
5	Imminent

[4]

Score	System Impact	Description
1	Insignificant	Can continue normal operations of the water system without this asset.
2	Minor	Redundant systems in place; loss of the asset has a minor impact on the ability of the system to operate.
3	Moderate	Some redundancy in place; loss of the asset has a moderate impact on the ability of the system to operate.
4	Major	Greatly reduced capacity (major impact) to operate water system without this asset.
5	Catastrophic	Cannot operate water system without this asset.

[2] ***Remaining / Adjusted Service Life***: *Remaining or adjusted service life will be the difference between the current year and the year an asset was installed /constructed. This value may change depending on specific asset maintenance practices and current asset condition rating.*

[5] ***Risk Score*** *is a number which is the result of Probability of Failure Score multiplied by System Impact Score.*

[6] *Attach the Hydropneumatic Tank Fiscal and Asset Assessment Form that was completed for each active hydropneumatic tank, if applicable.*

Water System Operation and Maintenance (O&M) Plan

A Water System Operation and Maintenance Plan is a written procedure explaining how a public water system is to be operated on a day-to-day basis to ensure public health, safety and compliance with applicable regulations. It also describes maintenance practices and frequency to assure that the physical components of the water system are maintained in such a way to maximize the useful life of the assets.

Copies of these procedures should be kept with this Fiscal and Asset Management form for reference purposes. If your utility already has a written water system operation and maintenance plan that is routinely updated, please attach the latest version of this plan to this document. If not, please outline the current operation and maintenance practices for each category in the spaces provided below:

Day-to-Day Operations		
Task	Frequency	Description
Record instantaneous and totalizing meter readings for all sources of supply		
Check and record water levels in storage tanks		
Inspect pumps, motors and controls		
Check chemical solution tanks and record amounts used; replenish tanks		
Conduct field operating tests for treatment parameters (pH, Cl_2 and PO_4 residual)		
Check instrumentation for proper signal input/output		
Complete security check of pumphouse		
Inspect heater/dehumidifier operation		
Read customer meters		

Routine Maintenance		
Task	Frequency	Description
Exercise Valves		
Implement flushing program		
Insect tank hatches, vents, pipes		
Inspect and lubricate pumps		
Calibrate chemical feed pumps and/or treatment instrumentation		
Inspect and conduct repairs to water system facilities – wellheads, pump house, etc., as needed		
Inspect and clean chemical feed lines and solution tanks		

Water Quality Monitoring	
Sampling Schedule	Attach copy of DWS Water Quality Monitoring & Compliance Schedule
Sample Locations	Attach copy of DWS- Approved Sampling Site Plan with sampling point map
Certified Laboratory: Name and Contact Information	
WQ Sampler: Name and Contact Information	

Capital Improvements

Input the assets with the top ten highest Risk Scores from the Asset Inventory Worksheet on pages 5 and 6, starting with the highest score first. Fill out the columns in the table in accordance with the instructions in order to develop a Capital Improvement Project List and Budget.

Risk Score	*Asset ID*	*Asset*	*Description of Action Required to Improve Asset*	*Years Until Action Required*	*Approx. Total Cost of Required Action: Replacement, Rehabilitation, Repair*	*Reserves Required Each Year (Total Cost ÷ # of Years)*
				Totals:		

Capital Improvement Funding:

For the actions you've listed on the table above, where is the funding for these projects included in your budget? Is the money included in the capital reserve? Is it included in your Operation & Maintenance budget? Please explain.

Explain how the system is or will be developing/managing a reserve fund for water system capital improvements. Be sure to include how the reserve fund will be generated and used and how often funds are/will be added to the account.

SECTION 3. FISCAL MANAGEMENT INFORMATION

Fiscal Information – Answer the questions and complete the tables below. If a line item is not applicable you can leave it blank.

Water Rates: (complete all rows that apply)

Flat Fee	Y / N	Current Rate		Frequency of Billing:	Monthly		Quarterly		Other (Specify):	
Metered Usage	Y / N	Current Rate	_____ Base Rate _____ Volume Charge	Frequency of Billing:	Monthly		Quarterly		Other (Specify):	
Other	Y / N	Current Rate		Frequency of Billing:	Monthly		Quarterly		Other (Specify):	

Average Residential Annual Water Bill _____ Average Commercial Annual Water Bill _____ Are water rates combined with any other rates/fees? (If yes, list) _____

When was the last time the water rates were reviewed? _____

When was the last time the water rates were changed? If so, how were they changed? _____

Types of Accounts Maintained by the Water System (check all that apply):

Operating Account _____ Reserve Account _____ Emergency Account _____ Other (list) _____

PWS Revenue (complete or attach PWS budget)	Actual Last Year	Budget Current Year	Projected Next Year	Comments
Total Water Usage Revenue:				
Other Fees and Service Charges (late fees, new connection fee, etc.):				
Special Assessments:				
Secured Funding (e.g. loan):				
Interest:				
Amount transferred from Reserve Fund:				
Amount transferred from Emergency Fund:				
Other:				
TOTAL REVENUE:	$	$	$	

PWS Operating Expenses	Actual Last Year	Budget Current Year	Projected Next Year	Comments
Expenses				
Maintenance:				
Certified Operator:				
Utilities (power, telephone, internet, etc.):				
Salaries and Benefits:				
Equipment Cost:				
Water Quality Sampling & Testing:				
Water Treatment (Chemicals, etc.):				
Capital Improvement Project:				
Rent or Mortgage:				
Insurance:				
Professional Services (property management, legal, accounting, engineering, etc.):				
Training Costs:				
Billing costs:				
Fees (state PWS fee, etc.):				
Security:				
Debt payments:				
Taxes:				
Amount transferred to Reserve Fund:				
Amount transferred to Emergency Fund:				
Other:				
TOTAL EXPENSES:	$	$	$	
Net Income/Loss:				
Total Revenue:	$	$	$	
Total Expenses:	$	$	$	
Net Income/loss:	$	$	$	

Overall Account Balances	Actual Last Year	Budget Current Year	Projected Next Year	Comments
Operating Account Balance (cash on hand, etc.)				
Opening balance:				
Annual income/loss:				
Ending balance:				
Approx. number of months of operating monies on-hand:				
Emergency Fund Account Balance				
Opening balance:				
Annual inflow/outflow:				
Ending balance:				
Reserve Fund Account Balance				
Opening balance:				
Annual inflow/outflow:				
Ending balance:				
Required Reserves				
Total Annual Required Reserves:				
Opening Reserve Fund Balance:				
Annual inflow/outflow:				
Required Reserves Ending Balance:				
Additional Reserves Needed:				
Debt Balance(s)				
Opening Balance:				
Annual Outflow (Payments):				
Ending Balance:				

Fiscal Management Review

How often are the water system revenues and expenses reviewed? By whom and how are they reviewed?

If the water system revenues were insufficient to meet expenses, what steps is the PWS using to rectify the situation including reserving funds for anticipated capital improvements and other reserve purposes such as emergencies and debt expenses?

What fiscal controls are in place to ensure that monies are collected and spent appropriately, and the financial needs of the system are met? Who is responsible for collecting water bill/fees from customers?

How many customer accounts were unpaid or delinquent during the year? How are these unpaid or delinquent accounts resolved?

SECTION 4. UNACCOUNTED FOR WATER LOSS INFORMATION

"Unaccounted for Water Loss" means water that the small community water system supplies to its distribution system, but never reaches its consumers. Types of unaccounted for water loss can be leaks, main breaks, flushing, tank cleaning, etc. The vast majority of water systems have unaccounted for water loss. It should be noted that unaccounted for water for the purpose of this exercise encompasses both Real Water Loss such as leaks, main breaks, etc. and PWS approved, but Unbilled Water Loss such as water main flushing, treatment backwashing or make up water, firefighting, etc.

Determination of PWS Unaccounted for Water Loss (UWL)

Do you have Unaccounted for Water Loss? YES _____ NO _____(zero water loss is rare to non-existent)

If No, How do you know? _____

If yes, What is the total annual amount of unaccounted for water loss for your PWS? (use either Option A or Option B below to determine this amount)	

***Option A**: PWS that meters both supply production and distribution consumption*

Use the table below to organize your meter reading data and complete the calculation to determine the amount of unaccounted for water loss.

Month	Total Production (Gallons)	Total Distribution (Gallons)	Unaccounted for Water Loss (Real Water Loss & Unbilled Water Loss) (Gallons)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Annual Totals			
Calculation	Total Production (minus) -	Total Distribution (equals) =	Unaccounted For Water Loss

***Option B:** PWS that do not include distribution meters must estimate the total amount of unaccounted for water loss*

Unaccounted for water loss can be estimated by calculating the total amount of water produced (and/or purchased) and examining water usage trends and applying established estimates on the amount of water used. This option is only for systems that do not utilize distribution meters. Per RCSA Section 19-13-B102(n) public water systems are required to conduct weekly meter readings for each source of supply. Weekly water produced should be tabulated from the meter readings and compiled in order to determine long-term trends. According to record retention requirements, PWS should maintain these records for ten years.

Populate the total amount of water produced (as calculated by adding up all of your source meters weekly readings) for each week of the year in the table below.

Weekly Readings	Year:		Year:		Year:	
Week Number	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ # of Days = Gallons/Day)	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ # of Days – Gallons/Day)	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ # of Days – Gallons/Day)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
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37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
Annual Totals						

Use the tabulated production readings above to determine trends and/or look for anomalies such as exceedingly high water usage, etc. Also, by calculating the estimated daily and/or customer usage, you will be able to more easily see trends. To estimate daily usage, divide the total gallons produced each week by the number of days between readings. To estimate customer usage, take the total gallons produced each week and divide by the number of customers or by the number of service connections. Try to identify the cause for anomalies such as annual flushing programs, water main breaks or service line leaks, etc. Then estimate the amount of unaccounted for water by comparing the anomalies to the typical water production averages. Space is available for 3 years' worth of water production readings in order to compare trends which are more easily seen over a longer period of time.

Causes for Unaccounted for Water Loss

Check "Yes" or "No" for each category and provide an adequate description for each item checked "Yes"

Yes	No	Category	Description (Size and Number of Occurrences per Year)	Estimated/Actual Volume
		Water main breaks (Real)		
		Distribution system leaks (Real)		
		Water main flushing (Unbilled)		
		Treatment system backwash/process (Unbilled)		
		Fire Protection (Unbilled)		
		Distribution Bleeder (Unbilled)		
		Other:		
			Total Estimated Unaccounted for Water Loss Volume (gallons):	
			Volume Water Produced in Year (gallons):	
			Estimated Percentage of UWL = UWL ÷ Total Volume Produced in Year:	

Measures Being Taken to Reduce the Amount of Unaccounted for Water Loss

Check "Yes" or "No" for each category and provide an adequate description for each item checked "Yes"

Yes	No	Category	How Often	Description
		Conduct Leak Detection Survey		
		Water Main Replacement Program		
		Conduct Routine Water Audits		
		Meter Replacement/ Calibration Program		
		Trend Meter Reading Data		
		Midnight - 4 am Meter Read		
		Other:		

SECTION 5. Annual Update Record Complete as necessary each year when plan is updated.

Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			

Appendix G - Public Act 21-121 Adopted from House Bill 6666 Re: Capacity Implementation Plan Requirement

Public Act 21-121 adopted from House Bill 6666
Sec. 85. (NEW) (*Effective October 1, 2021*) (a) As used in this section:

(1) "Consumer" has the same meaning as provided in section 25-32a of the general statutes;

(2) "Owner" means the person or entity that owns or controls the small community water system; and

(3) "Small community water system" has the same meaning as provided in section 19a-37e of the general statutes.

(b) Not later than January 1, 2025, each owner of a small community water system shall complete a small community water system capacity implementation plan on a form prescribed by the Department of Public Health demonstrating that such owner has the managerial, technical and financial capacity to continue to own and operate such system and shall implement such plan. Following the completion of the initial small community water system capacity implementation plan, each small community water system shall update such small community water system capacity implementation plan annually and make such small community water system capacity implementation plan available to the department upon request. Such plan shall include:

(1) A description of the small community water system, including the number of consumers and persons served and sources of drinking water;

(2) Ownership and management information, including the type of ownership structure and the current names, addresses and telephone numbers of the owners, certified operators and emergency contact persons for the small community water system;

(3) Service area maps;

(4) Facilities maps, including the location of and specific information regarding sources, storage facilities, treatment facilities, pressure zones, booster pumps, hydrants, distribution lines, valves and sampling points;

(5) A description of such system's cross-connection control program;

(6) A description of such system's source water protection program;

(7) A copy of such system's emergency response plan required pursuant to section 19-13-B102 of the regulations of Connecticut state agencies;

(8) A capital improvement program, including the schedule that identifies all capital improvements scheduled for a five-year planning period and capital improvements or major projects scheduled for a twenty-year planning period;

(9) Water production and consumption information;

(10) Information regarding public water systems that are nearby, including the distance from the small community water system and type of public water system, if any. Such information shall be based on the coordinated water system plan approved by the Commissioner of Public Health pursuant to section 25-33h of the general statutes for the water utility coordinating committee in which such small community water system is located; and

(11) Financial capacity information, including:
(A) An evaluation of the small community water system's fiscal and assessment management plan prepared pursuant to section 19a-37e of the general statutes;
(B) A summary of the income and expenses for the five years preceding the date of submission of the plan;
(C) A five-year balanced operation budget;
(D) Water rate structure and fees charged, including information regarding how such rates and fees are updated and whether such rates and fees are sufficient to maintain cash flow stability and to fund the capital improvement program, as well as any emergency improvements; and
(E) An evaluation that has considered the affordability of water rates.

(c) On or before July 1, 2025, and annually thereafter, the small community water system shall provide a summary of its small community water system capacity plan in the small community water system's consumer confidence report required by section 19-13-B102 of the regulations of Connecticut state agencies.

(d) The provisions of this section shall not apply to a small community water system that is (1) regulated by the Public Utilities Regulatory Authority, (2) subject to the requirements set forth in section 25-32d of the general statutes, or (3) a state agency.

(e) The provisions of this section shall be deemed to relate to the purity and adequacy of water supplies for the purposes of the imposition of a penalty under section 25-32e of the general statutes.

f) The commissioner may adopt regulations, in accordance with the provisions of chapter 54 of the general statutes, to carry out the provisions of this section.

Appendix H - CyberSecurity Self-Assessment Checklist for PWS

STATE of CONNECTICUT
DEPARTMENT of PUBLIC HEALTH
Cybersecurity Self-Assessment Checklist for PWS

The CT DPH Drinking Water Section is providing this Cybersecurity Self-Assessment Checklist for PWS use to assist in the preparation of the cybersecurity prevention and response component of the required Emergency Response Plans (ERPs) pursuant to the American Water Infrastructure Act of 2018 and State regulations. Public Water Systems should strive to answer "Yes" to all questions below.

Public Water System Information			
PWS ID:		**PWS Name:**	

Does your Public Water System:		**YES or NO**
1.	Keep an inventory of control system devices and ensure this equipment is not exposed to networks outside the utility? • *Never allow any machine on the control network to "talk" directly to a machine on the business network or on the Internet.*	
2.	Segregate networks and apply firewalls? • *Classify IT assets, data, and personnel into specific groups, and restrict access to these groups. Be alert for unusual behavior in Operational Technology (OT) and IT systems, such as unexpected reboots of digital controllers and other OT hardware and software, and delays or disruptions in communication with field equipment or other OT devices. Enhance logging to investigate anomalous activity – including collecting more logs and increasing storage capacity and retention time.*	
3.	Use secure remote access methods? • *A secure method, like a virtual private network, should be used if remote access is required.*	
4.	Establish roles to control access to different networks and log system users? • *Role-based controls will grant or deny access to network resources based on job functions.*	
5.	Backup Data? • *Implement and test data backup procedures on both IT and OT networks and ensure copies of backups are isolated (stored offline) from the network.*	
6.	Require strong passwords and password management practices? • *Use strong passwords and have different passwords for different accounts.*	
7.	Stay aware of vulnerabilities and implement patches and updates when needed? • *Monitor for and apply IT system patches and updates. CISA maintains a catalog of Known Exploited Vulnerabilities that utilities are encouraged to review to identify vulnerable systems.*	
8.	Implement multi-factor authentication? • *After changing passwords, make implementing multi-factor authentication (MFA) a priority. MFA significantly reduces your risk from almost all opportunistic attempts to gain entry into your systems.*	
9.	Enforce policies for the security of mobile devices? • *Limit the use of mobile devices on your networks and ensure devices are password protected.*	

10.	Have an employee cybersecurity training program? • *All employees should receive regular cybersecurity training.*	
11.	Involve utility executives in cybersecurity? • *Organizational leaders are often unaware of cybersecurity threats and needs.*	
12.	Incident Response Plans? • *Create, maintain, and exercise a cyber incident response and continuity of operations plans.*	
13.	Monitor for network intrusions? • *Be capable of detecting a compromise quickly and executing an incident response plan. Malicious cyber actors are known to target organizations on weekends and holidays when there are gaps in organizational cybersecurity. Identify surge support for responding to an incident.*	
14.	Manual Operations? • *Have a resilience plan that addresses how to operate your system if you lose access to or control of critical OT or IT systems – including the ability to sustain manual operations for extended periods.*	

NOTE: For more information about each of these questions, see WaterISAC *15 Cybersecurity Fundamentals for Water and Wastewater Utilities* at https://www.waterisac.org/fundamentals.