STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

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Drinking Water Section

September 30, 2019

Ms. Jeri Weiss
USEPA Region 1 – New England
5 Post Office Square
Mail Code OEP06-2
Boston, MA 02109-3912

SUBJECT: 2019 Capacity Development Strategy Status Report

Dear Ms. Weiss:

The Connecticut Department of Public Health's Drinking Water Section is pleased to submit the attached 2019 Capacity Development Strategy Status Report to USEPA Region 1. The report identifies capacity development accomplishments conducted during the period of July 1st, 2018 to June 30th, 2019, for new and existing public water systems in accordance with DPH's Capacity Development Strategy.

Capacity development initiatives are interwoven with all functional units within the Drinking Water Section to ensure the proper oversight and long term sustainability of the State's public water systems and thereby protecting public health. The initiatives discussed in the subject report are dynamic and as the needs of Connecticut's public water systems change, the Capacity Development Strategy will adapt to meet their needs to ensure the proper operation of the State's water systems.

If you have any questions, please contact me at (860) 509-7333 or at Lori.Mathieu@ct.gov.

Sincerely,

Lori D. Mathieu

Lori Mathieu
Public Health Section Chief
Drinking Water Section

c: Heather Aaron, MPH, LNHA – Deputy Commissioner, Department of Public Health
Andrea Traviglia, USEPA Region 1

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State of Connecticut

Department of Public Health Drinking Water Section

Capacity Development Strategy Status Report

For the Period of July 1st, 2018 – June 30th, 2019

September 27, 2019

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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, 2018 through June 30, 2019. 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.

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 are able to 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 PWS. 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 PWS 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 of its existing PWSs to address issues through proactive 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. Many small systems lack the TMF expertise that promotes long term sustainability. Systems that lack capacity in one or more of the TMF areas are identified through a prioritization process. The DPH encourages and helps to facilitate the consolidation of small systems when feasible. The Strategy is dynamic in nature and as new challenges arise for CT's PWSs, DPH works hard across all functional units to address them through partnerships, training and education, and/or the passage of new statutes such as fiscal and asset management plans for small CWS. During SFY19, DPH worked to enhance capacity not only for small PWS, but has recognized and refocused activities on large PWS as well including communication and proactive measures regarding emerging contaminants like perfluoroalkyl substances (PFAS), legionella, cyanotoxins, manganese, and sodium/chloride. This report will outline all of the major activities undertaken by the DPH Drinking Water Section (DWS) to

implement the Strategy in order to create and maintain sustainable PWSs that can reliably serve safe and adequate water to the public now and into the future.

Introduction

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

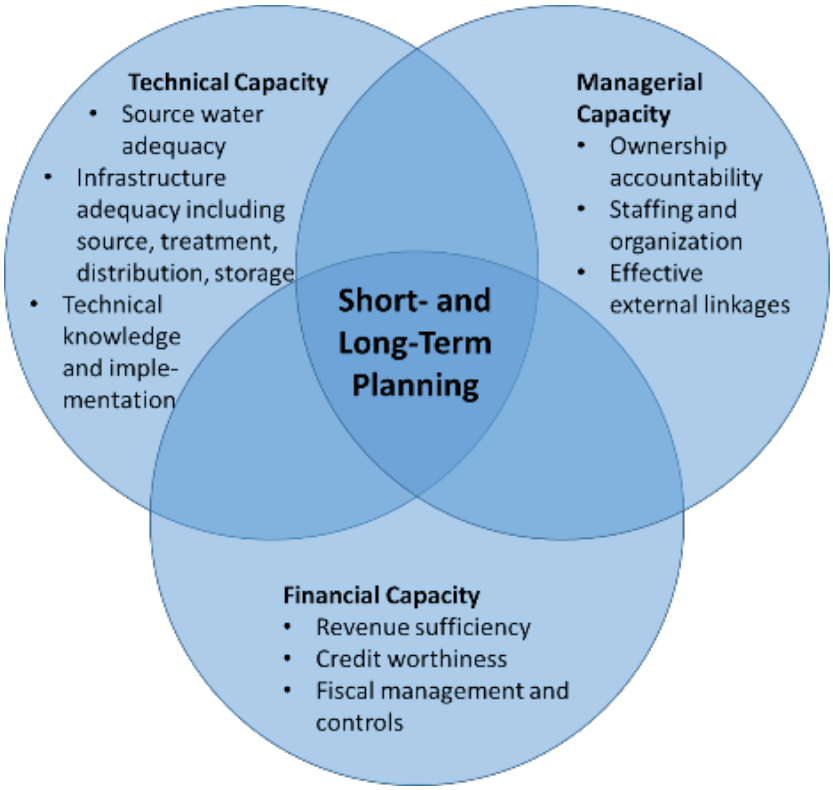
Community Water Systems (CWS): Water systems that provide service to 25 or more residents at least 60 days per year. Systems can range widely in size from large municipal or privately owned systems to small rural neighborhoods that share a common water supply.

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 508 community water systems (CWSs) serve residential populations and 523 non-transient non-community (NTNC) systems and 1,416 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 shown here:



Technical capacity refers to a PWSs 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 PWSs 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 PWSs 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, 2018 – June 30th, 2019, 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 of 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 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 community water systems. 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. 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. During SFY19, DPH conducted a series of meetings with local health stakeholders to revise the PWS Screening Form to incorporate 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. As is shown in the pie chart below, the majority of new PWS are 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.

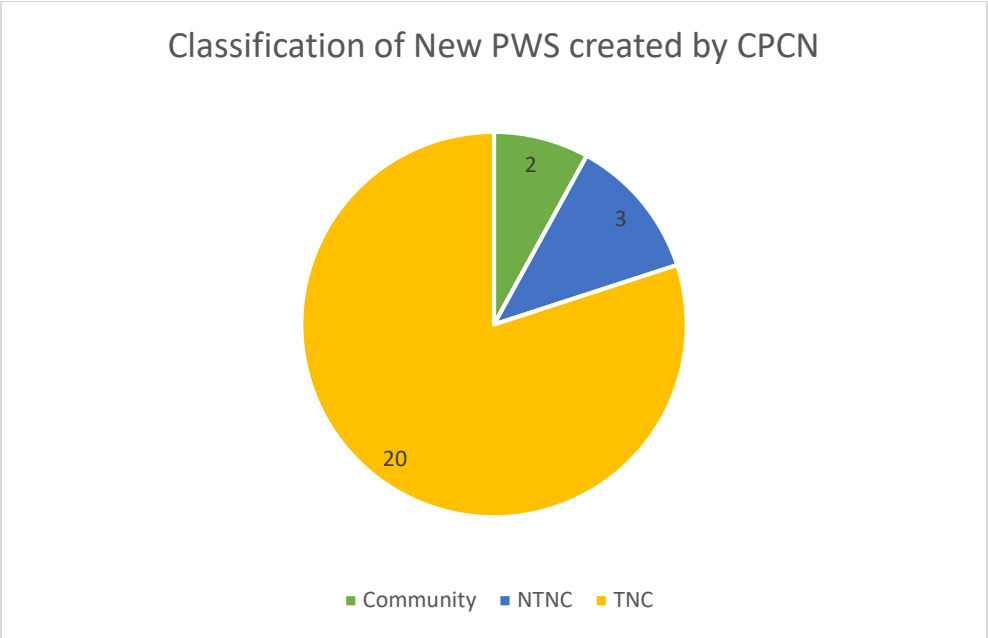


Table 1

List of New PWS - July 1st, 2016 – June 30th, 2019

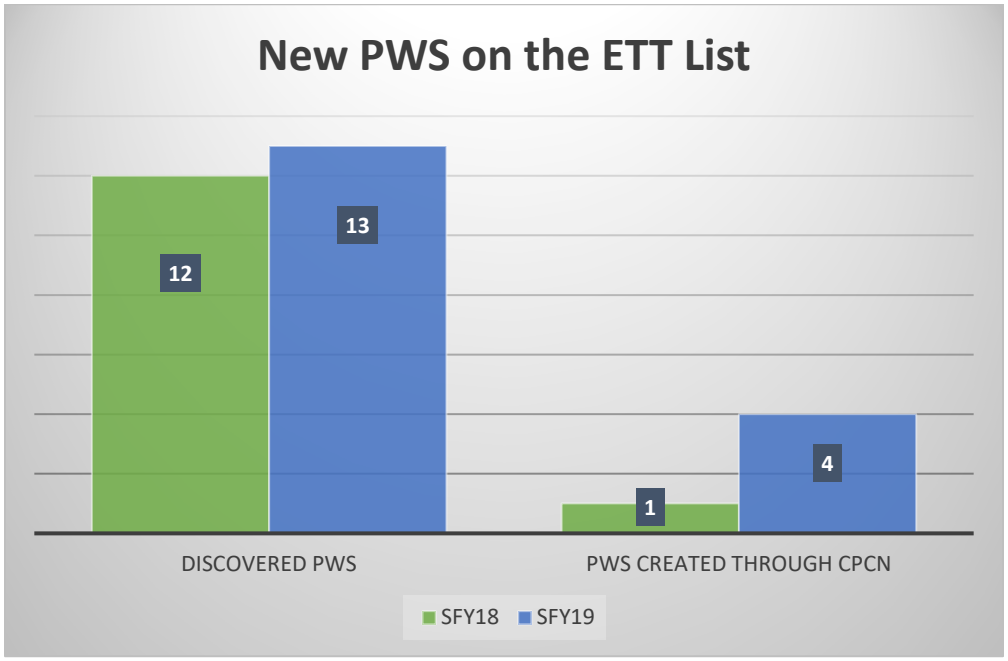
PWS ID	PWS Name	PWS Class	ETT Score
CT0960221	AQUARION WATER CO OF CT-LAUREL RIDGE	C	
CT0419241	GREEN VILLAGE	C	
CT0429213	201 WEST HIGH STREET	NTNC	
CT0750123	REYNOLDS SUBARU	NTNC	5
CT1341373	TTM TECHNOLOGIES, INC - BUILDING 6	NTNC	
CT0869154	NASKART LLC	NC	1
CT0820284	144 MERIDEN RD	NC	
CT0480234	LUANN'S BAKERY AND CAFE	NC	
CT1210194	FOX FARM BREWERY	NC	
CT0699224	OU812, LLC - 165 HARTFORD TURNPIKE	NC	
CT0581044	EAST COAST AUTO SALES & SERVICE	NC	
CT0286014	752 MIDDLETOWN ROAD - COLCHESTER	NC	
CT0550374	AJS STEAK & PIZZA RESTAURANT	NC	
CT0309154	HEARTSTONE FARM & WINERY, LLC	NC	
CT1301154	WHEELS STORE NO. 14	NC	
CT1419094	ROUTE 193 LLC RESTAURANT	NC	
CT1149054	BESTWAY CONVENIENCE STORE - PRESTON	NC	
CT0121094	BOLTON COSMETIC & FAMILY DENTISTRY	NC	
CT0631234	STONEHURST AT HAMPTON VALLEY – INN	NC	
CT0631244	STONEHURST AT HAMPTON VALLEY – BARN	NC	5
CT1021114	DOLLAR GENERAL - NORTH STONINGTON	NC	
CT0672064	THE WORSHIP CENTER	NC	7
CT1099254	SANGERMANO PROPERTIES, LLC	NC	
CT1609164	DOLLAR GENERAL WILLINGTON	NC	
CT1189524	RIDGEFIELD LITTLE LEAGUE – JENSEN FIELD	NC	

PWS ID	PWS Name	PWS Class	ETT Score
CT0787091	CTWC - UCONN DEPOT DIV.	C	
CT0787101	CTWC - UCONN HUNTING LODGE DIV.	C	
CT0787111	CTWC - UCONN SOUTH EAGLEVILLE DIV.	C	
CT0787121	CTWC - UCONN WILLOWBROOK DIV.	C	
CT0699231	DEER CROSSING APARTMENTS	C	2
CT0869143	RIVERVIEW FARM SEABIRD ENTERPRISES	NTNC	5
CT0690622	EASTCONN	NTNC	5
CT1100112	VALLEY W.S. NORTH MOUNTAIN PUMP STATION	NTNC	
CT0240262	THE OWL'S NEST DAY SCHOOL	NTNC	4
CT0261103	WHELEN ENGINEERING CO - AVIATION	NTNC	
CT1341343	TTM PRINTED CIRCUIT - BUILDING 5	NTNC	1
CT1341344	TTM PRINTED CIRCUIT - BUILDING 3A ANNEX	NTNC	
CT0869163	1495 ROUTE 85	NTNC	4
CT1341363	TTM PRINTED CIRCUIT - BUILDING 4	NTNC	
CT1021103	QUINLAN ENTERPRISE BUILDING	NTNC	
CT0429223	NELSON'S COURT	NTNC	2
CT1021113	JONATHAN EDWARDS WINERY	NTNC	
CT0481033	BOLLES MOTORS INC	NTNC	
CT0609123	BETHEL 1570 LLC	NTNC	
CT0189993	31 OLD ROUTE SEVEN	NTNC	3
CT0105083	NEWPORT ACADEMY - NORTH CAMPUS	NTNC	
CT0529054	CAROL'S LUNCHBOX	NC	
CT1059284	ALL PRO AUTOMOTIVE	NC	
CT1059283	JIA MEI LLC	NC	
CT1069014	PASTA VITA	NC	
CT0869144	ORIENTAL BAR & GRILL	NC	
CT1059294	THE VILLAGE SHOPS	NC	1
CT1059304	ADVANCED FAMILY DENTISTRY OF OLD LYME	NC	1
CT0419224	GOODSPEED REALTY LLC	NC	
CT0787084	RED BARN CREAMERY	NC	1
CT1059314	HIGH HOPES THERAPEUTIC RIDING INC	NC	
CT1059324	64-68 LYME STREET	NC	
CT1699104	TAYLOR BROOKE WINERY	NC	
CT1435134	WRIGHTS BARN	NC	
CT0727104	MAUGLE SIERRA VINEYARDS LLC	NC	
CT0419234	40 WILLIAM F. PALMER RD	NC	
CT1429234	ROCKVILLE FISH AND GAME - CLUBHOUSE	NC	
CT1463014	ROCKVILLE FISH AND GAME - TRAP AND SKEET	NC	
CT1378104	CLYDE'S CIDER MILL	NC	
CT0614114	66 KILLINGWORTH ROAD HIGGANUM	NC	1
CT0859134	GREAT HOLLOW LAKE	NC	
CT1085064	AGGIE'S PARK	NC	
CT1130204	ARRIGONI WINERY, LLC	NC	
CT1259143	SHARON COUNTRY CLUB	NC	

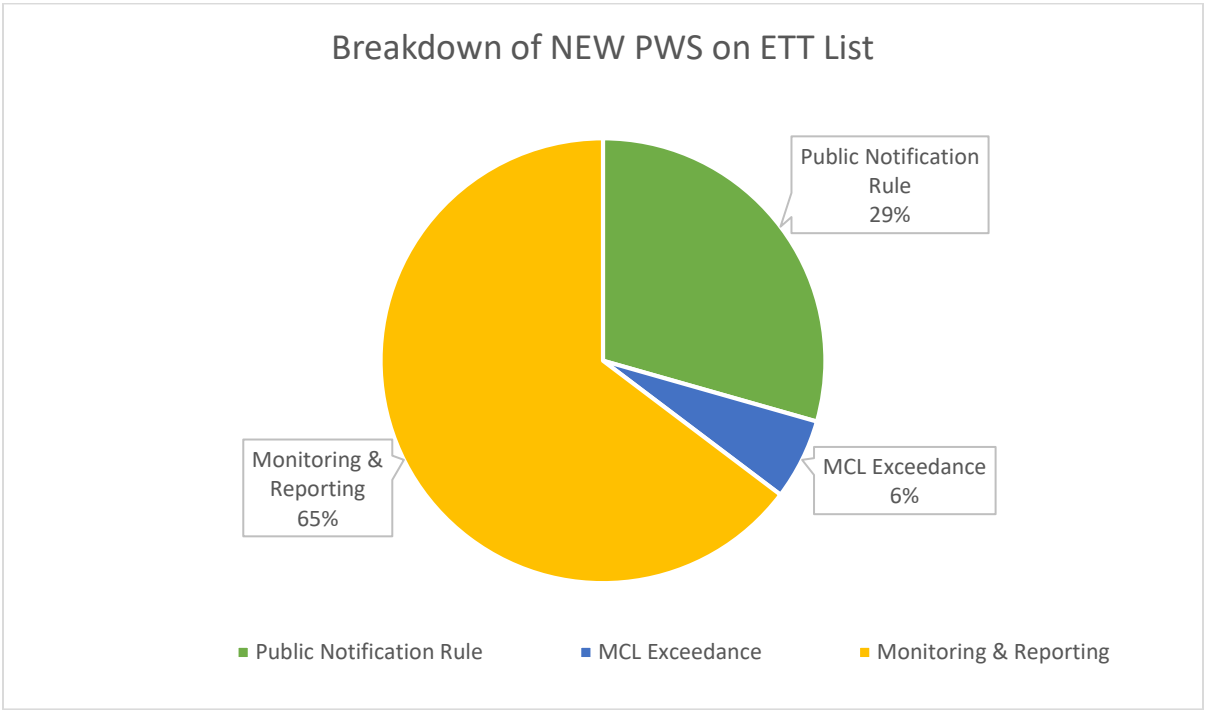
PWS ID	PWS Name	PWS Class	ETT Score
CT0631254	HAMPTON GENERAL STORE	NC	
CT0699234	AMERICAN SPORTS CENTER	NC	
CT0869164	CAMP OAKDALE MAINTENANCE BUILDING	NC	
CT0290144	NORBROOK FARM BREWERY	NC	
CT0745144	COZY HILLS CAMPGROUND WELL #4	NC	
CT1231034	THE VINEYARD AT HILLYLAND	NC	
CT0709244	176 RTE 81	NC	

Twenty-five (25) 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 fifty-one (51) PWS were newly discovered systems which were existing and, in instances, had been operating for years. 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 change in ownership that created new consecutive PWS (as in the case of the four new community PWS on the list). Each of the 51 discovered systems received the required 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 is prioritized for enforcement actions under the EPA's Enforcement Response Policy. None of the new PWS either newly discovered or created through the CPCN process scored 11 or more points on the ETT list. As is indicated on Table 1, 4 of these new PWS (16%) 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 thirteen of the newly discovered PWS (25.5%) on the ETT list with scores ranging from 1-5 points. This speaks to the efforts of the Strategy with respect to the TMF capacity review and PWS education throughout the CPCN process as compared to the newly discovered PWS which do not include these processes. The numbers of new PWS on the ETT list with any points has increased slightly from last year up from 4.5% to 16% for new PWS created through the CPCN and from 20% to 25.5% for newly discovered PWS as shown below. This trend can be the result of many factors but reinforces the previous conclusions that more work needs to be done to work with new PWS to start them off on the right foot. Some ideas could be to utilize federal technical assistance contractors to meet with new systems within the first month of activation to explain PWS responsibilities in more detail or use DWS staff to conduct follow up phone calls shortly after a PWS responsibility package has been sent to a 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. More work should be done to communicate clearly the responsibilities for new PWS (especially for non-community systems) that are discovered. The majority of new systems are Transient Non-Community PWS which are not required to have a certified operator. It is proven that a good certified operator can be a valuable asset to a PWS.



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 SFY19 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 enforcement. A comprehensive review of a PWS's performance is evaluated when isolated compliance problems are discovered and also during routine sanitary surveys. 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.

This year, the functional units were challenged by a variety of existing and emerging contaminants such as perfluoroalykl substances (PFAS), legionella, cyanotoxins, manganese sodium/chloride and lead. The DPH's first and foremost priority as a Primacy Agency is maintaining compliance with established maximum contaminant levels (MCLs) which is in and of itself a large responsibility. However, with the spotlight on public health effects from contaminants such as PFAS, legionella, manganese and cyanotoxins, the DPH has had much work to do this year to educate ourselves and our PWS, developing strategies to respond to such issues.

In addition to the four focus areas, DWS has worked to increase partnerships and training opportunities to build increased capacity for PWS in the traditionally less regulated area of financial and managerial capacity. Although the DPH contract with Resources for Communities and People (RCAP) to provide direct asset management technical assistance ended in SFY18, the DWS continued to refer PWS to RCAP for assistance as part of their national contract with EPA. DPH also partnered with another federal technical assistance provider, Environmental Finance Center Network (EFCN) to develop a 4-part webinar series for PWS to help prepare small community PWS in meeting the new fiscal and asset management plan requirement which is posted on the DWS website. Partnerships were continued as DWS participated in work on several

STRATEGY FOCUS AREAS - SFY19 ACCOMPLISHMENTS

Source Protection and Planning

- Maintained High Quality Source List
- 31 Watershed Surveys encompassing 210 drinking water watersheds completed
- Developed statewide GIS layers for Class 1 and 2 Water Company Lands for DWS use for ensuring continued protection of source recharge areas
- Water Supply Plans (WSP) –4 new updated were submitted, 3 reviewed
- WSP update to require enhanced vulnerability assessment of PFAS risk areas within public drinking water source areas and PFAS testing for all new sources of supply.
- Water Utility Coordinating Committee- Coordinated Plans Approved and Initiated Transition to Implementation Phase
- 10 CPCN Projects Reviewed and Approved
- 2 PWS Takeovers Initiated – 5 In process

SDWA Compliance and Enforcement

- 639 Sanitary Surveys Conducted; Approx. 100 PWS Infrastructure Projects Reviewed
- 435, 193 WQ sample results processed and reviewed for compliance
- CWS Capacity Questionnaire updated and work continued on real-time CAT module
- New Capacity Development for Small Systems Webpage launched
- Implementation of Asset & Fiscal Management Plan Statute for small CWS
- Enforcement Unit issued 1 Notice of Violation with Civil Penalties, 34 Consent Orders/Agreements, & 30 Administrative Orders
- AWOP Distribution Optimization training focus on Disinfection By-Products

Operator Certification

- 64 Operator CEU Course Approvals for a sum total of 313.5 training contact hours
- Violations issued to 7 CWS and 2 NTNC for no assigned operator
- Maintained a list of over 2,000 certified operators that are available and trained

Drinking Water State Revolving Fund

- DWSRF Required Capacity Review
- 6 New Emergency Generators funded for small systems – 64 program total
- 20 new loans for 27 infrastructure projects totaling more than $37.4M (8 loans to small systems)
- 10 project applications received from new borrowers

Partnerships

- Env. Finance Center Network 4-part webinar series on small system sustainability concepts
- Continued referrals to RCAP for direct PWS asset management and technical assistance
- CIRCA - Vulnerability and Emergency Plans finalized
- WUCC and State Water Plan as a form of partnerships transition to plan implementation,
- New partnerships created with emerging contaminants: Chloride stakeholder mtg, PFAS task force
- 6 new Emergency Interconnections & approx. 20-25 PWS tie into 2 new Regional Interconnections

major plans this reporting period which each highlight PWS capacity in its own way. Some of these initiatives include:

- DPH concluded its work with UCONN's Connecticut Institute for Resiliency and Climate Adaptation (CIRCA) on finalizing the Comprehensive Drinking Water Vulnerability Assessment and Resiliency Plan. The plan includes various assessments and recommendations for implementation and emergency preparedness templates for use by PWS and DPH.
- State Water Plan: the plan was adopted by the Connecticut General Assembly on June 5th, 2019 and will continue to move forward to implement the action items laid out in the plan which discusses how to best balance the needs of public water supply, economic development, recreation, and ecological health.
- WUCC: moved toward implementation phase of the published coordinated plans which will see tangible impacts to small systems with capacity deficiencies.

Finally, much time was spent on partnerships for significant regionalization projects which are being undertaken to create viable water systems now and into the future. A total of 6 emergency interconnections which would provide redundancy for approximately 41,000 people; and inactivation of approximately 20-25 PWS through interconnections in Tylerville and Durham Center to solve historic contaminations issues are in or have finished construction during this reporting period. These interconnections were complex and costly problems to address over many years, however through DWS's technical support and leadership with our partners, these projects moved forward toward completion.

Identification of PWS in Need of Capacity Development Assistance

DPH uses all of 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. The CAT data has been an integral part of developing capacity through the WUCC process and keeping the data updated and relevant is key. The sanitary survey capacity questionnaire was revised during SFY19 and is included as Appendix C. Work conducted this year included the initial creation of a module to be included in the DWS Compliance Assistance Database that will update PWS CAT scores real time to reflect when new violations are identified or if old violations are resolved, for example.

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 during 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 SFY19, steps were taken to better document these reviews and ensure consistency between the asset management plans used to meet the DWSRF requirements and the fiscal and asset plans that will be required under Public Act 18-168 for small community PWS. These types of efforts are expected to continue.

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.

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 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 the primary mechanisms to develop capacity for Non-Community (NTNC and TNC) PWS.

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 D 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 the most recent accomplishment – passage of a new state statute requiring fiscal and asset management plans for

small community water systems. Much of the work conducted in SFY19 centered around implementation of the new statute, Public Act 18-168, with the first due date for the prioritized fiscal and asset assessment of any operational hydropneumatic storage tanks at small community PWS on May 2, 2019. Also, DWS began preparation of a fiscal and asset management plan template to help guide PWS in meeting the January 1, 2021 plan due date, as well as partnering with Federal technical assistance contractor, the Environmental Finance Center Network (EFCN), to provide a 4-part webinar series to educate small community PWS on the new requirements and other sustainability concepts. Additionally, the DWSRF program created the new Small Loan Program for Non- Construction Projects to streamline state and federal requirements and make it easier for small systems to obtain DWSRF funding. This program is for the purchase and installation of equipment, or the replacement of equipment, installed within an existing facility that does not involve the construction, alteration or repair (including painting or decorating) of that facility and costs under $100,000.

The approach for developing capacity for larger CWS is still heavy on technical assistance, but always with an eye toward holistic long-term solutions that improve or maintain TMF capacity. WebEOC use continued and was tested during the year with large CWS to improve communication during emergency events. Continued participation in the EPA sponsored Area Wide Optimization Program (AWOP) helps build DWS staff technical expertise, in order to better assist large CWS with regulatory compliance issues. This year AWOP training centered around disinfection by-products and data integrity concepts which have been used during all subpart H sanitary surveys this year. The DWSRF continued to expand the variety of applicants and/or projects and during SFY19, received the program's first application for lead service line replacements. Passage of Public Act PA 19-194 now entitles all PWS that are eligible for DWSRF to apply for state bond (grant) funding for use in addressing public health issues which supports the DWS's regionalization and small system consolidation efforts as part of the project. Finally, a large amount of effort has been put forth with emerging contaminants for our PWS. DWS created internal workgroups for Perfluoroalykl Substances (PFAS) and Legionella, and is actively working with utilities on the causes and mitigation of harmful algal blooms (HABs)/cyanotoxins, and impacts from road salts (sodium and chloride). DWS also participates heavily in Agency (legionella) and InterAgency (PFAS) task forces created to bring together stakeholders to investigate, educate and implement strategies to reduce public health risk to these contaminants of concern mostly without established MCLs.

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 web link: https://portal.ct.gov/DPH/Drinking-Water/WUCC/Water-Utility-Coordinating-Committee. These documents were developed and published in SFY18. The WUCCs are transitioning into implementation currently. Following a webcast that will detail this transition, a statewide workgroup is planned that will discuss areas that have clusters of small community and non-community systems and attempt to minimize the development of new small systems as well as attempt to develop ways to incentivize the interconnection of these systems to viable public water systems. There will be significant challenges as currently the extension of water mains and/or interconnections is often prohibitively expensive. These efforts are expected to continue for multiple years due to the significant potential cost implications and new legislative support may be necessary/beneficial.

Asset and Fiscal 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 is included as Appendix E. This law will also require the DPH commissioner to publish a schedule of civil penalties imposed against water companies under the safe drinking water statutes, instead of adopting them in regulations as under current law. These requirements will assist the DPH in its work to ensure the purity and adequacy of water supplies and in imposing a penalty for violating statutory or regulatory requirements regarding public water supply purity, adequacy, or testing. The new asset management requirement for small CWSs will help raise awareness and highlight areas where DWS can continue its partnerships with state and federal contractors such as RCAP, the EFCN, and CT Section American Water Works Association (Ct AWWA).

The prioritized fiscal and asset hydropneumatic storage tank assessment for all small CWS was conducted during SFY19. A 2-page assessment form was developed by DPH staff (included as Appendix F) for PWS owners and operators to use to accurately capture tank asset and fiscal information. Out of the original inventory of 208 PWS with active hydropneumatic storage tanks, a key finding was that a significant percentage (40.4%) of these PWS had already replaced or eliminated the hydropneumatic tanks with bladder type storage tanks or constant pressure booster pump systems, proactively. To date, assessments for 162 hydropneumatic storage tanks in service at 124 PWS have been received. Some of the key findings from the tank assessment are summarized below:

Number of Hydro Tanks Assessed: **162 Tanks** at 124 PWS

Ave. Age of Hydro Tanks Currently in Service: **32.4 Years** (66 tanks age unknown- no records)

Oldest Hydro Tank Still In Service: **69 Years Old** (11 tanks >50 years)

# of Tanks Inspected in the past 5 years: **29 (17.9%)**

# of Tanks that have been repaired since installation: **9 (5.6%)**

% of PWS that eliminated Hydro Tank Proactively: **40.4%**

% of PWS that bill separately for water: **49.2%**

% of PWS that have reserve funds to pay for tank repair/replacement: **37.9%**

# of PWS interested in DWSRF funding for tank replacement: **36**

Conclusions drawn from the data received show that the majority of the hydropneumatic storage tanks assessed are beyond and in some cases, well beyond, their useful service life. Sixty-six of the 162 tanks assessed (40.7%) were of unknown tank age, showing poor record keeping and/or likely no service history. Nearly all of the PWS indicated that they do not regularly inspect their tanks and only 9 of the tanks had ever been repaired in some fashion since installation, so it is fair to conclude that these tanks are not being maintained in accordance with the manufacturer's recommendations. Some of the good news is that over 40% of PWS (84 PWS out of original 208) have already eliminated their aging hydropneumatic tanks proactively, which in many cases was prompted by the tank explosion in 2015 and the resulting passage of Public Act 18-168. Although not verified, 49.2% of these small community PWS indicated that they bill separately for water which may indicate some sort of rate structure with 37.9% having a reserve fund capable of covering the cost of a tank repair or replacement. Also, a list of 36 PWS interested in learning about DWSRF funding options for hydro tank replacement projects was gathered and passed to the DWSRF unit for follow up, as applicable. Overall, this fiscal and asset assessment of a single asset (hydropneumatic storage tanks) got PWS to consider the state of their asset and the cost needed to repair/replace the asset if it was demonstrated to be beyond the useful service life, but there is still concern that some PWS do not plan on addressing their aging infrastructure. This data will be used further to conduct individual technical assistance to educate PWS on options to replace this aging asset. DWS is hopeful that this requirement as well as the overall fiscal and asset management plan will be successful in creating viability in small PWS by bringing fiscal and asset management to the forefront.

Environmental Finance Center Network Webinar Series on Small System Sustainability: During SFY19, DWS partnered with federal technical assistance contractor, Environmental Finance Center Network (EFCN), a university-based organization that helps PWSs with issues such as asset management and rate setting to water loss detection and conservation, through training and technical assistance. The four-part webinar series was designed to review common problems facing small community water systems, educate and

provide solutions to prepare small community PWS in meeting the new statutory requirements for preparing fiscal and asset management plans including unaccounted for water and the prioritized hydropneumatic tank assessment. The four-part webinar series included the following webinars:

1. Asset Management For Small Systems: Improving Your System and Meeting New Regulations - Broadcast On: Monday, December 17, 2018, 4:00PM-5:00PM EST

2. Water System Revenue and Funding Programs - Broadcast On: Tuesday, January 8, 2019, 4:00PM-5:00PM EST

3. Regionalization as Consideration for Small System Sustainability - Broadcast On: Tuesday, January 29, 2019, 4:00PM-5:00PM EST

4. Managing Your Water System Under Pressure: New Requirements for Hydropneumatic Tanks and Water Loss - Broadcast On: Wednesday, February 13, 2019, 3:00PM-4:00PM EST

The webinar series was well attended with participation from 89 small utility owners, operators and other registrants. The webinars were recorded and are available on EFCN's website, the DWS Capacity Development for Small Water Systems website and were also posted as courses available on CtTRAIN, the state online training provider system.

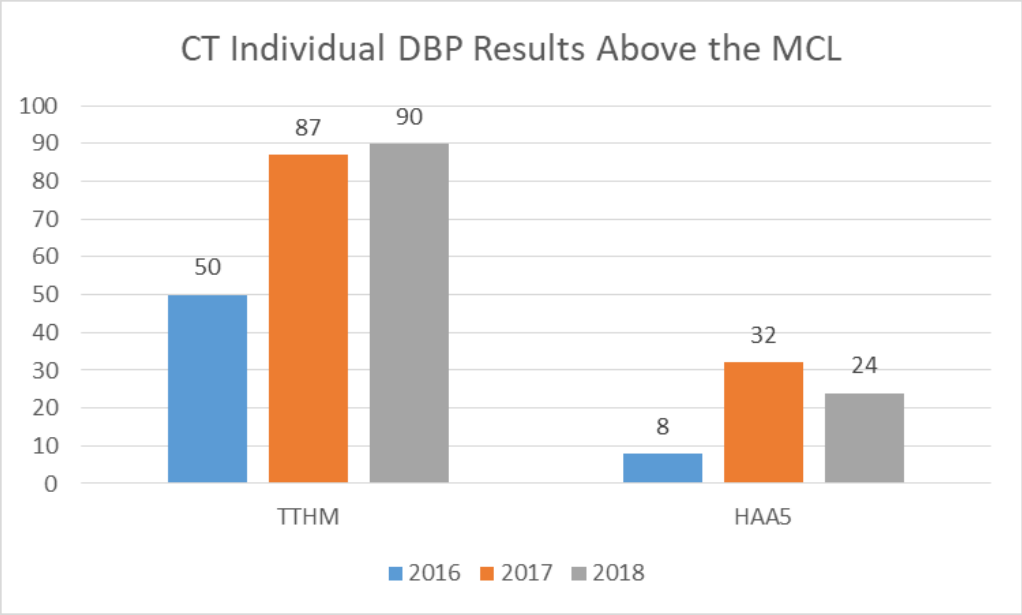
DWSRF Small Loan Program: Similar to the DWSRF Emergency Power Generator Program (EPGP), DWS created a Small Loan Program during SFY 19, which streamlines the procurement procedures for non-construction projects costing less than $100,000 in an effort to make it easier for small PWSs with qualifying projects to proceed through the DWSRF process. This program is only available for the purchase and installation of equipment, or the replacement of equipment, installed within an existing facility that does not involve the construction, alteration or repair (including painting or decorating) of that facility. Typical projects that would be eligible to receive a loan under this program would include:

- Replacement of pumps or motors
- Installation or replacement of diaphragm pressure tanks
- Installation of water treatment equipment or modifications to existing water treatment systems for regulatory compliance (filters, chemical feed systems, etc.)
- Minor incidental plumbing and electrical work (including SCADA) required only to accommodate the installed or replaced equipment

This program was 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.

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 the SFY19, DWS staff participated in two distribution system optimization workshops as part of the Region 3 AWOP group aimed at reducing DBPs. This knowledge will be

passed on from DWS to large CWS in CT in order to help the CWS achieve and maintain compliance with the Stage 2 Disinfection By-Product Rule. As was reported during the last fiscal year. DWS saw a significant increase in the number of DBP results above the corresponding maximum contaminant level (MCL). Analysis of the SFY19 data shows that PWS still continue to struggle with this issue but that the tides may be starting to turn. The large increase in TTHM exceedances from 2016 to 2017 has appeared to stabilize and only 3 more detections above the MCL were observed in 2018. For HAA5, the number of individual samples above the MCL decreased by 25%. 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. Further, DWS is working with the CT Section AWWA Water Treatment Plant Operations and Maintenance Committee to prepare a half day seminar for PWS on this topic during the Winter of 2020. DWS expects this trend to continue and will focus efforts on trending and early identification of potential problems.



DWSRF Program: Last year, the DWSRF Program scheduled meetings with 5 non-borrowing municipalities serving greater than 10,000 people to discuss the financial benefits of DWSRF financing and details regarding program requirements that may differ than their current financing programs. As a result of the meetings, DWSRF applications were received from 3 of these communities. In addition, New London WPCA submitted the state's first lead service line replacement project application during SFY19. The project would remove and replace an estimated 1,500 lead service lines installed prior to 1930 over a 5-year period, estimated at a cost of $20.5M. The program 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 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.

State Grant Funding: The $20 million of available State grant funding under the Public Water System Improvement Program (Public Act 14-98), originally enacted in May of 2014, was allocated by the State Bond Commission in May 2017 for two specific Public Water Systems (PWS), Groton Utilities (GU) and Norwich Public Utilities (NPU) that commenced during the last two fiscal years. Both projects include a total of 6 regional emergency interconnections. This program, which is codified in CGS 22a-483f, provides grants-in-aid, in the form of loan principal forgiveness, to certain eligible PWSs 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 the supplemental grants-in-aid under CGS 22a-483f includes the same eligibility criteria for DWSRF loans with exceptions, which are explicitly contained within CGS 22a-483f. Public Act 19-194 was passed during the last legislative session in 2019 and amended this statute to allow public service companies, as defined in Section 16-1 of the CGS, to be eligible for these grants-in- aid, effective October 1, 2019. Now, all PWS that are eligible for DWSRF funding are also eligible for these grants-in-aid for applicable projects. DWS is pursuing the further expansion and additional allotment of funding to assist public water systems to address emerging issues and potentially other issues such as lead service line removal. More to come in the future as the DWS continues to move this program forward. State grant funding being made available under this program to support the DWS's regionalization and small system consolidation efforts while also offering subsidized financing for other related drinking water infrastructure upgrades to maintain viable water systems.

Emerging Contaminants Work Highlights: PFAS - In September of 2018, the DPH issued DWS Circular Letter #2018-20 to PWS that prepare water supply plans pursuant to CGS Section 25-32d to update their evaluation of source water protection measures to include an inventory of land use activities to include potential Perfluoroalkyl Substances (PFAS) generators within areas that are tributary to their sources of public drinking water. In order to develop technical capacity for PWS to handle this emerging contaminant, DPH required that the source vulnerability assessments to be conducted and submitted by March 31, 2019. The circular letter and assessment form is included as Appendix G. Approximately 50% of the PWS completed the assessment on time. The DWS continues to receive assessments and provide technical assistance to the PWS that are delinquent. The DWS is also requiring PFAS testing at all new sources of public drinking water prior to receiving approval for use. Sixteen new public drinking water sources, both for new and existing public water systems have been sampled for PFAS. One new source returned results exceeding the state's drinking water action level of 70 parts per trillion for the sum of 5 PFAS. The water from that well is only being used for sanitation and a public water main is currently being extended to the area. At the end of this reporting period the DPH participated with the DEEP to present on these up and coming issues and concern for PFAS contamination to Governor's Office staff which lead to the creation of a Task Force and development of an Action Plan.

Legionella – The Drinking Water Section (DWS) collaborated with programs within DPH to form a 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 programs also partnered on broadcasting legionella webinars with focus on keeping healthcare facilities safe and the CMS requirement for a water management plan. Also we have promoted the need for open and continual communications between the public water system and the healthcare facilities it serves to assure measures are taking on both side to minimize legionella growth and fend off the proliferation of this public health threat.

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.

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 at schools and daycares were shared with these entities. To date, 88 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. Fifty (50) of these orders have been closed out as of the time this report was written.

Sodium and Chloride **-** On June 11, 2019, The Connecticut Environmental Health Association (CEHA), in partnership with DPH hosted the first Sodium/Chloride Stakeholder Workgroup meeting. The stakeholders present were from over 20 different organizations including from state and local government, academia and the private sector – represented by a total of 34 members. This workgroup plans to share regular updates amongst each other and discuss concerns with sodium and chloride contamination, as well as share actions each organization is taking to address the over use of road salts during winter storm events.

Fig. 2 Sodium and Chloride Stakeholders Meeting on 6/11/19 at the Katherine A Kelley State Public Health Laboratory

Cyanotoxins **-** The DWS continues to work with the Putnam Water Pollution Control Authority (WPCA) and partners to address a risk of cyanotoxins in drinking water. Roseland Lake, an upstream waterbody that contributes raw surface water to Putnam WPCA's treatment plant has had significant water quality impairments including cyanobacterial blooms due to many years of accumulating nutrients. Some cyanobacteria can create cyanotoxins. Agricultural properties in the watershed are considered to be a significant contributor. Currently, DWS, Connecticut DEEP, the Town of Putnam, a certified lake manager, the Town of Woodstock (where the lake is located), the local health department, EPA Region 1, Connecticut NRCS, the local conservation district, Woodstock property owners and other partners are all collaborating to improve the water quality of the lake and assess and mitigate risks to drinking water quality from this emerging contaminant.

Fig. 3 Active Cyanobacterial bloom in Roseland Lake which is a upland waterbody that contributes raw surface water to Putnam WPCA's treatment plant

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 tenants of the existing system strategy, however as you can see in the actions taken this past fiscal year, DWS is adaptable and shifts its resources accordingly to develop a consistent and proactive approach to emerging issues within the water industry that can affect a PWS's TMF capacity.

The DWS will be working in the coming year to prepare a revised Strategy to provide to the EPA Region 1 for review and comment during the next fiscal year. The revised strategy will incorporate changes as a result of the American Water Infrastructure Act (AWIA) of 2018 such as the consideration of asset management planning in the strategy.

Conclusion

As is evidenced by all of the capacity development activities discussed above, the DWS continued to implement the tenants of the Strategy to meet the needs of Connecticut's PWSs during SFY 19. It is clearly shown that when new PWS are created using the focus areas within the Strategy combined with the laws in place, new PWS are much more likely to succeed. Additional work is needed to educate newly discovered PWS that DPH begins to regulate in order to establish and maintain acceptable levels of TMF capacity from the beginning. For existing systems, it is demonstrated that capacity development is intrinsic to all of the DWS functional units, and routine interactions with PWS is the primary mechanism used to develop and maintain TMF capacity. This is extremely important with all the new regulations PWS are facing as part of the SDWA and a variety of emerging contaminants. With diminishing federal funding available to states to implement the SDWA, DWS must be able to incorporate capacity development into every interaction with the PWS to maximize use of our time. 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 mitigate problematic matters. An example of this that came to fruition during SFY19 was implementation of Public Act PA 18-168 that will require all small CWS to have an asset and fiscal management plan with a prioritized assessment of any hydropneumatic tanks, if applicable. DWS worked with its federally funded external partners, EFCN to provide training and technical assistance to small CWS to comply with the new requirement in the form of a 4-part webinar series. Capacity needs and possible solutions for small CWS ownership and operations for the future has also become a focus of the WUCCs which will transition to the implementation of the Coordinated Plans this coming year. The Drinking Water Section (DWS) effectively regulated and protected public health at five hundred and eight (508) CWSs, five hundred and twenty-three (523) NTNC systems, and one thousand four hundred and sixteen (1,416) 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.

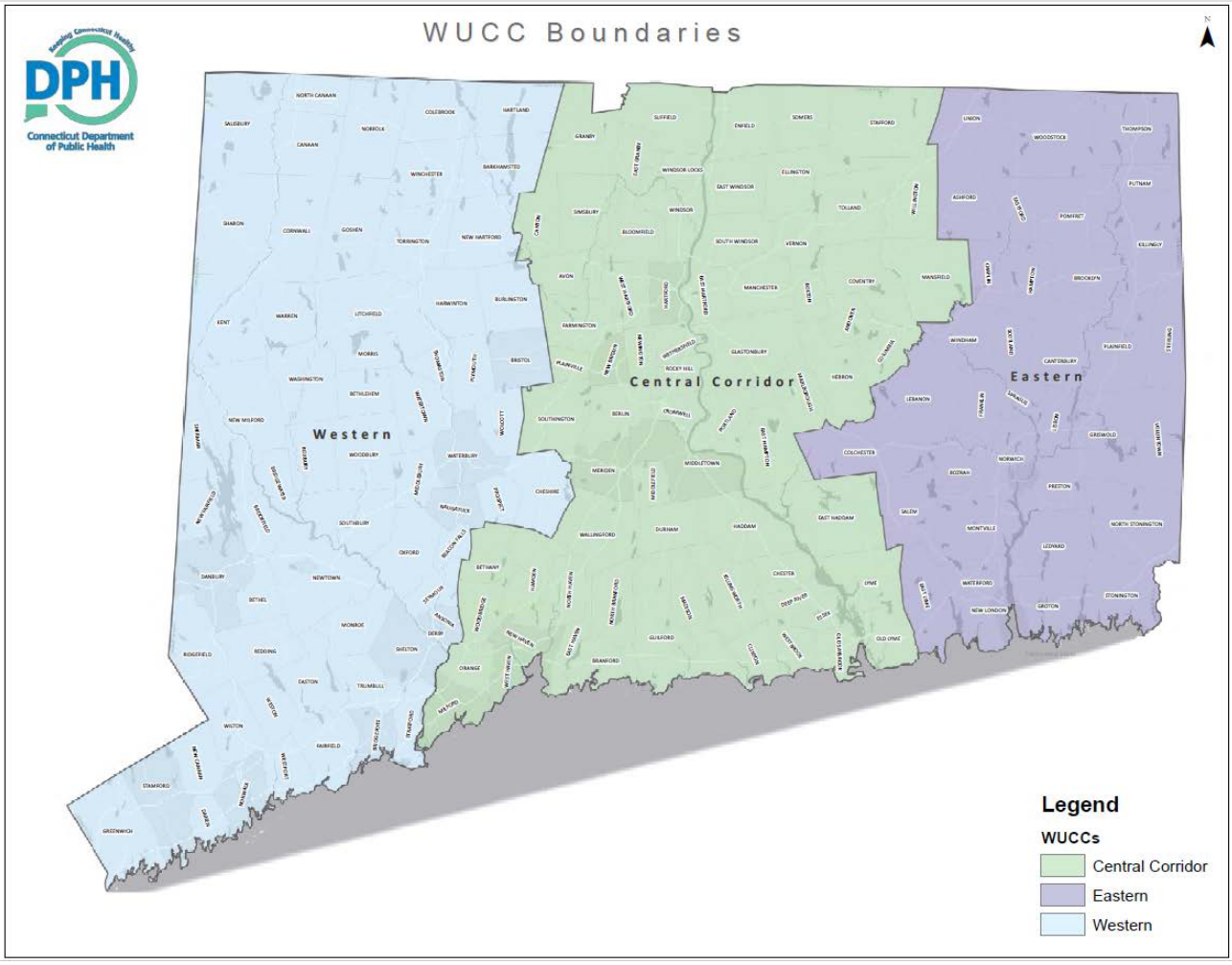
5. *Did the State make any modifications to the existing system strategy? If so, describe.*

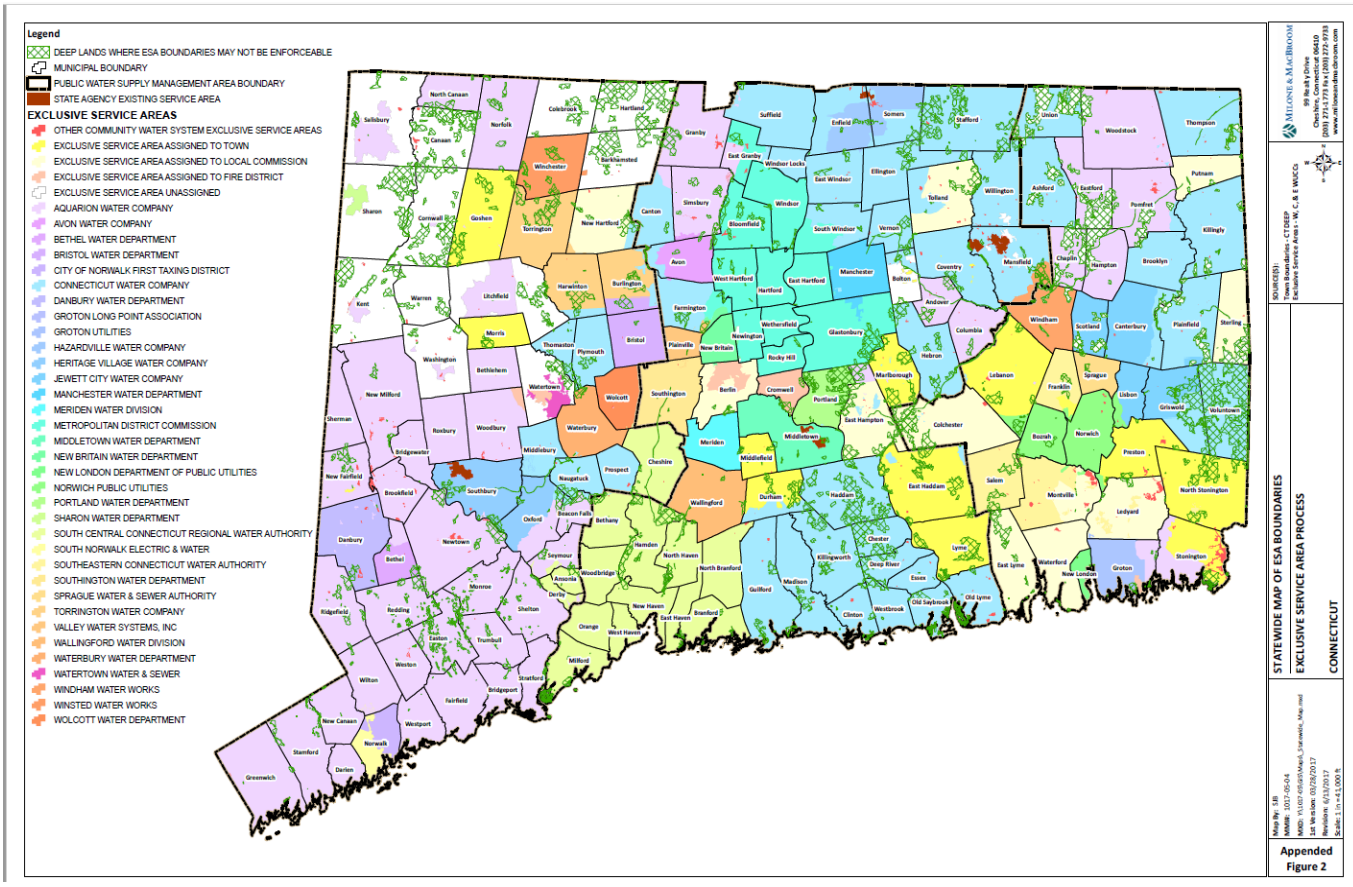
Explanation: A response to this question may include program modification, wording, or approach. States should identify the reasons for the modification(s), how these modifications were identified, and how they will affect the implementation and future goals of the program.

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

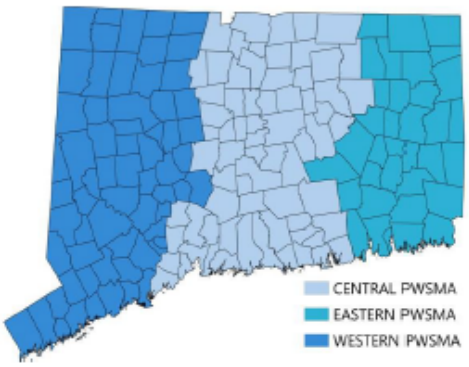

WUCC Boundaries
Connecticut Department of Public Health
Western
Central Corridor
Eastern
Legend
WUCCs
Central Corridor
Eastern
Western


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:\607.05\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.

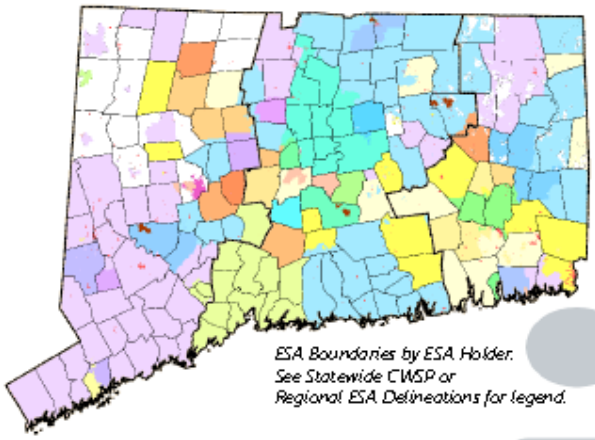
Each WUCC prepared its CWSP and submitted the plan to DPH in May (Western and Eastern regions) and June (Central region) of 2018. The CWSPs are required to be updated as necessary or at least every 10 years.

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.

November 19, 2018



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

State of Connecticut Department of Public Health
Drinking Water Section
Community Public Water System 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. 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 an onsite sanitary survey of your PWS this year.

PWS Name: _____ **PWS ID: CT** _____

Managerial Capacity Questions

1. 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: _____ **Phone:** _____
Title: _____ **Emergency Phone:** _____
Address: _____ **Email:** _____
City, State, Zip: _____

2. Does your PWS have metered service connections? ☐ Yes ☐ No ☐ Partially
3. Does your PWS conduct leak detection surveys? ☐ Yes ☐ No **Frequency** _____
4. Has your system had instances where demand exceeded your supply (e.g. low pressure or no pressure)? ☐ Yes ☐ No
5. Has your well(s) pumping rate decreased in the last 5 years? ☐ Yes ☐ No ☐ N/A
6. Has your system demand increased in the last 5 years? ☐ Yes ☐ No ☐ Unknown
7. Is there a process to address water emergencies 24 hours a day for the PWS? ☐ Yes ☐ No ☐ N/A
8. Does your PWS own the land at least 75' around each well? ☐ Yes ☐ No ☐ N/A
   - Do you have a map that shows this?

Financial Capacity Questions

1. Does your PWS calculate the annual costs of operating and maintaining your Water System? ☐ Yes ☐ No
2. Does your PWS have a Fiscal and Asset Management Plan? ☐ Yes ☐ No
3. Do you bill customers for water? If yes, please explain the method for billing customers. ☐ Yes ☐ No _____
4. Does the customer billing cover all annual costs including depreciation, future expenses and infrastructure replacement ? ☐ Yes ☐ No
5. Does your PWS have rules, regulations and/or by-laws that cover billing and address delinquent payments? ☐ Yes ☐ No
6. 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? ☐ Yes ☐ No

Please use this area for any elaboration or comments that you have:

_____

* Your responses to this survey are part of this public water system's regulatory requirements, specifically RCSA Section 19-13-B102(a), (p), (r) and (s) (https://eregulations.ct.gov/eRegsPortal/) and PA18-168

Reset Form

Appendix D - DWS Three Storm Strategy Report

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:

Phone: (860) 509-7333 • Fax: (860) 509-7359 • VP: (860) 899-1611
410 Capitol Avenue, MS#51WAT, P.O. Box 340308
Hartford, Connecticut 06134-0308
www.ct.gov/dph
Affirmative Action/Equal Opportunity Employer

- 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***

9. **Assistance with Asset & Fiscal Management Plan development** - work with a contractor and EPA TA providers and RCAP to provide for asset management planning, emergency planning and fiscal planning; ***RCAP Contract initiated in 2014, ending Fall 2018,*** develop continuing training program Fall/Winter 2018/2019

10. **Streamlined Small System DWSRF Loan Process** - develop a subsidized small system DWSRF loan program, ***in progress***

11. **Regional Vulnerability Review and Plan Development** - work to develop regional vulnerability assessments and resiliency plans though utilization of $600,000 in HUD funding via DOH; ***Planning initiated in 2016, workshop held April 2018, Plan to be finalized Fall 2018***

12. **WUCC Process** - move forward the WUCC process in order to assure large system involvement with small CPWS issues and vulnerabilities, and analyze satellite management or interconnection potential; ***Planning process initiated statewide June 2016, plans to be finalized July 2018, implement plan***

13. **Asset and Fiscal Plan Development** - move forward with Asset and fiscal Management legislation in order to require plan development; ***legislation drafted in 2013, moving forward during 2018 legislative session House Bill 5151***

14. **Takeover Process 16-262n & 16-46** - Streamline Takeover Process & Rework Receiverships Process - work with PURA to redevelop the CPCN and Takeover processes and legislation if needed; ***initiated Docket in 2015, Docket 15-11-33 reviewed process and finalized report 2018***

15. **Certified Operators Ad Hoc Committee** – work with committee to review issues and concerns with small systems and develop new initiatives including review of ownership and financial responsibility; ***First meeting Winter 2018, nest meeting Summer 2018, develop an Action Plan***

16. **HydroTank Assessment** – Assessment requirement following tank explosion in 2015; ***part of House Bill 5151, hope to pass May 2018 legislative session***

This document will be updated on an ongoing basis as projects move forward and issues evolve over time.

Last updated April 2018

LJM

Appendix E - House Bill 5163 Asset and Fiscal Management Plan Requirement

Substitute House Bill No. 5163
Public Act No. 18-168 Sec. 61. (NEW) (*Effective October 1, 2018*)
(a) As used in this section:
(1) "Small community water system" means a water company that regularly serves at least twenty-five, but not more than one thousand, year-round residents;
(2) "Unaccounted for water loss" means water that the small community water system supplies to its distribution system, but that never reaches its consumers;
(3) "Useful life" means a manufacturer's recommended life or the estimated lifespan of a water company's capital asset, taking into consideration the service history and the condition of such capital asset at the time a fiscal and asset management plan is prepared; and
(4) "Water company" has the same meaning as provided in section 25-32a of the general statutes.

(b) Each small community water system shall prepare a fiscal and asset management plan for all of the capital assets that comprise such system. The fiscal and asset management plan shall include, but need not be limited to, (1) a list of all capital assets of the small community water system, (2) the useful life of such capital assets, which shall be based on the current condition of such capital assets, (3) the maintenance and service history of such capital assets, (4) the manufacturer's recommendation regarding such capital assets, and (5) the small community water system's plan for the reconditioning, refurbishment or replacement of such capital assets. Such fiscal and asset management plan shall also provide information regarding whether the small community water system has any unaccounted for water loss, the amount of such unaccounted for water loss, what is causing such unaccounted for water loss and the measures the small community water system is taking to reduce such unaccounted for water loss. Each small community water system shall make the assessment of its hydropneumatic pressure tanks its initial priority in its preparation of the fiscal and asset management plan.

(c) Each small community water system shall complete the fiscal and asset management plan for all of its capital assets not later than January 1, 2021. Following the completion of the initial fiscal and asset management plan, each small community water system shall update such fiscal and asset management plan annually and make such fiscal and asset management plan available to the department upon request.

(d) Each small community water system shall complete, on a form developed by the Department of Public Health, the fiscal and asset management plan assessment review of its hydropneumatic pressure tanks not later than May 2, 2019.

(e) 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.
(f) 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, as amended by this act.

(g) The Commissioner of Public Health may adopt regulations, in accordance with the provisions of chapter 54 of the general statutes, to carry out the provisions of this section.

Appendix F - Hydropneumatic Tank Fiscal and Asset Assessment Form

STATE of CONNECTICUT DEPARTMENT of PUBLIC HEALTH

Drinking Water Section

Hydropneumatic Tank Fiscal and Asset Assessment Form

(Form Instructions)

Note: Please **download and save** this form to your computer prior to filling out any information.

Pursuant to Public Act No. 18-168 §61, please complete this form (if you are a small community Public Water System (PWS) that serves at most 1000 year-round residents) and return it to this office by May 2, 2019.

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

	Hydropneumatic Tank Information and Asset Assessment	Hydropneumatic Tank(s)			
		Tank#		Tank#	
1.1	Date Assessment was Completed:				
1.2	Tank Volume (in gallons):				
1.3	Water System Facility ID				
1.4	Tank Name				
1.5	Year Tank Constructed				
1.6	Current Age of Tank (subtract Year Tank Constructed from Current year): If year tank constructed is unknown enter 10 years.				
1.7	What is the useful service lifespan of the tank as specified by the manufacturer? If there are no manufacturer specifications, enter 10 years or provide the source of your answer here: If warranty from manufacturer is >10 years, enter that and attach the proof of manufacturer warranty to this form.				
1.8	If the tank has not exceeded its useful service lifespan, what is its adjusted remaining useful service life (in years)?				
1.9	If the tank has exceeded the useful service lifespan, how many years have passed since the exceedance (subtract your answer to 1.7 from your answer to 1.6)?	0		0	
1.10	Select the current condition of the tank (e.g. Good (G), Needs maintenance (NM) or Needs replacement (NR)).				
		Yes	**No**	**Yes**	**No**
2.1	Has the tank been inspected within the past 5 years? If yes, indicate the name, credentials and contact information of the Inspector here:	☐	☐	☐	☐
2.2	Has the exterior of tank been maintained within the past 5 years? If yes, indicate the name and contact information of the person who did the maintenance here:	☐	☐	☐	☐
2.3	Has the interior of the tank been maintained within the past 5 years? If yes, indicate the name and contact information of the person who did the maintenance here:	☐	☐	☐	☐
2.4	Were both exterior and interior of tank maintained to manufacturer's recommendation over the past 5 years?	☐	☐	☐	☐
2.5	Is the tank free of exterior damage and / or corrosion?	☐	☐	☐	☐
2.6	Is the tank free of interior damage and / or corrosion?	☐	☐	☐	☐
2.7	Was tank painted to prevent rust/corrosion in the past 5 years?	☐	☐	☐	☐
2.8	Has this tank always operated below the maximum operating pressure?	☐	☐	☐	☐
2.9	Does the tank have a working pressure relief valve?	☐	☐	☐	☐
2.10	Is the pressure relief valve set to open at the manufacturer's specified pressure?	☐	☐	☐	☐
2.11	Has the pressure relief valve been overhauled or replaced during the last 5 years?	☐	☐	☐	☐
2.12	Does the tank have a functioning pressure gauge?	☐	☐	☐	☐
2.13	Is the tank properly secured to the foundation or bulk-headed?	☐	☐	☐	☐
2.14	Are sight levels, hoses, and valves in good working condition?	☐	☐	☐	☐
2.15	Has the tank ever been repaired? If yes, indicate when and for what reason here:	☐	☐	☐	☐

Hydropneumatic Tank Fiscal Assessment		Hydropneumatic Tank(s)	
		Tank# ___	Tank #___
3.1	Estimated cost to rehabilitate this tank?		
3.2	Estimated cost to replace this tank with a new one?		
3.3	Estimated cost to install variable frequency drive (VFD) pumps and floor mounted bladder tanks (as an alternative to rehabilitating or replacing tank)?		
		Yes	**No**
3.4	Do you currently bill customers for water usage?	☐	☐
3.5	Beyond funds used to cover standard operation and maintenance costs, do you have a ***reserve fund*** (funds set aside) in place for rehabilitating and/or replacing all your assets including your tank(s)?	☐	☐
3.6	Will your reserve fund allocated for hydropneumatic tank(s) be enough to cover the cost of replacement of the tank(s) by the end of its remaining useful service life?	☐	☐
3.7	If you selected "**No**" to 3.5 or 3.6, are you willing to increase your customer billing rates and/or form consolidation partnerships to meet the tank and overall infrastructure improvement to meet your reserve funding needs?	☐	☐
3.8	Do you review the reserve funding needs of your assets, including the tanks, on an annual basis?	☐	☐
3.9	Have you evaluated the need for rehabilitation or replacement of the tank(s)?	☐	☐
3.10	If replacement or rehabilitation is needed could the tank(s) be eliminated with the installation* of variable frequency drive (VFD) pumps and bladder tanks as a more cost-effective option? *(If you answered yes to this question and if you are interested in DWSRF financing, visit* http://www.ct.gov/dph/dwsrf**)**	☐	☐
3.11	For VFD pumps and floor mounted bladder tanks installation did you or do you plan to apply to the DWSRF program for financing?	☐	☐
3.12	If you have chosen to eliminate the tank by installing VFD pumps and bladder tanks, what is your estimated date of VFD project commencement?		

Contact Information for the Person that Performed the Assessment					
Salutation:		**First Name:**		**Last Name:**	
Organization:			**Job Title:**		
Business Phone:		**Mobile Phone:**		**E-mail Address:**	

Certification

I certify that the information contained herein which is being submitted to the Connecticut Department of Public Health for a drinking water regulatory compliance purpose is complete and accurate and I understand that any false statement contained herein is punishable as a criminal offense under section 53a-157b of the Connecticut General Statutes.

Signature of PWS Owner/Legal Contact:_____ Date: _____

Printed Name of PWS Owner/ Legal Contact: _____

Phone Number:_____ E-mail Address: _____

NOTICE: Any false statement or statements made by you that you do not believe to be true and which is intended to mislead a public servant in the performance of his or her official function may be punishable by a fine or imprisonment, or both, in accordance with to Conn. Gen. Stat. § 53a-157b.

Important Notes:

Average useful service lifespan of a hydropneumatic tank is 10 years or as warranted by the manufacturer. If the age of tank (in 1.6 above) is 10 years or greater than that specified by the manufacturer, then the tank has reached or exceeded its useful service life. If you are considering replacement, we strongly recommend you consider VFDs as a possible alternative to replacement, if feasible.

*Any alternative configuration must be able to meet peak demands and separation distance requirements. Such changes and works of sanitary significance require review and approval by the DWS prior to construction, in accordance with RCSA Section 19-13 B102(d)2; A *general application* can be found on DWS website.

Please email completed form to dwdcompliance@ct.gov by clicking on the '**Submit**' button.

For questions see the *Form Instructions* or contact DWS at (860)-509-7333 Save Form Clear Form Submit

Appendix G - PFAS Circular Letter and Source Vulnerability Assessment Form

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Raul Pino, M.D., M.P.H.
Commissioner

Dannel P. Malloy
Governor

Nancy Wyman
Lt. Governor

Drinking Water Section

DWS Circular Letter #2018-20

To: Public Water Systems that prepare water supply plans pursuant to CT General Statutes Section 25-32d, Local Directors of Health

From: Lori J. Mathieu, Public Health Section Chief, Drinking Water Section

Date: September 27, 2018

Subject: Requirement to Update an Evaluation of Source Water Protection Measures and Request to Sample Drinking Water Sources for Perfluoroalkyl Substances (PFAS)

It has become evident that the Perfluoroalkyl Substances (PFAS) data submitted to the Environmental Protection Agency (EPA) for the Third Unregulated Contaminant Monitoring Rule (UCMR3) was not sufficient to evaluate the safety of CT's public drinking water relative to the State's Drinking Water Action Level (DWAL) of 70 parts per trillion for the sum of the concentrations of perfluorooctanoic acid (PFOA) + perfluorooctane sulfonate (PFOS) + perfluorohexane sulfonate (PFHxS) + perfluoroheptanoic acid (PFHpA) + perfluorononanoic acid (PFNA). Therefore, pursuant to Connecticut General Statutes section 25-32d(a) the Drinking Water Section (DWS) is requiring that all PWS that are required to produce a water supply plan update their evaluation of source water protection measures required under the Regulations of Connecticut State Agencies section 25-32d-3(i). DPH will work with the CT AWWA Source Water Protection Committee to develop a format for this evaluation.

As part of the evaluation, Public Water Systems are being asked to update the inventory of land use activities required under RCSA section 25-32d-3(i)(3) to include identification of potential PFAS generators within areas that are tributary to their sources of public drinking water. The Interstate Technology Regulatory Council (ITRC) has published a series of Fact sheets on PFAS including the History and Use of PFAS which contain reference material that may be useful to identify industries and activities to include in the inventory. This revision must be submitted to the DWS by March 31, 2019. Updates can be submitted electronically to DPH.SourceProtection@ct.gov .
If potential PFAS generators are identified in public drinking water supply watersheds, the DWS requests that these facilities are identified and prioritized per the evaluation conducted under 25-32(d)-3i for sanitary inspections pursuant to the RCSA section 19-13-B102(b). Inspection results should be included in the water company's annual watershed survey report beginning in the 2019 survey season (report due by March 1, 2020).

Phone: (860) 509-7333 • Fax: (860) 509-7359
Telecommunications Relay Service 7-1-1
410 Capitol Avenue, MS #12DWS, P.O. Box 340308
Hartford, Connecticut 06134-0308
www.ct.gov/dph
Affirmative Action/Equal Opportunity Employer

In addition, the DWS recommends that all PWS receiving this circular letter collect samples for PFAS analysis for all sources of public drinking water. While we recommend that all of your sources be sampled, you might choose to prioritize sample collection from your water supply sources that are highlighted as vulnerable per the above noted evaluation.

For public water systems that elect to sample their sources of public drinking water for PFAS, samples must be analyzed by a laboratory that is registered in CT and approved by the EPA to conduct EPA Method 537. The DPH Environmental Laboratory Certification Program has published a list of laboratories registered in CT. It is recommended that you have the laboratory report results for the six PFAS covered under UCMR3. (The five PFAS comprising the DWAL plus PFBS as PFBS is often on the leading edge of a PFAS plume.) The DWS requests that results above method detection limit for each of the analytes be reported using the Electronic Data Interchange with the analyte codes found in the following table:

Analyte	Acronym	Reporting Code
Perfluorobutanesulfonic Acid	PFBS	2801
Perfluorooctanesulfonic Acid	PFOS	2805
Perfluorooctanoic Acid	PFOA	2806
Perfluoroheptanoic Acid	PFHpA	2802
Perflorohexanesulfonic Acid	PFHxS	2803
Perfluoronoanoic Acid	PFNA	2804

If sample results exceed 50 percent of the CT Drinking Water Action Level of 70 parts per trillion, then the DWS requests to be notified and the Public Water System should collect confirmation samples. The DWS has prepared guidance and public notification templates if the DWAL is approached or exceeded.

The DWS is available to attend the next CT Section of the AWWA Source Protection Committee meeting to work on a mutually agreeable reporting format and answer any questions regarding this evaluation. If you have any questions regarding this Circular Letter, please contact Pat Bisacky at 860-509-7333 or via email at Patricia.Bisacky@ct.gov .

Cc: Yvonne Addo and Janet Brancifort, Deputy Commissioners, DPH
Ellen Blaschinski, Chief Operating Officer, DPH
Jane Downing, USEPA Region 1
Suzanne Blancaflor, Brian Toal and Ryan Tetreault, DPH Environmental Health Section
Robert Kaliszewski, Betsey Wingfield, Jan Czeczotka, and Shannon Pociu, Department of Energy and Environmental Protection, Remediation Division
John W. Betkoski, III, CTDEEP Public Utilities Regulatory Authority, Chairman Water Planning Council
Kurt Sampara, Chairman, CT Section AWWA Source Protection Committee

Source Water PFAS[1] Vulnerability Assessment Form

This form is intended to be used to assess and inventory land use activities that are of immediate concern to water quality, or have a significant potential to contaminate a public drinking water supply, for delineated source water protection areas, as required by section 25-32d-3(i)(3) of the Regulations of Connecticut State Agencies (RCSA).

SYSTEM: _____ AQUIFER/WATERSHED: _____

PWSID#: _____ SANITARY RADIUS: _____

LOCATION: _____ DATE FORM COMPLETED: _____

☐ NO POTENTIAL PFAS SOURCES IDENTIFIED FORM COMPLETED BY: _____

Potential Contaminant Source (insert additional rows as needed)	**Site Address**	**Description**	**Distance to Drinking Water Source**[2]	**Past History**
Tier 1 Risk	High risk potential; Sites that use AFFF firefighting foams; Landfills (all types); Industries that use PFAS[3] (metal plating, etching, textiles/leather/carpeting, paper and cardboard products, wire manufacturing, industrial cleaning products, surface coatings/paints/ varnishes/inks, plastics/resins/rubber, adhesives, electronics, semiconductors, photolithography, cosmetics/personal care).			
Military Base				
Airport				
Fire Training Area				
Landfill				
PFAS Industry[3]				
Tier 2 Risk	Moderate risk potential; Fire Departments that store AFFF firefighting foams; Wastewater discharges from car washes; Groundwater discharges from major septic systems permitted by DPH or DEEP; Water Pollution Control Facility (WPCF - public sewer system); Sites of significant fires where AFFF firefighting foams were applied (car crash, tanker truck roll-over, gasoline/diesel released to the ground, etc.); AFFF fire suppression systems (possible in large industrial buildings, oil terminals); Application or use of biosolids on agricultural fields.			
Fire Department				
Car Wash				
Major Septic System (>2,000 gal) or Institutional Septic				

Water Pollution Control Facilities (WPCFs)				
Historicfires				
AFFF Fire Suppression System				
Agricultural areas with biosolid application				
Undetermined Risk	The risk of PFAS contamination is undetermined. Land uses identified and listed below may require further investigation and information.			
COMMENTS:				
[1] Per- and Polyfluoroalkyl Substances				
[2] Distance to Drinking Water Source - Distance to closest reservoir, tributary, or wellhead				
[3] PFAS Industry - Refer to ITRC fact sheets for more information on known industries/manufacturers that may use PFAS				