STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Deidre S. Gifford, MD, MPH
Acting Commissioner

Ned Lamont
Governor

Susan Bysiewicz
Lt. Governor

Drinking Water Section

September 30, 2020

The Honorable Ned Lamont
Governor's Office
210 Capitol Avenue
Hartford, CT 06106

SUBJECT: 2020 Governor's Triennial Capacity Development Strategy Status Report

Dear Governor Lamont:

The Connecticut Department of Public Health's Drinking Water Section is pleased to submit the attached 2020 Triennial Governor's Capacity Development Strategy Status Report to USEPA Region 1. The report identifies technical, managerial and financial capacity development accomplishments conducted during the period of July 1st, 2017 to June 30th, 2020, 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. There are specific activities undertaken for each type of water system to best meet their unique needs. We are happy to note that even in the midst of the current public health pandemic, DPH has been able to continue working to meet the capacity needs of CT's public water systems and their customers and hope that the upcoming due date of January 1, 2021 for small CWS fiscal and asset management plans will be a big step forward for small CWS capacity.

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

Sincerely,

Heather Aaron, MPH, LNHA
Deputy Commissioner
Department of Public Health

c: Lori Mathieu, Branch Chief, DPH Environmental Health & Drinking Water Branch
Jeri Weiss and Andrea Traviglia, USEPA Region 1

State of Connecticut

Department of Public Health Drinking Water Section

Triennial Governor's Capacity Development Strategy Status Report

For the Period of July 1st, 2017 – June 30th, 2020

September 30, 2020

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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 summarizes capacity development activities during July 1, 2017 through June 30, 2020. A copy of this report is sent to the Governor's office and is also available to the public on the DPH Drinking Water Section (DWS) website. Further, the DPH Drinking Water Section prepares an annual report on capacity development activities each fiscal year which is submitted to EPA and also available on the 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 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 programmatic 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 the past three years of the reporting period, DPH worked diligently to continue progress on small PWS capacity, but also undertook initiatives for large PWS as well. This report will discuss the many activities conducted including; implementation of emergency power for CWS and fiscal and asset management plans for small CWS regulations, creation of the Private Public Partnership (P3), important partnerships with technical assistance contractors, move toward implementation phase

for the State Water Plan and WUCCs, utilization of the DWSRF in new ways, continued communication and proactive measures regarding emerging contaminants like perfluoroalkyl substances (PFAS), legionella, cyanotoxins, manganese, and sodium/chloride.

During the last quarter of SFY20, the state as well as the country was affected by the Covid-19 pandemic which had a great impact on the daily life of all including our regulated PWS community. The state is still working under Executive Orders from the Governor which has shut down some businesses that may also be regulated PWS or large PWS customers and navigating this new normal has created many challenges but has also presented new opportunities to work with PWS and other partners. 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.

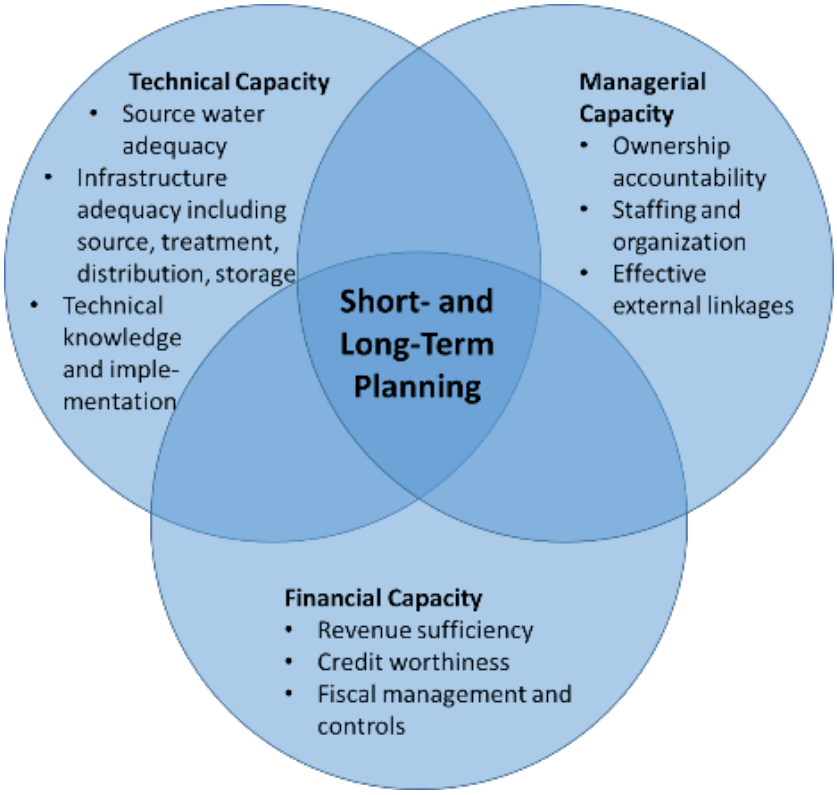
Transient Non-Community (TNC) Systems: Non-residential water systems that serve 25 or more people, but not necessarily the same people each day, for at least 60 days out of the year that include restaurants, parks, churches, campgrounds and gas stations.

Connecticut's relatively small geographic footprint contains a large number of public water systems (PWSs), as 503 community water systems (CWSs) serve residential populations and 515 non-transient non-community (NTNC) systems and 1,411 transient non-community (TNC) systems serve non-residential populations. The DPH, as a SDWA primacy agency, must implement a Capacity Development Strategy (Strategy) that addresses PWSs technical, managerial and financial (TMF) needs as described below and depicted on the following page:

Technical capacity refers to a 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, 2017 – June 30th, 2020, as well as provides information on efficacy 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.

The everyday DWS programmatic activities are briefly summarized below for each of the seven functional units. The daily work of each DWS staff member all contributes to building adequate TMF capacity for all PWS.

Safe Drinking Water Rule Implementation Unit: The DWS Safe Drinking Water Rule Implementation (SDWRI) Unit closely monitors regulatory compliance through the Safe Drinking Water Information System (SDWIS) database in conjunction with a Compliance Assistance Database (DWSCAD). The DWS electronically receives drinking water analytical results from public water systems and laboratories certified by the State of Connecticut. SDWIS analyzes water quality compliance data and reports the subsequent regulatory compliance violations that occur. The unit must provide oversight of SDWIS and ensure that (SDWIS) is kept in good working order, maintained to eliminate down times, updated as necessary to support the section's reporting mandates to the EPA. DWSCAD

provides support to all DWS Programs to implement drinking water rules, track engineering project reviews, creates PWS water quality monitoring and compliance schedules, water supply plan reviews, sanitary surveys, DWSRF projects, cross-connection control program requirements, certificate projects, and watershed surveys among other elements. The unit also maintains Laserfiche, an electronic document management system which is the primary repository for the Section's official documents and enables the Section to meet all State and Federal document retention requirements.

Technical Review and Field Assessment Unit and Capacity Development Units:
The DWS Technical Review & Field Assessment (TR&FA) Unit for Community and NTNC PWS, and the DWS Capacity Unit for TNC PWS, is charged with ensuring that PWS implement and comply with all applicable state and federal drinking water mandates. This includes ensuring that system capacity is maintained in a condition that affords and assures the safety and protection of public health. Routine sanitary surveys are conducted every three (3) years for CWS and every five (5) years for NTNC and TNC systems to assess the compliance and capacity of the state's PWSs. During a sanitary survey the required 8 elements are reviewed including the physical condition of the water system infrastructure, records of regulatory compliance, and information regarding the managerial and financial health of the system. Field engineers from the two units issue a formal sanitary survey report upon completion and provide technical assistance to system owners and operators during and after the survey. Face to face interaction is critical to building a strong working relationship between the regulatory agency and the regulated community and provides additional opportunity to observe the physical condition of water system components to understand how the water system operates and observe potential capacity weaknesses. The engineers of these units reviews and approves all PWS infrastructure projects (with the exception of PWS projects funded through the DWSRF program) and maintains/updates construction guidelines. The staffs of both units also are responsible for Water Supply Plan review and approval and provide general technical assistance, handle consumer complaints, conduct sampling when necessary and respond to any reported security and emergency incidents.

The Capacity Development Unit is further charged with ensuring implementation of the Capacity Development Strategy aimed at identifying and targeting efforts of the Section to create and maintain technical, managerial and financial capacity for PWS.

Enforcement Unit: The Enforcement Unit (the unit) is responsible for issuing violations of state and federal drinking water regulations related to failure to monitor or report water quality test results. The unit is responsible for preparing and issuing all formal enforcement actions (i.e., Notice of Violation with Civil Penalty, Consent Orders and Administrative Orders); entering formal enforcement compliance requirements into the DWS database; and tracking compliance with specific requirements. Any follow-up that is required as a result of requests for Administrative hearings or referrals to the Office of Attorney General for court action are also handled by this program. This program provides quarterly updates to the EPA on systems that have been identified as priority systems for enforcement by the EPA Enforcement Targeting Tool (ETT) and works closely with this federal agency on all enforcement activities.

Drinking Water State Revolving Fund Unit: The Drinking Water State Revolving Fund (DWSRF) Unit assists community and non-profit, non-community PWSs in financing drinking water infrastructure improvement projects such as upgrades and renovations to water storage tanks, water treatment

facilities, pump stations and water mains. Funding is provided as long-term, low-interest loans that can be repaid in terms of up to twenty (20) years with interest rates as low as 2%. All PWS that apply for DWSRF funding must demonstrate adequate TFM 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 capacity issues that are identified must either be corrected before a PWS is qualified to receive a loan or the project should include a plan to address the technical deficiency as part of the project.

Source Assessment and Protection Unit: The DWS Source Assessment and Protection Unit enforce state statutes and regulations and implements state policies that pertain specifically to the protection of public drinking water sources. Connecticut has approximately 4,000 surface and ground water drinking water supply sources that require protection and preservation. The unit maintains the DWS webpage and Geographic Information System (GIS) that that are central tools to ensure that information is readily available to those that need it. The GIS system supports provides analysis and visualization of a large amount of data and is used daily by the Section's planners, engineers, and analysts. Unit initiatives such review of water company land permits, watershed surveys, water company land sales, source abandonment permits, well permit exceptions, new source siting, tracking emerging issues, maintain and foster source water collaborative, engage local health and planning leaders on water supply management planning among others have been identified by the DWS as critical to drinking water source protection, achieving minimized risk to public health and supporting capacity development.

Grants and Administration Unit: The staff of the Grants and Administration Unit coordinates activities for the Section including grant management and progress reporting for required EPA program management reports. Staff also prepares any contracts, implements the DWS Fee Assessment program and coordinates the preparation of DWSRF loan agreements with the DPH Fiscal Office, the Office of Grants and Contracts and the Office of the State Treasurer. The Unit assists the DWS in providing and developing communication activities and conducts general office functions to support the PWSS and DWSRF Programs. Staff also prepares publications (i.e. fact sheets, brochures, pamphlets, etc.), the Quality Management Plan, Quality Assurance Project Plans, Standard Operating Procedure documents, and coordinates external and internal training. The Unit also has responsibility for the Operator Certification and Cross Connection Control programs.

The Certified Operator program ensures that all CWS and NTNC PWSs are operated by qualified and skilled certified operators. Certifications are issued for treatment plant, distribution system, small water system operators, backflow prevention device testers, and cross connection survey inspectors based on criteria established in regulation. The Operator Certification program is responsible for providing training and guidance to certified operators related to their duties and responsibilities and exercises quality control over the certification examination. Operators are required to maintain minimum training contact hours to renew their certification. The unit also approves other operator training course providers, operator training course curriculum and coordinates internal staff training for the Section. In a recent effort to streamline the certification process, the DWS implemented an E-Licensure program which allows all licensure activities to be completed online.

The Cross Connection program ensures that PWSs conduct inspections for cross connections and test backflow prevention devices. The intent is to prevent contamination of drinking water through the proactive identification of any improper connections to the drinking water distribution system and through testing the devices that restrict the backflow of contaminants. DPH receives over 700 cross connection inspection survey reports annually. The DPH's regulations require the certification of Backflow Prevention Device Testers ("Testers") and cross connection survey inspectors ("Inspectors"). The program issues and renews certificates for backflow personnel and over 900 individuals have active DPH certificates as Testers/Inspectors. Staff participates in the training for "Testers" and "Inspectors" and provides technical assistance to the water industry, PWSs, local health departments, building inspectors and the general public.

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 every community water system. The new process has reduced redundancies in the CPCN process by ensuring there is no duplication of efforts between the two agencies. No new changes have been made to the authority during this reporting period.

Control Points

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

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

No changes were made to the control points during the reporting period, however, as discussed above, the DWS continues to work to strengthen its ability to minimize the creation of new PWS, as well as streamline the process to make it easier for new PWS to understand and therefore comply. 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 meeting was held with local health stakeholders to discuss ways to improve this process and in SFY20, DPH began utilizing the revised PWS Screening Form which incorporates a local health sign off to ensure all developments that can potentially create new PWS are appropriately captured before they proceed too far with the development. 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.

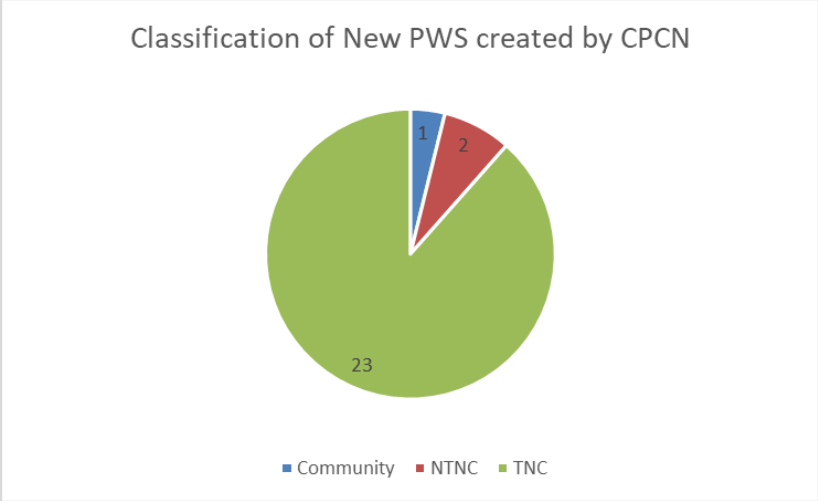


Table 1 below provides a list of all new PWS from the previous three fiscal years that are currently regulated by DWS. Twenty-six (26) new PWS highlighted in green were created through the CPCN process during the last three fiscal years which included a TMF Capacity review, as well as the other control points discussed previously, prior to the final approvals being granted. The remaining forty-one (41) 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 four of the new community PWS on the list). Each of the 41 discovered systems received the required regulatory compliance information upon their activation in the form of an individual "Public Water System Responsibilities Letter".

Table 1

List of New PWS - July 1st, 2017 – June 30th, 2020

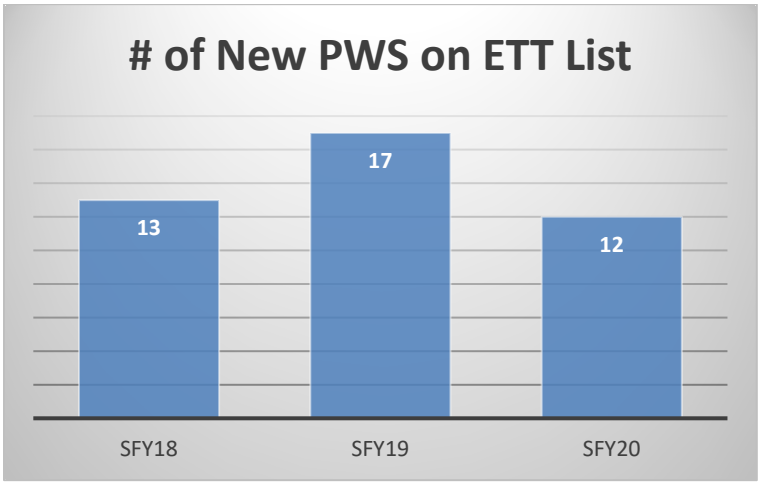
PWS ID	PWS Name	PWS Classification	ETT Score
CT0419241	GREEN VILLAGE	C	1
CT0750123	REYNOLDS SUBARU	NTNC	3
CT1341373	TTM TECHNOLOGIES, INC - BUILDING 6	NTNC	
CT0309154	HEARTSTONE FARM & WINERY, LLC	NC	2
CT1301154	WHEELS STORE NO. 14	NC	
CT1419094	ROUTE 193 LLC RESTAURANT	NC	
CT1149054	BESTWAY CONVENIENCE STORE	NC	
CT0121094	BOLTON COSMETIC & FAMILY DENTISTRY	NC	
CT0631234	STONEHURST AT HAMPTON VALLEY – INN	NC	
CT0631244	STONEHURST AT HAMPTON VALLEY – BARN	NC	
CT1021114	DOLLAR GENERAL - NORTH STONINGTON	NC	
CT0672064	THE WORSHIP CENTER	NC	5
CT1099254	SANGERMANO PROPERTIES, LLC	NC	
CT0727114	VITALE AQUATIC & TENNIS	NC	
CT1609164	DOLLAR GENERAL WILLINGTON	NC	
CT1189524	RIDGEFIELD LITTLE LEAGUE – JENSEN FIELD	NC	5
CT1099264	FLATS BUSINESS PARK	NC	
CT1699114	TAYLOR BROOKE BREWERY	NC	
CT0419244	STAEHLY FARMS CIDER BARN	NC	
CT1219134	DOLLAR GENERAL SALEM	NC	
CT1129094	WATERCURE FARM, LLC	NC	
CT0787094	LENARD HALL	NC	
CT0999084	STEWARDS OF THE LAND BREWERY	NC	
CT0286034	HOP CULTURE FARMS & BREW CO.	NC	
CT0429224	13 NORTH MAIN STREET	NC	
CT0055074	DOLLAR GENERAL BARKHAMSTED	NC	
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
CT1341363	TTM PRINTED CIRCUIT - BUILDING 4	NTNC	
CT0429223	NELSON'S COURT	NTNC	2
CT1021103	QUINLAN ENTERPRISE BUILDING	NTNC	
CT1021113	JONATHAN EDWARDS WINERY	NTNC	
CT0481033	BOLLES MOTORS INC	NTNC	
CT0189993	31 OLD ROUTE SEVEN	NTNC	
CT0105083	NEWPORT ACADEMY - NORTH CAMPUS	NTNC	
CT0549073	CANDLEWICK KENNELS	NTNC	
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	2
CT0859134	GREAT HOLLOW LAKE	NC	
CT1085064	AGGIE'S PARK	NC	6
CT1130204	ARRIGONI WINERY, LLC	NC	
CT1259143	SHARON COUNTRY CLUB	NC	
CT0699234	AMERICAN SPORTS CENTER	NC	6
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	
CT1059334	LYME SENIOR CENTER	NC	
CT1355044	GR ART AND CARE BUILDING	NC	8
CT1341374	STAFFORD SPRINGS KINGDOM HALL	NC	
CT1670204	BROOKSIDE FARM MARKET	NC	
CT1501164	INSTITUTE FOR AMERICAN INDIAN S RESEARCH	NC	
CT0598064	GR COMPANIES, INC.	NC	
CT1270254	CLUB RIVER OAKS HALFWAY HOUSE	NC	
CT1669154	WOODTICK PAVILION	NC	
CT1419104	THOMPSON SPEEDWAY-GARAGE	NC	
CT0235094	CANTON CONGREGATION OF JEHOVAH'S WITNESS	NC	
CT0429234	NELSON’S CAMPGROUND REC HALL WELL	NC	

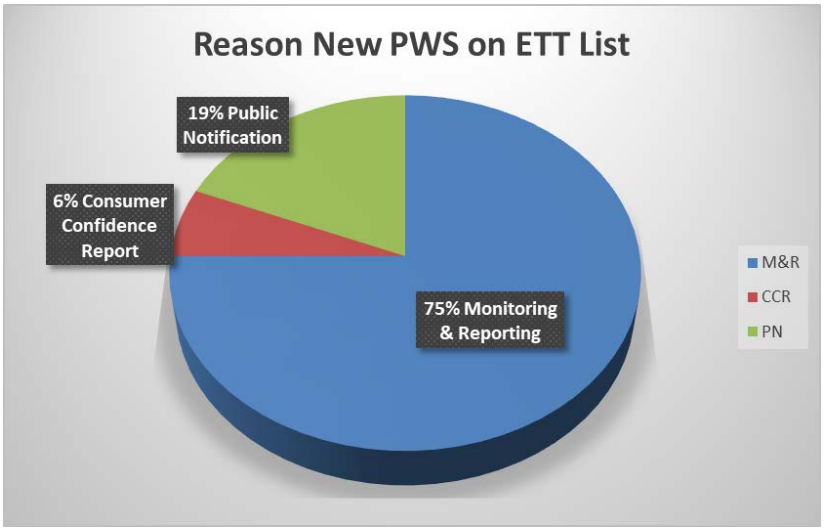
The Drinking Water Section (DWS) uses the EPA’s Enforcement Targeting Tool (ETT) point-based system to identify compliance problems. Any PWS that scores eleven (11) or more points is prioritized for enforcement actions under the EPA’s Enforcement Response Policy. None of the new PWS either newly discovered or created through the CPCN process scored 11 or more points on the latest ETT list. As is indicated on Table 1, 5 of these new PWS (19%) 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 six of the newly discovered PWS (14.6%) on the ETT list with scores ranging from 1-8 points. Typically, the new systems created through the CPCN process have a much lower percentage of systems with ETT points as the CPCN process includes the TMF capacity review and more PWS education. However, due to the Covid-19 pandemic, many of the new non-community PWS were closed involuntarily due to the Governor's Executive Orders and we believe that some of the monitoring and reporting delays were due in part to inability to access monitoring locations for some of the PWS on the list.

The numbers of new PWS on the ETT list with any points has increased slightly from last year up from 16% to 19% for new PWS created through the CPCN but were down from 25.5% to 14.6% for newly discovered PWS. These trends 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. As we have seen the trend increase in the past, the DWS focused additional technical assistance through the Safe Drinking Water Rule Implementation and Enforcement Units to work directly with new PWS to resolve any compliance issues and bring PWS into full compliance. The overall number of systems on the current ETT list is decreasing as shown in the three year graph below so we should continue to follow up with all new systems to ensure they understand all of the responsibilities of operating a new PWS. DWS also plans to undertake a review of the CPCN TMF review to ensure the new PWS have everything they need to succeed upon being activated.



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. DWS will continue to investigate new ways to communicate clearly the responsibilities for new PWS (especially for non-community systems) for all new PWS. Perhaps the strengthening of the capacity review for non-community PWS CPCN projects would be a good place to start. 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 the associated accomplishments conducted within those areas during the last three fiscal years are highlighted in Table 2. 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 the worldwide pandemic of Covid-19. DWS, as well as many regulated PWS, had to change operations overnight. Flexibility and adaptability were the name of the game and for a short period of time, sanitary surveys were put on hold while a remote survey protocol was developed to ensure safety of DWS staff as well as essential employees of PWSs. DWS staff were began teleworking from home and in some cases, routine interaction with PWS became challenging as DWS worked to provide remote access to our many online operating systems to staff working remotely. DWS was quickly able to overcome the obstacles and in fact, spent some of the downtime to revise and create new guidance documents, forms and standard operating procedures, as well as create and present an in-depth webinar training on the new fiscal and asset

Table 2. Summary of Programmatic and Capacity Initiatives during 7/1/18 through 6/30/20

Activity	SFY18	SFY19	SFY20	Comment
Safe Drinking Water Act Compliance and Enforcement				
Conduct Sanitary Surveys at PWS	584	639	466	Temporary suspension of survey program due to Covid-19 pandemic is why there are less surveys recorded in SFY20
Review New PWS technical Projects	~68	~100	~105	PWS projects continue to increase as staff identify more deficiencies or work with PWS to implement proactive project plans
Process WQ data and assess compliance	409,893	435,193	442,747	Receiving water quality results and verifying compliance with state and federal rules remains a significant and important effort to assess capacity
CWS SS Capacity Questionnaire	X	X	X	Capacity Questionnaire will be completed by each PWS at the time of their sanitary survey to measure TMF and update CAT score. It was created in 2018 and updated each SFY.
Formal Enforcement Issued	7 NOV 20 CO 9 AO	1 NOV 34 CO 30 AO	0 NOV 20 CO 45 AO	New Policy in SFY19 to issue Administrative Orders for all MCL violations as well as Lead Exceedances to set hard deadlines and better track return to compliance.
Fiscal & Asset Management Plan Statute	Passed 2018	Hydro tank template	F & AM plan template	Much work was spent over the past reporting period preparing templates and guidance for PWS enabling them to meet the new requirements
Creation of New WebPage to communicate with PWS	SS Webpage	Capacity Webpage	Covid-19 Webpage	Development of specific new pages for sanitary surveys, capacity development for small PWS and important information for PWS during Covid-19 have been developed
Participation in AWOP Program	X	X	X	Focus on Distribution and Disinfection By-Product Optimization during last 3 years

Activity	SFY18	SFY19	SFY20	Comment
Drinking Water State Revolving Fund				
DWSRF loans processed	7 loans for $68.1M	20 loans for $37.4M	10 loans for $13.4M	DWSRF program remains strong in helping PWS install critical infrastructure upgrades.
DWSRF New Generators Funded	5	6	5	Program total to date: 69 emergency generators – significant investment by CWS
$20M State Bond Funding from Public Act 14-98 for interconnections/regionalization	X	X		$15M was awarded as principle forgiveness to Groton Utilities WTP Upgrade Project and $5M to Norwich WTP Upgrade Project. Each project included permanent or emergency interconnections with smaller CWS.
Creation of Small Loan Program		X		Provide more funding opportunities for small PWS to upgrade water system infrastructure in a streamlined manner without "construction".
Creation of Disadvantaged Community Program			X	Additional subsidy from DPH's annual capitalization grant will be made available to CWS in disadvantaged communities
Creation of Capacity Review Checklist			X	Formal documentation of TMF capacity assessments for loan applicants and direct technical assistance as needed
Source Protection and Planning				
Maintain High Quality Source List	X	X	X	Over 4,000 sources for use by PWS available
Review PWS Watershed Survey Reports	X	X	X	31 Watershed surveys submitted annually for over 210 drinking water watersheds
GIS Initiatives	X	X	X	SFY18- update GIS layers for PWS SFY19-create Class 1 & 2 water co. land layers SFY20-create and publish a public GIS viewer SFY20-developed internal GIS portal for staff to view DWS GIS from any device
PWS Takeover Proceedings Initiated	1	2	4	9 small CWS in takeover process currently.

Activity	SFY18	SFY19	SFY20	Comment
Review Water Supply Plan	10	3	6	Created new review protocol and in SFY20 trained additional staff on new protocol to reenergize program and catch up on reviews of this important planning tool for large CWS
Water Supply Plan Update for PFAS		X		Require all PWS that prepare WSP to update their plan with a PFAS vulnerability assessment to identify PFAS risk areas in source water areas
Operator Certification				
Operator CEU Course Approvals	92	64	82	In SFY20, 24 courses were remote/distance learning
Total Training Contact Hours Approved	328.5	313.5	278.5	In SFY20, 82 TCHs were for remote/distance learning
NOV for no operator	4	9	0	In SFY20, 20 PWS with no operators were brought back into compliance with no formal enforcement, but only technical assistance.
Maintained list of Certified Operators	X	X	X	Over 2,000 operators available for CT PWS
Creation of Remote and Distance Learning Course Criteria			X	New program criteria developed on the fly due to Covid-19 pandemic and the moratorium on in person training classes.
Partnerships				
RCAP Contract for CWS Asset Management Assistance	X	X		RCAP provided one-on-one technical assistance to 17 small CWS in preparing an asset management plan and conducted training webinars for small CWS on rate setting
EFCN trainings & Webinar series	X	X		Important collaboration to educate all PWS on asset and financial management and prepare them/provide resources to meet new regs. Planned trainings in SFY20 were canceled due to Covid-19.

Activity	SFY18	SFY19	SFY20	Comment
ASRWWA partnership renewal			X	New leadership and commitment to provide tangible training and technical assistance to PWS in CT started up in SFY20
CIRCA Vulnerability Assessment	X	X	X	DWS was a primary participant in the creation of a Drinking Water Vulnerability and Resiliency Plan which was finalized in SFY19. In SFY20 implementation began which included the first annual Resilient CT summit.
Emerging Contaminant Workgroups for PFAS, Legionella, Sodium/Chloride	X	X	X	Gain knowledge and work with stakeholders on several emerging contaminants developing a variety of new initiatives to prepare PWS to mitigate impacts from these contaminants. In SFY20, DWS was able to translate additional workload into two new engineer staff positions.
Finalization and Implementation of WUCC and State Water Plan	X	X	X	Multi-year planning processes are both now in implementation phase. These initiatives focus on small system capacity as a key issue.
Regionalization and Interconnection Opportunities		X	X	6 emergency interconnections completed; approx. 20-25 PWS tied into 2 new regional interconnections in Tylerville and Durham
Created Private/Public Partnership (P3) Stakeholder group			X	New workgroup between DPH and a representative group of PWS including the four largest PWS in CT that now meet regularly to share information and get input on new department initiatives.

management plan template. All these efforts should help streamline processes and provide additional education for our PWS community.

In addition to the four focus areas, DWS realizes the value of partnerships and training opportunities to build increased capacity for PWS. Some of the many partnerships DWS worked on during the previous three year reporting period included partnerships with federal technical assistance contractors such as Resources for Communities and People (RCAP), the Environmental Finance Center Network (EFCN) and Atlantic States Rural Water and Wastewater Association (ASRWWA); partnerships stemming from various initiative committees, task forces and workgroups like WUCCs, State Water Plan, Drinking Water Vulnerability Assessment and Resilience (DWVAR) Plan; creation of the Public Private Partnership (P3) workgroup to bring regulators and industry stakeholders together; emerging contaminants stakeholder workgroups for parameters like PFAS, sodium and chloride, lead, legionella, cyanotoxins and manganese; and regionalization/interconnection projects.

Identification of PWS in Need of Capacity Development Assistance

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

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

2) Sanitary Survey/Capacity Assessment Tool (CAT) Data: Another mechanism used is the sanitary survey process and the resulting compliance determinations. During a sanitary survey the physical infrastructure of the water system as well as other elements including monitoring and reporting, operator certification, management and operations and security are assessed to determine if there are significant violations or deficiencies that could present long and/or short term sustainability problems. The DWS continuously modifies elements of the question sets into the sanitary survey process to determine if systems are adequately employing sustainability concepts with their physical assets. Sanitary surveys are conducted at least every three (3) years for CWSs and every five (5) years for Non-Community systems. The small system capacity assessment tool (CAT) has also been

incorporated into the sanitary survey process. All CWS are required to complete a capacity questionnaire that will update the baseline CAT at the time of the survey. 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 each of the last three calendar years and the most recent version is included as Appendix C. It is anticipated that this is the final revision which will enable work on the DWS Compliance Assistance Database (CAD) module that will update PWS CAT scores real time to reflect when new violations are identified or if old violations are resolved, for example. Work on programming the module began during the reporting period but was halted during Covid-19 as DWS staff efforts needed to be redirected to other work. It is anticipated that the CAD module for the CAT scores will be completed in SFY21.

3) DWSRF Program Capacity Review: All PWS that apply for DWSRF funding must demonstrate adequate TMF capacity 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 SFY20, a "TMF Capacity Review Checklist" (included as Appendix D) was developed to better document the capacity review completed for DWSRF funding recipients. This checklist ensures that all available aspects of capacity are reviewed, including routine compliance, formal enforcement, ETT score, most recent sanitary survey, and fiscal and asset management planning. Any PWS which is found to not have sufficient capacity will be referred for technical assistance.

4) Other PWS data: The PWS capacity needs can also be realized through many different types of programmatic interactions that provide data to the DWS. Review of comprehensive CWS water supply plans, lack of a certified operator or operators with large amounts of violations cited at the systems they operate, water service interruptions resulting in boil water advisories 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, frequent circular letters and online water quality monitoring and compliance schedules to provide a broad range of information to PWSs to assist in achieving compliance and provide access to important information. These actions are especially important in developing capacity for Non-Community (NTNC and TNC) PWS. Further, Since the start of the Covid-19 pandemic in March 2020, DWS instituted weekly webinars/meetings with PWS, environmental laboratories, certified laboratories and other stakeholders, as well as created a special "Covid-19 Information for Public Water Systems" webpage once business as usual changed due to the pandemic. These initiatives were stood up to keep PWS, environmental laboratories and certified operators up to date on the latest information and guidance as it became available during this rapidly developing situation.

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

WUCC planning process statewide, a technical assistance contract with RCAP Solutions to provide financial capacity assistance and $20 million in state grant funding for the DWSRF to be reinvested in small CWS consolidation or interconnection projects, as well as passage of a new state statute (CGS 19a-37e) requiring fiscal and asset management plans for small community water systems. Further, DWS utilized federal technical assistance contractor Environmental Finance Center Network (EFCN) to provide pertinent training on elements included in the new fiscal and asset management plan requirement. A large amount of work was spent during the last reporting period on implementation of the new statute. The first due date for the prioritized fiscal and asset assessment of any operational hydropneumatic storage tanks at small community PWS was on May 2, 2019, and the data gathered from that effort is summarized below. The final due date for the fiscal and asset management plan is fast approaching on January 1, 2021.

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 many times 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 and is used to better assist large CWS with regulatory compliance issues during sanitary surveys and during other technical assistance interactions. The DWSRF continued to create new ways to engage loan applicants and with passage of Public Act PA 19-194, all PWS that are eligible for DWSRF can apply for state bond (grant) funding for use in addressing public health issues which support the DWS's regionalization and small system consolidation efforts as part of the project. DWS revised its Intended Use Plan to include grants in aid for lead service line replacement and treatment for emerging contaminants projects as well as created a Disadvantaged Community Assistance Program. A new stakeholder group called the Public/Private Partnership (P3) was created by DWS to bring regulators and key members of the regulated PWS community together on a regular basis to discuss issues as they happen in real time. Work with partners on several initiatives including the WUCCs, State Water Plan, CIRCA and implementation of the Drinking Water Vulnerability Assessment and Resilience Plan, and various taskforces, workgroups and projects relating to emerging contaminants like Perfluoroalykl Substances (PFAS), Legionella, sodium and chloride, lead and cyanotoxins from harmful algal blooms. Work in these areas brings together stakeholders to investigate, educate and implement strategies to reduce public health risk from these contaminants of concern which are mostly without established MCLs. Finally, revision of Water Supply Plan completion and review process has also tried to ensure consistency among the largest PWS. Summaries of work conducted on many important initiatives show how DWS functional units work together and with strategic partners to develop capacity for all PWS are provided below.

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 was codified into the Connecticut General Statutes CGS 19a-37e and is included as Appendix F. This law also requires 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 G) 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 was 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.

During this SFY20, DWS worked to help PWS meet the second due date of the statute by developing a fiscal and asset management plan template with instructions, a guidance document, an appendix to be included for CWS who also want to apply for a DWSRF loan, a completed example plan and a training webinar. The template is included as Appendix H and was formatted to include all information that is needed to meet the statute including PWS General Information Section, Asset Management Section with asset inventory, assessment and prioritization, capital improvement plan, level of service goals, a Financial Management Section with rates, rate structures, current and future budgets and other financial questions, and finally an Unaccounted for Water (UAW) Section with amount of UAW, causes and ways to reduce UAW. This work was very comprehensive and took many hours of research and refining drafts. DWS test piloted drafts with actual systems and also shared the drafts with the Top Operator workgroup to get feedback in order to create a meaningful template for PWS to work with. Approximately 291 small CWS are required to create this plan by the end of the 2020 calendar year.

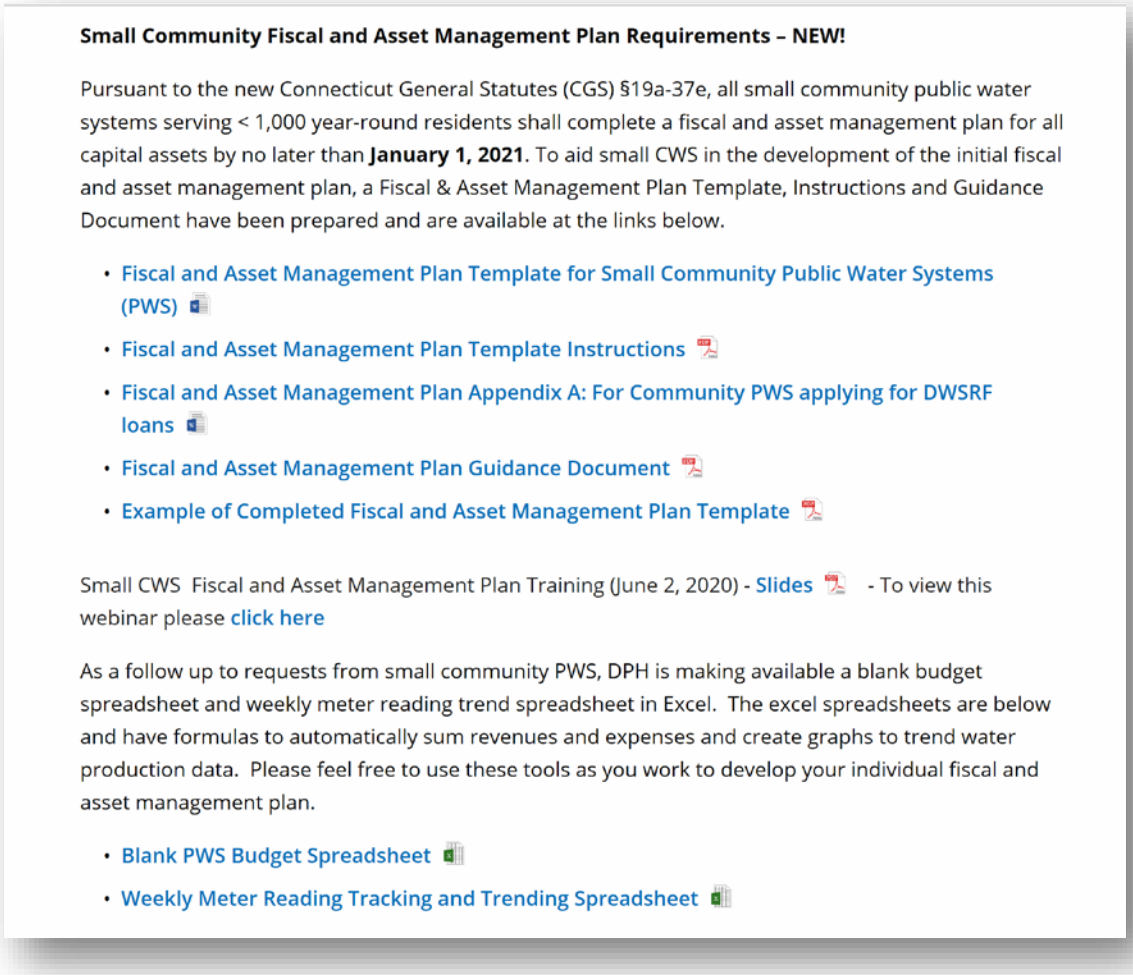


Fig. 2 Screenshot of DWS Capacity Development for Small Water Systems web page where all new documents/materials developed are posted and available for small CWS to meet CGS 19a-37e

DWS had partnered with federal technical assistance contractor, Environmental Finance Center Network (EFCN) to provide in person training on the template and related topics, however those plans had to be canceled due to the Covid-19 pandemic. Instead, four members of the DWS Capacity Development workgroup prepared a 1.5 hour virtual webinar that was held on June 2, 2020 to provide training on how to complete the various sections of the template. The webinar was well attended and included a very active question and answer period. Due to feedback and questions as a result of the webinar, DWS released two additional spreadsheet with formatting for PWS budget and weekly meter reading tracking/trending to continue to provide meaningful tools for small CWS to implement as they move forward with fiscal and asset management and unaccounted for water.

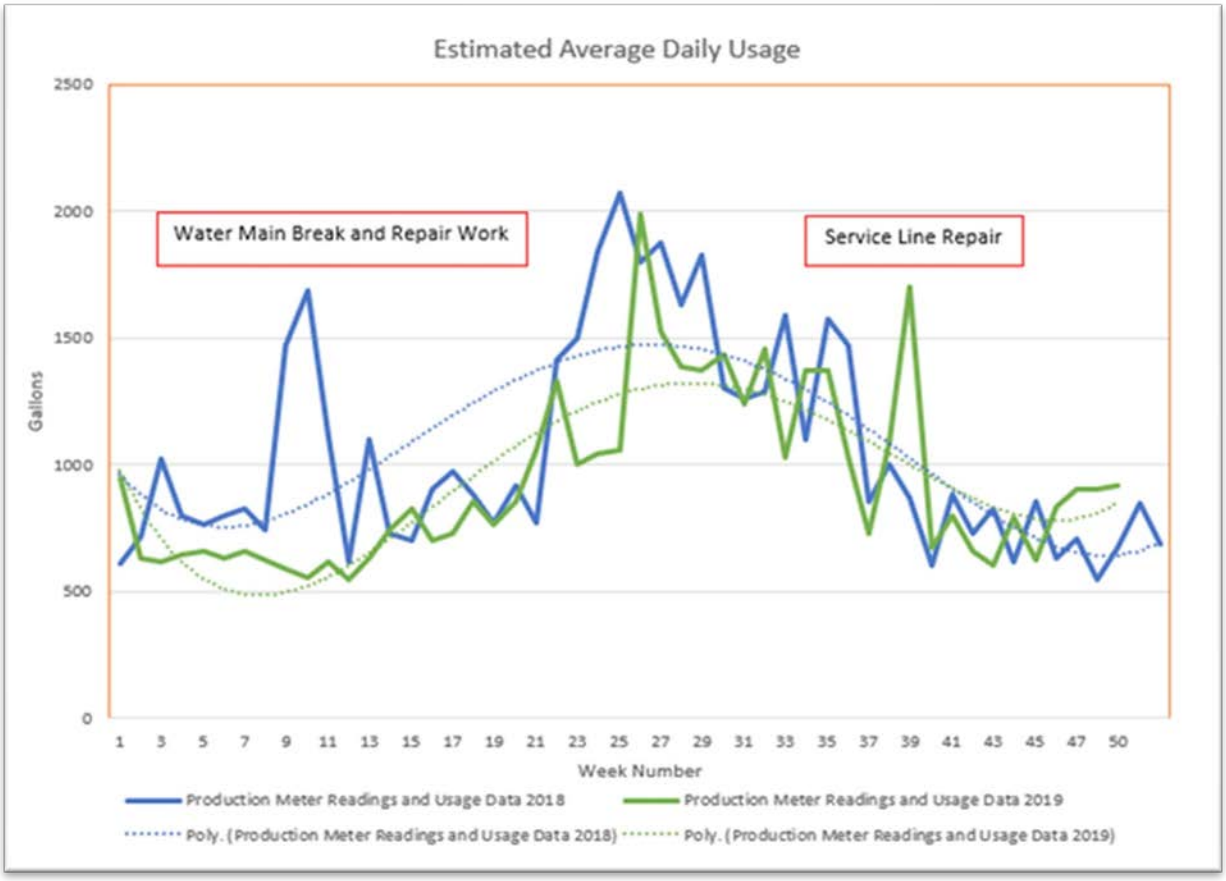


Fig. 3 Example of meter reading data compiled and graphed using the DWS spreadsheet to help PWS trend their production data to identify anomalies and reduce UAW

Asset Management Assistance Contract: The DPH completed its work with contractor RCAP Solutions during SFY18. RCAP provided direct assistance to seventeen PWSs to develop an asset management plan by conducting an in-depth asset inventory, populating the inventory data in the Check-Up Program for Small Systems (CUPSS) software, and outlining the basic asset management plan. Asset management is a key principle in achieving sustainable infrastructure within a PWS, and as such is the primary focus of this contract. Small PWS' are in great need of asset management technical assistance to aid in minimizing ownership and operational costs of drinking water infrastructure assets and to plan for maintenance or replacement before failure. RCAP Solutions developed a financial rate setting workshop at our request to offer to Connecticut small systems to further assist them in their financial capacity. This course, "Basics of Financial Management" was attended by 14 certified water operators and 4 Board members from 14 different public water systems. A summary of all of the PWS that RCAP has worked with over the span of the contract is included as Appendix I.

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.

Federal Technical Assistance Provider Partnership: DWS renewed its partnership with federal technical assistance contractor, Atlantic States Rural Water and Wastewater Association (ASRWWA) during SFY20. ASRWWA had a change in leadership as well as local representation and in doing so, DWS agreed to work to coordinate specific efforts to assist CT PWS. ASRWWA was instrumental in helping coordinate distribution of face coverings to small PWS in accordance with the CtWARN guidelines during the pandemic. Also, ASRWWA has come up to speed on the new fiscal and asset management plan requirements and has been working in person in small group settings to guide small community PWS in the development of their fiscal and asset management plans using the new DPH template as well as general technical assistance for a multitude of compliance issues.

WUCC: The WUCCs have identified small community public water systems as needing significant capacity development assistance to combat some common problems such as uncoordinated planning among PWSs, competition between PWSs for expansion of service areas, increasing regulatory requirements, aging and substandard infrastructure, inadequate source protection, difficulty in developing new water sources, inadequate financing, poor management, and a significant lack of adequate communication between water companies and with local elected officials of the communities serviced. The WUCCs have assessed these issues and more in their

published Coordinated Plans. In each region, factors considered in the evaluation of small CWS included CAT score; whether the CWS is within 1,000 feet of another CWS; actual distance to another CWS; and limitations related to sources, storage, or pumping. Moving forward the Coordinated Plans developed a toolbox of options to ensure that each CWS has at least two options available to them to help correct the identified weaknesses. The options are:

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

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

DWSRF Small System Programs: DWS created an Emergency Power Generator Program during SFY 12 and a Small Loan Program during SFY 19. These programs streamline the procurement procedures for non-construction projects costing less than $100,000 in an effort to make it easier for small PWSs with qualifying projects to proceed through the DWSRF process. This program is only available for the purchase and installation of generators for emergency back-up power, new equipment, or the replacement of equipment installed for an existing facility that does not involve the construction, alteration or repair (including painting or decorating) of that facility. Typical projects that would be eligible to receive a loan under this program would include:

- Generators and associated propane fuel tanks, transfer switches, etc.
- 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

These programs are designed to work in concert with the Fiscal and Asset Management Plan process. Small PWS that have identified the need for infrastructure repair and/or replacement as part of their fiscal and asset management plan will be better prepared to attain funding through this streamlined

program. Information about the Emergency Generator Program loans during the reporting period below.

Emergency Power and Emergency Contingency and Response Plan Regulation: RCSA Section 19-13-B102 was amended in December of 2015 to require emergency power provisions for all critical facilities and emergency contingency and response plans at all CWS. The sanitary survey checklist has been updated to include the response plan and emergency power questions. Additionally, the DWSRF Unit continues its generator program that subsidizes the cost of new permanent generators at CWS and not for profit NTNC PWS. The DWSRF Program provided loans to small community water systems during the reporting period for the purchase and installation of 16 new emergency generators that will allow them to continue to provide water service to their customers during power outages (see Figure 4). The DWSRF's Emergency Power Generator Program was established in SFY 2012 and over its 8-year existence has provided loans for the purchase and/or installation of 69 emergency generators for small systems.

Fig. 4: New propane fueled emergency generator installed at Little Brook Road Homeowners Association funded through the DWSRF Generator Program

State Water Plan: The Connecticut Water Planning Council (CT WPC) defines the State Water Plan as "a framework to identify data needs, recommend policies and management strategies, prioritize key issues, identify opportunities for improved or more efficient water management in the future, and identify mechanisms for resolving conflict." For the first time in Connecticut, having a mechanism to address water related topics and concerns is critical to creating pathways to resolve either on-going issues as well as planning for upcoming or emerging topics. It is also a centralized place where all scientific about water is consolidated into a single document for decision makers to easily refer to. The State Water Plan was officially adopted by the Connecticut General Assembly during SFY19 and the implementation phase is moving forward during SFY20

with the formation of sub-workgroups. Currently, sub-workgroups have focused on topics such as but not limited to; drought, private wells, outreach and communication, and regionalization which directly affect public water systems throughout the state. Participation in the State Water Planning process, whether through the Implementation Workgroup or the Advisory Workgroup, brings expertise from across the state from those who work within many fields of water quality as well as water conservation. More participation is always encouraged as the State Water Plan covers several different topics that relate to technical, managerial, and financial capacity for public water systems. The DWS participates in all levels of workgroups and sub-committee workgroups to provide insight on the state regulatory requirements and processes, as well as working collectively with the public drinking water industry. A summary of the adopted State Water Plan is included as Appendix J.

DWSRF Program: The DWSRF continues to grow and be an attractive financing option for important drinking water infrastructure projects that provide essential public health protection and help achieve long term infrastructure sustainability. The pace of loan executions has been great during the reporting period however, during SFY20 slowed down as a result of the COVID-19 pandemic and the reluctance of several PWS to place new construction contracts out to bid in the Spring due to many uncertainties. The demand for DWSRF loans still remains strong; however, the interest rates in the municipal bond market are currently at historically low levels and below the minimum 2% statutory limit on DWSRF loans. This situation is resulting in some municipal SRF borrowers choosing to refinance and pay off their Clean Water and Drinking Water loans. The short and long-term impacts of this situation on both SRFs are currently under evaluation.

The DWSRF program continues to look for ways to strengthen the capacity of loan recipients, particularly small systems. Since 2014, the DWSRF has subsidized loans to small systems that have developed asset management plans or agree to develop these plans as part of their loan project. The incentive to develop these plans to receive a subsidized loan has increased the recognition of asset management planning as an important and essential tool for small systems to understand and implement essential utility management concepts including capital improvement planning, rate structure, annual budget preparation and the importance of capital reserve funds. Ideas like individual meetings with water systems that have never utilized the DWSRF process, and creation of different DWSRF programs have been undertaken during the reporting period. A Disadvantaged Community Assistance Program was also created within the DWSRF during SFY20 and an additional 35% of DPH's annual capitalization grant was made available for DWSRF projects located in disadvantaged communities. In addition, the policies for subsidy were modified so that all projects are eligible for some level of federal subsidy.

State Grant Funding for DWSRF Projects: State grant funding under the Public Water System Improvement Program contained in CGS 22a-483f provides grants-in-aid, in the form of loan principal forgiveness for DWSRF projects. A project which is eligible for any subsidy from the DWSRF must execute a loan for the remaining amount of principal in order to receive the grants-in-aid. Eligibility criteria for these grant funds are identified in the DWSRF's annual Intended Use Plan to reflect the top drinking water infrastructure priorities for the State of Connecticut. Two DWSRF projects received the initial disbursement of $20M for the Groton Water Treatment Plant Upgrade and the

Norwich Public Utilities DAF project which commenced construction during SFY18 and includes a total of 6 new interconnections with small water systems. During SFY20 these priorities included regional interconnections, small system consolidations, lead service line replacements and treatment for emerging contaminants; however, there were no new appropriations for this program during SFY20. During the SFY20 legislative session the legislature did appropriate $24 million in grant funding to support this program during SFY21 and the DWSRF has been working closely with several current/potential applicants on eligible projects to utilize these funds.

WebEOC: The DWS has created a Public Drinking Water board in Connecticut's WebEOC emergency notification software. The board will allow the state's CWS to report operational status directly to the State Emergency Operations Center (EOC) during emergency incidents, allowing for direct communication of PWS needs such as fuel shortages for emergency generators, implementation or lifting of boil water advisories and drought triggers. The DWS has conducted two very successful training sessions to prepare PWS in using WebEOC through "hands-on" instruction for set-up, data entry and communication management. A dedicated webpage on WebEOC for PWS has been set-up to provide systems with WebEOC resources, access information and guidance materials. Currently, the over 75% of large CWS (serving over 1,000) are credentialed and trained in using the WebEOC water board (screenshot of water status board shown below).

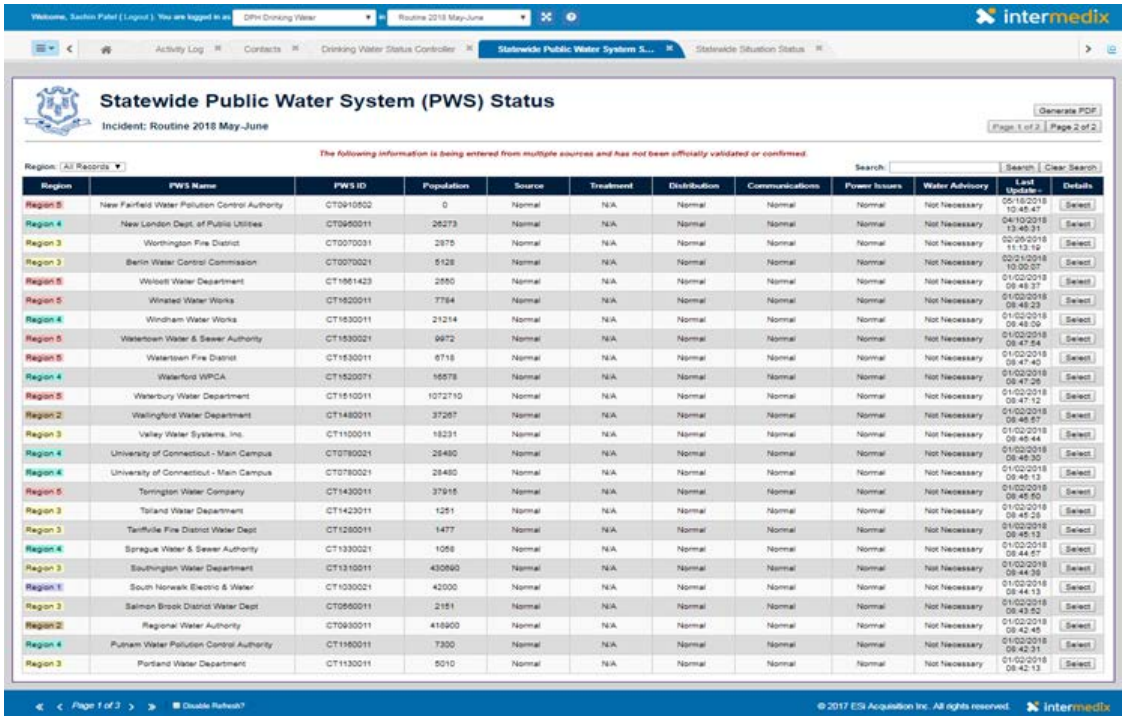


Fig. 5 Screenshot of the WebEOC water board for use by PWS to report system status to DPH

Private-Public Partnership (P3): The DWS developed a new workgroup during this reporting period called the Private-Public Partnership or P3 group. DWS realized with the weekly Covid-19 utility webinars that getting feedback from the regulated community real-time has been invaluable and

wanted to create a group that met regularly to discuss non Covid-19 issues in a similar fashion. This group is led by DWS management and technical field staff and includes a approximately 10 members from the regulated community including the four largest utilities in CT as well as a handful of other PWS. The group meets bi-weekly and DWS has used this group as a sounding board for new initiatives, to gather feedback from the utility perspective and to create new ways to partner with our water systems in order to better communicate the importance of safe drinking water and public health to PWS and consumers.

DVAR Report Implementation: Several partnerships stem from implementation of the findings and recommendations of the 2018 Drinking Water Vulnerability Assessment and Resilience (DWVAR) Plan with the Connecticut Institute of Resilience and Climate Adaptation (CIRCA). These recommendations include actions to increase resilience at small community water systems across Connecticut. Implementation efforts conducted include participation in the first annual Resilient Connecticut Summit held by CIRCA on November 12, 2019 and membership in the Governor's Council on Climate Change (GC3) Public Health and Safety (PH&S) Work Group. The goal of these efforts is to develop and implement adaptation strategies to assess and prepare for the impacts of climate change thereby enhancing capacity at public water systems.

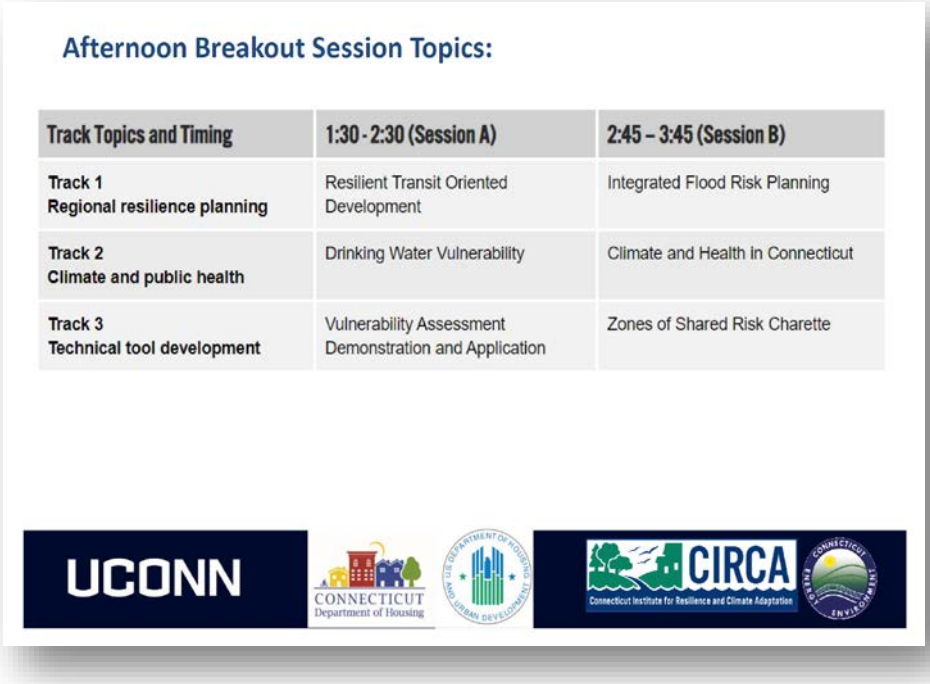
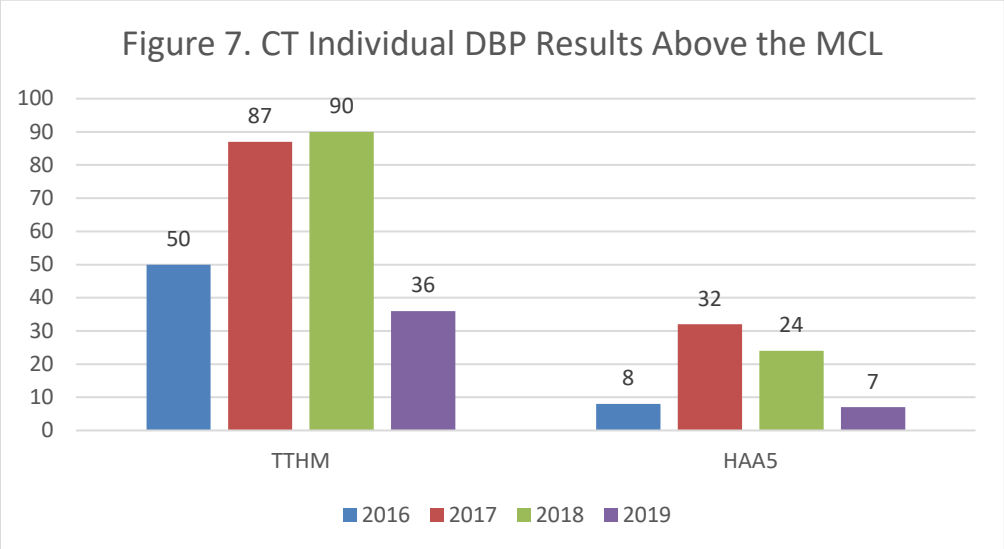


Fig. 6 CT DPH DWS organized and led the Drinking Water Vulnerability session as part of the first annual Resilient Connecticut Summit held at Fairfield University on 11/12/19

Sanitary Survey Program: The DWS sanitary survey staff have made many adjustments to the survey process during the reporting period. The two most notable is utilization of the SWIFT electronic sanitary survey software for all groundwater surveys and development of and

implementation to a remote sanitary survey protocol due to the Covid-19 pandemic. The use of the SWIFT electronic sanitary survey software and transition to the use of tablets in the field gives engineers a direct connection to the water system records back in the office and by reduces inefficiencies of using paper survey checklists, also decreasing the amount of time that it to issue the final report after the survey. While we are not primarily conducting sanitary surveys in person due to the pandemic, staff are still able to utilize the SWIFT survey software during the virtual survey process.

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 triennial reporting period, DWS staff participated in two distribution system optimization workshops each year as part of the Region 3 AWOP group aimed at reducing DBPs. This knowledge is passed on from DWS to large CWS in CT to help the CWS achieve and maintain compliance with the Stage 2 Disinfection By-Product Rule. DWS recently saw a concerning increase in the number of DBP results above the corresponding maximum contaminant level (MCL) during 2017 and for TTHMs in 2018. Analysis of the past four years shows a significant improvement. The number of samples exceeding the MCL is 60% less than the four-year high for total trihalomethanes (TTHMs) and 78.2% less for haloacetic acids (HAA5s) from the four-year high. 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 which was postponed due to the pandemic. DWS expects this trend to continue and will focus efforts on trending and early identification of potential problems.



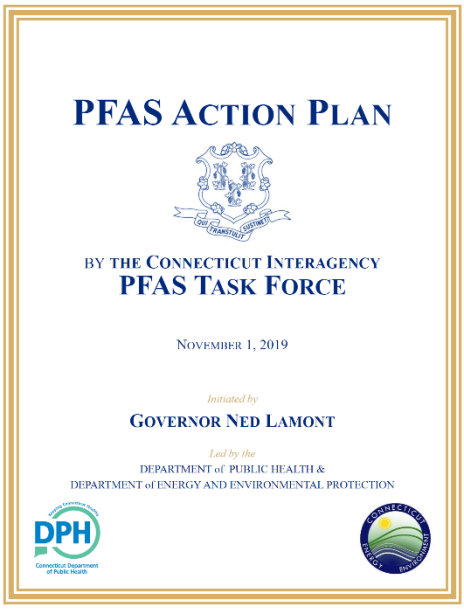
Water Supply Planning Process: 93 PWS that serve more than 1,000 people or have 250 or more service connections must submit individual WSPs to the DPH, DEEP, the Office of Policy and Management (OPM) and regional planning agencies every six to nine years. The every nine year submittal requirement is granted only to systems that meet all water quality and quantity obligations mandated by Federal and State regulations including maintaining a minimum adequate margin of safety and acquiring Sale of Excess Water permits for bulk water sales to another water company. These CWSs are provided technical, managerial, and financial (T/M/F) capacity element reviews that are part and parcel of water supply planning review process. Small satellite CWSs that are owned by large water companies are also included in the water supply planning process. The core elements of the water supply plans are:

- Description of existing supply; sources of water, available water and margin of safety.
- Analysis of present and future supply demands for the 5, 20 and 50 year plan periods.
- Assessment of potential alternative sources of supply.
- Water supply emergency contingency plan that encompasses contamination of water, power outages, drought, flood, and the failure of any or all critical system components.
- Required system improvements including new sources of supply, storage facilities, treatment processes, and distribution/pumping system upgrades that will ensure an adequate quantity and quality of supply and an effective delivery of water service for all system operating demand conditions for the 5, 20 and 50 year planning periods.
- Forecasted land sales including address, associated source of supply and acreage for each parcel of land anticipated to be sold in the 5, 20 and 50 year planning periods.
- Strategic ground water monitoring plan and an evaluation of source water protection measures including an analysis of potential hazards to public water sources of supply.
- Analysis of the impact of water conservation practices and a strategy for implementing supply and demand management measures.

Comprehensive WSPs are intended to ensure that larger CWSs have detailed sustainability plans and are able to meet present and future challenges. The WSPs undergo thorough review and must be approved by the DPH, the Department of Energy and Environmental Protection (DEEP), and the Public Utilities Regulatory Authority (PURA) where applicable. To ensure that future water supply plans are reporting and capturing accurately the systems' safe yield, available water and margin of safety; worksheets were developed to assist the systems in understanding the regulations and generating system capacity values that are logical and reliable. During SFY20, additional efforts have been expended to train new TRFA and CD Unit staff in the review of the WSPs utilizing the new format and worksheets.

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 K. After an overall PFAS briefing that the DWS provided to the Governor along with partners in the Environmental Health Section of DPH and the Department of Energy and Environmental Protection, the Governor created a Task Force on July 8, 2019 to address PFAS in Connecticut and deliver a report to him by October 1, 2019. To provide background and educate the various stakeholders interested in PFAS, the DWS, EHS and DEEP prepared and presented a webinar, "PFAS 101," with basic information on PFAS sources, health effects, sampling protocols and drinking water treatment. This webinar is available for viewing on the DPH's YouTube channel and the PFAS Task Force web page and can be used to educate and inform all public water system owners and operators. The DWS and EHS were co-chairs of the Human Health Committee and participated in drafting the plan. Several recommendations in the Final PFAS Action Plan support public water system capacity including: Support measures that provide financial assistance to public water systems for infrastructure improvements, including treatment and/or interconnections to nearby public water systems; procure laboratory instrumentation for PFAS analysis at the State Department of Public Health Laboratory; and continue to provide technical assistance, education, and outreach to local health departments and other officials through publications and in-person and web-based training. The DWS is also requiring PFAS testing at all new sources of public drinking water prior to receiving approval for use. Nineteen new public drinking water sources, both for new and existing public water systems have been sampled for PFAS. Several community public water systems have voluntarily sampled for PFAS. One small system returned results exceeding the state's drinking water action level of 70 parts per trillion for the sum of 5 PFAS in one of its sources. The PFAS Team provided technical assistance by collecting confirmation samples to evaluate whether the existing treatment system was effectively removing PFAS, which it was. The system is in an area that has a high density of public water systems and private wells on small lots. Additional sampling of private wells in the area is planned to occur in the fall of 2020. The DWS continues to assist this Town to explore options to provide a more sustainable solution to the existing patchwork of individual wells on small lots.


PFAS ACTION PLAN

BY THE CONNECTICUT INTERAGENCY
PFAS TASK FORCE

NOVEMBER 1, 2019

Initiated by
GOVERNOR NED LAMONT

Led by the
DEPARTMENT of PUBLIC HEALTH &
DEPARTMENT of ENERGY AND ENVIRONMENTAL PROTECTION

DPH
Connecticut Department of Public Health

Fig. 8 Coverpage of the final PFAS Action Plan Report prepared by the CT Interagency PFAS Task Force led by CT DPH and CT DEEP

Legionella – The Drinking Water Section (DWS) continued to work with the DPH Agency Legionella Response Team aimed at evaluating legionella defined cases and assist involved facilities in understanding the environmental assessment needed to address and curb the presence of legionella in water ready for consumption. The DWS representatives on the Agency Legionella Response Team facilitate communications between the public water system and the healthcare facilities it serves to assure measures are taking on both sides to minimize legionella growth and fend off the proliferation of this public health threat. During Covid-19 DWS was involved with reviewing on a weekly basis water quality and operational data for three Covid-19 recovery facilities to ensure that the supplying PWSs had optimal water quality coming into the facilities especially chlorine residuals. DWS also formed an internal workgroup to develop subject matter expertise on Legionella control and educating PWSs on best available practices to improve water quality in distribution systems to minimize bacterial growth. DWS legionella team members also partnered with the Association of State Drinking Water Administrators (ASDWA) on two white papers concerning legionella including *State Approaches to Building Water System Regulation* and *Using Water Quality Monitoring Data for Your Building Water Management Program* will benefit PWS and customers of PWS in this important initiative. Lastly, DWS worked hard to create two new Sanitary Engineer positions approved and through the hiring process during this reporting period to help create additional expertise in this area and to help handle the additional workload from these initiatives. These two engineer positions are slated to be filled during SFY21 as they move through the hiring process.

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. Currently, public water systems that serve populations over 10,000 are conducting monitoring for manganese under EPA's Fourth Unregulated Contaminant Monitoring Rule. The DWS reviews the results from this monitoring and is providing technical and financial assistance to those PWS that approach or exceed the HAL.

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 reporting period. Of note, information related to flushing and reducing lead levels (and other potential contaminants) as part of PWS reopening due to Covid-19 shutdowns. To date, 131 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. Eight-three (83) of these orders have been closed out as of the time this report was written. None of the largest PWS in CT have been issued orders for a lead action level exceedance since this new protocol has been enacted.

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. This workgroup has shared regular updates amongst each other and discusses concerns with sodium and chloride contamination, as well as shares actions

each organization is taking to address the over use of road salts during winter storm events. The DWS has been collaborating with the Departments of Energy and Environmental Protection and Transportation to craft legislation supporting a training program for private winter maintenance contractors to support reductions in the application of sodium and chloride. Staff of DWS has participated in piloting the training program that is being developed by the University of Connecticut's Technology Transfer Center and has offered advice and education on public drinking water supply impacts. Additionally, the connections made through stakeholder engagement has resulted in municipal public water systems encouraging their fellow public works departments to participate in the existing municipal education program and at least one public water system agreeing to be a test subject and pilot the private applicator education program that is awaiting legislation for implementation.

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

Capacity Development Strategy Review

The preparation of this Triennial Governor's Capacity Development Report serves as a review on the implementation of the existing systems strategy during the previous reporting period. 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 these past 3 fiscal years, 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 even during such a tumultuous time as the Covid-19 pandemic we are still currently facing.

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 resulting from the American Water Infrastructure Act (AWIA) of 2018 such as the

consideration of asset management planning in the strategy. DWS is already a leader in this area since the passage of our fiscal and asset management plan requirement for small community PWS.

Challenges Moving Forward

Congress amended the SDWA in 1996, providing for a variety of initiatives to assist States and PWSs in providing safe drinking water to the public. Capacity development, the Drinking Water State Revolving Fund (DWSRF), operator certification programs, and such resources as the Environmental Finance Centers and Small System Technical Assistance Centers, were instituted to provide assistance to States and CWSs. Congress established capacity development with the intent of focusing on those systems most in need of assistance. These were primarily small systems (serving populations of 3,300 or less). Over 90% of Connecticut's five hundred and three (503) CWS's are small systems. Regulations have become more stringent and complicated including the new federal Groundwater Rule (GWR) which began implementation in 2014 and the Revised Total Coliform Rule (RTCR) which began implementation in 2016. The GWR and the RTCR will affect all small systems as they rely predominantly on groundwater sources of water supply. Additionally, with changes to the lead and copper rule coming out imminently, there are more and more requirements being placed on these systems. With a small customer base, the increased cost of compliance, operations, capital improvements and planning efforts is often passed on to the rate payers in order to achieve long term sustainability. This challenge is even greater during tough economic times as collection services for non-payment of water bills do not exist for most small systems and the revenues necessary for sustainability suffer from these losses. This has been heightened during the current Covid-19 pandemic.

Increased awareness of the challenges that now face the state's public water supplies among community leaders is necessary. Planning efforts need to be undertaken and investments made to meet these challenges moving forward. The expansion of larger CWSs that have sufficient water supply to consolidate small systems is one option and an option that is strongly supported by the DWS. However, such expansions can be costly and new sources of drinking water supply may be needed to meet these demands. Incentives at the state and federal levels for larger CWSs to expand need to be discussed and explored for possible options. Other options include non-connected satellite ownership of small systems by larger systems where the costs associated with operating and maintaining small satellite system can be distributed across the larger customer based thereby achieving economies of scale for smaller systems. If small systems want to remain viable, DWS is adding requirements like the fiscal and asset management plans and emergency power provisions so that these systems can be resilient and sustainable into the future.

Other challenges include the potential for decreased levels of federal support for SDWA primacy agencies and the DWSRF. The DWS relies heavily on the federal Public Water System Supervision grant and DWSRF capitalization grants to fund program staff and activities. The DWSRF also provides millions of dollars each year to finance important community drinking water projects. Competition for federal funding is very high in the current economic climate and federal budgets are being cut.

The importance of safe drinking water must be communicated effectively to congressional leaders so that financial support for state SDWA primacy programs and the DWSRF continue.

As a result of these challenges, P.A. 14-98 was passed that directly tackled the financial challenges of the small systems by appropriating up to $50 million in state funds that will be used to provide supplemental grants-in-aid to eligible PWS that receive DWSRF loans from the DPH after July 1st, 2014. These supplemental subsidization funds now provide PWSs additional capacity to undertake other important projects the result in interconnections and or regionalization with other small PWS. Also, CGS 19a-37e is helping to provide the fundamentals of fiscal and asset management for small CWS to help educated them about what is required to be a viable and sustainable CWS that can provide safe and adequate water to their consumers now and into the future.

Assessment of the Efficacy of the Capacity Development Program

The DPH's Capacity Development Strategy has always been proactive to try to strengthen the TMF capacity of PWSs by identifying and correcting weaknesses early through close regulatory oversight, assistance and enforcement. The functional units within the DWS work closely together so that the "whole picture" of a PWS's performance is evaluated and discussed when isolated compliance problems are discovered. This process helps to identify and correct the root causes of compliance problems before more serious problems develop. Long term sustainability of each and every PWS is always the goal rather than a short-sited goal of only achieving compliance. To this extent, the strategy has worked well in Connecticut and is consistent with USEPA's Sustainability Policy released in 2010. The DWS has continued to review the Capacity Development Strategy for existing PWSs during 2018-2020 and has continued the process of drafting updates and changes to be incorporated into the future revision of the State Capacity Strategy. This Capacity Development Report to the Governor for the period of July 1st, 2017 – June 30th, 2020 will be made available to the public through the DWS's webpage at www.ct.gov/dph. With committed attention to activities discussed here, the DWS can further statewide capacity development strategy that promotes proactive, integrated, and flexible yet accountable TMF throughout key DWS Units and Connecticut's public water suppliers.

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 the last three fiscal years. 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 three (503) CWSs, five hundred and fifteen (515) NTNC systems, and one thousand four hundred and eleven (1,411) 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.

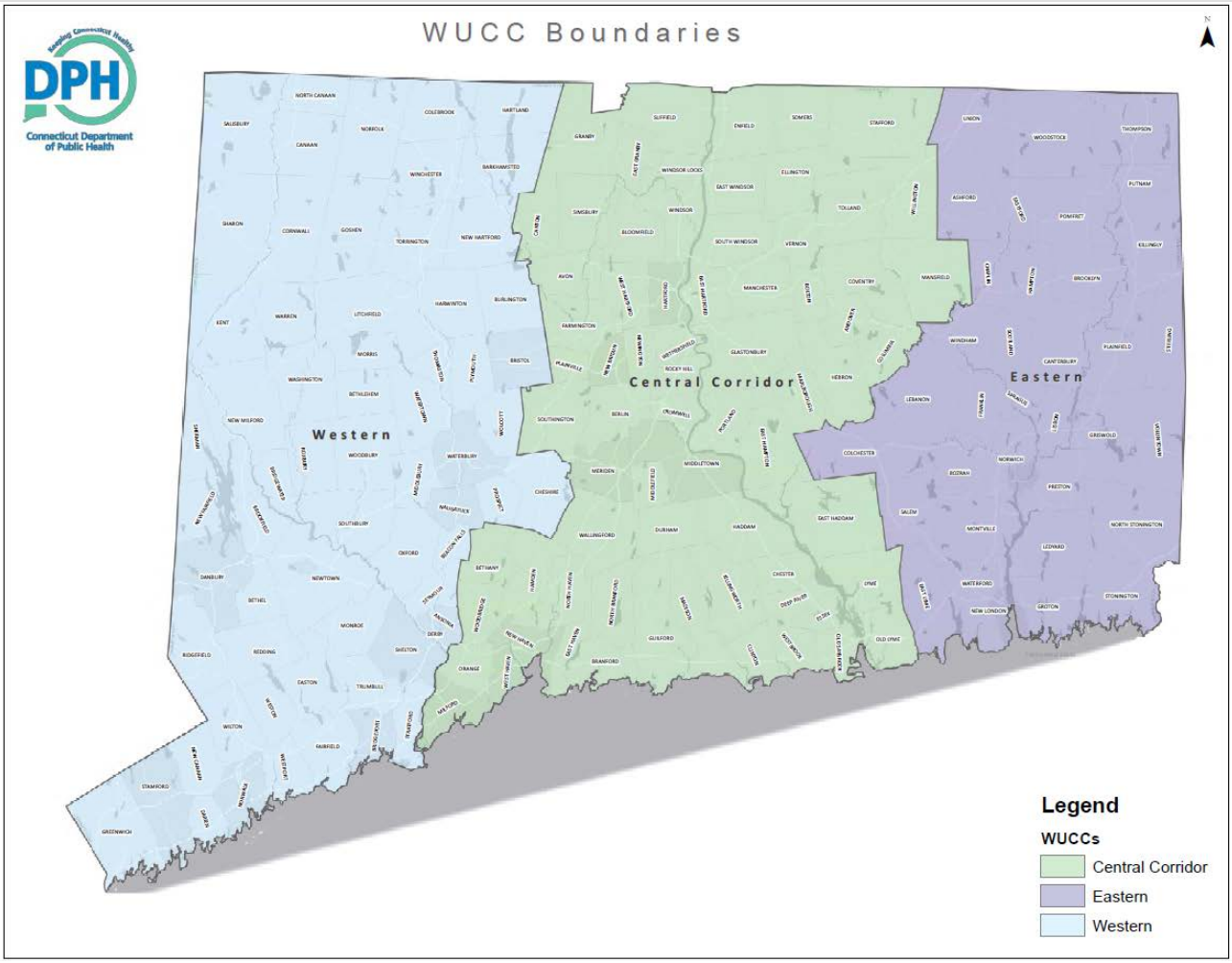
5. *Did the State make any modifications to the existing system strategy? If so, describe.*

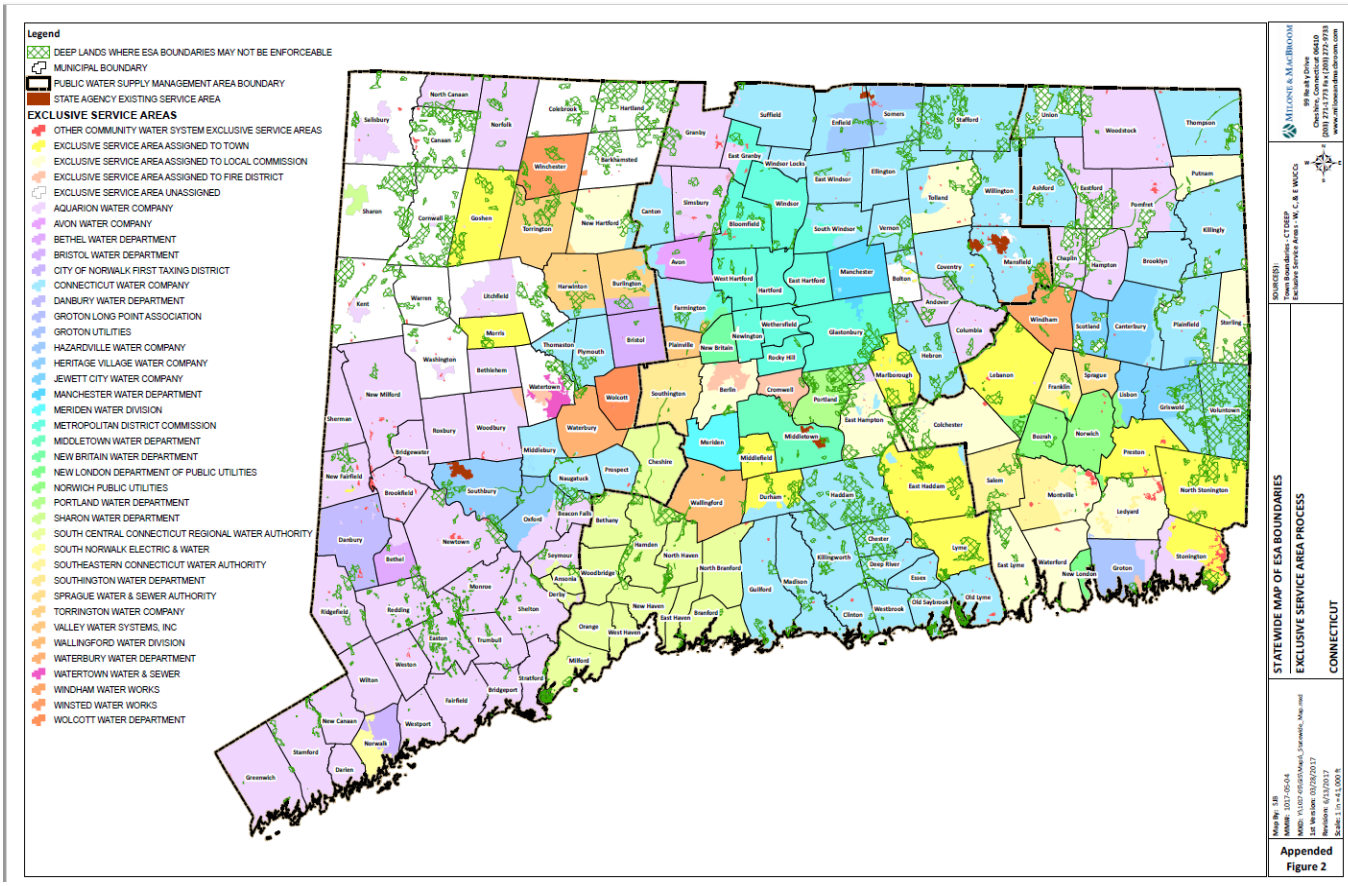
Explanation: A response to this question may include program modification, wording, or approach. States should identify the reasons for the modification(s), how these modifications were identified, and how they will affect the implementation and future goals of the program.

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

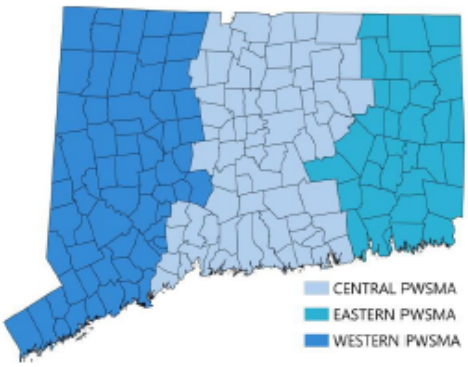

WUCC Boundaries
Connecticut Department of Public Health
Western
Central Corridor
Eastern
Legend
WUCCs
Central Corridor
Eastern
Western


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, C & E 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.

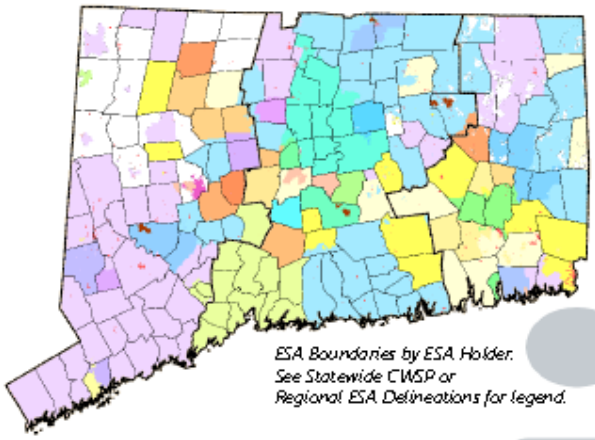
Each WUCC prepared its CWSP and submitted the plan to DPH in May (Western and Eastern regions) and June (Central region) of 2018. The CWSPs are required to be updated as necessary or at least every 10 years.

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 - 2020 Revision

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

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

PWS Name: PWS ID:

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

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

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

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

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

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

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

** Sanitary Radius Requirements for Groundwater Sources of Supply

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

Reset Form

Appendix D - DWSRF Capacity Review Checklist

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

Clear Form (temporary)

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

Project Name: _____

DWSRF Project Number: _____ Pop Served by PWS: _____

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

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

---

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

   Managerial Score ☐ Technical Score ☐ Financial Score ☐

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    Are there any water system issues? ☐ Yes ☐ No

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

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

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

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

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

Assistance provided/Actions taken:

Summary of Capacity Review

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

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

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

Attached: Capacity Assessment Tool CAD report

Comments:

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

Date Technical, Managerial & Financial Capacity Review Completed:

Appendix E - Three Storm Strategy 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:

DPH
Connecticut Department of Public Health

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 F - CGS 19a-37e 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 G - 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 warrantied 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 H - Small CWS Fiscal & Asset Management Plan Template

Connecticut Department of Public Health Drinking Water Section

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

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

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

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

SECTION 1: PWS GENERAL INFORMATION

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

Type of Ownership:
(check appropriate box)

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

Public Water System Description

Source Type:
(Check all that apply)

☐ Ground Water ☐ Surface Water ☐ Surface Water (Purchased) ☐ Ground Water (Purchased)

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

Contact Information

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

Fiscal and Asset Management Team

Name	*Responsibility*

Water System Schematic & Distribution System Map

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

SECTION 2. ASSET MANAGEMENT INFORMATION

Asset Inventory Worksheet

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

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

[1]

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

[3]

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

[4]

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

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

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

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

Water System Operation and Maintenance (O&M) Plan

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

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

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

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

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

Capital Improvements

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

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

Capital Improvement Funding:

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

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

SECTION 3. FISCAL MANAGEMENT INFORMATION

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

Water Rates: (complete all rows that apply)

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

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

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

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

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

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

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

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

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

Fiscal Management Review

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

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

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

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

SECTION 4. UNACCOUNTED FOR WATER LOSS INFORMATION

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

Determination of PWS Unaccounted for Water Loss (UWL)

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

If No, How do you know? _____

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

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

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

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

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

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

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

Weekly Readings	Year:		Year:		Year:	
Week Number	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ # of Days = Gallons/Day)	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ # of Days – Gallons/Day)	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ # of Days – Gallons/Day)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
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30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
Annual Totals						

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

Causes for Unaccounted for Water Loss

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

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

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

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

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

Ap

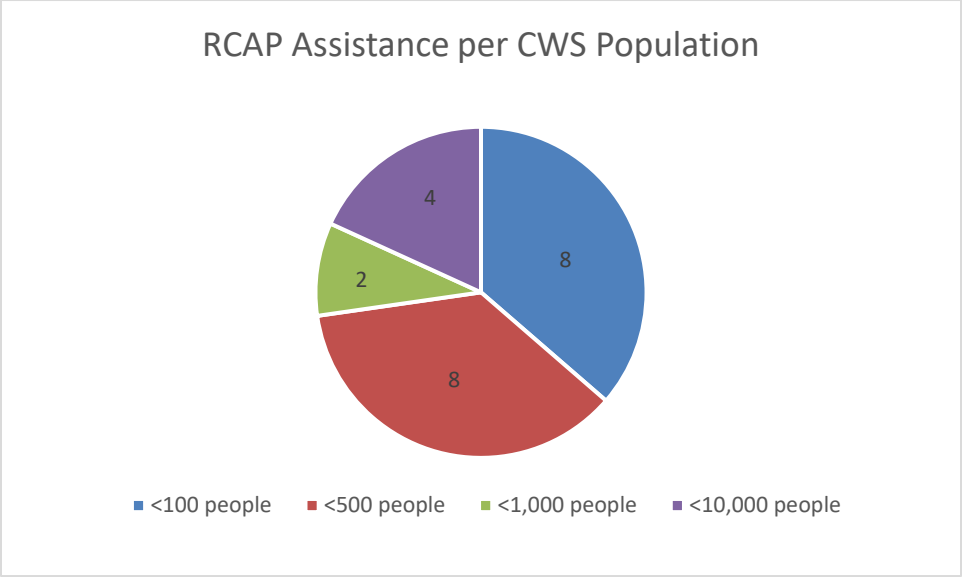
SECTION 5. Annual Update Record Complete as necessary each year when plan is updated.

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

Appendix I - Summary of RCAP Asset Management Assistance Contract

CWSs Assisted by RCAP 2014 - Present

PWS ID	PWS Name	Population	Project Status	SFY18
CT0120111	Cook Drive Association	49	Completed	
CT1160011	Putnam Water Pollution Control Authority	7300	Completed	
CT0340231	Snug Harbor Development Corporation	144	Completed	
CT1360011	Sterling Water System	308	Completed	Y
CT1280011	Tarrifville Fire District Water Dept	1477	Completed	
CT1420041	Woodland Summit Community Water Association	216	Completed	
CT1620011	Winsted Water Works	7784	Completed	Y
CT0420031	Bellwood Court	31	Completed	Y
CT0424011	Chatham Acres Elderly Housing	50	Completed	Y
CT1330021	Sprague Water & Sewer Authority	1058	Completed	Y
CT0110051	Juniper Club, Inc.	104	Completed	Y
CT1680031	Woodlake Tax District	912	Completed	Y
CT1210021	Crystal Lake Condominiums	184	Completed	Y
CT1050131	Mile Creek Apartments	60	Active	Y
CT0600041	Quonnpaug Hills-Main	564	Active	Y
CT0606011	Quonnpaug Hills-Section 1	27	Active	Y
CT1660011	Lake Hills Village Condominium	102	Active	Y
CT0340111	Aqua Vista Association, In. - Upper	260	Active	Y
CT0347051	Aqua Vista Association, Inc. - Lower	128	Active	Y
CT0121051	166 & 180 Boston Turnpike	31	Active	Y
CT0820031	Middlefield Housing Authority	62	Active	Y
CT1420081	Eastview Kozley Water Association	60	Active	Y



Appendix J - State Water Plan 2-Page Summary

Connecticut State Water Plan Summary

BACKGROUND: On July 1, 2014, Public Act 14-163, "An Act Concerning the Responsibilities of the Water Planning Council," directed the state's Water Planning Council (WPC) to develop a State Water Plan. The WPC is comprised of representatives of the four state entities with oversight or regulatory responsibility for water management: The Department of Energy and Environmental Protection (DEEP), the Department of Public Health (DPH), the Office of Policy and Management (OPM), and the Public Utilities Regulatory Authority (PURA). While Connecticut has historically enjoyed plentiful, clean water, unique factors in the state have combined to emphasize the importance of the Public Act and its recommended evaluation of water management strategies in the future:

- The recent drought in 2016 raised awareness that even in Connecticut, river basins can be depleted.
- Connecticut is the only state in the U.S. that prohibits wastewater discharges to drinking water sources, preserving the highest quality water for drinking (Class A). This protects human health and helps keep treatment costs low, but the policy could, however, limit future drinking water sources.
- New state streamflow requirements downstream of water supply reservoirs are highlighting the ecological need for water, which must be balanced with other water needs.
- Future climate trends in the northeast are uncertain, and planning for adaptation is essential.

GOALS: The overarching goal of the Plan, as defined by stakeholders who participated in the workshops as designated representatives of broad water interests, has been to "**Balance the use of water to meet all needs.**" The Plan aims to protect water quantity and quality for all of its current and future instream and out-of-stream uses when regulations, climate, and economic conditions are changing. These goals, as well as the recommendations in the Plan, were grounded in the enabling statute, and formulated by stakeholders from across the state representing various interests in water; public and private water utilities, environmental and watershed advocacy groups, agriculture, industry/energy, wastewater, land planning, golf courses, academia, and water science professionals.

USING THE PLAN: The Plan provides technical information and guiding principles that may be used to inform decisions across the state or on a case-by-case basis. The Plan does not attempt to prioritize any particular water use or water use category over others. Likewise, specific uses of water, if currently authorized by state law and regulation, are neither advocated nor diminished relative to other uses. The Plan's information may be used by lawmakers to formulate new legislation, by regulators to adapt water and land regulations to changing needs and conditions, and by the Water Planning Council to inform decisions and recommend legislation.

To comply with the statute's goal of collecting and applying scientific data, the Plan includes maps and data summary sheets on each of the state's 44 regional river basins and compares water that is naturally available in each basin to the growing needs for water in and out of the streams. Examples are included in the Executive Summary and Section 3 on how to properly and cautiously use these screening tools. Additionally, the policy recommendations in the Plan are intended to provide a basis for legislation, regulations, and situational decisions that **consistently apply the views of stakeholders** across the state.

5 MOST IMPORTANT MESSAGES IN THE PLAN: The Water Planning Council has interpreted the primary messages of the Plan as follows:

- **PLAN FUNCTION:** The Plan is not an answer, but a platform for consistent, informed decision making.
- **MAINTAIN HIGHEST QUALITY DRINKING WATER:** The Plan reaffirms the state's dedication to the highest standard of drinking water quality in the nation (Class A).
- **BALANCE:** Many river basins in Connecticut cannot satisfy all instream and out-of-stream needs all the time. The Plan offers ideas for understanding and improving this balance.
- **CONSERVATION:** While Connecticut leads the nation in protections of drinking water quality, the State lags in its water conservation ethic. Outreach that builds on utility initiatives is one of the most important recommendations in this Plan.
- **MAINTAIN SCIENTIFIC DATA:** The plan advocates for the collection and use of scientific data, as well as centralized access to it.

NEIWPCC CDM Smith Milone & MacBroom

KEY TECHNICAL FINDINGS: The following observations summarize key interpretations of the available scientific data included in the Plan.

- Many river basins have enough water to satisfy both instream (ecological, recreation) and out-of-stream (drinking, industry, agriculture, energy) needs most of the time, but they cannot all supply these needs during drought, or even typical summer conditions.
- Most water diversions in Connecticut were grandfathered from permitting through a registration process. Registered volumes do not necessarily represent actual overallocation of water as many remain unused or underutilized. Although there may be practical limitations to using their maximum capacity, full use of some unused registrations as authorized could put rivers in jeopardy of not meeting all instream and out-of-stream needs.
- There are opportunities to enhance the water conservation ethic for public and private water supply in Connecticut in cooperation with many initiatives already advocated by water utilities.
- Climate change is likely to have a significant effect on potential flooding in Connecticut, and could also result in drier summers in the next 25 years. More work is recommended on coastal impacts, longer-term effects (50 – 100 years), and basins at risk of not satisfying all future needs.
- Simulation modeling can be effective in future evaluation of potential new water policies or strategies within specific basins (as shown with a demonstration).

TOP TEN CONSENSUS-BASED POLICY PRIORITIES: Broad consensus was reached on the following top policy recommendations in the Plan, which can serve as guiding principles for legislation, regulations, and water planning.

1. Water management should follow scientific examples.
2. As possible, remove obsolete water registrations.
3. Encourage innovation in agricultural water practices.
4. Water data (or access to it) should be centralized in a single database and/or portal to other sources.
5. Consider Class B Water for individual non-potable uses if environmentally prudent and cost-effective, using guidelines to be developed by the WPC using the Triple Bottom Line metrics (environmental, social, economic).
6. Develop an education and outreach strategy focusing on water conservation topics.
7. The WPC should provide ongoing review of other Connecticut state plans in order to identify and address inconsistencies.
8. Encourage regional water solutions where they are practical and beneficial.
9. Reaffirm support for the protection of Class I and II land contributing to water supply. Expand protections to other watershed lands and land that feed aquifers used for public water supply or by private wells.
10. Create a data-based water education program aimed at the general public and municipal officials.

In addition to these top priorities, the Plan includes many more policy recommendations that are formulated based on stakeholder consensus, as well as recommended next steps for issues that require further study or deliberation.

FUTURE ROLES OF THE WATER PLANNING COUNCIL: To date, the Water Planning Council has been tasked by statute to oversee the development of the State Water Plan. To effectively implement the Plan by promoting consistent use of its data and recommendations, the WPC has proposed that its future roles may include:

- Early Review of Proposed Water Legislation
- Developing proposed legislation as needed
- Hiring a Water Plan "Chief" to serve as a liason between the WPC, public, and legislature.
- Conflict avoidance and resolution through mediation or arbitration (binding or non-binding)
- Seeking and securing funding for implementation
- Prioritizing and initiate next steps

Appendix K - 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).

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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				