STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

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Commissioner

Dannel P. Malloy
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Lt. Governor

Drinking Water Section

September 28, 2018

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

Subject: 2018 Capacity Development Strategy Status Report

Dear Ms. Weiss:

The Connecticut Department of Public Health's Drinking Water Section is pleased to submit the attached 2018 Capacity Development Strategy Status Report to USEPA Region 1. The report identifies capacity development accomplishments during the period of July 1st, 2017 through June 30th, 2018, for new and existing public water systems in accordance with DPH's Capacity Development Strategy. The Drinking Water Section continues to implement the elements of the state's approved Capacity Development Strategy.

Numerous proactive drinking water program activities are coordinated by the Department to provide an effective and efficient process that ensures the proper oversight of the State's public water supplies in order to protect public health. Together these activities, discussed in the subject report, provide the basis for the Capacity Development Strategy that is intended to ensure the proper operation of the State's existing water systems.

If you have questions or concerns, please contact me directly at 860-509-7343 or Lori.Mathieu@ct.gov.

Sincerely,

Lori Mathieu
Public Health Section Chief
Drinking Water Section

cc: Andrea Traviglia

Keeping Connecticut Healthy
DPH
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State of Connecticut

Department of Public Health Drinking Water Section

Capacity Development Strategy Status Report

For the Period of July 1st, 2017 – June 30th, 2018

September 28, 2018

Table of Contents

Executive Summary

The Connecticut Department of Public Health (DPH) is the state primacy agency for implementing and enforcing the Federal Safe Drinking Water Act (SDWA). The 1996 SDWA Amendments requires that primacy states develop a Capacity Development Strategy (Strategy) that addresses the technical, managerial and financial (TMF) needs of public water systems (PWSs). Primacy states are required to provide annual state capacity development program reports to the U.S. Environmental Protection Agency (EPA). This report covers capacity development activities during July 1, 2017 through June 30, 2018. A copy of this report is sent annually to EPA Region 1 and is also available to the public on the DPH Drinking Water Section (DWS) website.

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

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

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

The DPH works closely with all of its existing PWSs to address issues through proactive prevention and hands-on technical assistance within each of the Strategy focus areas. Early detection of water quality problems, promoting the sustained use of high quality sources for public drinking water and educational offerings for PWS owners and operators are critical aspects. Many small systems lack the TMF expertise that promotes long term sustainability. Systems that lack capacity in one or more of the TMF areas are identified through a prioritization process. The DPH encourages and helps to facilitate the consolidation of small systems when feasible. The Strategy is dynamic in nature and as new challenges arise for CT's PWSs, DPH works hard to address them through education and/or the passage of new regulations such as emergency power and response plans for all critical CWS facilities and asset and fiscal management plans for small CWS. During SFY18, DPH worked to enhance capacity not only for small PWS, but has recognized and refocused activities on large PWS as well. 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.

Introduction

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

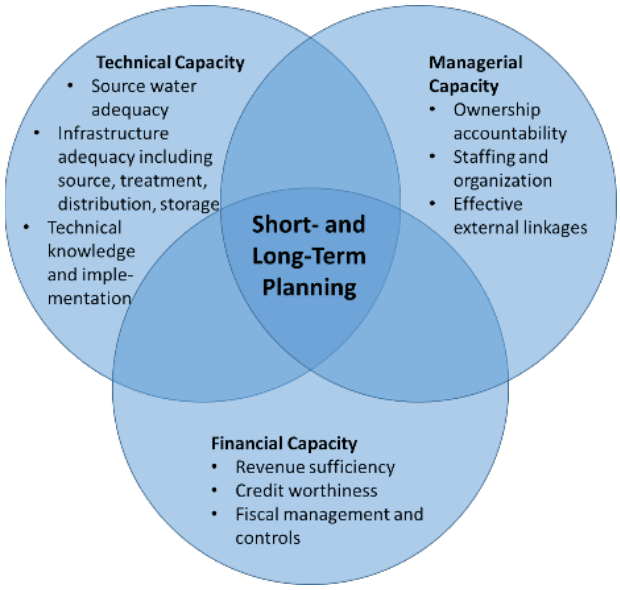
Community Water Systems (CWS): Water systems that provide service to 25 or more residents at least 60 days per year. Systems can range widely in size from large municipal or privately owned systems to small rural neighborhoods that share a common water supply.

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 514 community water systems (CWSs) serve residential populations and 524 non-transient non-community (NTNC) systems and 1,427 transient non-community (TNC) systems serve non-residential populations.

The DPH, as a SDWA primacy agency, must implement a Capacity Development Strategy (Strategy) that addresses PWSs technical, managerial and financial (TMF) needs as shown here:



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

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

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

This Capacity Development report identifies accomplishments during the period of July 1st, 2017 – June 30th, 2018, as well as provides information on effectiveness of the components of the DPH's Capacity Development Strategy. The DPH submitted the state's initial Strategy to the EPA Region 1 on August 4th, 2000 and became the first state in New England to have an accepted Strategy. The Strategy consolidates the DWS's programmatic activities into cohesive and consistent efforts and focuses on the proactive protection of public health by attempting to identify and prevent PWS capacity weaknesses before formal enforcement actions are required. In establishing the directive to support sustainable systems and to eliminate systems unable to sustain acceptable levels of capacity, the Strategy defines where resources can be effectively applied to achieve the best results. This report is formatted to include all of the required annual reporting criteria which has been included as Appendix A.

Capacity Development Activities for New Public Water Systems (PWSs)

Authority

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

Section 25-33i of the CGS states that no public water supply system may be approved within a public water supply management area after the Commissioner of Public Health has convened a water utility coordinating committee unless: (1) an existing public water supply system is unable to provide water service or (2) the committee recommends such approval. The Department of Public Health provides CPCN applications to the WUCC regions for review and potential action. 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 are included as Appendix B.

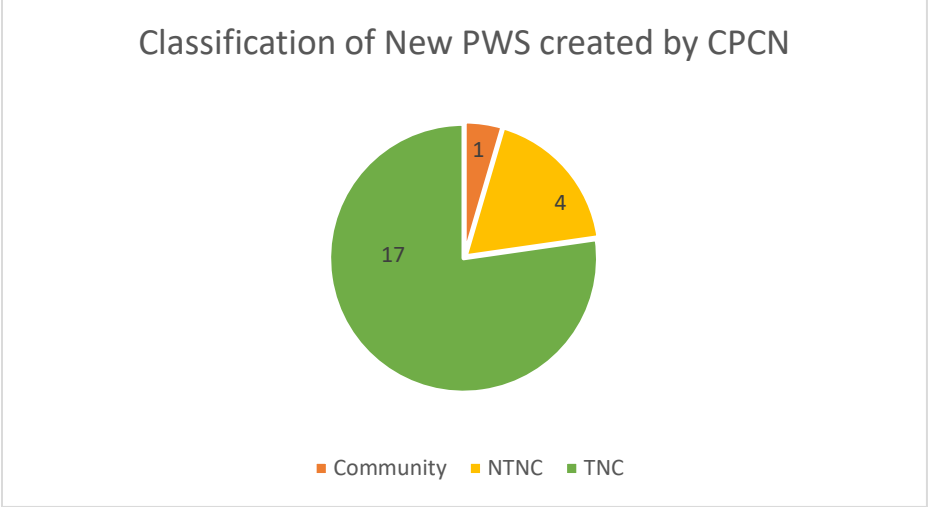
Public Act No. 16-197 which became effective on October 1, 2016 was the most recent change in our authority which expedites the review CPCN applications. Under P.A 16-197, the DPH reviews CPCN applications and issue CPCNs for community (residential) water systems as is currently done for non-community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

Control Points

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

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

No changes were made to the control points during the reporting period, however, as discussed above, the DWS continues to work to strengthen its ability to minimize the creation of new PWS, as well as streamline the process to make it easier for new PWS to understand and therefore comply. The DPH recognizes that early identification of potential new systems is critical. To achieve success requires coordination and involvement at the local community level. Local health departments use forms developed by the DWS to screen development projects to determine if a CPCN may be required. 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 Community PWS to interconnect with existing systems or be owned and operated by the ESA provider (1 CWS during last reporting period) with access to demonstrated TMF capacity.



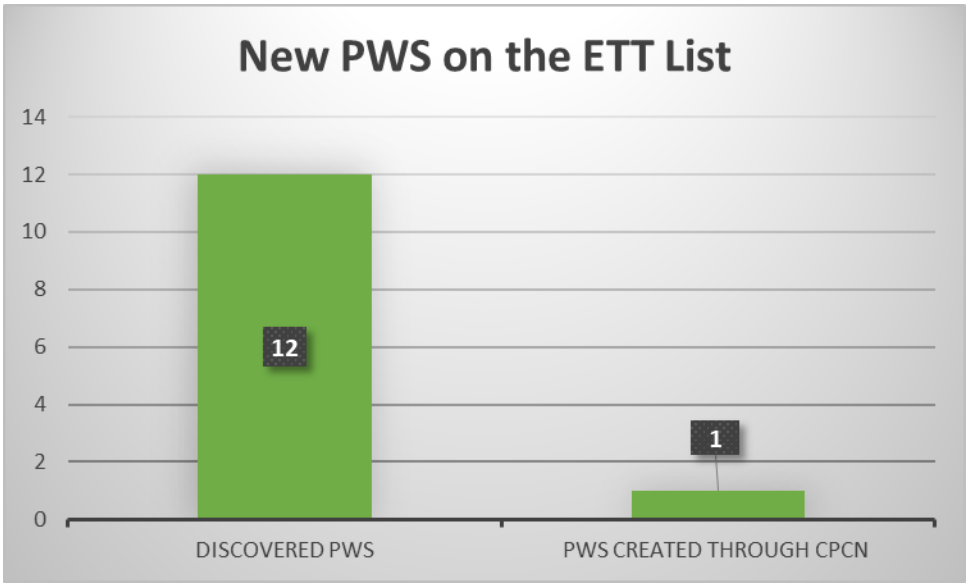
List of New PWS - July 1st, 2015 – June 30th, 2018

PWS ID	PWS NAME	PWS Class	ETT Score
CT0960221	AQUARION WATER CO OF CT-LAUREL RIDGE	C	
CT1341373	TTM TECHNOLOGIES, INC - BUILDING 6	NTNC	
CT0750123	REYNOLDS SUBARU	NTNC	1
CT0429213	201 WEST HIGH STREET	NTNC	
CT0286013	THE CARING COMMUNITY OF CT, INC.	NTNC	
CT1419094	ROUTE 193 LLC RESTAURANT	NC	
CT1301154	WHEELS STORE NO. 14	NC	
CT0309154	HEARTSTONE FARM & WINERY, LLC	NC	
CT0480234	LUANN'S BAKERY AND CAFE	NC	
CT1210194	FOX FARM BREWERY	NC	
CT0550374	AJS STEAK & PIZZA RESTAURANT	NC	
CT0286014	752 MIDDLETOWN ROAD - COLCHESTER	NC	
CT0581054	HANNAH'S MARKET & DELI	NC	
CT0581044	EAST COAST AUTO SALES & SERVICE	NC	
CT0699224	OU812, LLC - 165 HARTFORD TURNPIKE	NC	
CT0820284	144 MERIDEN RD	NC	
CT0429194	SPORTS ON 66	NC	
CT0869154	NASKART LLC	NC	
CT0408034	BRIGNOLE VINEYARDS, LLC	NC	
CT1429224	CROSS FARMS COMPLEX	NC	
CT1609154	WILLINGTON DUNKIN DONUTS	NC	
CT0869134	WIDE WORLD OF INDOOR SPORTS	NC	
CT0787121	CTWC - UCONN WILLOWBROOK DIV.	C	
CT0787111	CTWC - UCONN SOUTH EAGLEVILLE DIV.	C	
CT0787101	CTWC - UCONN HUNTING LODGE DIV.	C	
CT0787091	CTWC - UCONN DEPOT DIV.	C	
CT1021113	JONATHAN EDWARDS WINERY	NTNC	
CT1021103	QUINLAN ENTERPRISE BUILDING	NTNC	
CT0429223	NELSON'S COURT	NTNC	
CT1341363	TTM PRINTED CIRCUIT - BUILDING 4	NTNC	
CT0869163	1495 ROUTE 85	NTNC	
CT1341344	TTM PRINTED CIRCUIT - BUILDING 3A ANNEX	NTNC	
CT1341343	TTM PRINTED CIRCUIT - BUILDING 5	NTNC	6
CT0261103	WHELEN ENGINEERING CO - AVIATION	NTNC	
CT0240262	THE OWL'S NEST DAY SCHOOL	NTNC	3
CT1100112	VALLEY W.S. NORTH MOUNTAIN PUMP STATION	NTNC	
CT0690622	EASTCONN	NTNC	3
CT0869143	RIVERVIEW FARM SEABIRD ENTERPRISES	NTNC	2
CT1085061	AQUARION WATER CO OF CT -OXFORD TOWN CTR	NTNC	
CT0419223	CHESTELM ADULT DAY SERVICES, INC.	NTNC	8
CT0081143	THE GRADUATE INSTITUTE	NTNC	1
CT0859134	GREAT HOLLOW LAKE	NC	

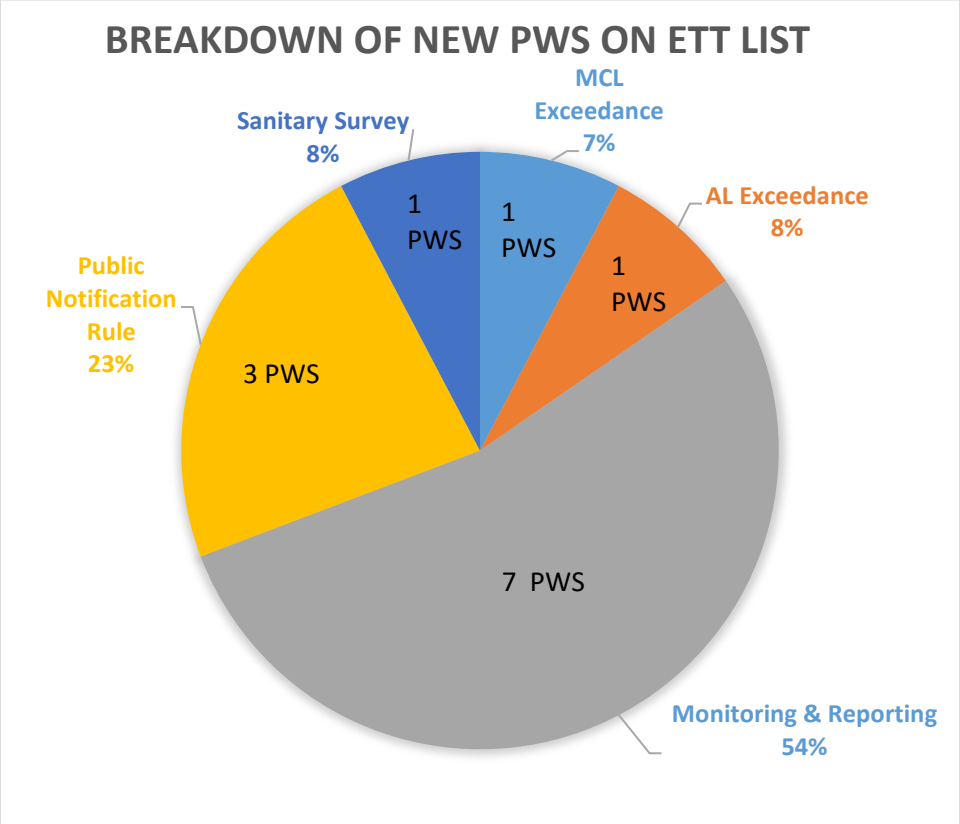
PWS ID	PWS NAME	PWS Class	ETT Score
CT0614114	66 KILLINGWORTH ROAD HIGGANUM	NC	
CT1378104	CLYDE'S CIDER MILL	NC	
CT1463014	ROCKVILLE FISH AND GAME - TRAP AND SKEET	NC	
CT1429234	ROCKVILLE FISH AND GAME - CLUBHOUSE	NC	
CT0419234	40 WILLIAM F. PALMER RD	NC	
CT1341354	71 WEST STAFFORD ROAD	NC	1
CT0727104	MAUGLE SIERRA VINEYARDS LLC	NC	
CT1435134	WRIGHTS BARN	NC	
CT0631224	HAMPTON MINI MART	NC	1
CT1059324	64-68 LYME STREET	NC	
CT1059314	HIGH HOPES THERAPEUTIC RIDING INC	NC	
CT0787084	RED BARN CREAMERY	NC	
CT0419224	GOODSPEED REALTY LLC	NC	
CT1059304	ADVANCED FAMILY DENTISTRY OF OLD LYME	NC	
CT1059294	THE VILLAGE SHOPS	NC	
CT1650104	DEM PRODUCE AND GARDEN CENTER	NC	
CT0869144	ORIENTAL BAR & GRILL	NC	
CT1069014	PASTA VITA	NC	
CT1059283	JIA MEI LLC	NC	
CT1059284	ALL PRO AUTOMOTIVE	NC	
CT0529054	CAROL'S LUNCHBOX	NC	
CT0286024	PRIAM VINEYARDS	NC	1
CT0279054	CHAMARD VINEYARDS	NC	
CT0969434	THE GREEN SPOT	NC	
CT0859114	500 PURDY HILL ROAD	NC	2
CT0839054	MINER HILLS FAMILY GOLF LLC	NC	
CT0969414	300 KENT ROAD	NC	3
CT0614104	1564 SAYBROOK ROAD	NC	
CT0235084	GIV COFFEE ROASTERY AND CAFE	NC	
CT1311084	PERRY PLAZA	NC	
CT0798054	THE FARM AT CARTER HILL	NC	
CT0969404	358 DANBURY ROAD	NC	1
CT0900154	GRACE COMMUNITY CHURCH	NC	
CT1270244	SHERMAN LIBRARY	NC	
CT0530344	ARROWHEAD ACRES, LLC.	NC	
CT0549064	E. DRAGHI & SONS, LLC	NC	
CT0549054	ROBBS FARM LLC	NC	
CT1000234	FREUNDS FARM MARKET & BAKERY	NC	
CT0609114	NEW HAVEN SPORTSMAN'S CLUB INC.	NC	
CT1099234	10 PUTNAM ROAD	NC	

Twenty-two (22) new PWS highlighted in green were created through the CPCN process which included a TMF Capacity review as well as the other control points discussed previously, prior to the final approvals being granted. The remaining sixty (60) PWS were newly discovered systems which were existing and, in instances, had been operating for years. These PWS started being regulated by DPH as referrals from local health departments, expansion of business operations that increased system population over the thresholds, or change in ownership that created new consecutive PWS (as in the case of the four new community PWS on the list). Each of the 60 discovered systems received the required regulatory compliance information upon their activation.

The Drinking Water Section (DWS) uses the EPA's Enforcement Targeting Tool (ETT) point-based system to identify compliance problems. Any PWS that scores eleven (11) or more points is prioritized for enforcement actions under the EPA's Enforcement Response Policy. None of the new PWS either newly discovered or created through the CPCN process scored 11 or more points on the ETT list. As is indicated on the table, only 1 of these new PWS (4.5%) is barely on the current EPA Enforcement Targeting Tool (ETT) list with 1 point due to a water quality monitoring & reporting (M&R) issue. This is compared to twelve of the newly discovered PWS (20%) on the ETT list with scores ranging from 1 point to 8 points. This speaks to the efforts of the Strategy with respect to the TMF capacity review and PWS education throughout the CPCN process as compared to the newly discovered PWS as shown below.



An evaluation of what cause each PWS to have points assigned as part of the ETT strategy was 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. More work should be done to communicate clearly the responsibilities for new PWS (especially for non-community systems) that are discovered.



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 reliable provide safe and adequate water. The DPH submitted the state's initial Strategy to the EPA Region 1 on August 4th, 2000 and became the first state in New England to have an accepted Strategy on December 1st, 2000.

Control Points

Building capacity for PWS is interwoven with all of the DWS functional units, programs, tools and activities as is evidenced in the Strategy focus areas and associated SFY18 accomplishments conducted within those areas highlighted to the right. The Strategy strengthens the TMF capacity of PWSs by identifying and correcting weaknesses early through close regulatory oversight, 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.

In addition to the four focus areas, DWS has worked to increase partnerships and training opportunities to build increased capacity for PWS in the traditionally less regulated area of financial and managerial capacity. DPH continued its contract with Resources for Communities and People (RCAP) to provide direct asset management technical assistance through one-on-one work with individual CWS as well as classroom training opportunities. DPH is also working more closely with Federal Technical Assistance provider, Environmental Finance Center Network (EFCN) to develop training classes for PWS on managerial and financial topics that will help with the roll out of the new asset and fiscal plan requirements. Finally DPH continued to work with UCONN's Connecticut Institute for Resiliency and Climate Adaptation (CIRCA) to create a comprehensive Drinking Water Vulnerability Assessment and Resiliency Plan. The plan will include various assessments and recommendations for implementation and emergency preparedness templates for use by PWS and DPH.

STRATEGY FOCUS AREAS

Source Protection and Planning

- High Quality Source List Updated
- 31 Watershed Surveys encompassing 210 drinking water watersheds completed
- Geographic Information Systems
- Water Supply Plans – 10 New Updated
- Water Utility Coordinating Committee draft Integrated reports completed
- 5 CPCN Projects Completed
- 1 PWS Takeover Initiated – 5 In process

SDWA Compliance and Enforcement

- 584 SS Done; 68 Projects Reviewed
- 409, 893 WQ sample results processed and reviewed for compliance
- CWS Capacity Questionnaire to update baseline CAT implemented
- New Sanitary Survey Webpage
- New Asset & Fiscal Management Plan Statute for small CWS
- Enforcement issued 7 Notices of Violation with Civil Penalties, 9 Consent Orders, & 20 Administrative Orders
- AWOP Distribution Optimization training

Operator Certification

- 92 Operator CEU Course Approvals for a sum total of 328.5 training contact hours
- Violations issued to 2 CWS and 2 NTNC for no operator
- Conduct Operator Investigations when warranted

Drinking Water State Revolving Fund

- DWSRF Required Capacity Review
- 5 New Emergency Generators funded
- Largest DWSRF loan in DWS history for $52M approved and work commenced
- $20 M State Bond Funding for Consolidation Projects distributed

Partnerships

- RCAP Asset Management Contract
- Env. Finance Center Network trainings
- CIRCA - Vulnerability and Emergency Plans

Identification of PWS in Need of Capacity Development Assistance

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

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

2) Sanitary Survey/Capacity Assessment Tool (CAT) Data: Another mechanism used is the sanitary survey process and the resulting compliance determinations. During a sanitary survey the physical infrastructure of the water system is assessed to determine if there are significant violations or deficiencies that could present long and/or short term sustainability problems. The DWS has incorporated many additional 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 is included as Appendix C.

3) DWSRF Program Capacity Review: All PWS that apply for DWSRF funding must demonstrate adequate TMF capacity in order to obtain a loan. Reviews of financial qualification are conducted by the OTT and, if the PWS is a privately owned rate-regulated utility, by the PURA. Technical and managerial reviews are performed by the DWS and include a historical review of regulatory compliance as well as infrastructure deficiencies that were identified during the most recent sanitary survey. Any financial issues that are identified must be corrected 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. In 2013, the DWSRF Program provided incentives for small PWS to implement AM plans by offering an additional 10% subsidization towards project(s) if systems had existing AM plans or would undertake AM planning as part of the project(s).

4) Other PWS data: The PWS capacity needs can also be realized through many different types of interactions that provide data to the DWS. Lack of a certified operator or operators with large amounts of violations cited at the systems they operate, water service interruptions resulting in frequent outages or bulk water hauling, catastrophic infrastructure failures (see Figure 1), cross-connection issues and/or customer complaints can help raise capacity issues to the surface resulting in prioritization for technical assistance or formal enforcement actions.

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

Capacity Development Approach for PWS in Need

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

Since the storms in 2011 and 2012 that greatly impacted our small community PWS, a large portion of the technical assistance and capacity development initiatives/outreach have been geared toward smaller community systems. A copy of the Three Storm Strategy prepared by DWS is included as Appendix D for reference. Some of the initiatives that came about after the storms were the passage of regulations for Emergency Power provisions at all CWS, continuing the WUCC planning process statewide, a technical assistance contract with RCAP Solutions to provide financial capacity assistance and $20 million in state bond funding to be reinvested in small CWS consolidation or interconnection projects, streamlining the water company takeover process, as well as the most recent accomplishment – passage of a new state statute requiring asset and fiscal management plans for small community water systems.

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. In order to improve communication during emergency events, DPH initiated training for large CWS on WebEOC, the state Emergency Operations Center database which is the culmination of many years work developing the water reporting board. Additionally, an analysis of DWSRF applicants was conducted that will help shape our DWSRF program interactions moving forward and continued participation in the EPA sponsored Area Wide Optimization Program (AWOP) helps build DWS staff technical expertise, in order to better assist large CWS with regulatory compliance issues.

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 4 loans to small community water systems during SFY 2018 for the purchase and installation of emergency generators that will allow them to continue to provide water service to their customers during power outages (see Figure 2). The DWSRF's Emergency Power Generator Program was established in SFY 2012 and over its 5 year existence has provided 53 loans for the purchase and/or installation of 57 emergency generators for small systems.

Fig. 2: New propane fueled emergency generator installed at Little Brook Road Homeowners Association funded through the DWSRF Generator Program

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 here: https://portal.ct.gov/DPH/Drinking-Water/WUCC/Water-Utility-Coordinating-Committee . These documents were developed and published in SFY18. Implementation is to begin in SFY19.

Asset Management Assistance Contract: The DPH continued its work with contractor RCAP Solutions during FY 2018. 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 E.

State Grant Funding: The $20 million of available State grant funding under the Public Water System Improvement Program (Public Act 14-98), originally enacted in May of 2014, was allocated by the State Bond Commission in May 2017 for two specific Public Water Systems (PWS), Groton Utilities (GU) and Norwich Public Utilities (NPU). GU received $15 million to support the necessary Water Treatment Plan (WTP) Upgrades and regional emergency interconnections with NPU and five of Southeastern CT Water Authority's (SCWA) CWSs. During this reporting period, GU's WTP Upgrade project commenced, is progressing, and expected to be completed in the fall of 2020 (see Figure 3). GU's emergency interconnection projects with 5 SCWA systems are moving earnestly and expected to be significantly completed by December 31, 2018. GU's emergency interconnection with NPU is expected to commence in the spring of 2019. NPU received $5 million to support the needed upgrades to their Stony Brook and Deep River WTPs upgrades, Occum water storage tank, and a water main extension to provide an emergency interconnection with Sprague Water and Sewer CWS. Two of NPU's projects are under construction while the other three projects are expected to commence in the fall of 2018. NPU's emergency interconnection project with Sprague Water and Sewer is expected to start in the spring of 2019. The DWSRF is also expected to provide approximately $52 million in long-term low-interest loans to support these important projects. The DWSRF Unit is working closely with the GU and NPU to ensure that all state and federal regulatory requirements are being met and the projects are satisfactorily completed in a timely manner. The DWS continues to advocate for additional State grant funding under this program to support the DWS's regionalization and small system consolidation efforts while also offering subsidized financing for other related drinking water infrastructure upgrades.

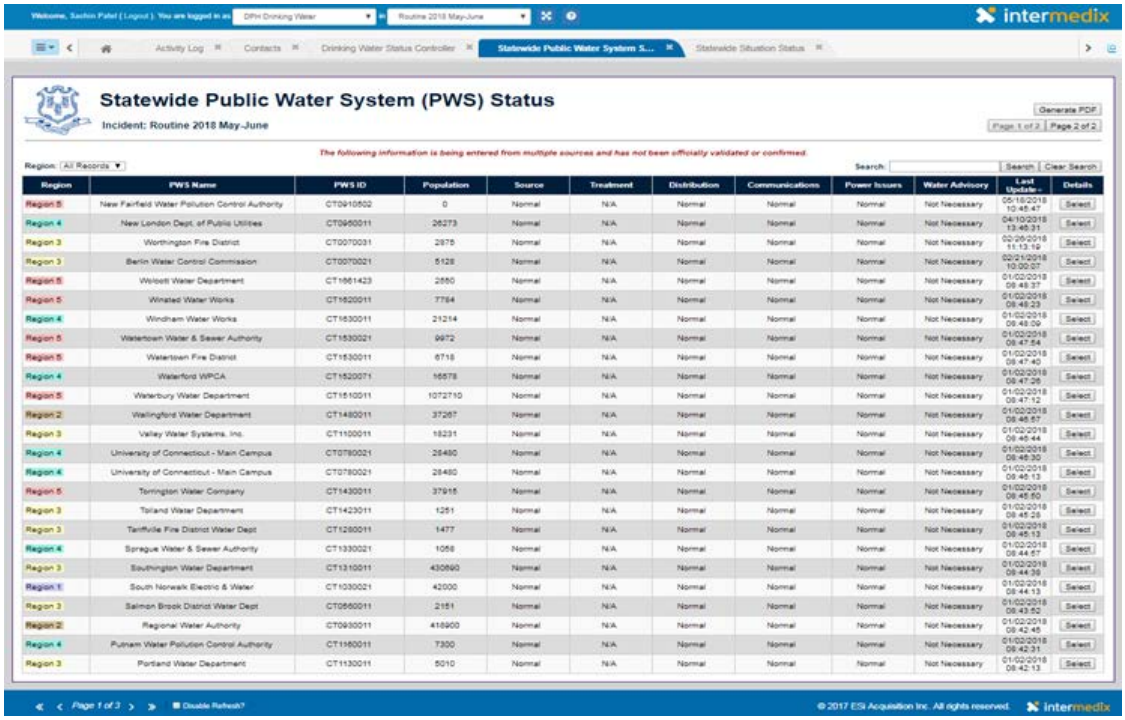
Fig. 3: Work at GU WTP including new tank foundation preparation in foreground and Dissolved Air Flotation building in background. The $52M project is funded through the DWSRF program with State Bond Funding subsidization.

Streamlining the Takeover Process: The Drinking Water Section (DWS) continued its work with the PURA to streamline the water system takeover process to support a swifter transfer of system ownership for small failing community public water systems. This will help to ensure a sustained, safe and adequate supply of drinking water for the public served by those systems. In the recently concluded Docket # 15-11-33 titled "THE PUBLIC UTILITIES REGULATORY AUTHORITY AND THE DEPARTMENT OF PUBLIC HEALTH'S JOINT REPORT ON STREAMLINING THE TAKEOVER PROCESS" the DWS and PURA have identified several key ways the process can be completed more efficiently while not sacrificing the thoroughness of the review. One (1) new take-over proceedings for a CWS was initiated during SFY18. A total of 5 takeover cases are currently under joint review by DPH and the PURA.

Asset and Fiscal Management Plan Requirement: DPH proposed a bill which passed during the 2018 legislative session requiring small community public water systems to prepare a fiscal and asset management plan of their systems' assets, including a prioritized assessment review of their hydropneumatic pressure tanks, if applicable. The Bill is included as Appendix F. This law will also require the DPH commissioner to publish a schedule of civil penalties imposed against water companies under the safe drinking water statutes, instead of adopting them in regulations as under current law. These requirements will assist the DPH in its work to ensure the purity and adequacy of water supplies and in imposing a penalty for violating statutory or regulatory requirements regarding public water supply purity, adequacy, or testing. The new asset management requirement

for small CWSs will help raise awareness and highlight areas where DWS can continue its partnerships with state and federal contractors such as RCAP, the EFC, CT Section of American Water Works Association (AWWA), and Rural Water Associations.

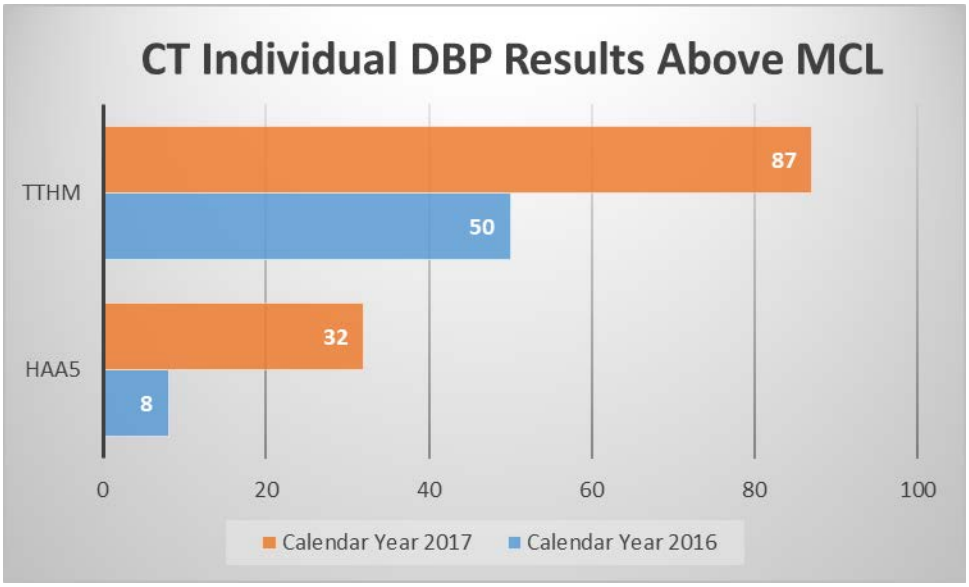
WebEOC: The DWS has created a Public Drinking Water board in Connecticut's WebEOC emergency notification software. The board will allow the state's CWS to report operational status directly to the State Emergency Operations Center (EOC) during emergency incidents, allowing for direct communication of 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).



DWSRF Program Analysis: Currently under the DWSRF Program, 15 of the 20 municipally owned community public water systems in Connecticut that serve greater than 10,000 persons utilize the DWSRF to finance drinking water infrastructure projects. During the coming year, the DWSRF Program intends to schedule meetings with the remaining 5 municipalities to provide the financial benefits of DWSRF financing and details regarding program requirements that may differ than their current financing programs. These municipalities are Windham, Middletown, Waterford, Wallingford and Danbury. Meetings will be held in SFY19 in order to explain the benefits of the

program and solicit new applications which will require Asset and Fiscal Management for the PWS as part of the 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. While originally developed to address microbial contaminants, AWOP has expanded beyond the original tools and is an ever-changing and ever-growing program that now addresses both microbial contaminants and disinfection byproducts (DBPs) in surface water systems. During the SFY18, DWS staff participated in two distribution system optimization workshops as part of the Region 3 AWOP group to reduce DBPs. This knowledge will be passed on from DWS to large CWS in CT in order to help the CWS achieve and maintain compliance with the Stage 2 Disinfection By-Product Rule. Currently DWS is seeing a significant increase in the number of DBP results above the corresponding maximum contaminant level (MCL) which is shown below and developing technical expertise in this area works with the goals of the Strategy to achieve technical compliance and therefore capacity through optimization. DWS expects this trend to continue and will focus efforts on trending and early identification of potential problems.



Capacity Development Strategy Review

The preparation of this Annual Capacity Development Report for EPA serves as a review on the implementation of the existing systems strategy during the previous year. Additionally, capacity development implementation is ongoing and much of the work within the four focus areas are incorporated into many routine work tasks within the DWS including weekly Compliance Section

meetings, quarterly and annual meetings with TA providers and development and evaluation of PWS and Certified Operator training materials and classes.

There have been no formal modifications to the core tenants of the existing system strategy, however as you can see in the actions taken this past fiscal year, DWS is adaptable and shifts its resources accordingly to develop a consistent and proactive approach to emerging issues within the water industry that can affect a PWS's TMF capacity.

The DWS will be working in the coming year to prepare a revised Strategy to provide to the EPA Region 1 for review and comment during the next fiscal year.

Conclusion

As is evidenced by all of the capacity development activities discussed above, the DWS continued to implement the tenants of the Strategy to meet the needs of Connecticut's PWSs during SFY 18. 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. More work is needed to educate newly discovered PWS that DPH begins to regulate in order to establish and maintain acceptable levels of TMF capacity. For existing systems, it is demonstrated that capacity development is intrinsic to all of the DWS functional units, and routine interactions with 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. 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 a streamlined takeover process. 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 SFY18 is the passage of House Bill 5163 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 will work with its state and federally funded external partners, RCAP and EFCN to provide training and technical assistance to small CWS to comply with the new requirement. Capacity needs and possible solutions for small CWS ownership and operations for the future has also become a focus of the rapidly-evolving WUCC process which was documented in the Regional Integrated Reports this year. The Drinking Water Section (DWS) effectively regulated and protected public health at five hundred and fourteen (514) CWSs, five hundred and twenty-four (524) NTNC systems, and one thousand four hundred and twenty-seven (1,427) 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 Regions and Exclusive Service Area Boundary Maps

WUCC Boundaries

Keeping Connecticut Healthy
DPH
Connecticut Department of Public Health

N

Western
Central Corridor
Eastern

NORTH CANAAN
SALISBURY
COLEBROOK
HARTLAND
NORFOLK
CANAAN
WINCHESTER
BARKHAMSTED
SHARON
CORNWALL
GOSHEN
TORRINGTON
NEW HARTFORD
KENT
WARREN
LITCHFIELD
HARWINTON
BURLINGTON
MORRIS
WASHINGTON
BETHLEHEM
THOMASTON
PLYMOUTH
BRISTOL
WATERTOWN
WOLCOTT
NEW MILFORD
SHERMAN
ROXBURY
WOODBURY
WATERBURY
BRIDGEWATER
MIDDLEBURY
PROSPECT
CHESHIRE
NAUGATUCK
NEW FAIRFIELD
BROOKFIELD
SOUTHBURY
OXFORD
BEACON FALLS
DANBURY
NEWTOWN
BETHEL
SEYMOUR
ANSONIA
DERBY
MONROE
REDDING
RIDGEFIELD
SHELTON
EASTON
TRUMBULL
WESTON
WILTON
FAIRFIELD
BRIDGEPORT
STRATFORD
MILFORD
NEW CANAAN
WESTPORT
NORWALK
STAMFORD
DARIEN
GREENWICH

SUFFIELD
ENFIELD
SOMERS
STAFFORD
GRANBY
EAST GRANBY
WINDSOR LOCKS
ELLINGTON
EAST WINDSOR
SIMSBURY
WINDSOR
TOLLAND
WILLINGTON
CANTON
BLOOMFIELD
SOUTH WINDSOR
VERNON
AVON
WEST HARTFORD
HARTFORD
EAST HARTFORD
MANCHESTER
BOLTON
COVENTRY
MANSFIELD
FARMINGTON
ANDOVER
COLUMBIA
NEW BRITAIN
NEWINGTON
WETHERSFIELD
GLASTONBURY
PLAINVILLE
ROCKY HILL
HEBRON
MARLBOROUGH
SOUTHINGTON
BERLIN
CROMWELL
PORTLAND
EAST HAMPTON
MERIDEN
MIDDLEFIELD
MIDDLETOWN
WALLINGFORD
DURHAM
HADDAM
EAST HADDAM
BETHANY
HAMDEN
NORTH HAVEN
NORTH BRANFORD
MADISON
KILLINGWORTH
CHESTER
DEEP RIVER
ESSEX
LYME
WOODBRIDGE
NEW HAVEN
EAST HAVEN
GUILFORD
CLINTON
WESTBROOK
OLD SAYBROOK
OLD LYME
ORANGE
WEST HAVEN
BRANFORD
Fishers Island Sound

UNION
WOODSTOCK
THOMPSON
ASHFORD
EASTFORD
PUTNAM
POMFRET
KILLINGLY
CHAPLIN
HAMPTON
BROOKLYN
WINDHAM
SCOTLAND
PLAINFIELD
STERLING
CANTERBURY
LEBANON
FRANKLIN
SPRAGUE
LISBON
GRISWOLD
VOLUNTOWN
COLCHESTER
NORWICH
BOZRAH
PRESTON
SALEM
MONTVILLE
NORTH STONINGTON
LEDYARD
WATERFORD
EAST LYME
STONINGTON
NEW LONDON
GROTON

Legend

WUCCs

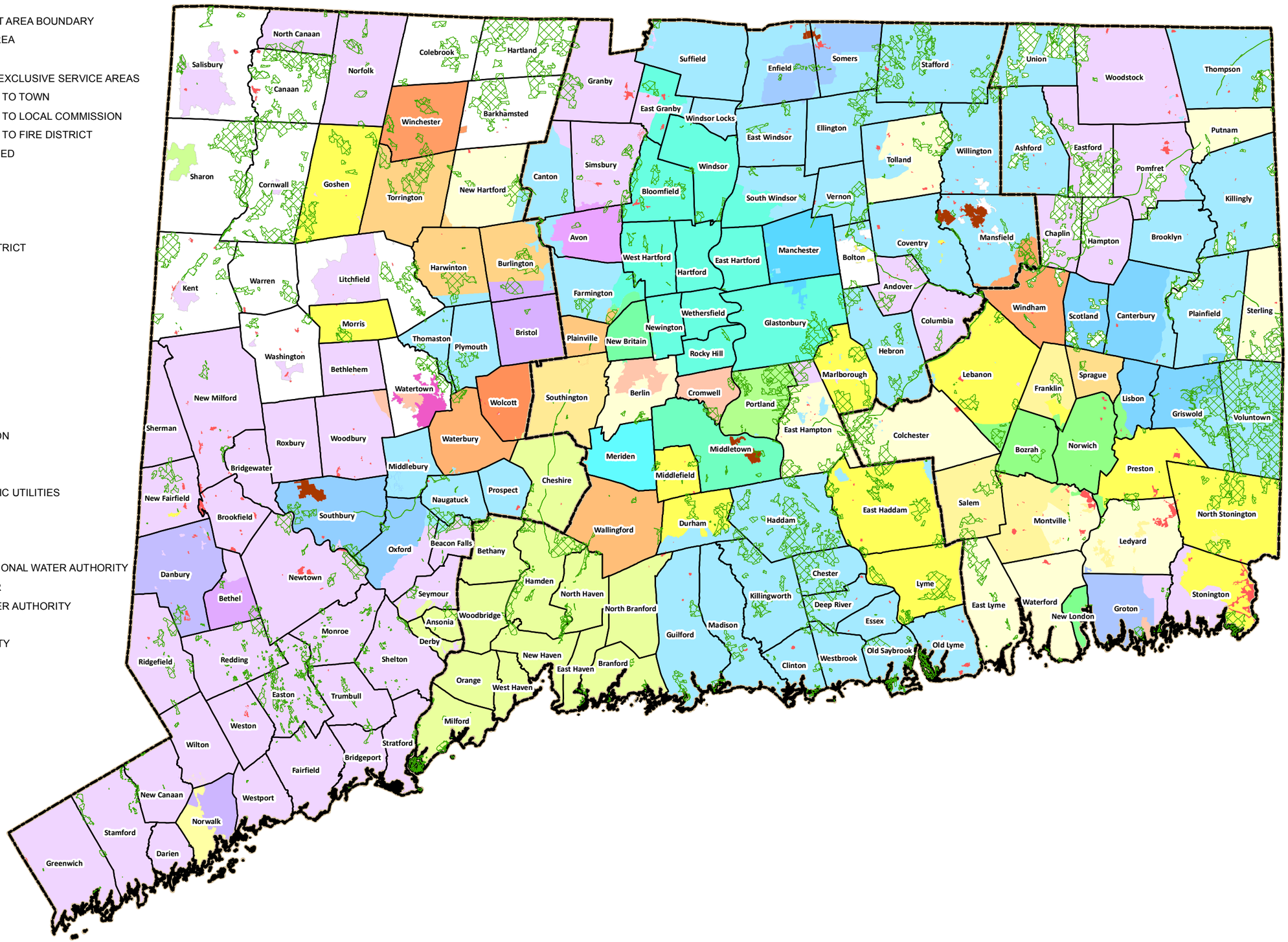
- Central Corridor
- Eastern
- Western

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



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www.miloneandmacbroom.com

SOURCE(S):
Town Boundaries - CT DEEP
Exclusive Service Areas - W, C, & E WUCCs

STATEWIDE MAP OF ESA BOUNDARIES
EXCLUSIVE SERVICE AREA PROCESS
CONNECTICUT

Map By: SJB
MMI#: 1017-05-04
MXD: Y:\1017-05\GIS\Maps_Statewide_Map.mxd
1st Version: 03/28/2017
Revision: 6/13/2017
Scale: 1 in = 41,000 ft

Appended Figure 2

Appendix C - Sanitary Survey Capacity Questionnaire

Community Public Water System Sanitary Survey Capacity Questionnaire

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

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

Managerial Capacity Questions

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

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

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

Financial Capacity Questions (Not Applicable for PURA Regulated PWS)

1. Does your PWS analyze the annual costs of operating and maintaining your system and adjust customer billing rates to cover these costs? ☐ Yes ☐ No ☐ N/A-PURA
2. Does the customer billing cover all annual costs including depreciation, future expenses and infrastructure replacement (i.e. Asset Management Plan)? ☐ Yes ☐ No ☐ N/A-PURA
3. Does your PWS have rules, regulations and/or by-laws that cover billing and address delinquent payments? ☐ Yes ☐ No ☐ N/A-PURA
4. Has your PWS set up a reserve fund for emergency costs or if not, does the PWS have the legal authority to levy special assessments on customers for unexpected large expenses? ☐ Yes ☐ No ☐ N/A-PURA

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

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

Appendix D - DWS Three Storm Strategy Report

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

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

Dannel P. Malloy
Governor
Nancy Wyman
Lt. Governor

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DPH Action Items:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

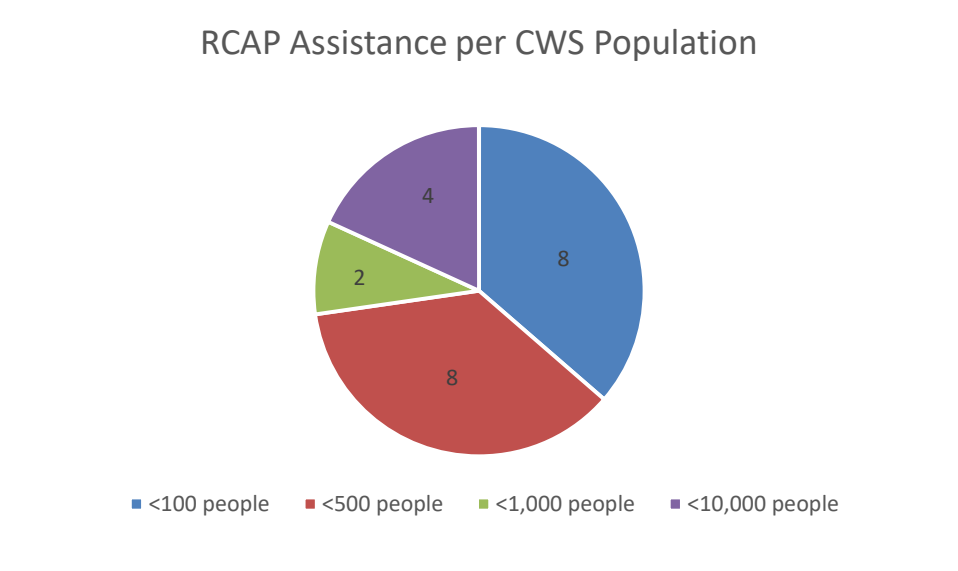
Last updated April 2018

LJM

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

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

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

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

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

(e) This section shall not apply to a small community water system that is (1) regulated by the Public Utilities Regulatory Authority, (2) subject to the requirements set forth in section 25-32d of the general statutes, or (3) a state agency.
(f) The provisions of this section shall be deemed to relate to the purity and adequacy of water supplies for the purposes of the imposition of a penalty under section 25-32e of the general statutes, as amended by this act.

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