

State of Connecticut  
Department of Public Health  
Drinking Water Section

Governor's Capacity Development Strategy Report

for the period

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## Acronyms

ARRA	American Recovery and Reinvestment Act of 2009
CAD	Compliance Assistance Database
CWS	Community (Public) Water System
CGS	Connecticut General Statutes
CPCN	Certificate of Public Convenience and Necessity
CUPSS	Check Up Program for Small Systems
DEEP	Department of Energy Environmental Protection (CT)
DOE	Department of Education (CT)
DPH	Department of Public Health (CT)
DWS	Drinking Water Section (CTDPH)
DWESAC	Drinking Water Emergencies and Security Advisory Committee
DWSRF	Drinking Water State Revolving Fund
USEPA	United States Environmental Protection Agency (Federal)
ETT	Enforcement Targeting Tool
GAF	General Application Form
GIS	Geographic Information System
GWR	Groundwater Rule
HAN	Health Alert Network
MCL	Maximum Contaminant Level
NTNC	Non-Transient Non-Community PWS
PWS	Public Water System
PWSS	Public Water System Supervision
SDWA	Safe Drinking Water Act (Federal)
SDWIS	Safe Drinking Water Information System
SNC	Significant Non-Complier
TMF	Technical, Managerial, and Financial (capacity)
TNC	Transient Non-Community PWS
WANS	Wide Area Notification System
WEAR	Water Emergency Assessment and Response Team
WPC	Water Planning Council
WSP	Water Supply Plan
WUCC	Water Utility Coordinating Committee

## **Executive Summary**

The Connecticut Department of Public Health (DPH) is the primacy agency for implementing and enforcing the Federal Safe Drinking Water Act (SDWA). The 1996 SDWA Amendments require primacy states to develop a Capacity Development Strategy that addresses the technical, managerial and financial (TMF) needs of public water systems (PWS). The Capacity Development provisions provide a framework for the State of Connecticut DPH, PWSs, and other stakeholders to work together to ensure that adequate capacity to comply with drinking water regulatory requirements is acquired and maintained. Capacity Development is an important component of Connecticut's proactive focus on prevention and early detection of problems, promotion of high quality public drinking water, and protection of public health.

Connecticut has, for many years, recognized that various program components were necessary for a strong Capacity Development Strategy. Connecticut had already established into law the core of its Capacity Development Strategy well before the SDWA Amendments of 1996. Connecticut has a large number of PWSs: 557 community water systems which serve a residential population; 582 non-transient non-community systems, and 1,453 transient non-community systems, which serve non-residential populations. Since Connecticut is a relatively small state, a strong Capacity Development Strategy is critical to address this large number of PWSs.

PWSs that lack capacity in one or more of the TMF areas are identified through a prioritization process using "triggers" recognized as indicators of concern. Some of these triggers are: systems listed on the annual non-compliance list, systems with water quality monitoring and/or reporting violations, systems lacking certified operators, systems with water quality violations and systems with deteriorating infrastructure. Historically, smaller systems are more apt to be non-sustainable since they bear similar regulatory compliance costs of larger systems but generate less capital due to their small customer base. Smaller systems may also lack the TMF expertise of larger systems. The DPH encourages and helps facilitate the consolidation of small systems with larger systems whenever feasible to achieve economies of scale and long-term sustainability.

Connecticut's Capacity Development Strategy strives to maintain existing systems that have adequate TMF capacity. The Strategy also strives to eliminate systems that are not sustainable by enhancing their TMF capacity through technical assistance, financial assistance, training and, when necessary, formal enforcement. Restructuring of existing, non-sustainable systems can occur through direct acquisition by a larger water system, by contracting out certain services to larger systems under receivership, or by some other alternative acceptable to the Connecticut DPH and the Connecticut Department of Energy and Environmental Protection (DEEP). The Certificate of Public Convenience and Necessity (CPCN) regulations, also administered jointly by these two agencies, restricts the creation of new small water systems by encouraging feasible interconnections with existing utilities and by establishing minimum regulatory standards for new water system design and management. The CPCN process is further complemented by CT's Water Utility Coordinating Committee (WUCC) and water supply planning processes under state statute which allows DPH to approve Exclusive Service Area (ESA) providers for specific geographical service areas when a PWS can verify an adequate Margin of Safety (MOS) for the five, twenty, and fifty year planning periods along with the adequate financial, technical, and

managerial capacity necessary to effectively serve the recommended service area. DPH works to ensure that the large PWSs which have claimed ESAs meet all their water supply regulatory obligations and critically have a sufficient supply and adequate Margin of Safety at least for the five and twenty years periods to properly serve these geographical areas.

Outreach activities, public participation, and creating and maintaining partnerships are also essential parts of our Capacity Development Strategy and include educational forums for municipalities, regional planning organizations, local health officials and other stakeholders on important drinking water topics which encourage partnerships to jointly and actively engage in discussions and development of solutions for drinking water issues within communities.

## **Introduction**

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

***Community Water Systems (CWS):*** These are water systems that provide water service to 25 or more residents at least 60 days per year. These system range widely in size from large municipal water systems to a small neighborhood of homes in a rural setting that share a common water supply.

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

***Transient Non-Community (TNC) Systems:*** These are 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. Examples include restaurants, parks, campgrounds and gas stations.

The Connecticut Department of Public Health (DPH), as the primacy agency for implementing and enforcing the Federal Safe Drinking Water Act (SDWA), is required to implement a Capacity Development Strategy that addresses the technical, managerial and financial (TMF) needs of public water systems (PWS). Each of these 3 elements of capacity is briefly described below:

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

***Managerial capacity*** refers to the ability of a PWS 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 the ability of a PWS to properly manage its financial obligations while generating sufficient reserve funds needed to maintain its infrastructure and includes elements such as rate structure, budget preparation, collection services and credit worthiness.

The DPH submitted its Capacity Development Strategy to the United States Environmental Protection Agency (USEPA) on August 4, 2000, and it was accepted on December 1, 2000. Connecticut was the first State in US EPA Region 1 to have its Strategy accepted. The SDWA further required Connecticut to adopt and implement its approved Capacity Development Strategy and, every 3 years, submit a report to the Governor on the efficacy of the strategy. The Capacity Development Strategy for Connecticut consolidates all programmatic activities within the Drinking Water Section (DWS) into a more cohesive and consistent effort. In establishing a directive to support sustainable water systems and eliminate those systems unable to sustain acceptable levels of capacity, the Capacity Development Strategy has defined the direction toward which the DWS's resources can be applied effectively. It has also identified an intricate weave of program activities critical to its implementation that are detailed in this report.

The Capacity Development Strategy is focused on proactive protection of public health by working toward identification and prevention of capacity weaknesses with PWSs before they escalate to the point where formal enforcement actions are necessary. The Capacity Development elements presented in this report are the tools used by the DWS that together form the strategy which is the basis of our Capacity Development program. This report to the Governor discusses each DWS program and presents its accomplishments during the period July 1, 2008 – June 30, 2011.

### **Capacity Development Strategy Implementation – New Systems**

Connecticut is required by the federal SDWA to have the authority to implement a program that assesses the TMF capacity of all new CWS and NTNC systems. DPH's Capacity Development Strategy includes mechanisms to prevent the proliferation of new small PWSs by requiring all new systems to obtain a Certificate of Public Convenience and Necessity (CPCN) pursuant to Connecticut General Statute Section 16-262n prior to construction. Through the CPCN regulatory review process, prospective new systems are required to first evaluate feasible interconnection with existing larger PWSs. If such interconnections are 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 jointly conducted by the DPH and the Department of Energy and Environmental Protection (DEEP) for CWS and by DPH alone for NTNC and TNC systems. Additionally, when a designated Exclusive Service Area (ESA) provider exists, under the CPCN process a designated ESA provider is required to own any newly created CWS satellite system which further ensures additional financial, managerial, and technical capacity along with the support of a larger customer base to support the satellite system.

In 2008, the DPH introduced revised statutory language to strengthen the Department's authority to require new community water systems (CWS) to have financial, managerial and technical capacity. Public Act 09-220 detailed these authorities and became effective on October 1, 2009. A copy of the October 16, 2009 Attorney General's certification for the Department's new systems authority based on these statutory changes was submitted to USEPA.

The DPH recognizes that early identification of potential new systems is critical and in order to do so requires community involvement at the local level. Local planning and zoning agencies, regional planning organizations and local health departments play a critical role in identifying

potential new PWSs. The DPH has held and continues to hold or participate in educational forums for these local agencies so that they understand the CPCN requirement and refer developers to the DPH and the DEEP for a CPCN before any local permits are issued. Local health departments utilize forms developed by the DWS to screen new local developments projects to determine if a CPCN is required. Municipalities are also responsible under Connecticut General Statute (CGS) Section 8-25a for the operation of any new water company serving more than 250 customers or 1000 persons that is created without a CPCN if that new water company is at any time unable or unwilling to provide adequate water service to its customers. These local controls are essential to an effective new systems program.

During the period of July 1, 2008 to June 30, 2011 there were 31 new PWSs created through the CPCN process in Connecticut including 2 CWS, 5 NTNC systems and 24 TNC systems (Attachment 1). These systems all received comprehensive TMF capacity evaluations during the CPCN review. This included a financial capacity review by the DPUC pursuant to regulatory requirements.

Connecticut utilized EPA's annual Significant Non-Compliance (SNC) list to identify systems with significant compliance problems warranting enforcement until January 2010. In January 2010, Connecticut began using the new Enforcement Targeting Tool (ETT) point-based system to identify PWSs with compliance problems that are targeted for enforcement actions. PWSs scoring 11 or more points on the ETT are considered priority systems for enforcement actions under EPA's Enforcement Response Policy. During this 3 year period 2 new systems that went through the CPCN review process met the SNC or ETT criteria for enforcement. The DPH continues to work with these systems in order to return to compliance.

During this same period 89 other new systems were added to the DWS's inventory of PWS including 10 CWS, 13 NTNC systems and 63 TNC systems (Attachment 2). Most of these were newly discovered existing systems that were identified after the systems had been built and placed into operation. The vast majority were non-community systems that had been in operation for many years. Some of these systems were existing commercial properties that changed ownership and business operations which subsequently resulted in them becoming PWSs by exceeding the population threshold. All systems were provided the necessary regulatory compliance information and sanitary surveys were conducted at 73 of these 89 systems. Of the 89 systems, 4 met the SNC or ETT criteria for formal enforcement. Three (3) of these 4 systems were able to return to compliance. The DPH is working with the remaining PWS in order to achieve compliance.

### **Capacity Development Strategy Implementation – Existing Systems**

The Capacity Development Strategy includes mechanisms to ensure that existing PWSs are sustainable so that they can deliver a safe and sufficient supply of water to their customers for future generations. The strategy recognizes the difficulties small water systems face in keeping up with new regulations as well as compliance, operations and infrastructure maintenance costs. The strategy strongly promotes consolidation of smaller systems with larger systems to achieve economies of scale for their rate payers and long-term infrastructure sustainability. When consolidation is not feasible, the strategy includes mechanisms to assist small systems with

compliance and sustainability through technical assistance, financial assistance, training and, if necessary, formal enforcement or take-over proceedings.

The Capacity Development Strategy identifies several “triggers” used to identify and prioritize existing PWSs that need assistance that are described in the following sections.

#### Compliance with State and Federal Regulations

The DWS Enforcement and Certification Unit utilize two tools developed by the USEPA as a primary mechanism of identifying PWSs with capacity development problems. The first tool is the annual SNC list. More recently starting in 2010, the DWS has begun utilizing the newer ETT that USEPA developed to identify PWSs prioritized for enforcement actions. Both tools were used to ensure that PWSs with significant regulatory compliance problems receive priority attention by the DWS and that formal enforcement proceedings are initiated, if necessary, to get these systems back into compliance.

The DWS closely monitors regulatory compliance of all PWSs through a Safe Drinking Water Information Systems (SDWIS) database that captures and reports regulatory compliance violations when they occur. DWS engineers from the Compliance Unit receive these compliance reports on an on-going basis and make contact with PWSs that incur violations to determine the cause. These engineers provide technical assistance to assist PWSs in returning to compliance. In most cases, this quick attention to compliance violations results in the PWS returning to compliance before they ever reach the SNC or ETT lists. In other cases, these engineers are able to determine early on when a PWS is struggling in one of the TMF areas and more in depth assistance is provided through appropriate DWS programs. This proactive attention to compliance problems when they occur is central to Connecticut’s strategy.

The DWS utilizes a tiered enforcement approach to achieve compliance. The first tier is the issuance of a Notice of Violation with Civil Penalties. The second tier is a formal Consent Order that is a voluntary and binding agreement between the PWS and the DPH that establishes a plan and timetable for compliance. The third tier is a formal Administrative Order that orders non-voluntary compliance. Since Administrative Orders can be appealed they are typically only used for recalcitrant systems that refuse to comply.

During the period of July 1, 2008 to June 30, 2010 the DWS issued Notices of Violation with Civil Penalties to 93 PWSs, Consent Orders to 20 PWSs and Administrative Orders to 38 PWSs. During that same time 171 PWSs appeared on USEPA’s SNC or ETT lists.

#### Compliance with Operator Certification Regulations

All CWS and NTNC systems are required by regulation to have DPH certified operators operate their water systems. There are several different classifications for operators and the number of operators and classification requirements for individual PWSs depends on the size and complexity of the water system. The DWS Operator Certification Program within the Enforcement and Certification Unit is responsible for DPH’s oversight of the qualifications of these operators. The DWS issues certifications for treatment plant operators, water distribution

system operators, small system operators and backflow inspectors. The DWS also exercises quality control over the examination process for these operators.

The Operator Certification Program also conducts routine operator training classes for drinking water operators of water systems serving fewer than 3,300 persons, and participates in operator training programs offered by other training providers. Operators are required to maintain minimum training contact hours for the renewal of their certificate. Training sessions cover subject matter including operator duties/responsibilities, regulatory compliance, source protection, water quality, sampling, infrastructure components, customer service, safety and management. The Program also approves other operator training course providers, operator training course curriculum and coordinates internal staff training for the DWS.

Having professional and skilled operators operating PWSs is critical to maintaining the delivery of safe drinking water to Connecticut's citizens. The DWS maintains a operator certification database to monitor compliance with this requirement. When a CWS or NTNC system does not meet the minimum operator certification requirement then this is a trigger of a capacity weakness. The Operator Certification Program provides technical assistance to those systems that are in violation to achieve compliance. If compliance cannot be achieved through technical assistance then formal enforcement actions are initiated.

During the period of period of July 1, 2008 to June 30, 2011 there were 528 CWS and 625 NTNC systems required to meet minimum operator certification requirements. During that period the DWS issued violations for this requirement to 47 CWSs and 63 NTNC systems. Further, the DPH worked to certify 633 operators in Connecticut. The Operator Certification Program also held 24 operator training courses, audited 4 training courses and approved 203 training courses by other providers.

### Sanitary Surveys

DWS engineers from the Compliance Unit conduct routine on-site sanitary surveys to assess the compliance and capacity for all of Connecticut's PWSs. Sanitary surveys are conducted every 3 years for CWS and every 5 years for NTNC and TNC systems. During a sanitary survey the physical condition of the water systems infrastructure is assessed, records of regulatory compliance are reviewed, information is gathered on the managerial and financial health of water system and technical assistance is provided to owners and operators of the water system. Additional non-routine sanitary surveys are conducted when regulatory compliance or other problems are encountered such as water quality violations, security incidents or customer complaints. This face to face interaction is critical to building a strong working relationship between the regulatory agency and the regulated community. It also provides the DWS with an opportunity to see the physical condition of water system components understand how the water system operates and observe potential capacity weaknesses. Compliance Unit engineers issue formal sanitary survey reports to PWSs identifying any regulatory violations and offering recommendations for improvements. In many cases, these engineers will also triage TMF weaknesses they identify during these surveys with other DWS programs as appropriate for follow-up assistance including financial assistance from the Drinking Water State Revolving

Fund when significant infrastructure improvements are needed. PWSs are required to provide a corrective action plan to all violations that are cited in these reports.

During the period of July 1, 2008 to June 30, 2011 the DWS performed sanitary surveys of 1,927 PWSs including 472 CWS, 353 NTNC systems and 1,019 TNC systems.

### Water Supply Plans (WSP)

Seventy-two (72) water companies that serve more than 1000 people are required to submit individual WSPs to the DPH, the Department of Energy and Environmental Protection (DEEP), the Office of Policy and Management (OPM), the Public Utilities Regulatory Authority (PURA), and regional planning agencies every six (6) to nine (9) years. The nine (9) year submittal time period requirement is granted only to public water 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. The Seventy-two (72) water companies that are required to submit plans are further comprised of 214 individual CWSs as many water companies have multiple distinct divisions addressed within their individual plan. This generally unrecognized element of CT's program ensures that about 37% of CT's current CWSs, many of which are small satellite CWSs owned by large water companies, are provided the additional technical, managerial, and financial capacity elements addressed in DPH's water supply planning process.

The core elements of these plans are:

- A description of the existing water supply system including sources of water, available water and margin of safety.
- An analysis of present and future water supply demands for the five, twenty, and fifty year planning periods.
- An assessment of potential alternative sources of supply.
- A water supply emergency contingency plan, including emergencies due to contamination of water, power outages, drought, flood or failure of any or all-critical system components.
- Necessary system improvements such as new sources of supply, storage facilities, treatment processes, and distribution/pumping system upgrades that will ensure an adequate quantity and quality of water supply and an effective delivery of water service for all system operating demand conditions for the 5, 20 and 50 year planning periods.
- A forecast of future land sales that includes a list of the address, associated source of supply and acreage included for each anticipated parcel of land projected to be sold during the 5, 20 and 50 year planning periods.
- A plan for strategic ground water monitoring in conformance with the strategic groundwater monitoring plan.
- An analysis of the impact of water conservation practices and a strategy for implementing supply and demand management measures.
- An evaluation of source water protection measures that includes an analysis of potential hazards to public drinking water sources of supply.

These comprehensive WSPs are intended to ensure that larger CWSs have detailed sustainability

plans for their water systems and are able to meet present and future challenges. These WSPs undergo a 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. During the period of July 1, 2008 to June 30, 2011 the DWS Planning Unit has reviewed water supply plans from fifty (50) of the seventy-two (72) water companies that are required to submit individual WSPs on a routine schedule. The plans reviewed in total include the technical review of eighty-eight (88) distinct individual CWSs which are encompassed within the water supply plans of these fifty (50) water companies. DPH has given final approval to five (5) of these plans with another twenty-six (26) plans having already gone through a significant portion of DPH's improved review process including in depth staff and supervisory technical reviews, meetings with the water companies to discuss necessary technical revisions, and are close to achieving final approval once DPH receives the final necessary technical corrections. The remaining nineteen (19) plans under review have been reviewed by staff and deemed significantly insufficient in one or more critical areas and require major revisions.

Significant revisions to CT's water supply planning statutes were enacted in 2009 under Public Act 09-220 which extended the submittal requirements for water supply plans from the previously required five year time period from the date of the previous plan submittal to a six year time period from the approval date of the previous plan with a provision for an extension to a nine year period from the approval date of the previous plan for any water company satisfactorily meeting all regulatory obligations. In addition to significantly extending the routine minimum time period for water supply plan submittals, the revisions also allow PWSs to provide subsequent plan updates in the future for any water supply plan approved after the October 1, 2009 effective date. These future water supply plan updates in many instances could consist of a few updated pages in lieu of the currently required comprehensive technical manuals covering the entire operation. This change makes the current plan review period critical important for DPH to ensure that any water supply plan approved is comprehensive, technically accurate, and corrects the many historic errors that are usually noted as the current plans under DPH review will likely be the last complete water supply plan DPH will receive for each water company. A presentation on the new regulations and changes to the water supply planning process was provided at the Connecticut Water Works Association (CWWA)/CT Section American Water Works Association (AWWA) Annual Conference on October 23, 2009 in Wallingford.

The Planning Unit also reviews agreements between CWSs that involve the sale of water to ensure that it will not have any adverse impact on the seller's available water for their customers. In addition, CWSs are also required to obtain permits from the DWS prior to abandoning any of their drinking water sources so that the Planning Unit can assess the impact from the loss of these sources. During the period of July 1, 2008 to June 30, 2011, the Planning Unit reviewed 15 Sale of Excess Water Permit applications and 6 Source Water Abandonment Permit applications from CWSs.

## **Other DWS Functions that Support Capacity Development**

### Drinking Water State Revolving Fund (DWSRF)

The DWSRF Program is contained within the DWS's Capacity Development Unit. The DWSRF provides low interest loans to eligible public water systems for sustainable drinking water infrastructure projects. The program is funded with annual capitalization grants from the EPA and executed loan repayment streams that are recycled through the program. The program is leveraged through bond sales conducted by the Office of the State Treasurer. Projects receiving funding under this program are prioritized based on established priority ranking criteria and finalized through a published public participation process that includes a public hearing. In 2009 and 2010 the program also provided partial subsidization for projects which significantly helped keep important statewide drinking water projects moving forward during difficult economic times. The DWSRF also provides set-aside funding for administration and augmentation of the program.

During the period of July 1, 2008 to June 30, 2011 the DWSRF provided loans and subsidization totaling approximately \$22 million to PWSs for 18 drinking water projects in various areas of the state. This included approximately \$17 million dollars from the American Recovery and Reinvestment Act of 2009 (ARRA).

### Source Water Protection

The DWS's Source Water Protection (SWP) Unit is responsible for the protection of Connecticut's approximately 4,000 existing drinking water sources as well as all future sources. The Unit operates under a Strategic Plan that contains five main areas: regulatory, management planning, education and training, cross program linkages, and stakeholder involvement. Highlights of these areas are:

- Develop, enhance, oversee and enforce existing public health source protection laws and regulations for the regulation of source development, water company land, recreational use permits, storm water discharge and the sale of water companies and water company lands.
- Review and approve siting of new/replacement sources of public drinking water.
- Develop integrated Geographic Information System (GIS) to improve analyses of source water quality and wellhead protection
- Work with sister state and local agencies concerning contamination that represents a risk to sources of public drinking water.
- Review and comment on annual watershed survey reports.
- Review and comment on projects from other state agencies.
- Educate certified operators concerning source water protection.
- Educate local land use officials and local health directors.
- Integrate drinking water source protection with water supply management planning.
- Initiate the development of drinking water quality management plans.

- Develop a consistent local land use review process to assist towns in protecting drinking water sources.
- Involve stakeholders on a continuous basis.
- Work with state agencies on initiatives that include open space acquisition, responsible growth, and state policies that may affect public drinking water sources.
- Review and track emerging issues that may affect public drinking water sources.

During the period of July 1, 2008 to June 30, 2011 the Source Water Protection Unit approved 118 new groundwater well sites, reviewed 85 watershed survey reports, reviewed 85 state agencies projects for potential impacts on sources of drinking water, reviewed 73 water company owned land permit applications and reviewed 29 water company land recreation permits.

Also during this period, the SWP Unit developed several legislative proposals, five of which were adopted into law. These proposals were developed in order to either enhance the Unit's ability to protect the environmental resources critical to public health or to streamline existing cumbersome processes. A brief description of these proposals follows:

- Public Act 11-242 emphasizes the importance of maintaining Connecticut's most pristine water bodies for public drinking water use.
- Revision to CT General Statutes Section 25-33(b) requires that a public water system control the entire sanitary radius of a new source of supply by ownership, easement or other plan approved by the department. It also requires an evaluation of the potential effects a new source of supply may have on nearby private and public water systems. The Unit developed new application forms and redeveloped the new water supply well review process to include this requirement.
- New section of the CT General Statutes 25-32(p) allows the lease of class I water company land (within 200' of a public water supply well) to another water company while retaining protections required by law. This section of the law has been used to enable the transfer of small public water systems with limited capacity, such as mobile home parks and condominium developments, to large water utilities with the capacity to manage these systems in a manner which is protective of public health.
- Revision to CT General Statutes Section 16-262m specifically grants the Department the ability to deny a permit for a new public water system source of supply if it believes that the supply may be susceptible to contamination in the area, if the supply has an effect on other nearby sources of supply or if the new public water system does not control the entire sanitary radius of its proposed source of supply.
- Revision to CT General Statutes Section 25-33k streamlines the source abandonment process by allowing for a de minimis ruling in the cases of low-yielding sources of supply with poor water quality.

The SWP Unit is currently developing regulations for the approval of new sources of supply pursuant to CT General Statutes Section 25-33(b).

## Regional Water Supply Planning

"An Act Concerning a Connecticut Plan for Public Water Supply Coordination" (Public Act 85-535) was passed by the Connecticut General Assembly in the 1985 legislative session. The Legislature found that "in order to maximize efficient and effective development of the state's public water supply systems and to promote public health, safety and welfare, the DPH shall administer a procedure to coordinate the planning of public water supply systems." The act provides for a coordinated approach to long-range water supply planning by addressing water quality and quantity issues from an area-wide perspective. The process is designed to bring together PWS representatives and regional planning organizations to discuss long-range water supply issues and to develop a plan for dealing with those issues.

Common problems faced by public water systems when the process was developed were: 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. It was felt that many of these problems would lend themselves to an area wide analysis which would result in the most appropriate solutions.

Thus, the state was divided into seven (7) Water Utility Coordinating Committee (WUCC) management areas based upon a number of factors including similarity of water supply problems, proliferation of small water systems, groundwater contamination problems, and over allocated water resources. The WUCC planning process was designed to bring water utility representatives and both regional and local planning officials together to discuss long-range water supply issues and develop a coordinated water supply plan that addressed these issues in each management area. The coordinated plans were to be built upon individual water supply plans required to be produced by public water systems that serve over 1,000 people pursuant to CGS 25-32d. The coordinated water supply plan was to include an assessment of water supply problems and conditions within the management area, exclusive service area designations, and integration of the area's individual water supply plans into a cohesive area wide plan emphasizing cooperation and coordination between public water systems.

It was expected that water utility representatives and local officials would use a team or consensus approach to solve the problems identified in each management area. The Water Utility Coordinating Committee (WUCC), which is convened by the DPH, would then have a vested interest in the plan and its implementation because it is their plan rather than a State conceived solution. Each WUCC would then reconvene periodically to revise the area wide supplement to reflect the changing status of the individual plans and current planning issues at that time. It was felt an iterative process like the WUCC would result in a living document that, however, would require constant vigilance and regular updates to reflect the changing status of individual water supply systems, the economic impacts to projected demographics and the environmental impact on drinking water supplies.

WUCCs have been established in four (4) of the seven (7) regional management areas to date: the Housatonic (convened June 11, 1986), Upper Connecticut River (convened March 24, 1987), South Central Connecticut (convened November 4, 1987), and the Southeast Connecticut (convened August 5, 1998). The Housatonic, Upper Connecticut River, South Central Connecticut, and the Southeast Connecticut completed their plans in September 1988, March 1989, April 1990, and March 2001; respectively. The Southeast Connecticut WUCC regional coordinated plan was approved by DPH on February 19, 2002; thus, making the Southeast Connecticut WUCC management area the only current WUCC with DPH approved ESA providers. The remaining three (3) WUCCs not yet convened are the Northeast, Southwest, and the Northwest Hills. Serious consideration is currently being given to consolidation and realignment of the WUCC management areas into a configuration that is more manageable, based upon the availability of sufficient water supply resources to meet service needs, and generally more reflective of local, regional, and statewide conditions today.

Because of the potential significance of the WUCC process if properly implemented, the WUCC planning process was one of eleven (11) areas of concern recognized by legislation in 2000 that established the Water Planning Council (WPC). The WPC was created by the legislature to address issues pertaining to Connecticut's water resources especially where multiple State agencies had regulatory authority. The WPC also investigates the efficiencies and effectiveness of significant water resource legislation that Connecticut has already enacted, such as the WUCC planning process, especially when the legislation was visionary at the time and intended to ensure the long term sustainability of public water supplies in Connecticut. The WPC submitted annual reports to the legislature in January 2009, 2010, and 2011. The annual reports included findings and implementation strategies including a recommendation to develop a reasonable timeline for completion of the three remaining management areas where WUCCs have not been convened and to continue the planning process in all management areas at least every ten years. In order to accomplish this recommendation, the WPC recognized the need to review relevant existing legislation and regulations for the purpose of proposing constructive changes in legislation. Important aspects of the process that need to be revised in regulations to make the process more effective, efficient, and consistent statewide are definition of terms; the content of the plan; the legal definition of a minimum adequate margin of safety, procedural requirements for the structure of the WUCC, voting procedures, operating rules, and the criteria and procedures for approval of the plan. The criteria and process for establishing exclusive service areas should also be revised and regulations are needed to provide guidance to the WUCC management areas for revising an ESA, especially during the periods between plan updates.

During the period of July 1, 2008 to June 30, 2011 Housatonic WUCC met on four (4) occasions (November 6, 2008; June 17, 2009; July 15, 2009; November 15, 2009), the Upper Connecticut River WUCC met on three (3) occasions (May 14, 2009; September 22, 2010; October 21, 2010), the South Central WUCC met on three (3) occasions (December 8, 2008; September 22, 2010; October 21, 2010) and the Southeast WUCC met on one (1) occasion (September 15, 2008).

## Take-Over Proceedings

The failure of an existing PWS to comply with either DEEP and/or DPH regulations could require joint hearings to determine the systems economic viability. If it is determined that the water system is not viable, the DPUC, with DPH's consultation, may order the acquisition of the water system by the most suitable entity. This process is often referred to as a "takeover" proceeding.

During the period of July 1, 2008 to June 30, 2011 17 takeover proceedings concerning 50 public water systems were initiated and 9 PWSs transferred ownership to other PWSs that were deemed to have sufficient TMF capacity to properly provide long-term sustainability to the system they received. The takeover proceedings for the remaining systems are still on-going.

## Drinking Water at Connecticut's Public Schools

For several years now the DPH has partnered with the CT DOE to ensure that drinking water systems at Connecticut's public schools meet current design standards. If a school applies to DOE for funding they must complete a Water System Project Evaluation Form if they have an on-site water supply and are planning any water infrastructure work. Schools that are planning water infrastructure projects are referred to the DPH to ensure the water systems components meet regulatory requirements and industry design standards.

The DOE has also assisted municipalities by providing partial grant funding for water system infrastructure violations or deficiencies at their public schools when these items are discovered by the DPH during sanitary survey visits. This partnership has led to many upgraded water systems at schools throughout the state.

## Cross Connection Control

A cross connection is defined as any connection, actual or potential, between a potable (drinking) water source and a non-potable water source, which could cause contamination of the public water supply, by backflow or back-siphonage. The DWS has an active cross connection program that requires PWSs to conduct inspections for cross connections and tests of backflow prevention devices. The premise of a PWS Cross Connection Program is to prevent contamination of drinking water by identifying improper connections to the drinking water distribution system and by testing devices that prevent backflow of contaminants into the drinking water system. A PWS that is unable to affect such a program demonstrates a lack of capacity to ensure safe drinking water.

The DPH's operator certification regulations require the certification of backflow personnel (Testers or Tester/Inspectors). The DWS's Operator Certification Program approves and participates in training for Backflow Prevention Device Testers and Cross Connection Survey Inspectors. The program administers the issuance and renewal of certificates for backflow personnel. Currently, there are over 738 individuals who have active DPH certificates as Testers or Tester/Inspectors.

During the period of July 1, 2008 to June 30, 2011 the DWS assessed 2,054 cross connection survey reports for violations and completeness.

### Engineering Reviews

Engineers from the DWS's Compliance Unit conduct engineering reviews of PWS water and treatments works infrastructure projects to ensure compliance with regulatory requirements and recognized drinking water industry standards. These projects include water treatment plant upgrades, water storage tanks, pump stations and transmission mains.

During the period of July 1, 2008 to June 30, 2011 the Compliance Unit performed 315 engineering reviews.

### Capacity Development Training

The DWS Capacity Development Unit coordinates the provision of technical assistance and training to Public Water Systems on capacity development initiatives including asset management, capital improvement planning, budgeting and rate setting that lead to long term PWS sustainability. Emphasis is placed on providing technical assistance to small CWS that tend to have the most difficulty in the areas of regulatory compliance and sustainability. The Capacity Development Unit has staff who are certified trainers for EPA's Check Up Program for Small Systems (CUPPS) that is a free and easy to use asset management program for small PWSs.

During the period of July 1, 2008 to June 30, 2011 the DWS partnered with USEPA Region 1 to put on a 2 day Advanced Asset Management Workshop for large and medium sized CWSs and a 1 day CUPPS training event for small CWSs. In addition, the Unit offered on-site technical assistance to several small CWSs in setting up the CUPPS program. One small municipal CWS received extensive on-site technical assistance with the CUPPS program during this period.

In addition, the DWS participated in the Connecticut Section of American Water Works Association's Annual Trade Conference and Vendor Exposition in 2009, 2010 and 2011. During these events the DWS held two concurrent full day training sessions. One session was targeted for small water system operators and one session was for local health officials. The trainings focused on various capacity development topics targeted for these audiences.

### Data Management

Compliance data for PWS is managed by the DWS Information Systems Unit utilizing the SDWIS database. The database includes detailed information on each PWS in Connecticut and compliance reports are run on a daily basis and distributed to appropriate DWS programs when violations are encountered. The database stores water quality compliance data for all PWSs which is reported electronically by laboratories certified by the State of Connecticut to perform drinking water analyses. The database is also supplemented with a Compliance Assistance Database (CAD) which provides support for all DWS Programs to track engineering project

reviews, water supply plan reviews, sanitary surveys, DWSRF projects, cross-connection control program requirements, and watershed surveys among other elements. The Information Systems Unit also oversees the DWS's GIS and the Laserfiche electronic record archiving system. These data management tools and functions are central to establishing control over the vast amount of data received by the DWS, the preparation of state and federal reports and the ability to efficiently manage the workload of individual DWS programs.

### Security and Emergency Response

The DWS Compliance Unit also takes a lead role in implementing drinking water security and emergency response related activities for the Section and provides technical assistance to PWSs on security and emergency response related matters. These activities include providing oversight of the DWS's Water Emergencies Assessment and Response (WEAR) team. The WEAR team is trained in Incident Command and Emergency Response procedures and provides on-site technical assistance to public water systems during all types of emergencies. The DWS is also responsible for coordination of the Drinking Water Emergencies & Security Advisory Committee (DWESAC) activities which is made up of other programs within the DPH and representatives from the water industry, local health, law enforcement, Connecticut Department of Emergency Management and Homeland Security, DEEP, USEPA, Federal Bureau of Investigation, United States Department of Homeland Security and the United States Department of Justice. The DWS also continues to participate in partnership with the drinking water and wastewater industries in the development of CtWARN (the Connecticut Water/Wastewater Agency Response Network). CtWARN and the national WARN network in general is design and intended to support and promote statewide emergency preparedness, disaster response, and mutual assistance matters for public and private water and wastewater utilities. DWS has been a member of the CtWARN Steering Committee since its inception and has also provided funding to support CtWARN operations.

The DWS responded to nearly 100 security and emergency incidents during the July 1, 2008 to June 30, 2011 period ranging from E. Coli contamination events to suspicious activity in and around drinking water infrastructure. Two prime examples of DWS response activities would be the precautionary Boil Water Advisory for Metropolitan District Commission (MDC) customers in April 2009 where organisms were found within their distribution system and there was significant concern of a treatment failure at one of the water treatment plants and the DWS response and the E. Coli contamination event at the Putnam WPCA water system in July 2009. Both examples show how the DWS security and emergency response capabilities have evolved and how quickly and effectively DWS staff are able to respond to the needs of the drinking water industry and their customers which total 2.7 million of the State's residents.

### Outreach and Public Participation

The DWS makes extensive use of our website to provide timely information to public water systems, local health departments, the general public and other stakeholders. The website provides individual webpages for each major DWS program or activity. The website includes routinely updated compliance schedules for public water systems and violations data for local health departments. It also includes forms, guidance documents, fact sheets and other drinking

water information that assists PWSs with regulatory compliance. The website is maintained by the DWS Information Systems Unit.

The DWS through the DPH Communications Office also issues press releases when critical public health information regarding drinking water needs to be provided to the public on a statewide basis.

The DWS also utilizes the DPH Emergency Notification System to provide important information to select stakeholders. The DPH currently utilizes the Everbridge notification software/system that allows the DPH and DWS to share information with all local health departments, all PWSs, local Chief Elected Officials and other stakeholder groups simultaneously. These networks save a tremendous amount of time getting important messages out to stakeholders in a timely manner during public health emergencies.

The DWS also provides drinking water subject area experts to various organizations to speak at conferences, seminars, workshops and other functions related to public drinking water.

### Grants Management

The primary source of funding for staff and program activities in the DWS are federal grant funds from the USEPA. Staff from the DWS's Capacity Development Unit prepare federal grant applications, workplans and budgets on an annual basis to support program activities. Funding and spending is monitored by the Unit with assistance from accounting staff from the DPH Fiscal Office to maintain accurate expenditure accounts.

During the period of July 1, 2008 to June 30, 2011 the DWS received approximately \$62,172,043 in federal grants. The breakdown of the grants:

- DWSRF - (FFY 2007 – FFY 2010) - \$38,004,000
- ARRA - (FFY 2009) - \$19,500,000
- PWSS - (FFY 2008 – FFY 2011) - \$4,668,043

### Office Support

Staff from DWS's Office Support Unit provide clerical and administrative support to the management staff and individual programs. Duties include directing all incoming calls to the appropriate staff person, scheduling meetings; sorting and distributing mail; processing licensing fees and other monies received; tracking staff time and attendance, vehicle scheduling, preparing resource packets and mass mailings; maintaining all inventories and stock; ordering supplies; data entry; file maintenance; scanning and archiving, record keeping and reporting; processing personnel forms and travel authorizations, etc.

## **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 578 CWS's are small systems. In 2011, small systems face even greater challenges than in the past. Regulations have become more stringent and complicated including the new federal Groundwater Rule (GWR) that Connecticut recently adopted. The GWR will affect all small systems as they rely predominantly on groundwater sources of water supply. Many of these systems have inadequately protected groundwater sources that will likely require the installation of water treatment systems or new protected groundwater sources to be found and installed. With a small customer base, the increased cost of compliance, operations, capital improvements and planning efforts must be passed on to the rate payers in order to achieve long term sustainability. This challenge is even greater during tough economic times. Collection services for non-payment of water bills are absent from many small systems and the revenues necessary for sustainability suffer from these losses.

Increased awareness of these challenges 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 the small satellite system can be distributed across the larger customer based thereby achieving economies of scale for smaller systems.

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.

## **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 2010-2011 and has continued the process of drafting updates and changes to the strategy to reflect current implementation processes. However, the DWS has had to delay completing this project due to resource constraints resulting from the loss of DWS staff, difficulty re-filling positions due to the economy and the additional work caused by implementation of the ARRA. Although updates and changes are necessary, overall, our implementation is still consistent with our existing USEPA approved Capacity Development Strategy.

This Capacity Development Report to the Governor for the period July 1, 2008 – June 30, 2011 will be made available to the public through the DWS’s webpage at [www.ct.gov/dph](http://www.ct.gov/dph). With committed attention to the activities discussed in this report, the DWS can further develop its statewide capacity development strategy that promotes T/M/F in a proactive, integrated, flexible, and accountable manner throughout its key DWS Units.