



Monthly Meeting #16

Coordinated Water System Plan Eastern Region

Southeastern Connecticut Council of Governments, Norwich, CT | September 13, 2017

Agenda



1. Welcome & Roll Call (5 minutes)
2. Approval of August Meeting Minutes (5 minutes)
3. Formal Correspondence (5 minutes)
4. Public Comment Period (10 minutes)
5. ESA Modifications Discussion / Update (10 minutes)
6. Presentation by DPH on Revised Water Supply Planning Guidance Related to Public Act 17-211 (15 minutes)
7. Integrated Report Topics (65 minutes)
 - Presentation by DPH on Small System Capacity
 - Satellite Management / Small System Viability
 - Minimum Design Standards
 - Future Sources, Raw Water Quality, and Acquisition of Land for New Stratified Drift Wells
8. Other Business (5 minutes)



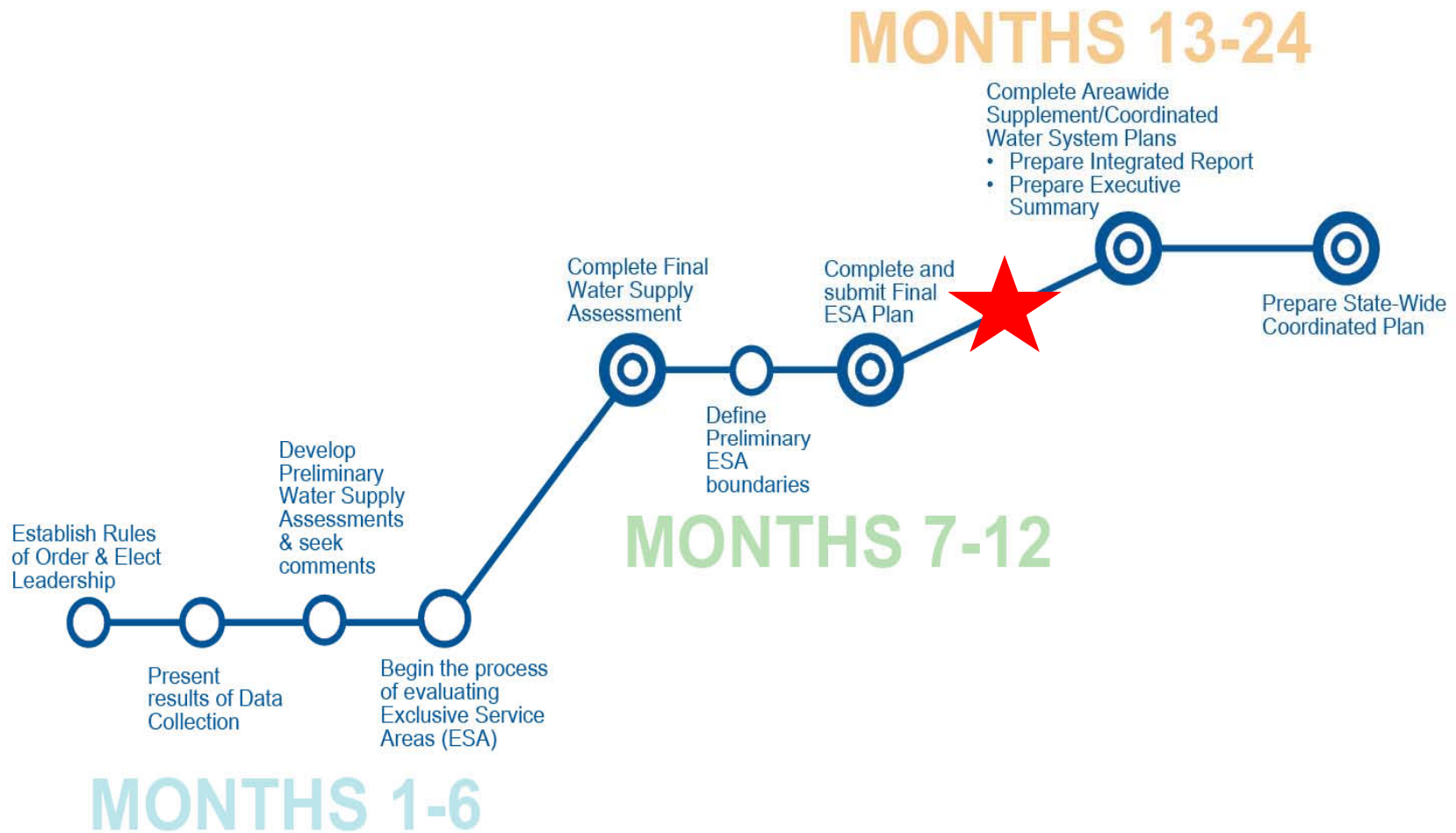
1. Welcome and Roll Call

Taking Stock



- ***What Have We Accomplished?***
 - ✓ Discussed Integrated Report Modules #1 through #7
- ***What Are We Doing Today?***
 - ✓ Presentation by DPH regarding Public Act 17-211
 - ✓ Presentation by DPH regarding Small System Capacities
 - ✓ Discussing Integrated Report Modules #8 through #10
- ***What's Next?***
 - ✓ Additional Integrated Report Topics

WUCC Time Frame



2. Approval of Meeting Minutes

3. Formal Correspondence

Formal Correspondence



| Date | From | To | Main Topic(s) |
|-----------|---------------------------|---|--|
| 9/4/2017 | Connecticut Water Company | MMI | Responses to questions for modules 8-10 |
| 9/11/2017 | Eastern WUCC | Rivers Alliance, Eastern WUCC, Interested Parties | Response to Rivers Alliance correspondence dated May 9, 2017 |
| 9/11/2017 | Windham Water Works | MMI | Responses to questions for modules 8-11 |
| 9/11/2017 | Aquarion Water Company | MMI | Responses to questions for modules 8-10 |
| 9/11/2017 | SCWA | MMI | Responses to questions for modules 8-10 |
| 9/12/2017 | Norwich PU | MMI | Responses to questions for modules 8-10 |
| 9/13/2017 | Jewett City WC | MMI | Responses to questions for modules 8-10 |

4. Public Comment Period

5. ESA Modifications Discussion / Updates

6. Presentation by DPH on Revised Water Supply Planning Guidance Related to Public Act 17-211



FREEDOM OF INFORMATION ACT PUBLIC ACT 17-211

Eastern Water Utility Coordinating Committee
Southeastern Connecticut Council of Governments
Linda Ferraro
Public Health Services Manager



PUBLIC ACT 17-211

Effective July 1, 2017 - Public Act Number 17-211 makes the following changes to current Freedom of Information Act (FOIA) law:

- Amends § 1-210(b)(19), which is the FOIA section that states which records a public agency may withhold from disclosure when there are reasonable grounds to believe disclosure may result in a security risk
 - The requirements in § 1-210(b)(19) regarding “water company records” have been deleted
- Under new law, all FOIA requirements regarding “water company records” are now found in § 25-32d.



PUBLIC ACT 17-211

- Amends § 1-210(d), by removing the requirements that:
 - State agencies notify Commissioner of DAS when it receives a request for “water company records”,
 - State agencies notify the water company when it receives a request for that “water company records”,
 - that Commissioner of DAS consult with the water company to which the “water company records” relate when determining if a security risk exists
 - that Commissioner of DAS make the determination regarding whether there are reasonable grounds to believe disclosure of a “water company record or records” may result in a security risk.
- Amends § 25-32d, by adding a provision [§ 25-32d (d)]
 - requiring water companies, when **submitting a water supply plan**, or a revision to a water supply plan, to Commissioner of DPH, to also submit a **copy of the plan that is redacted in accordance with the section’s provisions on confidential records**



PUBLIC ACT 17-211

- Under the new law, there is a list in § 25-32d of the records that a public agency must keep confidential. The list includes, but is not limited to:
 - cybersecurity plans, emergency contingency plans, information and communications systems, vulnerability assessments, operational and design specifications of water and sewage treatment facility security systems or risk management plans,
 - Emergency contingency plans and emergency preparedness plans; except drought management and response plans shall be subject to disclosure,
 - Design drawings or maps identifying specific locations, detailed schematics and construction details of wells, source water intakes, water mains, tunnels, storage facilities, water and sewage treatment facilities or pump stations; **provided information regarding general location of water mains, wells and interconnections shall be subject to disclosure,**
 - Dam specifications or dam safety documents,
 - Building floor or structural plans, specifications of structural elements or building security systems or codes;



PUBLIC ACT 17-211

- Under the new law, there is a list in § 25-32d of the records that a public agency must keep confidential. The list includes, but is not limited to (con't):
 - Detailed network topology maps,
 - Distribution system hydraulic models,
 - Specific locations of or specifications regarding electrical power, standby generators or fuel systems for water system facilities, except that **general information** regarding these may be disclosed
 - Operational specifications, schematics and procedures of water and sewage treatment plant processes and associated equipment and chemicals, including, but not limited to, facility use of chlorine gas storage and delivery and the location of chemicals, except that a **general description** of any such treatment plant may be disclosed.



PUBLIC ACT 17-211

- In addition to those records on the list, a public agency is required to keep confidential any other “water company record” if the public agency determines there are reasonable grounds to believe that disclosure may result in a safety risk. No longer requires DWS/DPH to consult with DAS
- “Reasonable Grounds”
 - DAS historic determinations guide DPH FOIA responses - <http://www.ct.gov/dph/cwp/view.asp?a=3139&pm=1&Q=586148>
 - No way to enumerate all issues
 - Further discussion needed

7. Integrated Report Topics

Topic Schedule



| WSA | Stat. | Reg. | Task | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----|-------|------|---|-----|-----|-----|-----|-----|-----|-----|
| | | | State Water Plan summary | X | X | | | | | |
| | | | Request and receive data from utilities | X | X | X | | | | |
| ✓ | | | Maintenance and replacement of existing supply sources / asset management (aging infrastructure) | X | X | | | | | |
| ✓ | | ✓ | Financial Considerations / declining revenue vs. increasing costs | | X | | | | | |
| ✓ | ✓ | | Coordination of planning (between systems, with towns, across ESA boundaries) | | X | | | | | |
| ✓ | | ✓ | Source Water Protection | | | X | | | | |
| | ✓ | ✓ | Joint Use, Management, or Ownership of Facilities, Shared Resources | | | X | | | | |
| ✓ | | | Lack of fire protection | | | X | | | | |
| ✓ | ✓ | | Water Conservation / Drought Planning / High volume users / Increasing peaking ratios | | | X | | | | |
| ✓ | ✓ | ✓ | Satellite Management / Small System challenges and viability | | | | X | | | |
| | ✓ | ✓ | Minimum Design Standards | | | | X | | | |
| ✓ | ✓ | ✓ | Future Sources / Raw Well Water Quality / Acquisition of land for new stratified drift wells | | | | X | | | |
| ✓ | ✓ | ✓ | Future Interconnections and Impact (including WQ) / disjointed service areas / integration | | | | | | | |
| ✓ | | | Impacts of Climate Change | | | | | | | |
| ✓ | | | Impacts of Existing and Future Regulations | | | | | | | |
| | ✓ | ✓ | Potential Impacts on Other Use of Water Resources, including WQ, Flood Management, Recreation, Hydropower, and Aquatic Habitat Issues | | | | | | | |
| | | ✓ | Regional Population and Service Ratio, Consumption by Demand Category, Safe Yield (Impacts of Streamflow Regulations), Excess Water | | | | | | | |
| | ✓ | ✓ | Compatibility with local, regional, and state plans | | | | | | | |
| ✓ | | | Other issues | | | | | | | |



Water Supply Planning/DWSRF: Small System Challenges and Viability

Eric McPhee
Supervising Environmental Analyst
Source Assessment/Protection Unit
CTDPH-Drinking Water Section

WUCC Water Supply Assessments

7.3 Interconnections

Development of New Interconnections – New interconnections may be desired where not already present. This can help address water supply imbalances and increase redundancies that are desirable during water supply emergencies or droughts. For example, Heritage Village Water Company is not interconnected with any potential suppliers to the north, west, or south; and Aquarion may benefit from additional interconnections between its separate systems. Some interconnections in Table 2-10 will

7.4 Small Water Systems

Challenges of Operating Small Systems – Many municipalities and privately owned public water utilities, such as Aquarion Water Company and others, own and operate numerous small systems. Operational requirements such as regulatory permitting, technical assessment, system maintenance, infrastructure replacement, and water supply need require a disproportionate amount of time and money compared to the operation of a larger system. In particular, the lack of proper planning and/or asset management planning for many small CWSs (particularly a lack of knowledge regarding the full cost of providing a safe and reliable supply of drinking water) has resulted in systems with limited financial capacity to address public health code issues.

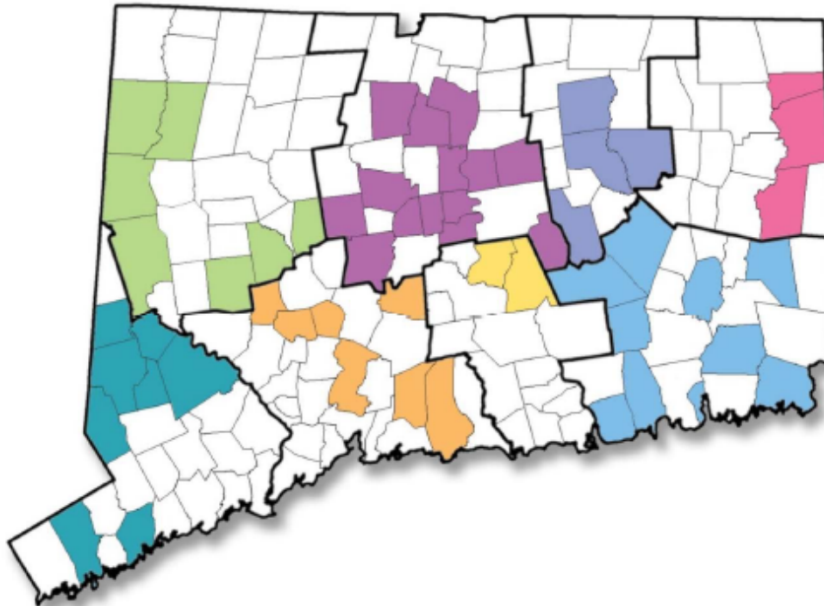
Viability of Small Water Systems – The large number of small public water systems in the region is not viewed as an issue per se. However, the viability of these systems is an issue of concern, particularly in areas where the density of small systems is moderate to high such as Brookfield, parts of Danbury, northern Bethel, and eastern New Fairfield. Additionally, the operation of small water systems immediately adjacent to larger systems can result in a disparity of the cost of water among populations in close proximity, especially when small systems fail to fully fund their water system operations. The cost of interconnecting small systems can be prohibitive or at the very least a disincentive. More fully



DWSRF Program

- The Drinking Water State Revolving Fund (DWSRF) program provides long-term below market rate loans to community and non-profit, non-community public water systems (PWSs) to finance infrastructure improvement projects. Examples include storage tanks, treatment works, and water mains.
- Loans have interest rates at approximately half the market rate and repayment terms can be up to 20 years.
- Certain projects may qualify for Federal or State subsidization as detailed annually in the IUP.
- The program supports and recognizes strong infrastructure sustainability programs that emphasize prevention as a tool for ensuring long term safe and affordable drinking water to Connecticut's residents.
- The program also places an emphasis on providing loans to small water systems and communities most in need. PWSs which serve fewer than 10,000 persons are strongly encouraged to apply.

COMMUNITIES ACROSS THE ENTIRE STATE OBTAINED PROJECT FUNDING OF MORE THAN \$259 MILLION THROUGH THE CONNECTICUT DRINKING WATER STATE REVOLVING FUND SINCE PROGRAM'S INCEPTION



Fairfield County: Bethel, *Brookfield*, Danbury, New Fairfield, *Newtown*, *Norwalk*, Ridgefield, Stamford

Hartford County: *Bristol*, Bloomfield, Enfield (Hazardville Water Company), Farmington, *Manchester*, *Marlborough*, *Metropolitan District Commission (MDC)* (includes Hartford, Bloomfield, Windsor, Rocky Hill, East Hartford, Newington, Wethersfield, West Hartford), *New Britain*, Simsbury, *Southington*

Litchfield County: Cornwall, Kent, *New Milford*, Plymouth, Salisbury, *Sharon*, *Watertown*, *Woodlake Tax District (Woodbury)*, Woodbury

Middlesex County: Cromwell Fire District, East Hampton, *Portland*

New Haven County: Guilford, *Meriden*, Middlebury, Naugatuck, North Branford, Prospect, South Central CT Regional Water Authority (RWA) (includes Hamden, North Branford), Waterbury

New London County: Colchester, *East Lyme*, *Griswold*, Lebanon, *Ledyard*, New London, *Norwich*, Old Lyme, Salem, Stonington

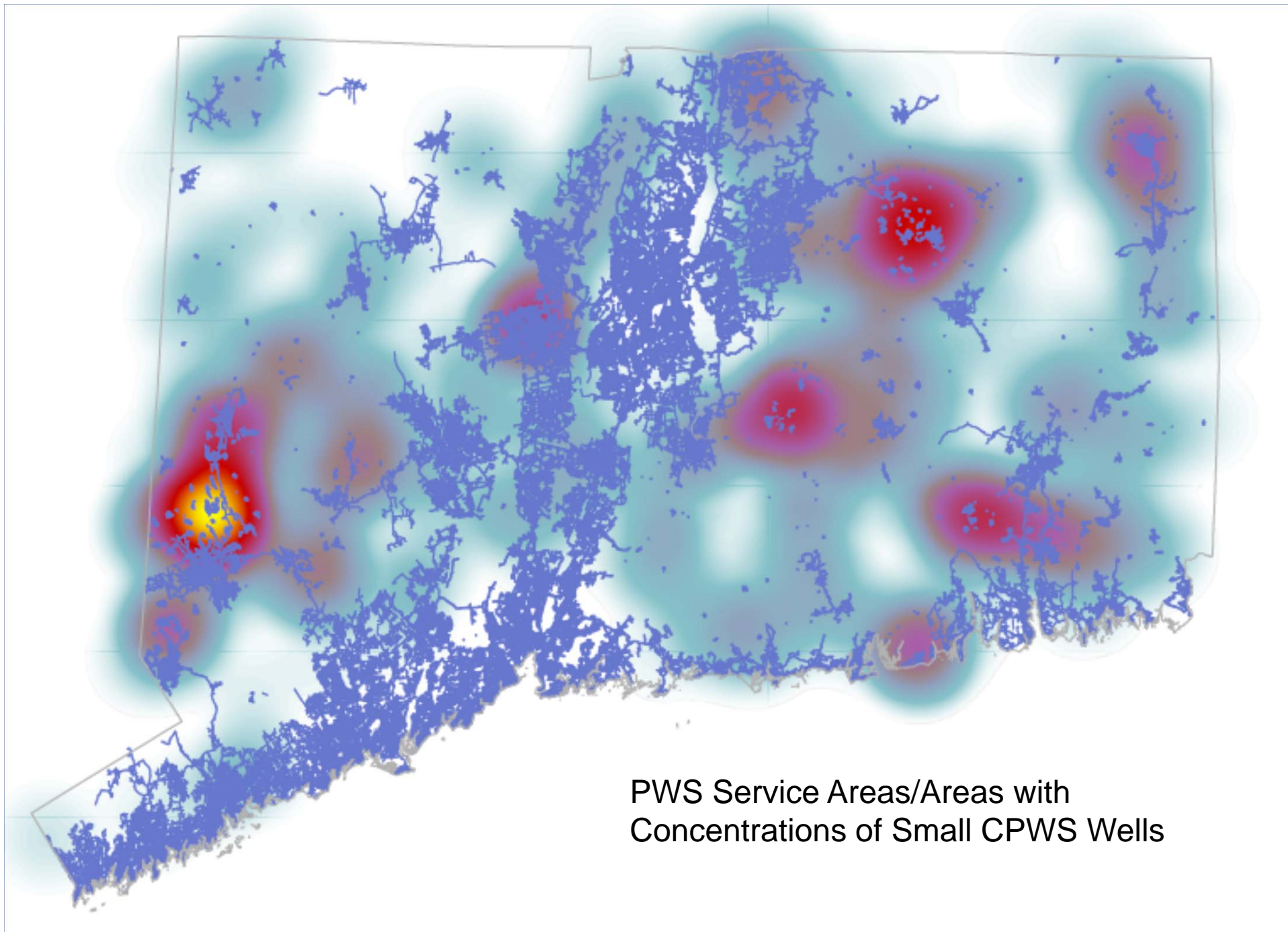
Tolland County: *Coventry*, *Hebron*, *Mansfield*, *Tolland*, *Willington*

Windham County: *Killingly*, Plainfield, Putnam

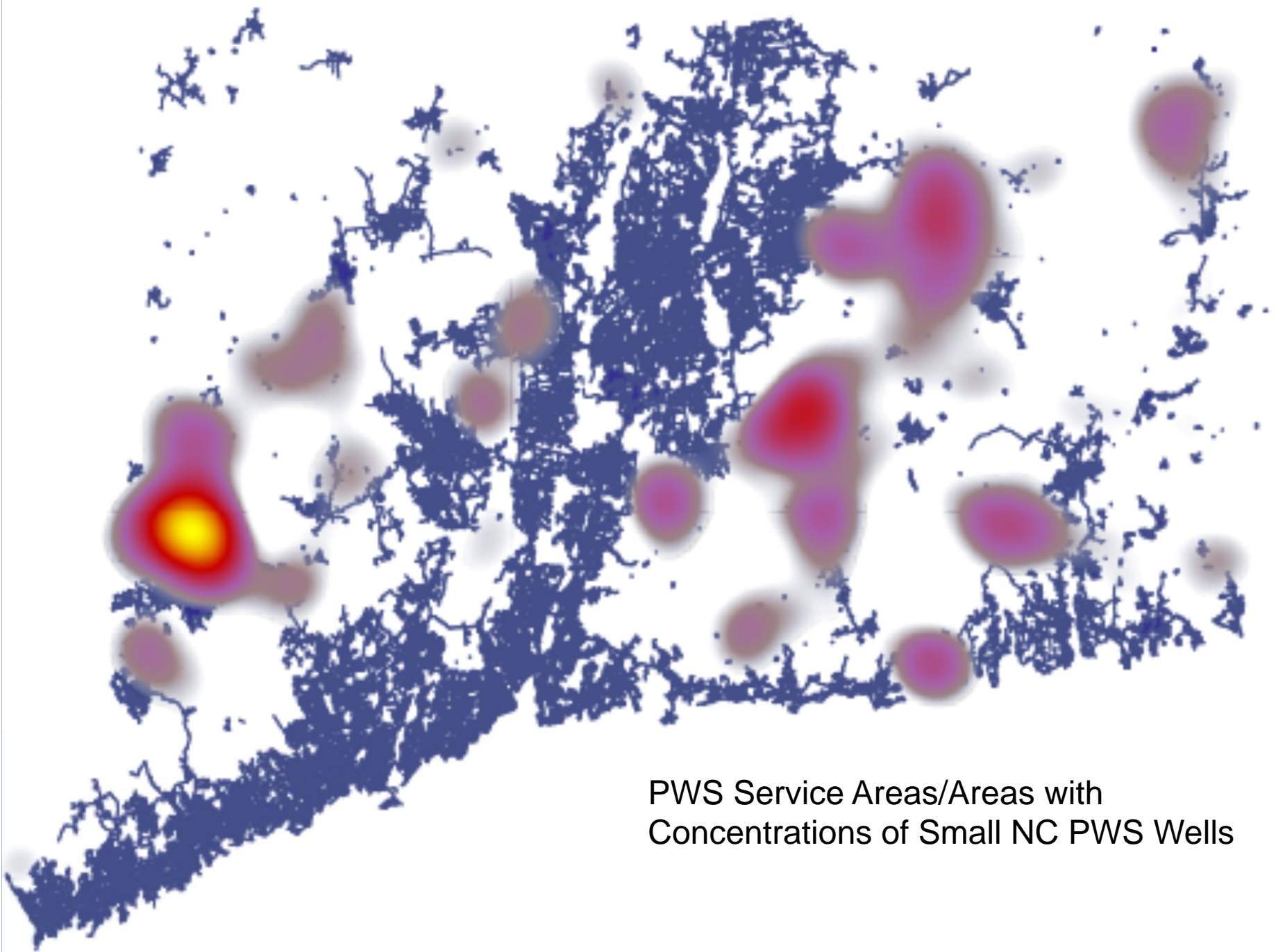
Bold and italic Towns received multiple loans

Can the DWSRF Program assist?

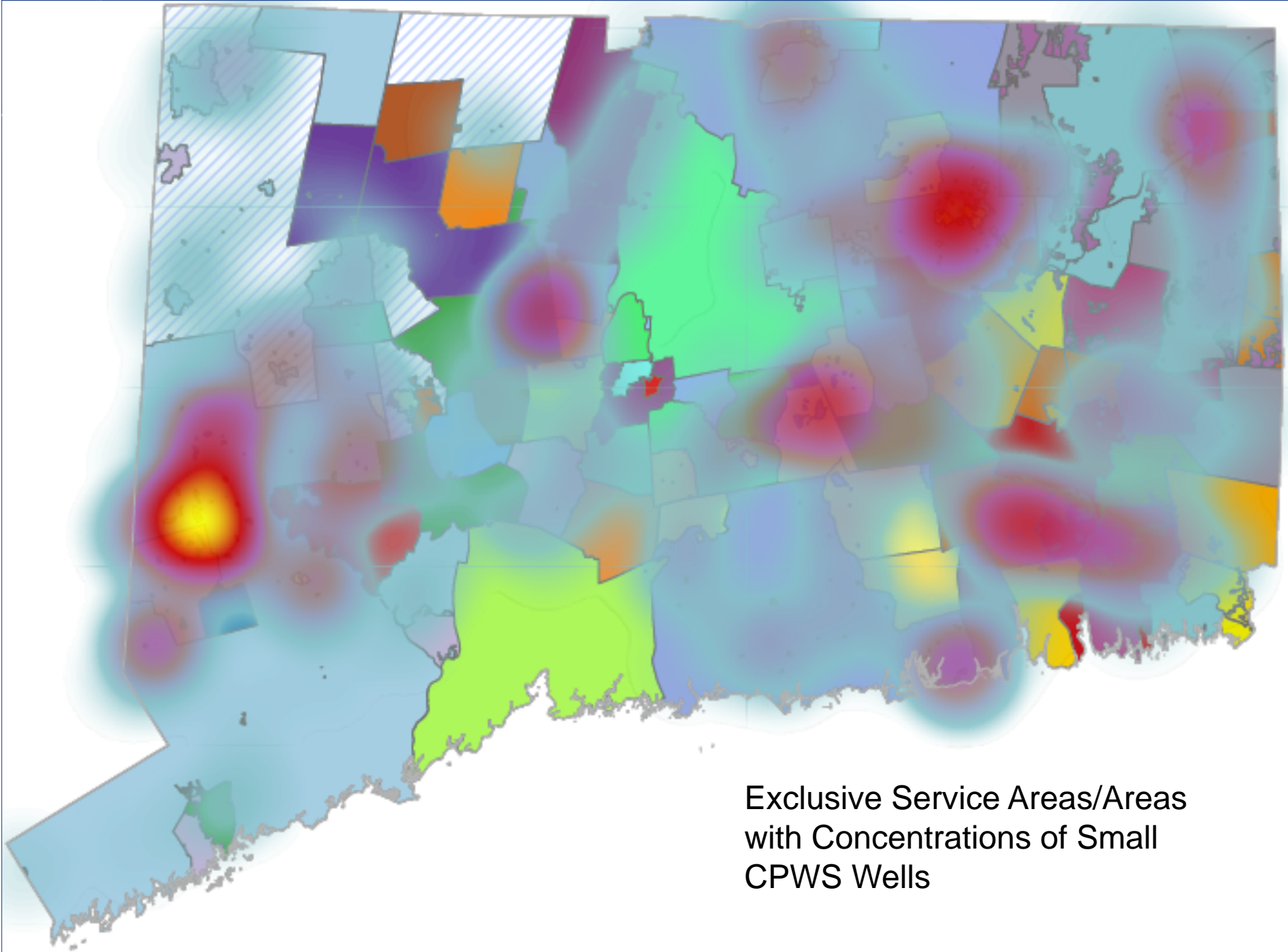
- Small systems are encouraged to apply
- Can fund interconnections (redundancy/resilience)



PWS Service Areas/Areas with Concentrations of Small CPWS Wells



PWS Service Areas/Areas with Concentrations of Small NC PWS Wells



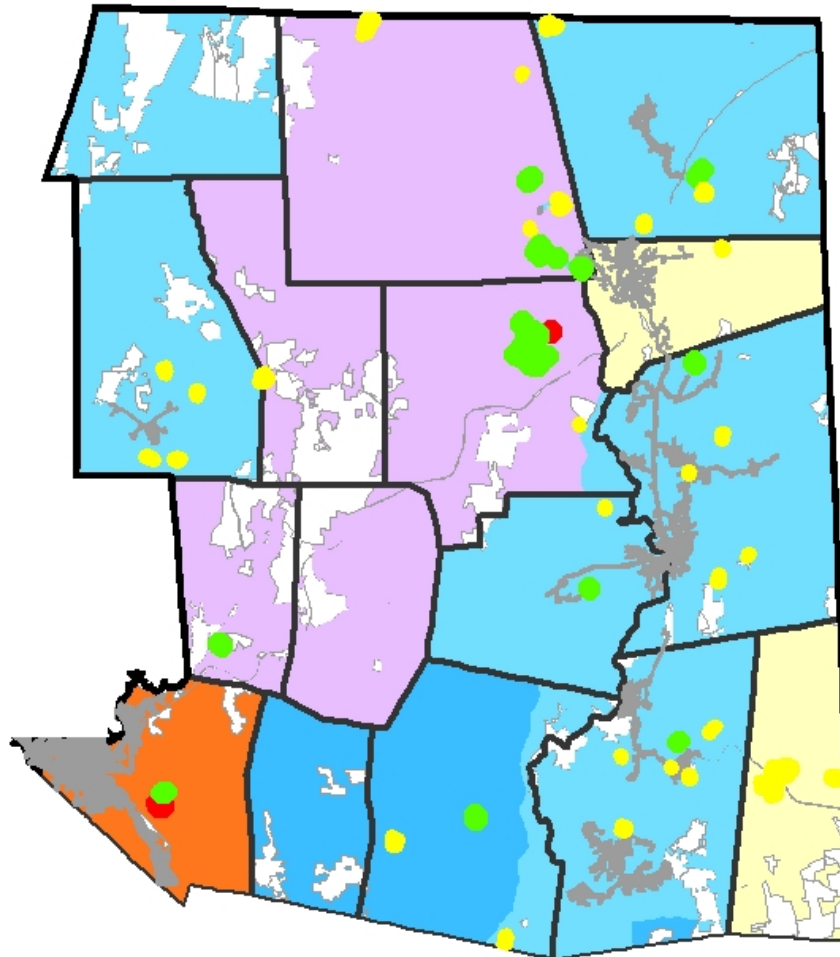
Exclusive Service Areas/Areas
with Concentrations of Small
CPWS Wells

Moving Forward

- Resiliency, Reliability
- Can DWSRF encourage regionalization and offer opportunities for small systems to interconnect?
- Opportunity: Link Integrated Reports, CIRCA Resiliency Study, State Water Plan with ESAs and WUCC Planning
- Bring small systems to the table (separate meeting?)

Small System Capacity

Eastern WUCC- Northern Region Towns

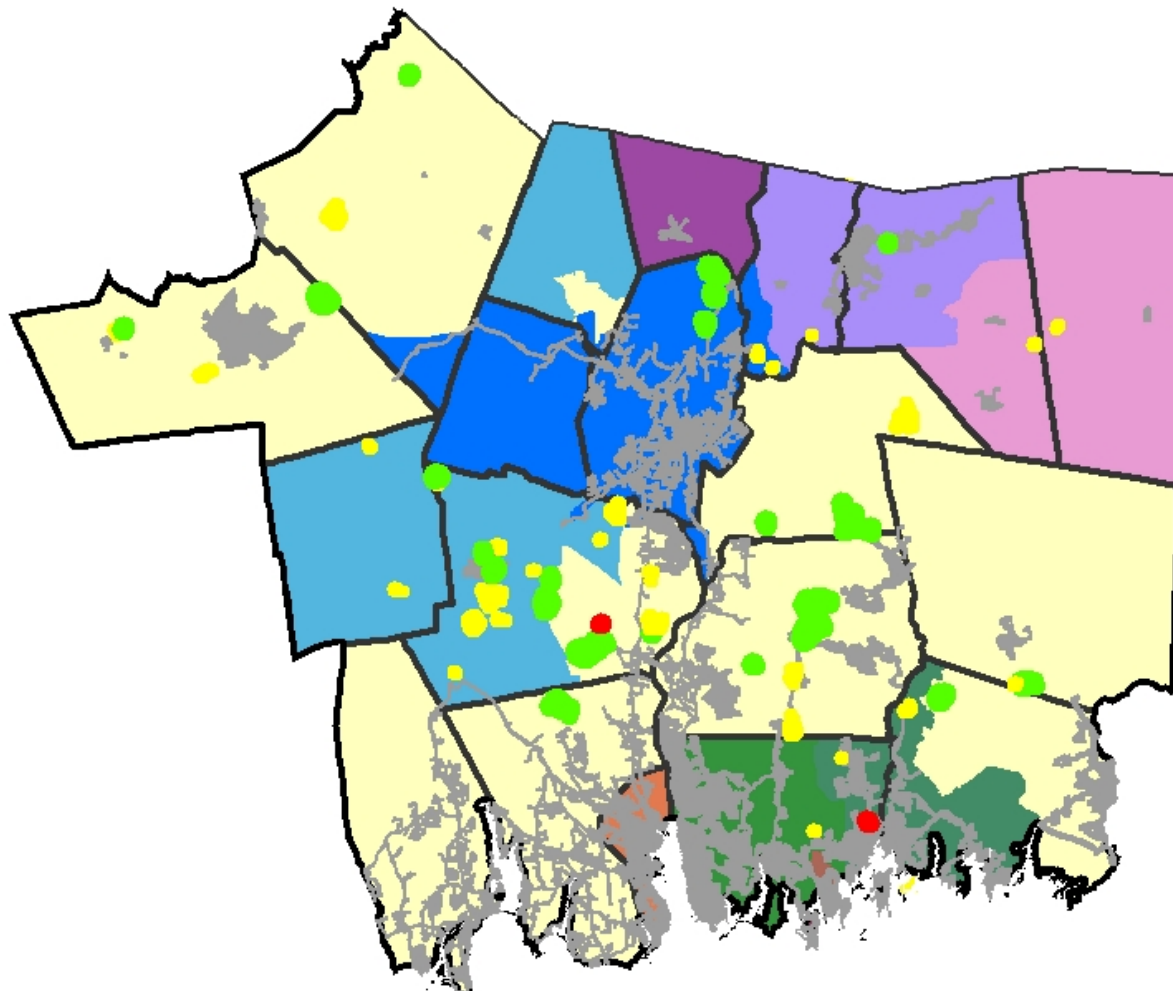


Legend

- Non-Scorecard Public Water System Service Area
- Scorecard Systems**
 - High Risk (0-39.9 Rating)
 - Moderate Risk (40-69.9 Rating)
 - Low Risk (70-100 Rating)
- Exclusive Service Area**
 - EXCLUSIVE SERVICE AREA ASSIGNED TO LOCAL COMMISSION
 - EXCLUSIVE SERVICE AREA UNASSIGNED
 - AQUARION WATER COMPANY
 - CONNECTICUT WATER COMPANY
 - JEWETT CITY WATER COMPANY
 - WINDHAM WATER WORKS

Small System Capacity

Eastern WUCC- Southern Region Towns



Legend

■ Non-Scorecard Public Water System Service Area

Scorecard Systems

■ High Risk (0-39.9 Rating)

■ Moderate Risk (40-69.9 Rating)

■ Low Risk (70-100 Rating)

Exclusive Service Area

■ EXCLUSIVE SERVICE AREA ASSIGNED TO LOCAL COMMISSION

■ SPRAGUE WATER & SEWER AUTHORITY

■ SOUTHEASTERN CONNECTICUT WATER AUTHORITY

■ EXCLUSIVE SERVICE AREA ASSIGNED TO FIRE DISTRICT

■ AQUARION WATER COMPANY

■ CONNECTICUT WATER COMPANY

■ GROTON LONG POINT ASSOCIATION

■ GROTON UTILITIES

■ JEWETT CITY WATER COMPANY

■ NEW LONDON DEPARTMENT OF PUBLIC UTILITIES

■ NORWICH PUBLIC UTILITIES

Module #8 - Satellite & Small Systems



Situation

- Total of 115 small community water systems are located in the Eastern PWSMA
- Some are satellite systems owned by larger systems (e.g., Aquarion, CWC, SCWA) and therefore do not lack resources; these are included in water supply plans
- Most are not owned by larger utilities and are not subject to water supply planning
- The Integrated Report shall list and describe water utilities that are willing to acquire or operate small or satellite systems, and list the small systems that are willing to be acquired or operated by others

***Coordinated
Water System
Plan
regulations
require a
“plan for
satellite
management
or transfer of
ownership”***

***RCSA 25-33h-
1(d)(C)(vi)***

Module #8 - Satellite & Small Systems



Challenges

- Operating Existing Small Systems
 - Permitting, technical assessment, system maintenance and repair, infrastructure replacement, and water supply require a disproportionate amount of resources compared to the operation of a large system
 - Lack of knowledge regarding full cost of providing a safe and reliable supply of drinking water has resulted in systems with limited capacity to address problems

| Overall Capacity Risk Level | Number of CWSs |
|-----------------------------|----------------|
| High | 4 |
| Moderate | 62 |
| Low | 41 |
| Total Assessed | 107 |

Recall that score cards were reviewed in October 2016

Module #8 - Satellite & Small Systems



Challenges

- Viability of Small Systems
 - The number of small public water systems in the region is not viewed as an issue, per se.
 - Viability of these systems needs to be reviewed particularly in areas where the density of small systems is moderate to high.
 - Operation of small water systems immediately adjacent to larger systems can result in a disparity of the cost of water among populations or businesses in close proximity.
 - Eliminating small systems may be possible in communities where larger public water system expansions have occurred, and these larger systems are now adjacent to small systems. BUT – there is limited financial incentive to consolidate

Module #8 - Satellite & Small Systems



Challenges

- Viability of Small Systems (Continued)
 - Reducing the number of independent small systems may be possible in some communities where options are limited.
 - Potential acquisitions of water systems may be of interest to system owners whose primary business is not providing water.
 - Potential acquisitions of water systems may be of interest to owners that are currently experiencing significant technical, managerial, and capacity challenges. These systems, particularly the numerous Non-Community systems, could benefit from different ownership.

Module #8 - Satellite & Small Systems



Challenges

- New Small Systems – Need for new public water systems is driven by:
 1. Creating public water systems in some village centers may be necessary due to high densities and challenging lot sizes coupled with a desire for nominal growth.
 2. Creating public water systems in some village centers or neighborhoods may be necessary due to water quality concerns.
 3. Developers approach municipalities about new projects ranging from commercial establishments to various types of residential developments. Many of these will necessitate the development of new public water systems (whether Community or Non-Community).
- Only some of these can be solved by water main extensions

Module #8 - Satellite & Small Systems



Responses from Utilities:

- Biggest challenges for small systems includes low yielding wells with poor water quality (particularly treatment cost), high repair and maintenance costs (esp. per-capita) for neglected systems, and relative isolation of many systems with limited space to install treatment components, and variety of manufacturers
- The takeover process can be lengthy when it goes through PURA. The water utility taking over the system doesn't always have a full idea of what improvements will be necessary until after the takeover, and it is difficult to come to agreement on how to share the cost of improvements on such systems and educate the new customers
- Many small system owners do not want to spend any more money than absolutely necessary
- AWC, CWC, JCWC, and SCWA are generally open to purchasing or acquiring systems within their ESA. WWW is not.

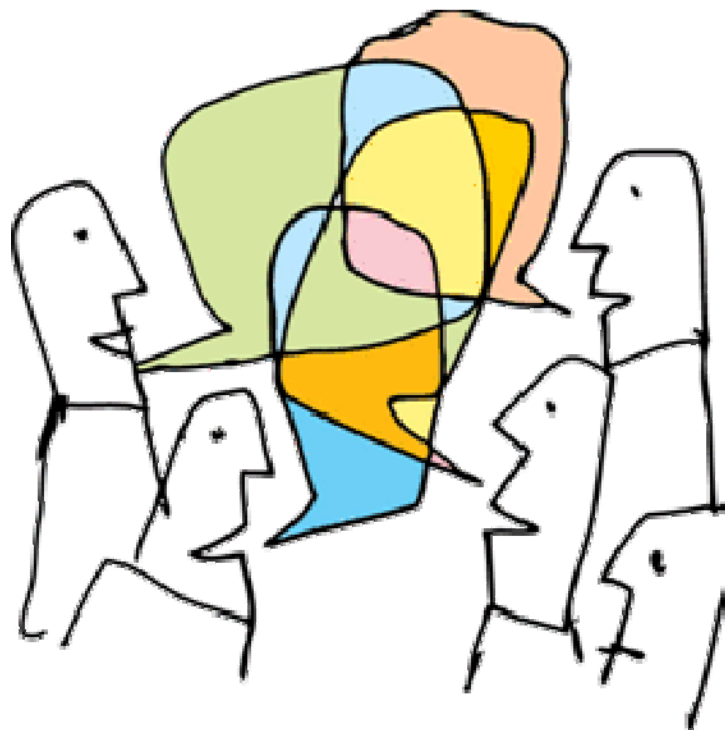
Module #8 - Satellite & Small Systems



Possible Solutions

- Technical
 - Development of interconnections where feasible
 - Encouraging flow of information from small system operators to DPH
- Managerial
 - Additional training on small system ownership, held at times convenient for small water system owners
 - Requiring new C systems to consolidate similar to NCs when water main becomes available
 - Improvements to the takeover process
- Financial
 - Development of a grant program to pay for small system consolidation, or other method to recoup expense
 - Additional training on determining the full cost of service, held at times convenient for small water system owners
 - Make it easier for small systems to access DWSRF

Module #8 Discussion



Module #9 – Minimum Design Standards



Situation

- Minimum design standards are set forth in RCSA 19-13-B-102 for system components and RCSA 16-262m for new community water systems, among others
- Many water systems have established additional design standards that require certain types of piping or equipment to be utilized for main extensions and service connections (e.g. to ensure consistency with the existing system)
- Large water systems that operate satellite systems typically have additional design standards related to new community water systems
- The former Southeastern WUCC outlined recommendations for exceeding the minimum state standards, but generally left imposition of the provisions to individual utilities

***Coordinated
Water System
Plan regulations
require
“provisions for
minimum design
standards
applicable to all
water system
improvements
and all new PWS”
RCSA 25-33h-1(d)(C)(vii)***

Module #9 – Minimum Design Standards



Challenges

- Although the WUCC is charged with generating provisions for minimum design standards, its charge is largely advisory and not regulatory.
- System age, components, construction, and manufacturers vary between systems.
- Developers need to understand all requirements upfront prior to starting CPCN process; entertaining new requirements in the middle of a costly process is undesired.
- Expansion of a small system adding two or three customers (5% expansion) could trigger the need for a CPCN, which could lead to different design standards applied within an existing system.

Module #9 – Minimum Design Standards



Responses from Utilities:

- AWC & NPU have design standards and preferences above the State standards which are appropriate to its systems
- CWC has purchasing, design, metering, controls, and material standards
- AWC & CWC provide standard written requirements to developers and contractors.
- SCWA & WWW have a planning/review and comment process to ensure compliance with specifications; NPU uses a “developers agreement”
- CWC recommends using what fits the system, while standardizing certain equipment.
- SCWA recommends that some design standards (safe yield, source protection, water quality, fire protection, treatment, and distribution) fall under the building official with the goal of standardizing level of service in a community

Module #9 – Minimum Design Standards



Responses from Utilities:

- Some specific minimum design examples include:
 - CWC requires a 25% margin of safety for small systems (bedrock wells may lose yield over time)
 - RWA requires safe yield be calculated over 12 hours (50% reduction in volume)
 - RWA requires the ADD to be met with the 18-hour safe yield when the largest well is offline

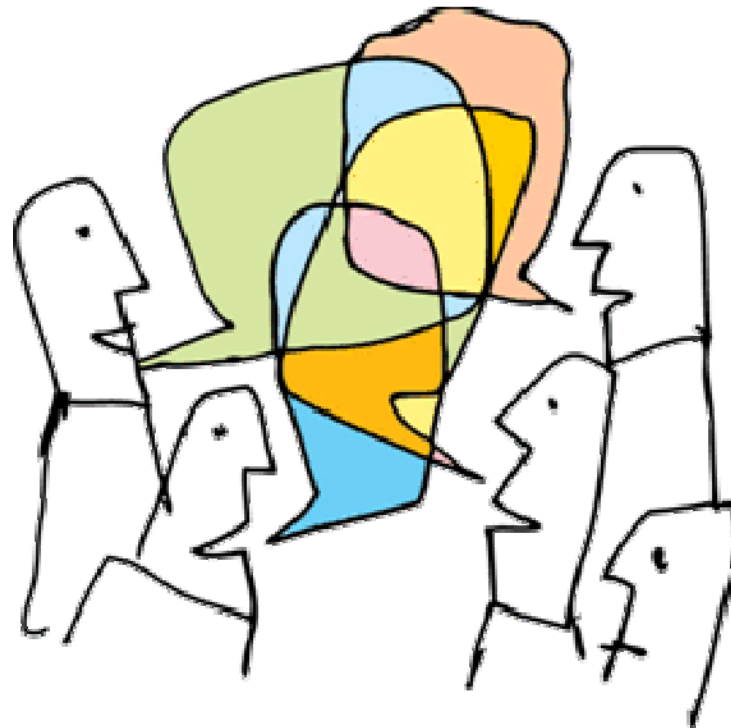
Module #9 – Minimum Design Standards



Possible Solutions

- Continue to recommend standards but leave at discretion of utilities
- Provide for a streamlined regulatory review for small systems (15 - 250 customers) needing to expand under the CPCN
- Ensure utility design standards are incorporated into any agreement for services or screening response related to the CPCN

Module #9 Discussion



Module #10 – Future Sources, etc.



Situation

- Water utilities must plan ahead to ensure sufficient supply is available over short (5-year), medium (20-year), and long term (50-year) planning horizons
- Water utilities face significant uncertainty regarding the timing of future water need
- Development of new sources of supply can take several years and be very costly
- Implementation of releases in accordance with the Streamflow Standards and Regulations may accelerate the need to enhance the yield of existing supplies or to develop new supplies
- In many cases, limited land is currently controlled by utilities for new source development

***Coordinated
Water System
Plan regulations
require
“evaluation...of
alternative
water sources
recommended to
supply future
areawide water
system needs”
RCSA 25-33h-1(d)(C)(iii)***

Module #10 – Future Sources, etc.

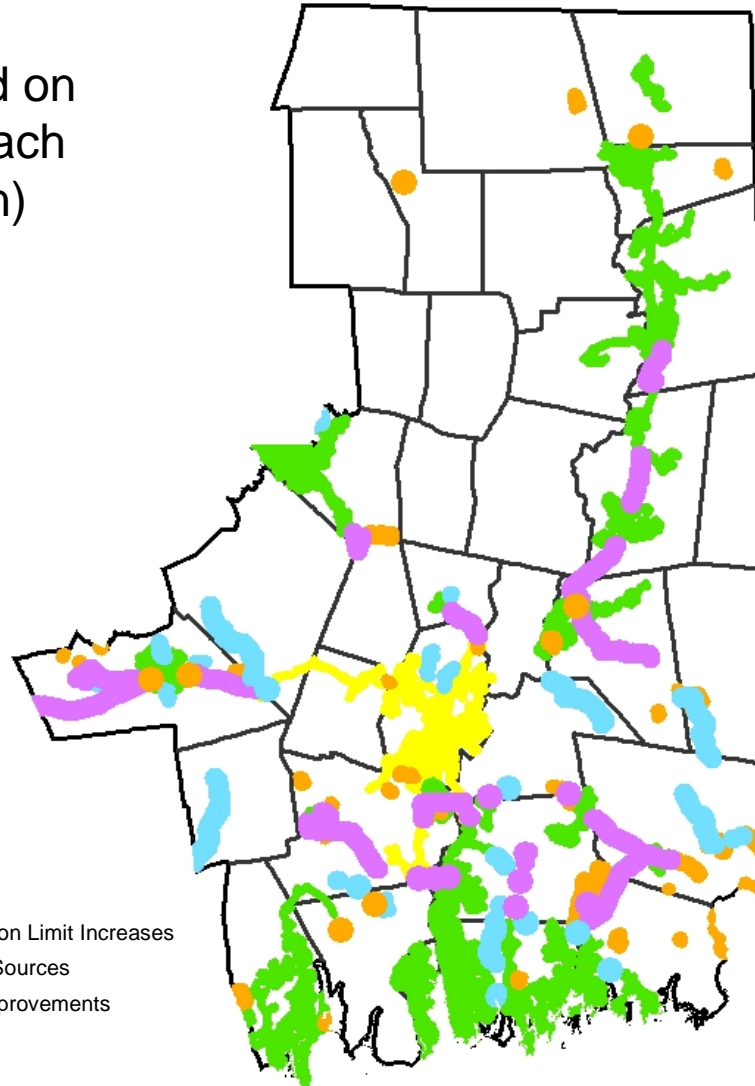
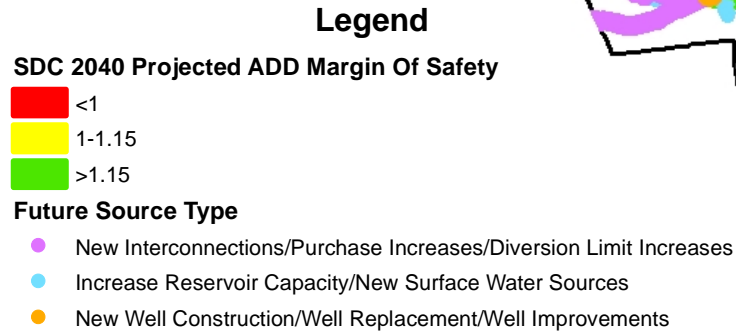


Challenges

- New source development has a high upfront capital cost
- Public water supply is one of many competing needs within a flow regime
- Permitting restrictions may reduce a project's cost-effectiveness, but the exact magnitude of the restrictions are difficult to predict before the source is developed
- Many available sites that could be viable in terms of quantity are coincident with areas that are – or may be – degraded in terms of quality
- Several different ways to predict future needs

Module #10 – Future Sources, etc.

Future Margin of Safety based on SDC 2040 Projections (approach similar to the State Water Plan)



Module #10 – Future Sources



Responses from Utilities:

- AWC, CWC, JCWC & NPU utilize the 5-, 20- and 50-year planning periods. Land purchases and easements are part of capital budget/long-term planning for AWC & CWC.
- AWC & CWC track declining water quality and quantity; and implement improved treatment and new source development as appropriate
- NPU & WWW track water quality, particularly in the summer months, when temperature/algae affects the treatment process
- SCWA tracks iron & manganese
- Typical barriers to new source development include identifying land and getting access and rights to a suitable site nearby system; uncertainty of diversion permitting cost, timeframe, and ultimate approval; and the costs to develop and bring a new source online

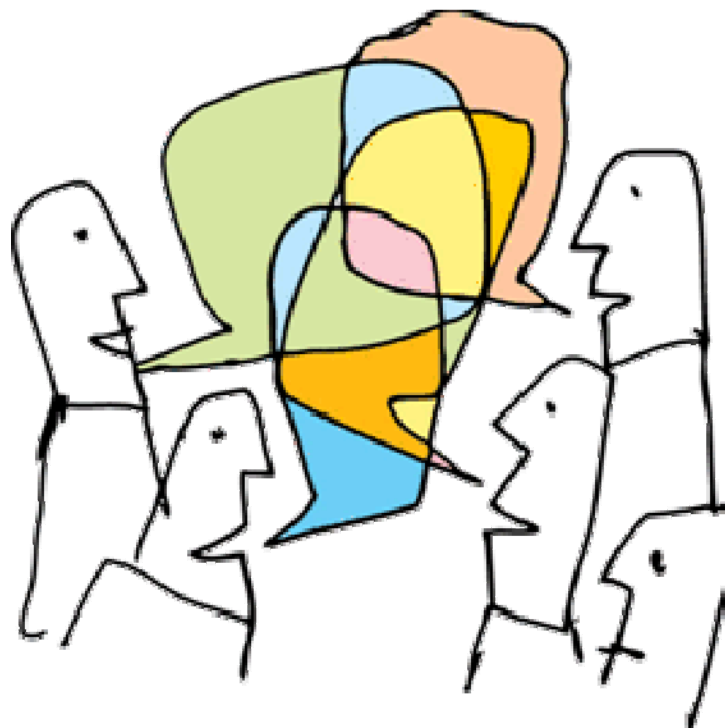
Module #10 – Future Sources, etc.



Possible Solutions

- Encourage joint development of new sources of supply where water could be reasonably shared between parties
- Work with DEEP and DPH prior to new source development to determine feasibility of a particular site in regards to existing known resources and water budget
- Work with municipalities, health districts, COGs, The Nature Conservancy, land trusts, and others to protect potential source water areas for future source development

Module #10 Discussion



Upcoming Modules



- Continue (if needed):
 - ✓ Future Sources / Raw Well Water Quality / Acquisition of land for new stratified drift wells
- Begin:
 - ✓ Future Interconnections and Impact (including WQ), disjointed service areas, and system integration
 - ✓ Impacts of climate change
 - ✓ Impacts of existing and future regulations

8. Other Business

Potential Agenda for October 11, 2017



1. Welcome & Roll Call (5 minutes)
2. Approval of Meeting Minutes (5 minutes)
3. Formal Correspondence (5 minutes)
4. Public Comment Period (10 minutes)
5. ESA Modifications Discussion / Update (10 minutes)
6. Integrated Report Module Discussion (90 minutes)
 - Future Sources, Raw Water Quality, and Acquisition of Land for New Stratified Drift Wells (if needed)
 - Future Interconnections and Impact (including Water Quality), Disjointed Service Areas, and System Integration
 - Impacts of Climate Change
 - Impacts of Existing and Future Regulations
 - Introduce additional topics
7. Other Business (5 minutes)