



Monthly Meeting #10

Coordinated Water System Plan Western Region

Brookfield Town Hall, Brookfield, Connecticut | March 21, 2017

Agenda



1. Welcome & Roll Call (5 minutes)
2. Approval of Meeting Minutes (5 minutes)
3. Review of Formal Correspondence (5 minutes)
4. Drinking Water System Vulnerability Assessment and Resiliency Plan (20 minutes)
5. Public Comment Period (5 minutes)
6. Consider and Approve Preliminary ESA maps for Public Comment (20 minutes)
7. Consider and Approve Preliminary ESA document for Public Comment (20 minutes)
8. Review Draft Statement of Confirmation for ESA Holders (10 minutes)
9. Other Business (as time allows)

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Taking Stock

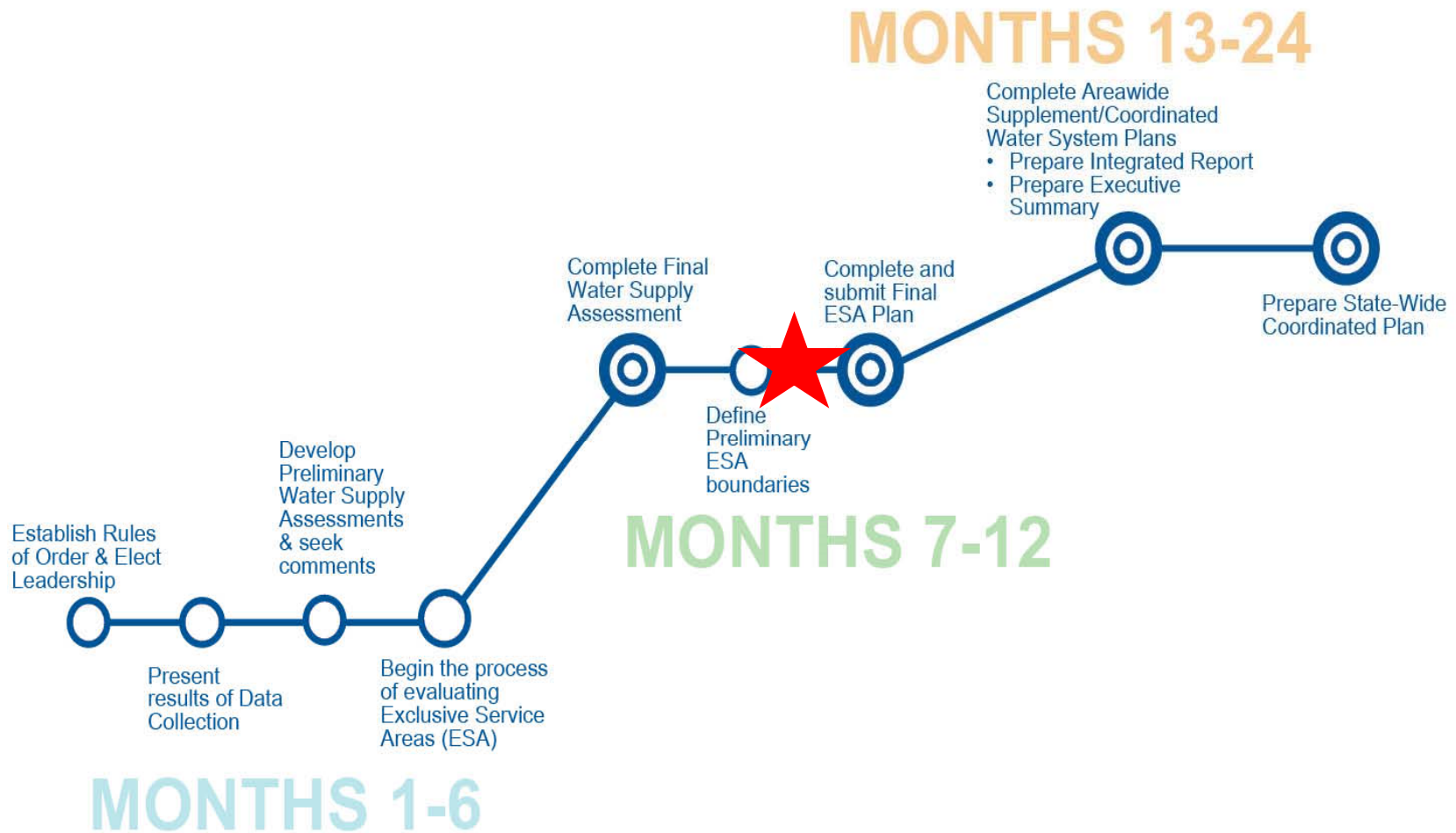


- ***What Have We Accomplished?***
 - ✓ All ESA conflicts have been resolved
 - ✓ The draft ESA document and boundaries was made available for review by active members

- ***What Are We Doing Today?***
 - ✓ Approving Preliminary ESA boundaries and the draft ESA document for public comment
 - ✓ Learning about a public water system resiliency planning process

- ***What's Next?***
 - ✓ Receive public comments on ESAs
 - ✓ Start work on the Integrated Report

WUCC Time Frame



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Formal Correspondence



Date	From	To	Main Topic(s)
3/13/2017	WUCC	DPH	Notification that preliminary ESAs are available (this was due nine months from the convening meeting of June 2016)

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DPH Drinking Water Vulnerability Assessment: UConn CIRCA and CEE

Western WUCC Meeting
March 21, 2017

Dr. Rebecca French
Director of Community Engagement, CIRCA

UConn



PROJECT OVERVIEW

UConn



Drinking Water Vulnerability Assessment and Resilience Plan (DWVAR Plan)

Project Organization

DWVAR Plan Drinking Water Section (DWS) Committee Members:

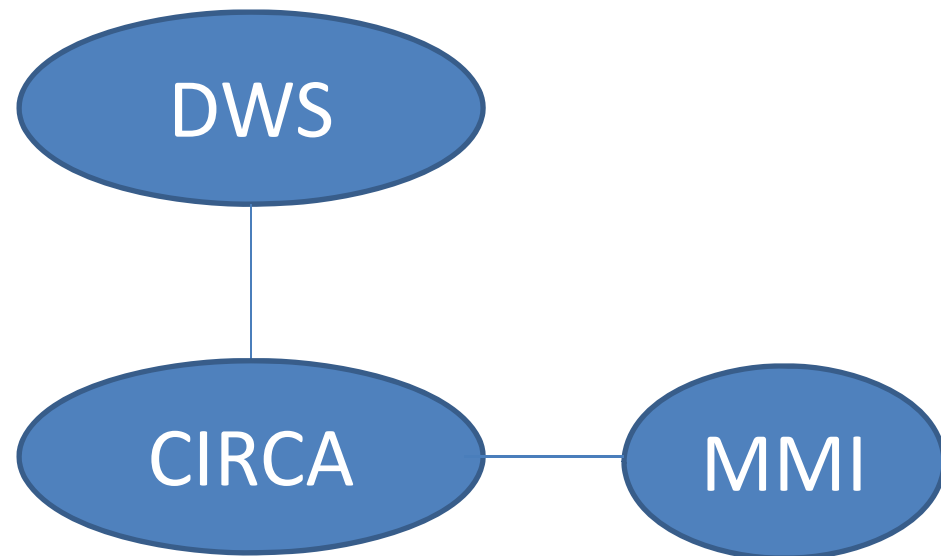
Lori Mathieu
Michael Hage
Eric McPhee
Rachel Nowek
Steven Wallett

CIRCA

James O'Donnell
Christine Kirchhoff
Rebecca French

MMI

David Murphy



Drinking Water Vulnerability Assessment and Resilience Plan (DWVAR Plan)

Project Objective

- To be better prepared and resilient before, during and after future storms and hazards by assessing, identifying and addressing vulnerabilities for community water systems in Fairfield, New Haven, New London, and Middlesex counties

Drinking Water Vulnerability Assessment and Resilience Plan (DWVAR Plan)

- **Task 1-** Community Water System (CWS) Vulnerability Assessment
- **Task 2-** Review and Assessment of DPH's Emergency Response plans
- **Task 3-** Private Well (PW) Assessment and Recommendations
- **Task 4-** Implementation Plan

Project end date – September 30, 2017

VULNERABILITIES

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Drinking Water System Vulnerabilities

Main Concerns

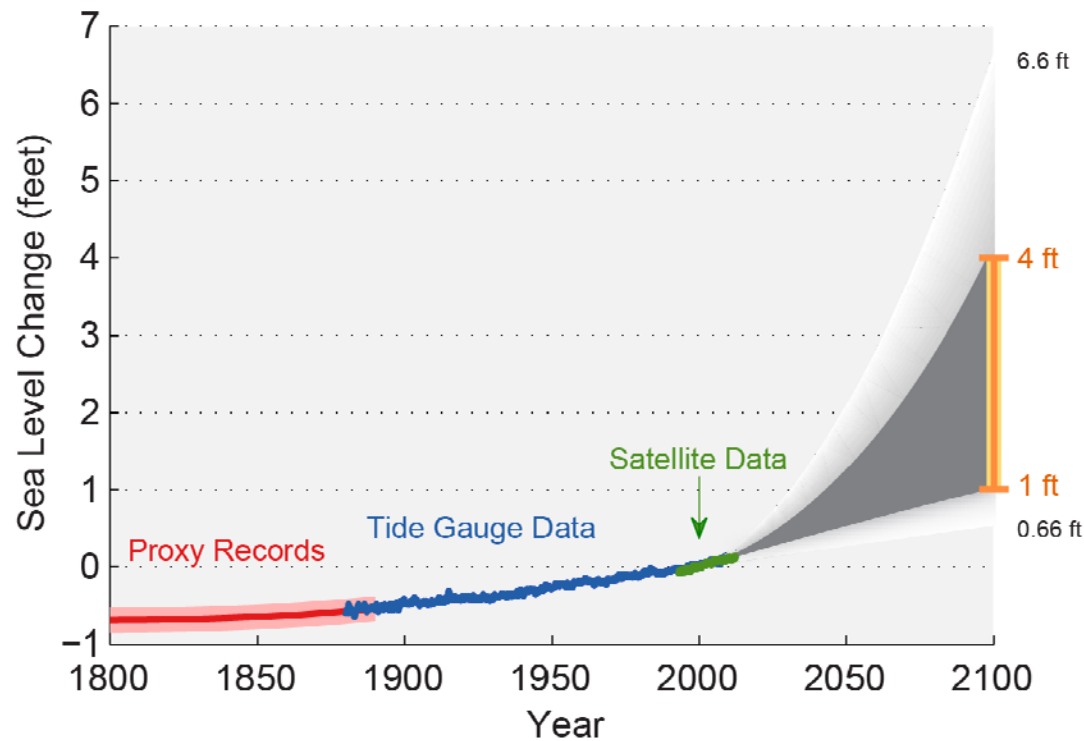
- Coastal and Inland Flooding
- Climate change
- Sea Level Rise
- Drought

Possible Consequences

- Disruption of service
- Degradation of water
- Reduced groundwater recharge
- Damage to infrastructure
- Financial burden to get back in operation
- Salt water intrusion

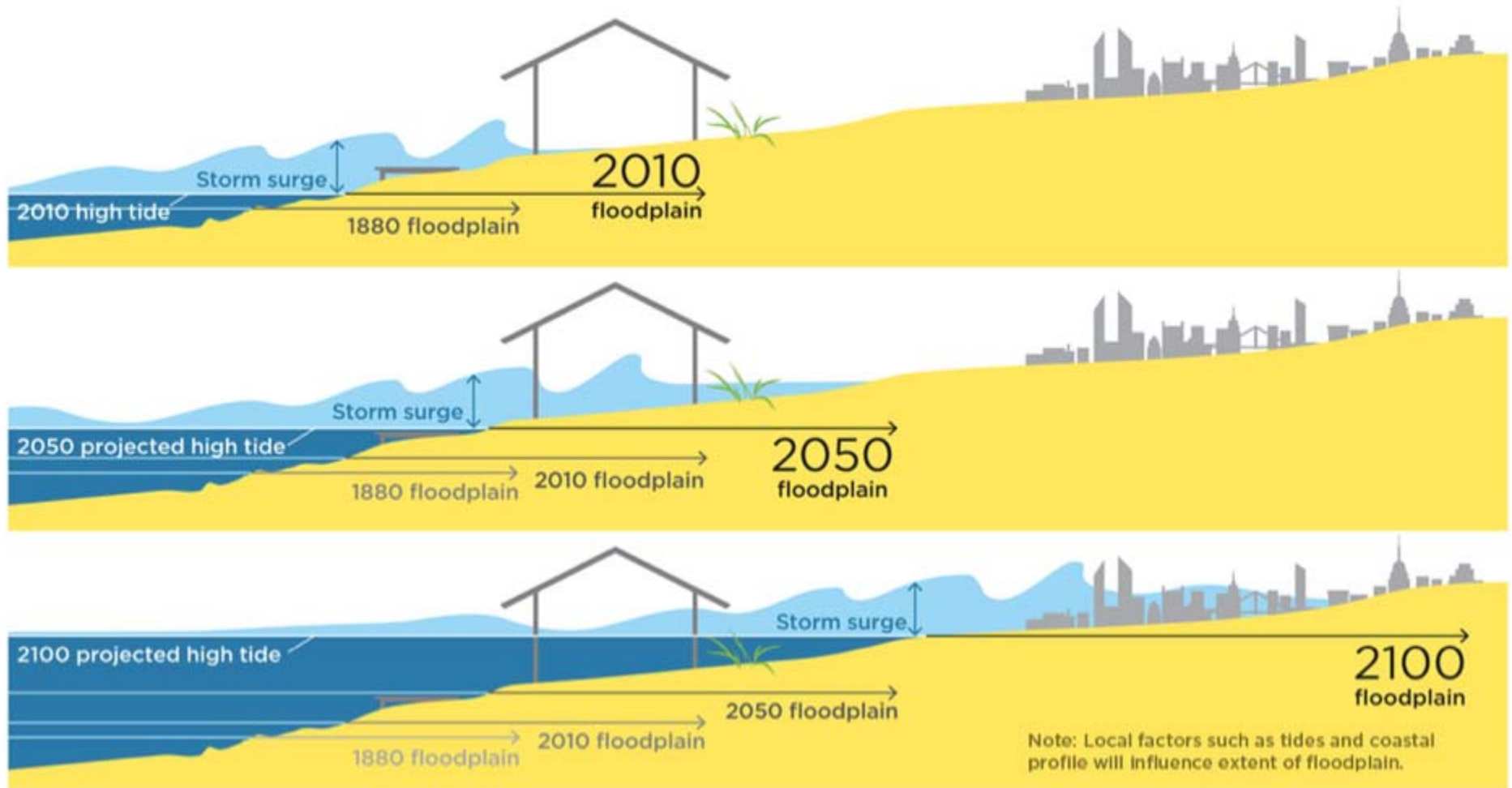
Impacts of Climate Change

Past and Projected Changes in Global Sea Level



NCA, 2014

Sea Level Rise Increases Frequency of Flooding



Union of Concerned Scientists, 2015

UConn



Western WUCC – Sea Level Rise



Western WUCC, Greenwich to Stratford, coastal area displayed with a 4 foot SLR projection using NOAA Sea Level Rise Viewer

Western WUCC

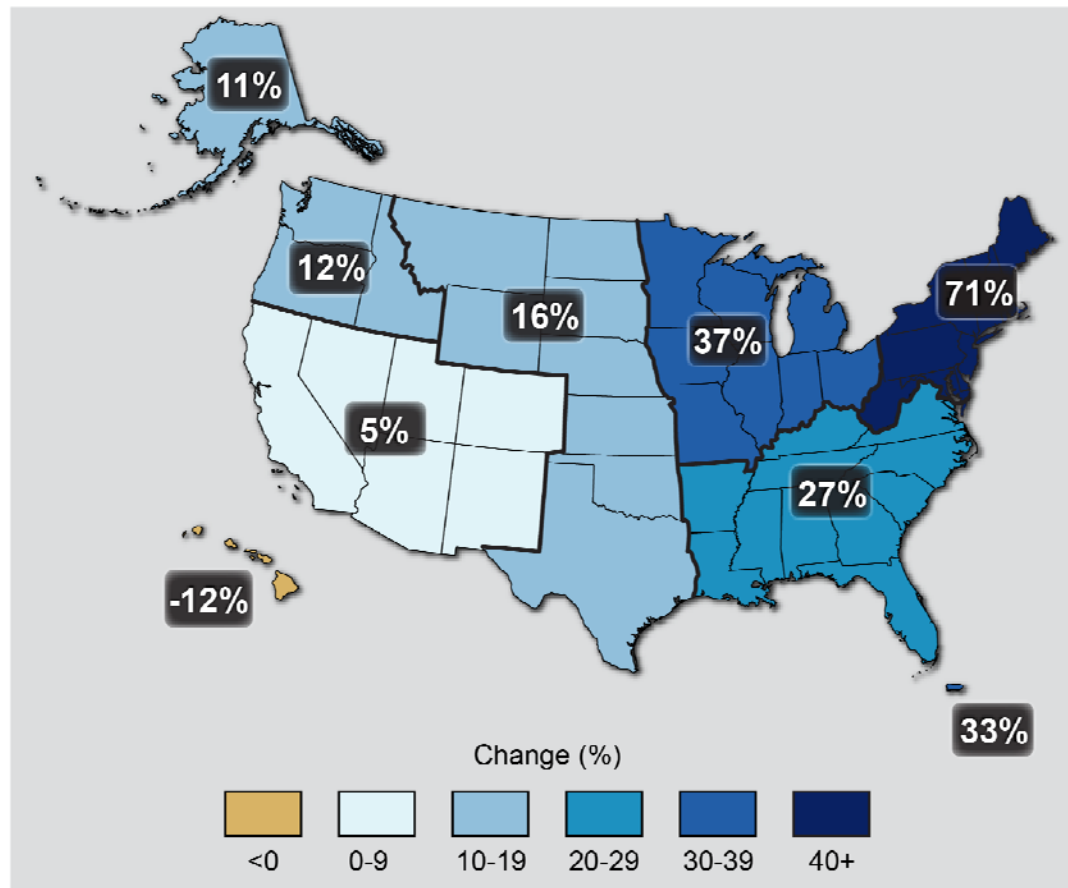


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Impacts of Climate Change in Northeast

Observed Change in Very Heavy Precipitation



NCA, 2014

Small System Vulnerabilities

Main Concerns for Connecticut Systems

- Potential for lack of emergency power and supply
- Lack of interconnections
- Some systems may rely solely on one source
- Potential for inadequate pumping or storage capacity
- Lack of adequate resources (financial or technical)



CASE STUDIES

UCONN



Waynesboro, TN

Adaptation decreased shutdowns from days to hours



- 2003 plant flooded with a **three day** shut down to repair equipment, clean and dry pumps
- 2004 flooded with extensive damage and caused a **four day** shutdown
- 2005 received a \$148,000 USDA flood mitigation grant
 - Removed first level windows & installed water tight doors
 - Relocated office and lab space to second floor
 - Raised raw water intake motors and equipment by four feet
- 2010 flooded with only an **eighteen hour** shutdown

Resilience

3 Components of Drinking Water Systems

Physical

- Water source
- Conveyance
- Raw Water storage
- Treatment
- Finished water storage
- Distribution system
- Monitoring system

Cyber

- Enterprise system
- Process system & operational controls
- Supervisory Control & Acquisition Data (SCADA) system

Human

- Employees
- Contractors

NEXT STEPS

UCONN



Community Water Systems: Interviews and Surveys

- Subtask 1.1:
 - Interviews with a subset of CWS managers
 - Survey of all CWS
- Timing: Interviews before surveys
 - Enables interview results to inform survey design
- Goal of interviews and survey
 - Understand past storm and drought impacts (if any) and responses
 - Assess adaptive capacity and resilience of CWS to storms and droughts and to long-term changes
 - Understand factors that influence adaptive capacity and resilience
 - Gather CWS perspectives on how to support increasing resilience

Acknowledgments

- **Dr. James O'Donnell** – CIRCA Executive Director and Professor Marine Science
 - Victoria Brudz, M.S. GIS and Project Coordinator
- **Dr. Rebecca A. French** – CIRCA Director of Community Engagement
- **Dr. Christine Kirchhoff** – Assistant Professor CEE
 - Dr. Julia Flagg, postdoctoral fellow
- **Dr. Guiling Wang** – Professor CEE
- **Dr. Amy Burnicki** – Assistant Professor in Residence CEE
- **Dave Murphy, P.E., CFM** – Milone & MacBroom

Contact Information

rebecca.french@uconn.edu

860-405-9228

circa.uconn.edu

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Remaining ESA Process Schedule



Action	Timeline
<ul style="list-style-type: none"> • Approve Preliminary ESA maps and document for Public Review 	March 14, 2017 Meeting (actual meeting date: March 21, 2017)
<ul style="list-style-type: none"> • 30-Day Public Comment Period 	March 22, 2017 through approximately April 21, 2017
<ul style="list-style-type: none"> • Review public comments received to date • Statements of Confirmation issued for review and signature • Process boundary adjustments if needed 	April 11, 2017 Meeting
<ul style="list-style-type: none"> • Review final set of public comments • Review draft final ESA Document • Process boundary adjustments if needed 	May 9, 2017 Meeting
<ul style="list-style-type: none"> • Approval of ESA Document 	June 13, 2017 Meeting

Status of DEEP and State Agencies



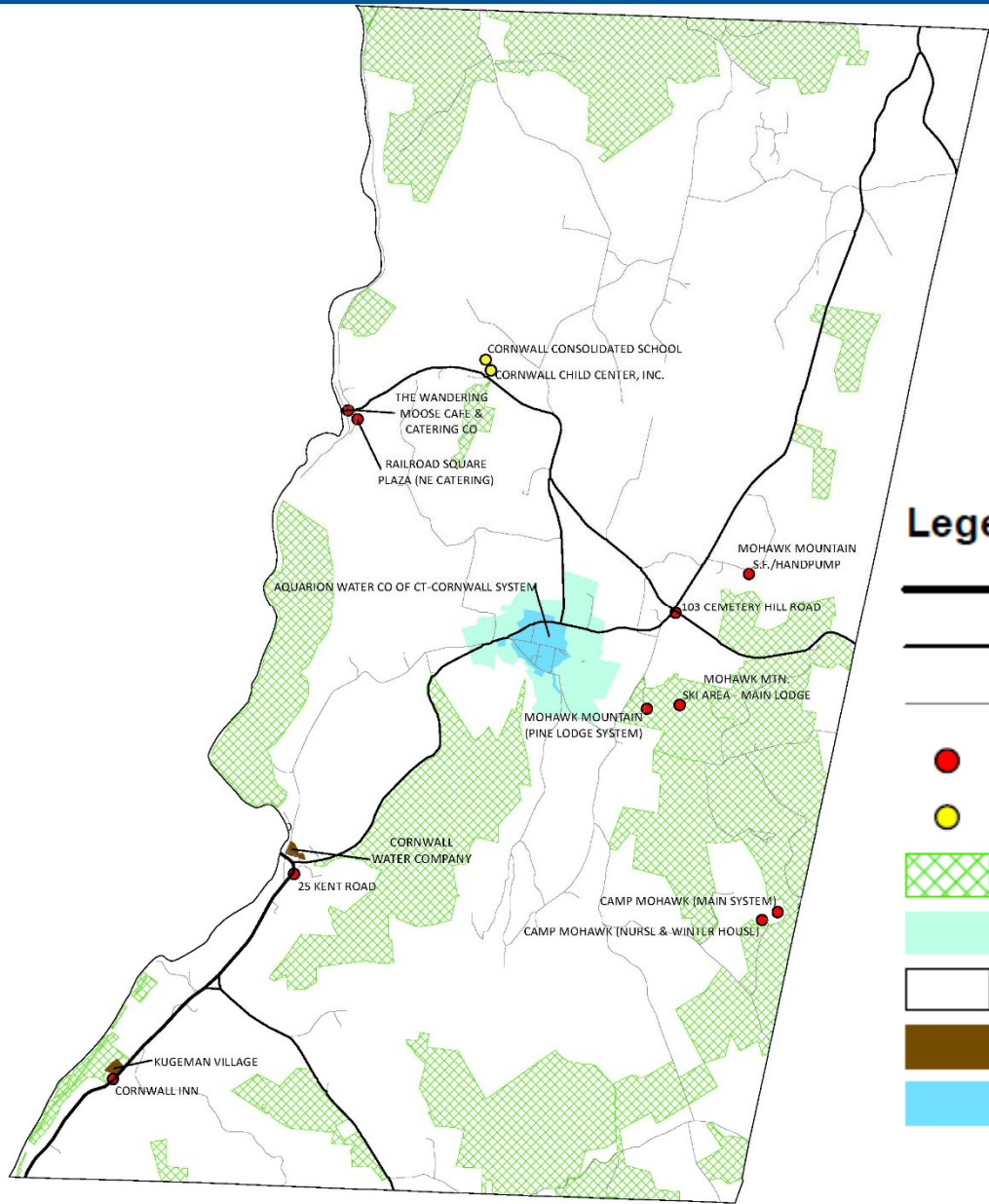
- State agencies (DEEP, UConn, Southbury Training School) are not considered WUCC members, although they have existing public water systems in the region
 - Existing service area boundaries will remain on maps
- DEEP lands on maps will be noted as “DEEP LANDS WHERE EXCLUSIVE SERVICE AREA MAY NOT BE ENFORCEABLE”
 - If the entire town is unassigned, the DEEP land is simply unassigned (no DEEP lands shown)
 - If ESAs are assigned, the DEEP land is shown with the notation that the ESA may not be enforceable

Status of Prior Unresolved ESAs













- Cornwall
 - Board of Selectmen voted in support of proposed Aquarion ESA
- Norwalk
 - Map was developed with a joint venture ESA for SNEW and FDWD
 - Subsequently, SNEW and FDWD determined that a joint venture ESA was not needed
 - System hydraulics imply SNEW service in that location
 - Conflict resolved
- Litchfield
 - Torrington Water Company ESA retracted (note that there is a small existing system in Litchfield)
 - Aquarion ESA limited to buffer around existing service area
 - Remaining land is unassigned
 - Conflict resolved

Preliminary ESA Delineation for Cornwall

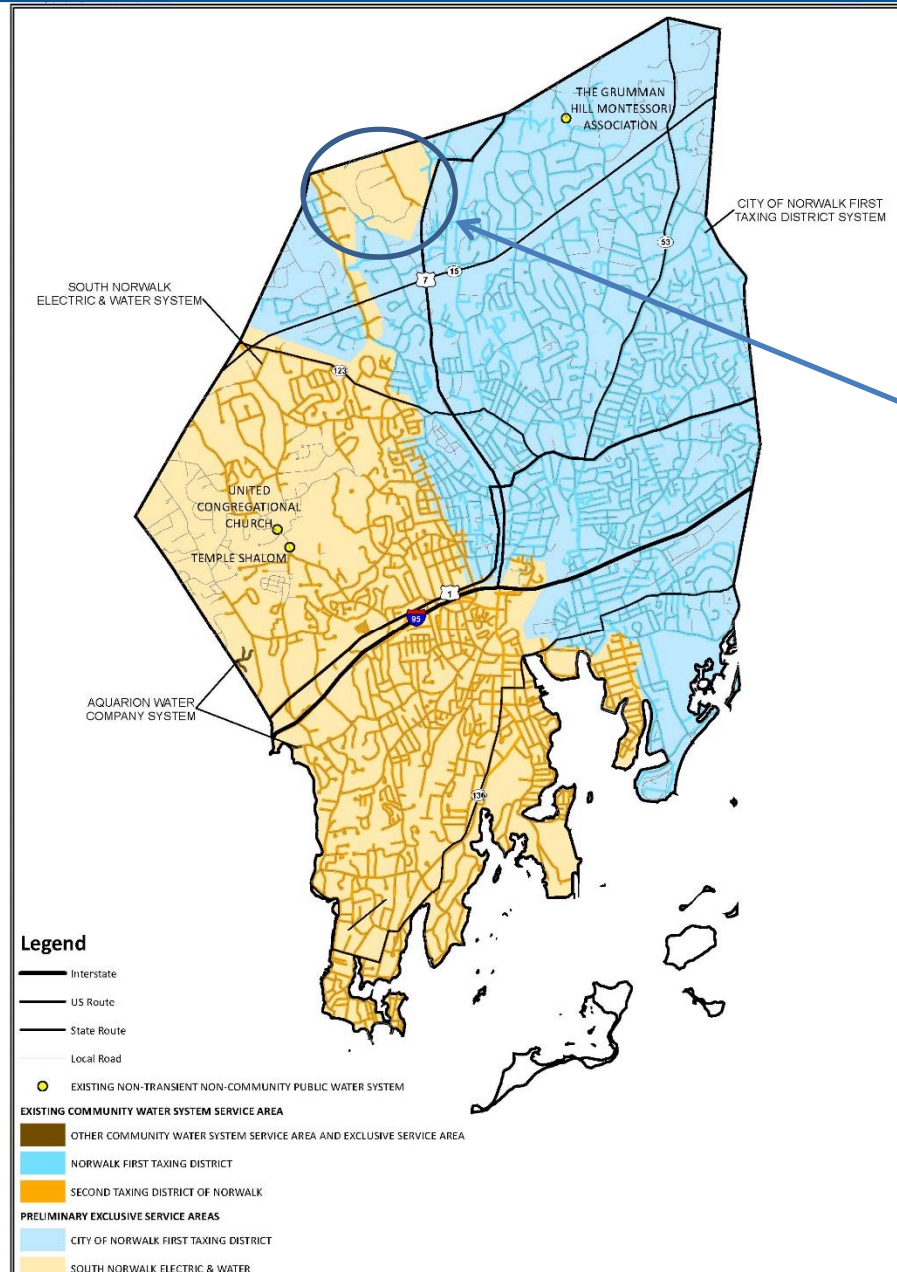


Legend

-  US Route
-  State Route
-  Town Road
-  EXISTING TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEM
-  EXISTING NON-TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEM
-  DEEP LANDS WHERE EXCLUSIVE SERVICE AREA MAY NOT BE ENFORCEABLE
-  AQUARION WATER COMPANY PRELIMINARY EXCLUSIVE SERVICE AREA
-  EXCLUSIVE SERVICE AREA UNASSIGNED (CLEAR)
-  OTHER COMMUNITY WATER SYSTEM SERVICE AREA AND EXCLUSIVE SERVICE AREA
-  AQUARION WATER COMPANY SERVICE AREA

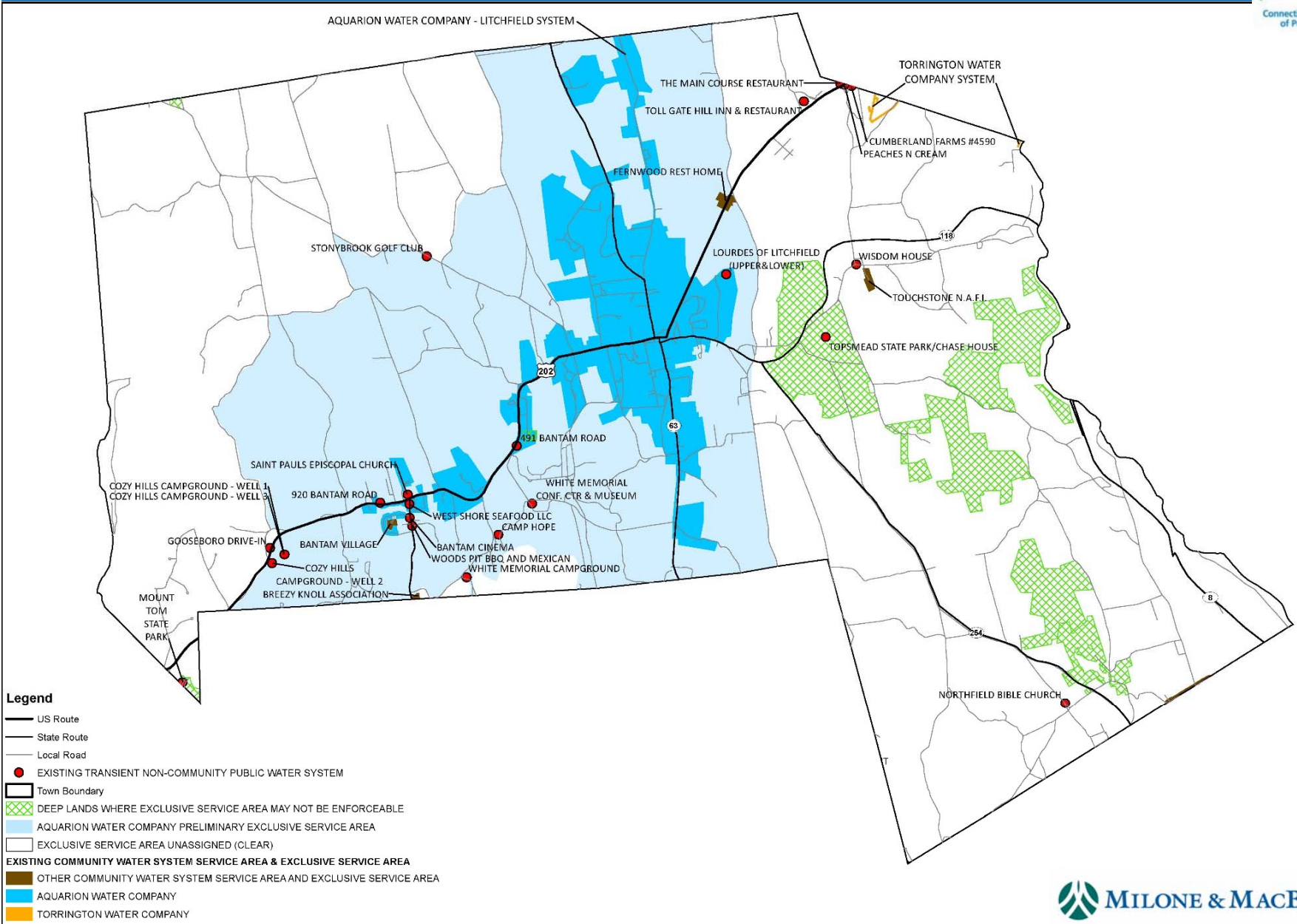
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Preliminary ESA Delineation for Norwalk



Previous potential joint venture ESA; will be SNEW ESA

Preliminary ESA Delineation for Litchfield



MILONE & MACBROOM
 Civil, Environmental &
 Planning Engineers &
 Surveyors

PROJECT NO.	DATE

Preliminary Exclusive Service Area Map
 Town of Litchfield, Connecticut
 Western PWS/MFA
 Western WLUCC
 Litchfield, CT

DM 2/29/17	SJB 3/2/17	DM 2/22/17
SCALE: 1:50,000		
DATE: MARCH 20, 2017		

Preliminary ESAs Viewed in February



- These can be reviewed for specific questions and answers
- A detailed page-by-page discussion of the boundaries was conducted at the February meeting and is not necessary during this meeting
- Motion to *“Approve the Preliminary ESA Boundaries to Be Distributed with ESA Document for Public Comment”*



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Edits Since Final Draft



Edits Since Final Draft was Posted:

- Removed “State Agency” from ESA Holder definition
- Added discussion for islands in Long Island Sound that were left unassigned
- Correct spelling errors / add missing words
- Revise maps for distribution with ESA Document

Draft ESA Document

- Any additional comments or edits?
- Discussion
- Motion to *“Approve the Preliminary ESA Document and associated Preliminary ESA Boundaries to be submitted for a 30-day public comment period”*



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Statement of Confirmation



1. Service Area Boundaries: The undersigned acknowledge that the attached map(s) as identified below as presented on Geographic Information System (GIS) mapping accurately identifies the undersigned ESA holder's ESA as accepted by the Western Connecticut WUCC on or prior to (DATE). Copies of the approved maps and Statements of Confirmation will be kept on file at the Connecticut DPH offices and will be available for public review. Unofficial copies will be available electronically online on the Western WUCC website hosted by Connecticut DPH.
2. Rights and Responsibilities: The undersigned acknowledges its right and responsibility for providing adequate service as requested by consumers and under terms otherwise provided by statute, regulation and ordinance with their ESA boundaries with a reasonable timeframe, as specified by the Regulations of Connecticut State Agencies 25-33h-1(k)(2). Such rights and responsibilities are detailed in the ESA Document prepared by the Western WUCC. The undersigned acknowledges that it will adhere to any applicable changes to the statutes and regulations which may occur from time to time.
3. Boundary Adjustments: If at some time in the future it is in the best interest of the undersigned to make adjustments to an ESA boundary, such adjustments must be made in accordance with the ESA Modification Procedures in the Western WUCC Work Plan and be approved by the Connecticut DPH. Such adjustments must be reconfirmed by completion of a new Statement of Confirmation of ESA Boundaries and updates to the associated mapping.

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Other Business

