



Monthly Meeting #17

Coordinated Water System Plan Eastern Region

Southeastern Connecticut Council of Governments, Norwich, CT | October 11, 2017

Agenda



1. Welcome & Roll Call (5 minutes)
2. Approval of September Meeting Minutes (5 minutes)
3. Formal Correspondence (5 minutes)
4. Public Comment Period (10 minutes)
5. ESA Modifications Discussion / Update (5 minutes)
6. Integrated Report Topics (85 minutes)
 - Presentation by DPH on DWSRF / Source Protection
 - Future Sources, Raw Water Quality, and Acquisition of Land for New Stratified Drift Wells
 - 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)



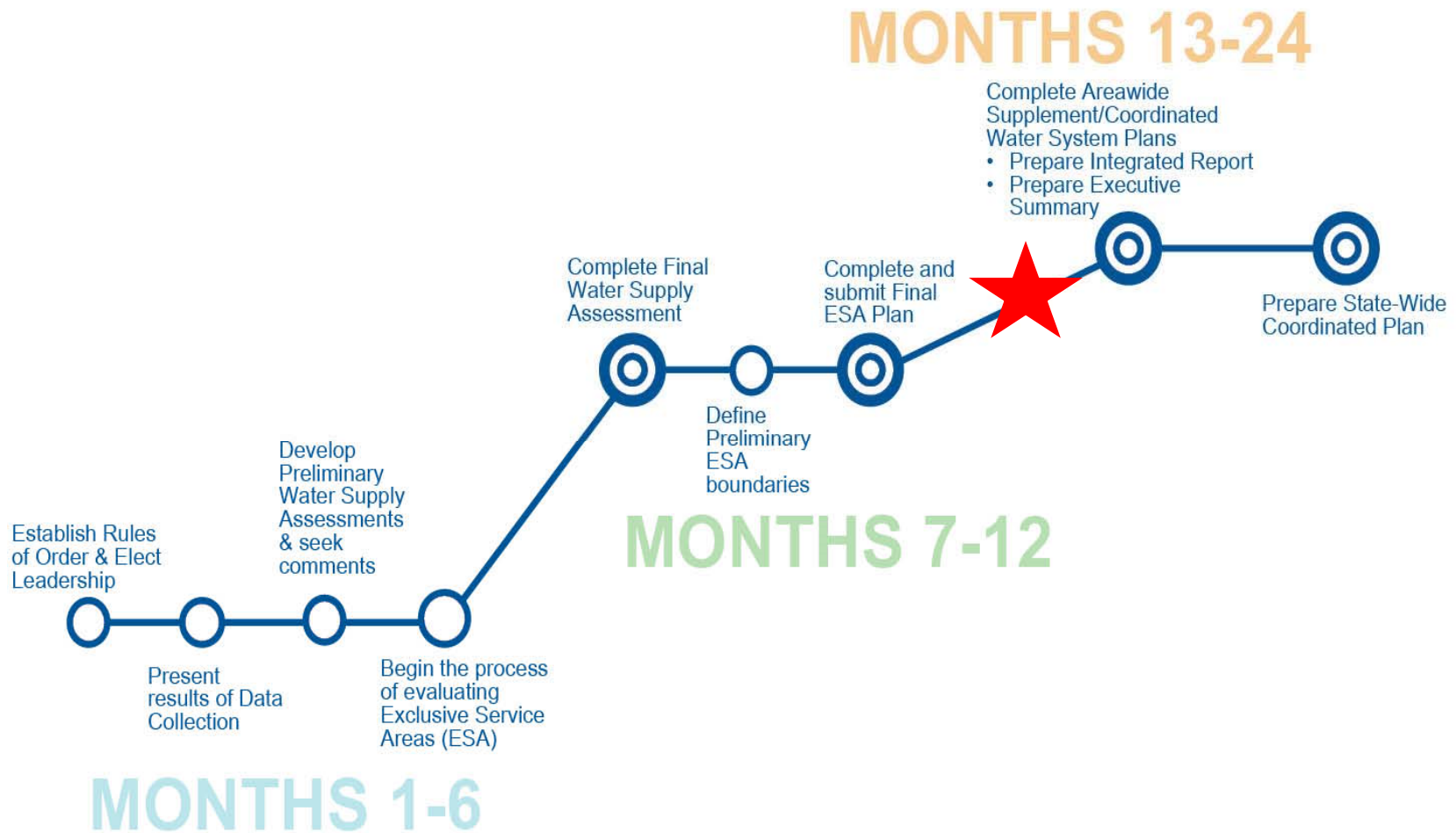
1. Welcome and Roll Call

Taking Stock



- ***What Have We Accomplished?***
 - ✓ Discussed Integrated Report Modules #1 through #10
- ***What Are We Doing Today?***
 - ✓ Presentation by DPH regarding DWSRF Public Hearing
 - ✓ Discussing Integrated Report Modules #10 through 13
- ***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)
9/21/2017	Western, Central, and Eastern WUCCs	WUCC Members	Data Collection and Module Question Completion Request for Integrated Report
9/27/2017	Groton Utilities	Eastern WUCC	Responses to questions for all modules
10/5/2017	Aquarion WC	MMI	Responses to questions for modules 11-16
10/5/2017	Windham WW	Eastern WUCC	Responses to questions for modules 11-14
10/10/2017	Norwich PU	Eastern WUCC	Responses to questions for modules 11-12
10/10/2017	SCWA	MMI	Responses to questions for modules 11-13

4. Public Comment Period

5. ESA Modifications Discussion / Updates

6. 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	X		
✓	✓	✓	Future Interconnections and Impact (including WQ) / disjointed service areas / integration					X		
✓			Impacts of Climate Change					X		
✓			Impacts of Existing and Future Regulations					X		
	✓	✓	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							



Drinking Water State Revolving Fund Public Hearing October 25, 2017

Raul Tejada
Sanitary Engineer 3
CTDPH - Drinking Water Section



Intended Use Plan

- The purpose of the public hearing is to seek meaningful public input on the SFY 2018 Intended Use Plan (IUP)
- IUP explains how DPH intends to utilize federal capitalization grant funds received from EPA
- Includes DWSRF policies
- Includes Project Priority List for projects submitted by PWS for SFY 2018 funding



NEW for SFY 2018

- PWS may submit applications for DWSRF funding at any time
- Priority Ranking System was revised to encourage and/or support
 - Water conservation projects
 - Resiliency projects
 - Projects to reduce lead in drinking water
 - Climate change planning
 - Asset Management planning
- Lead service lines encountered during water main replacement must be replaced if consent is obtained from property owner
- Federal subsidy % applied to contract prices rather than total project cost



Public Hearing

- 10/25/17 10:00 am at 470 Capital Ave., Hartford Conference Room 470 C
- If you cannot attend comments may be e-mailed until 10/24/2017 to:

DPH.CTDWSRF@ct.gov

- For more information visit the DWRSF website at:

<http://www.ct.gov/dph/dwsrf>



DWSRF Contacts

- DWSRF Team Members
 - Cameron Walden, Supervising Sanitary Engineer
 - Raul Tejada, Sanitary Engineer 3
 - Sara Ramsbottom, Sanitary Engineer 3
 - Florin Ghisa, Sanitary Engineer 3
- Call **(860) 509-7333**

Module #11 - Interconnections

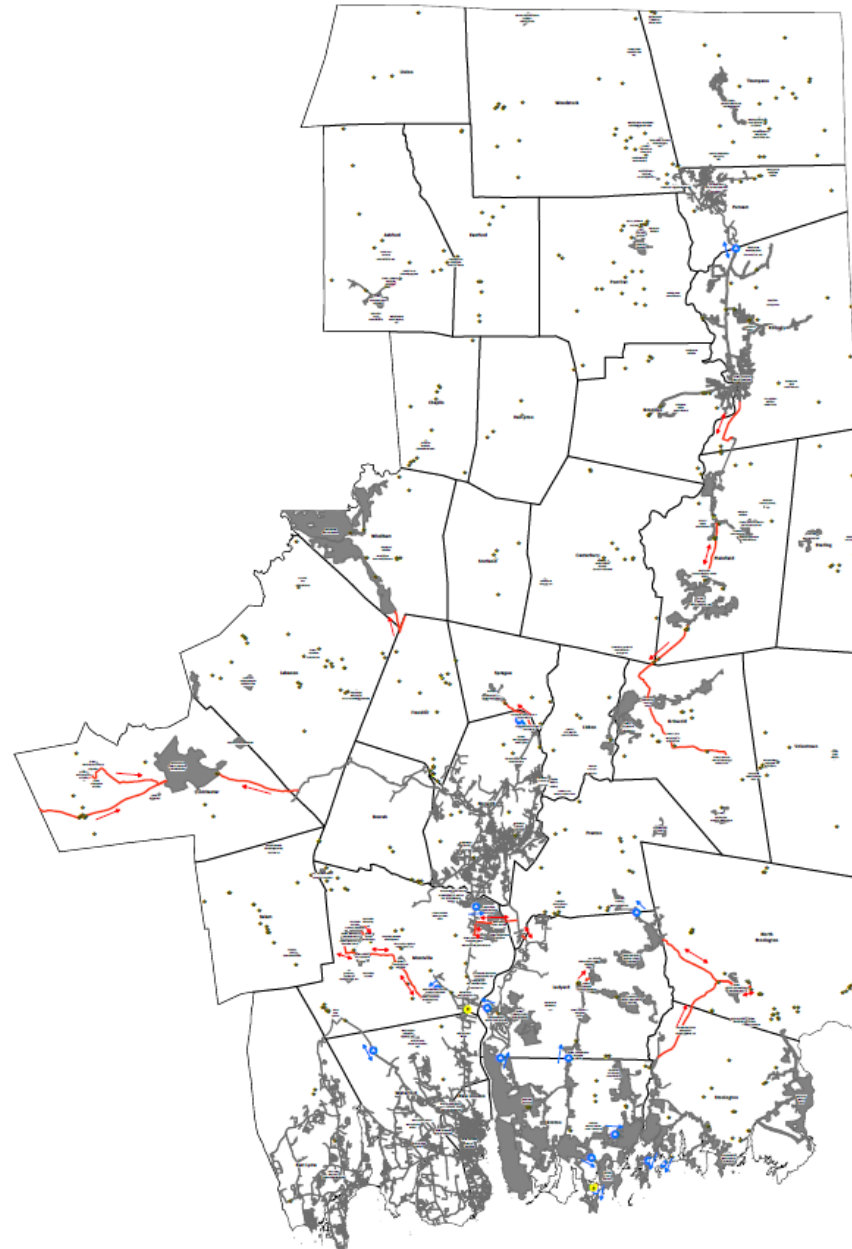


Situation

- WSA identified 18 interconnections in Eastern PWSMA, 13 of which are active
- WSA identified 9 utilities currently considering new interconnections for active or emergency use
- Additional interconnections identified under previous planning efforts
- The Integrated Report shall list existing and future interconnections within and outside of management area, requirements and limitations for use, schedule for facility development, etc.
- Formation of DBPs is a primary concern for regionally interconnected systems

CWSP regulations require “plans for any necessary interconnection of both raw and treated water for both daily and emergency”
RCSA 25-33h-1(d)(C)(iv)

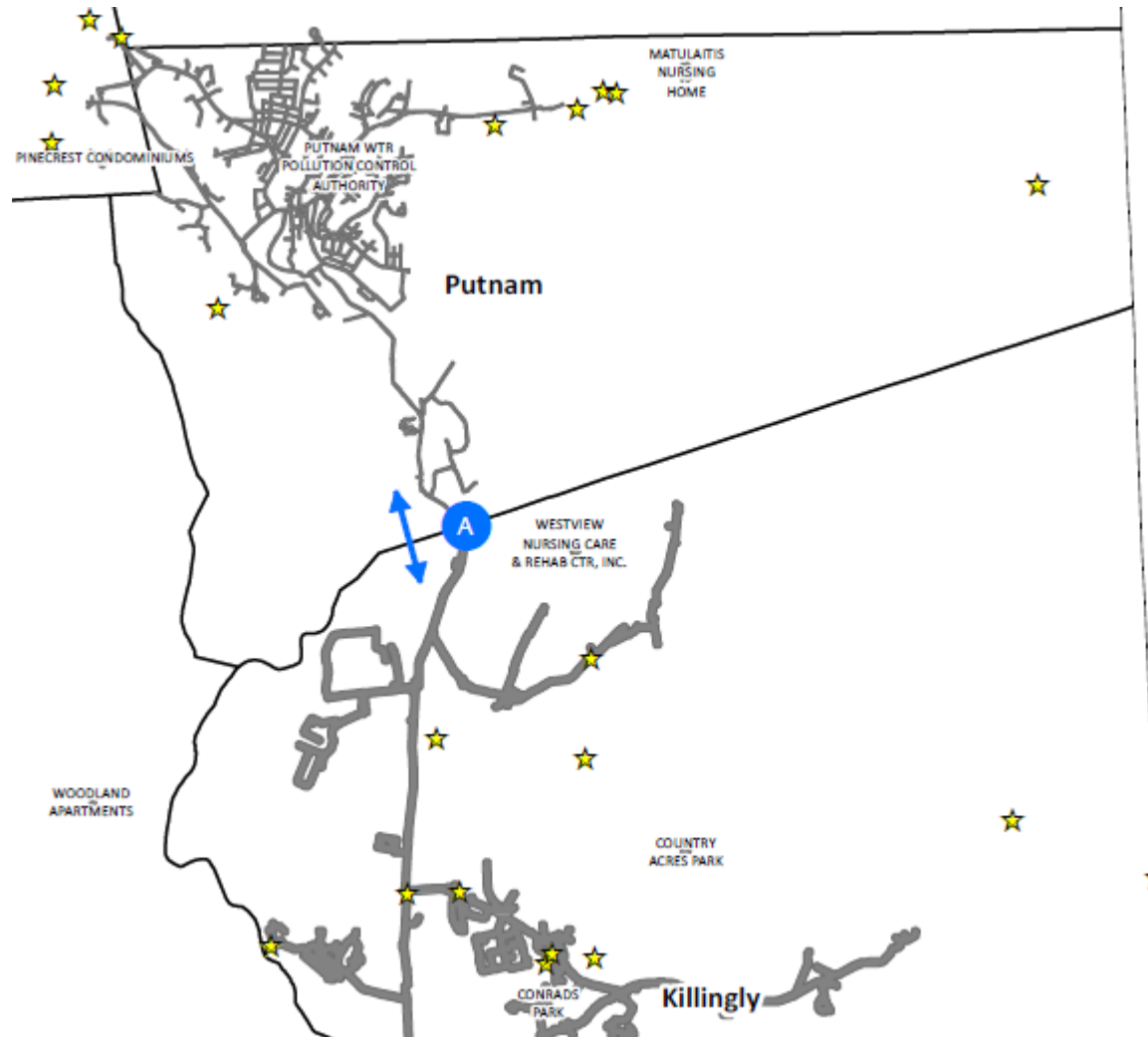
Module #11 - Interconnections



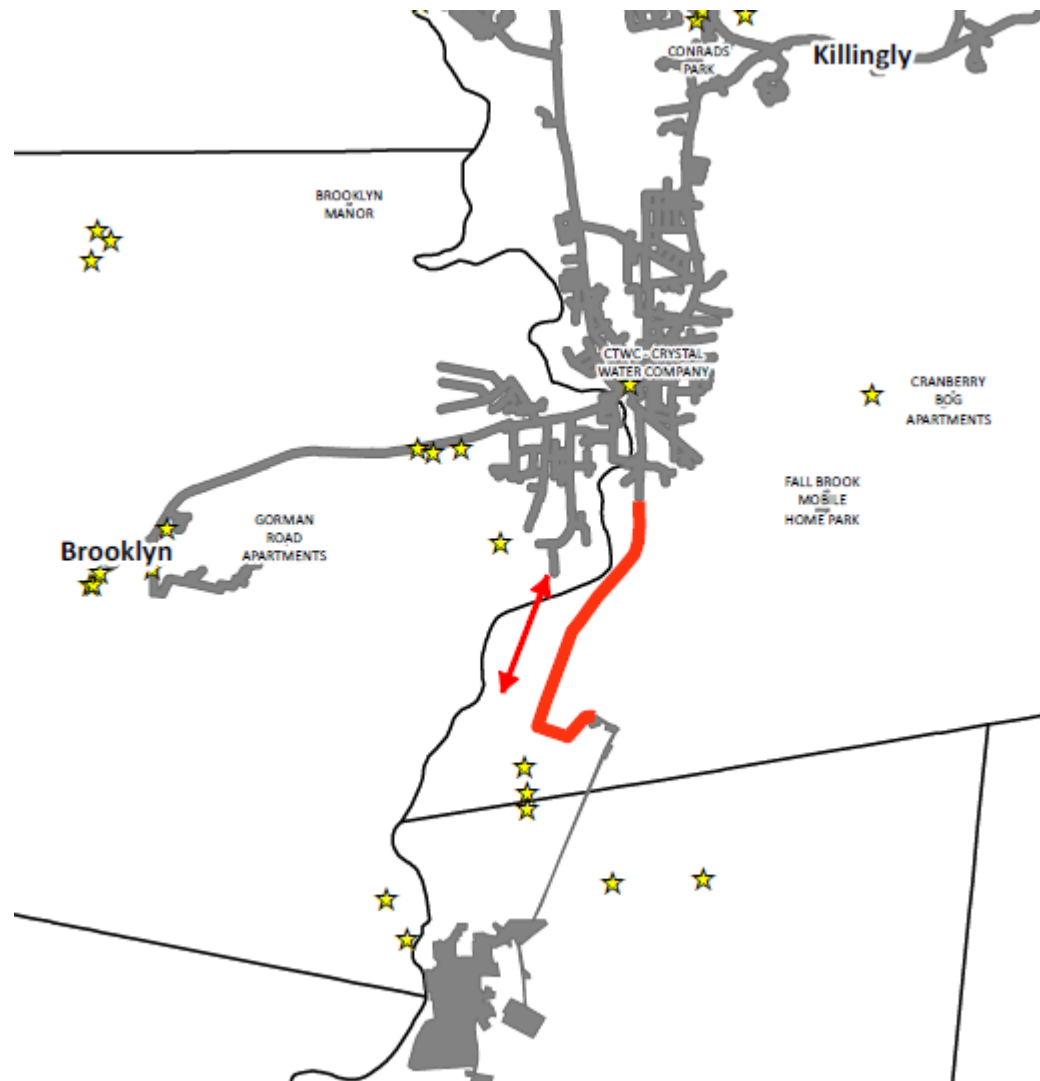
Key

- Existing Interconnections
 - Active (Blue Dots)
 - Emergency (Yellow Dots)
 - Inactive (Red Dots)
- Potential Interconnection Routing Based on WSPs & Future Source Lists
 - Red Lines – Treated Water
 - No potential raw water interconnections identified

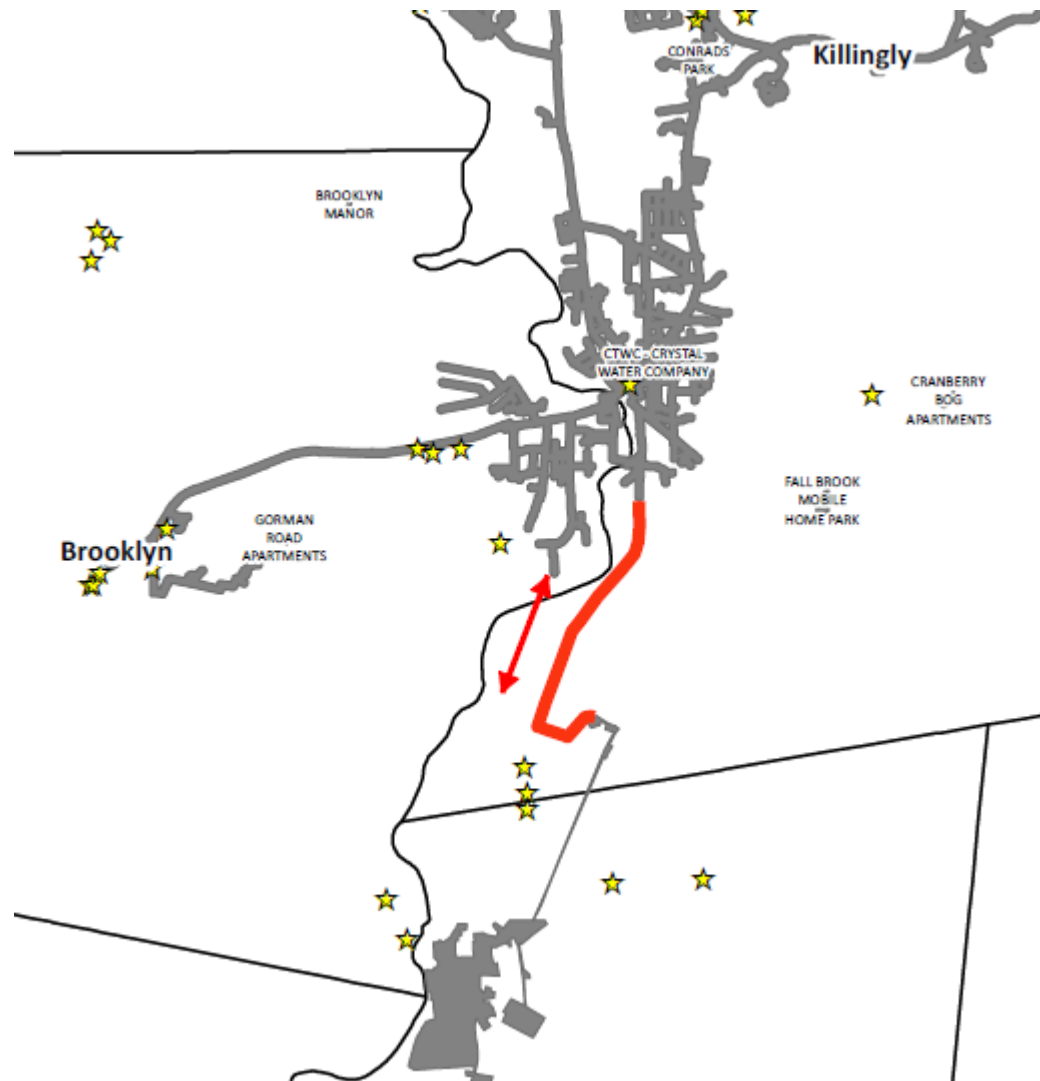
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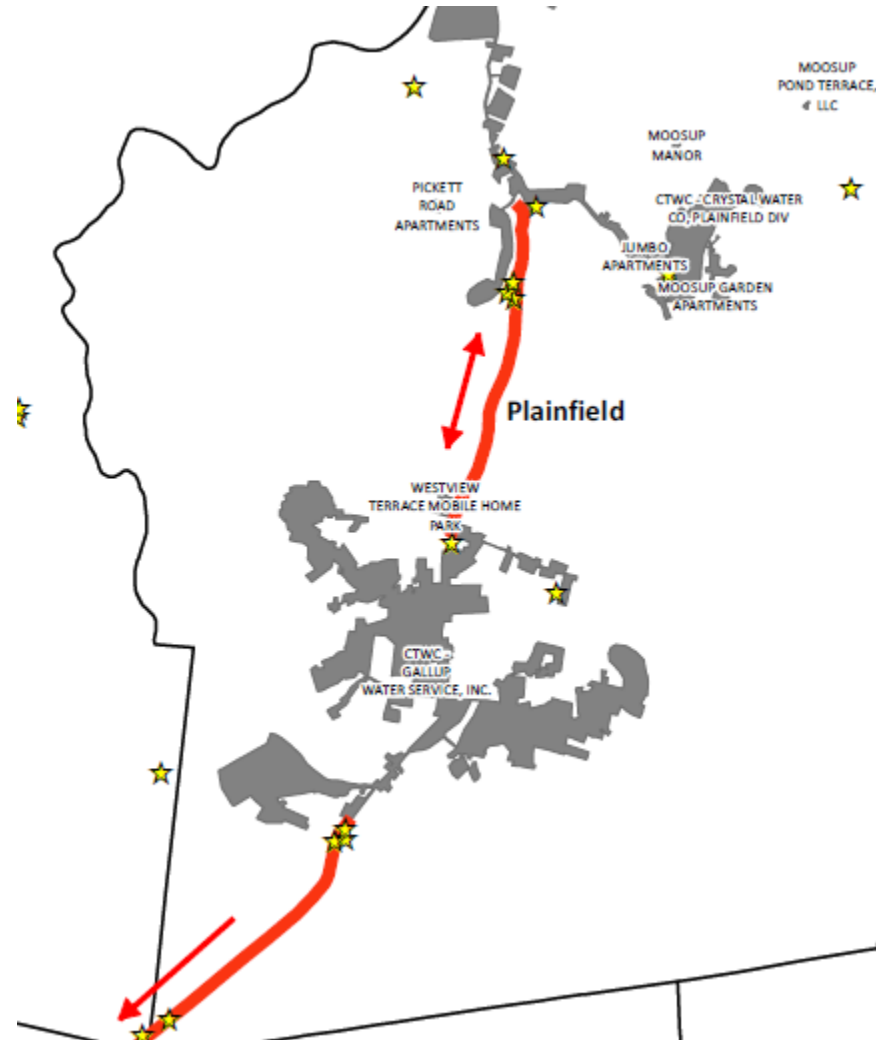
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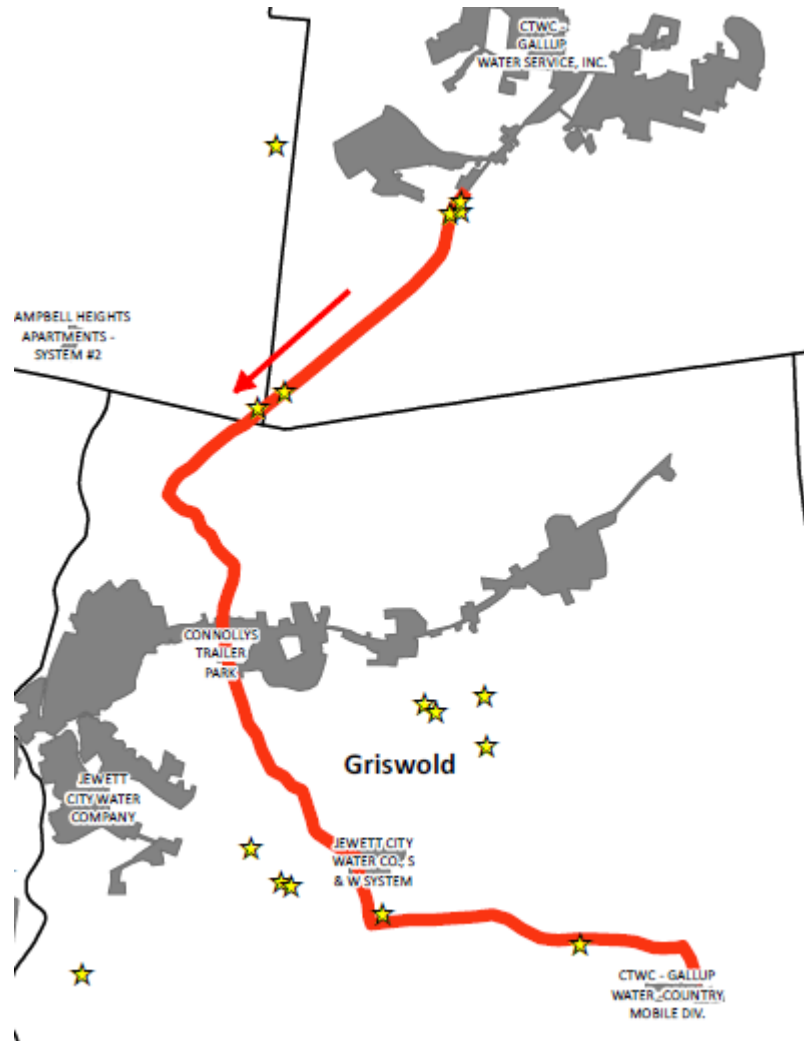
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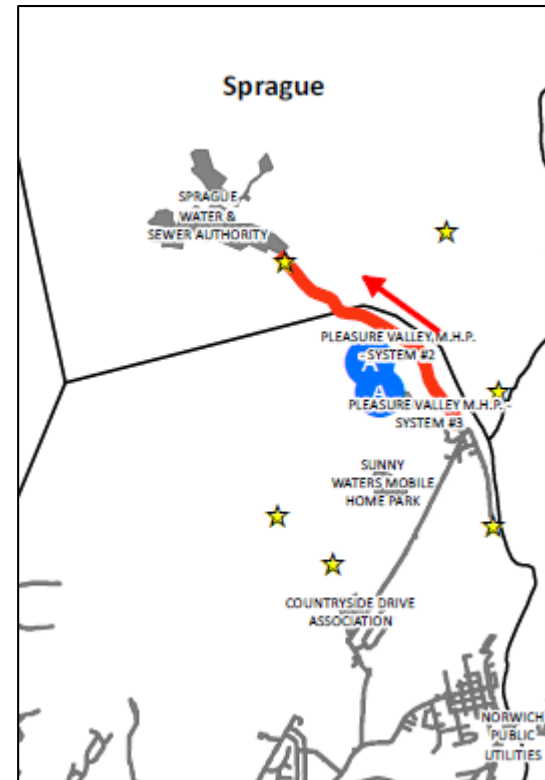
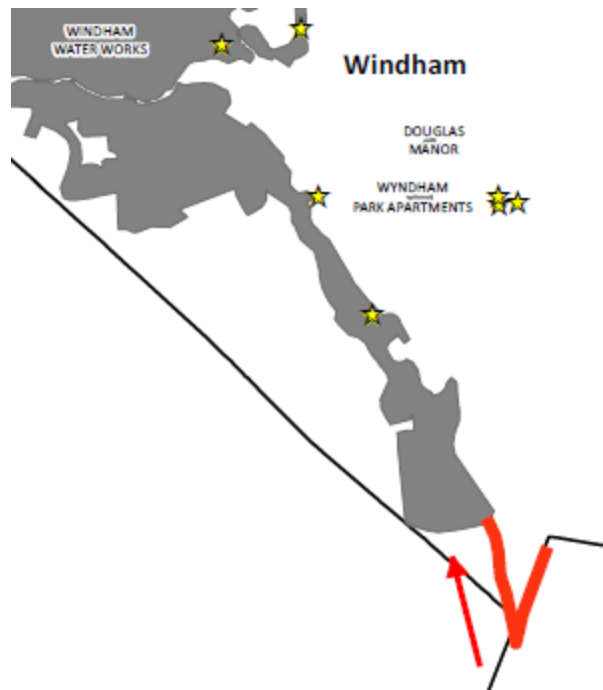
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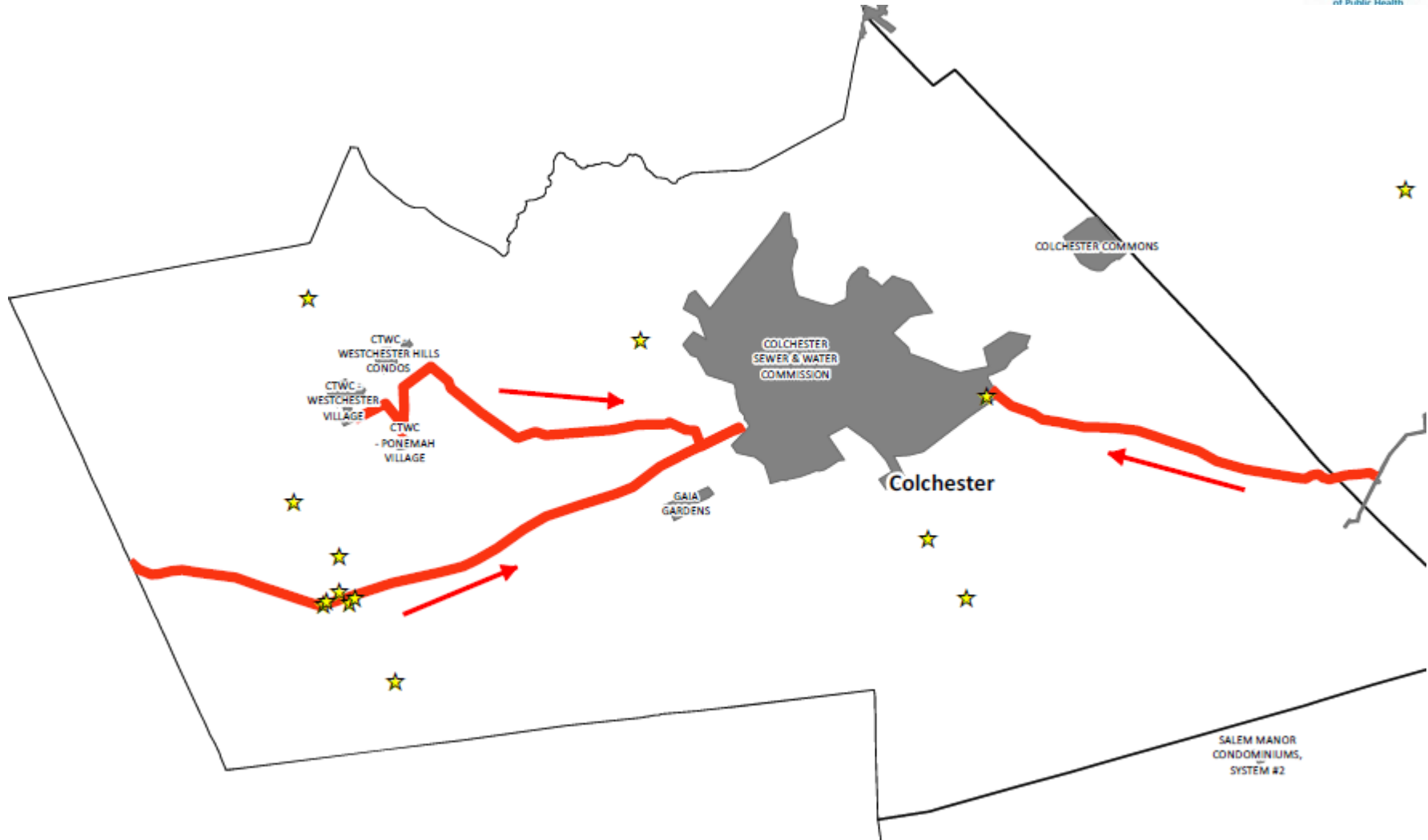
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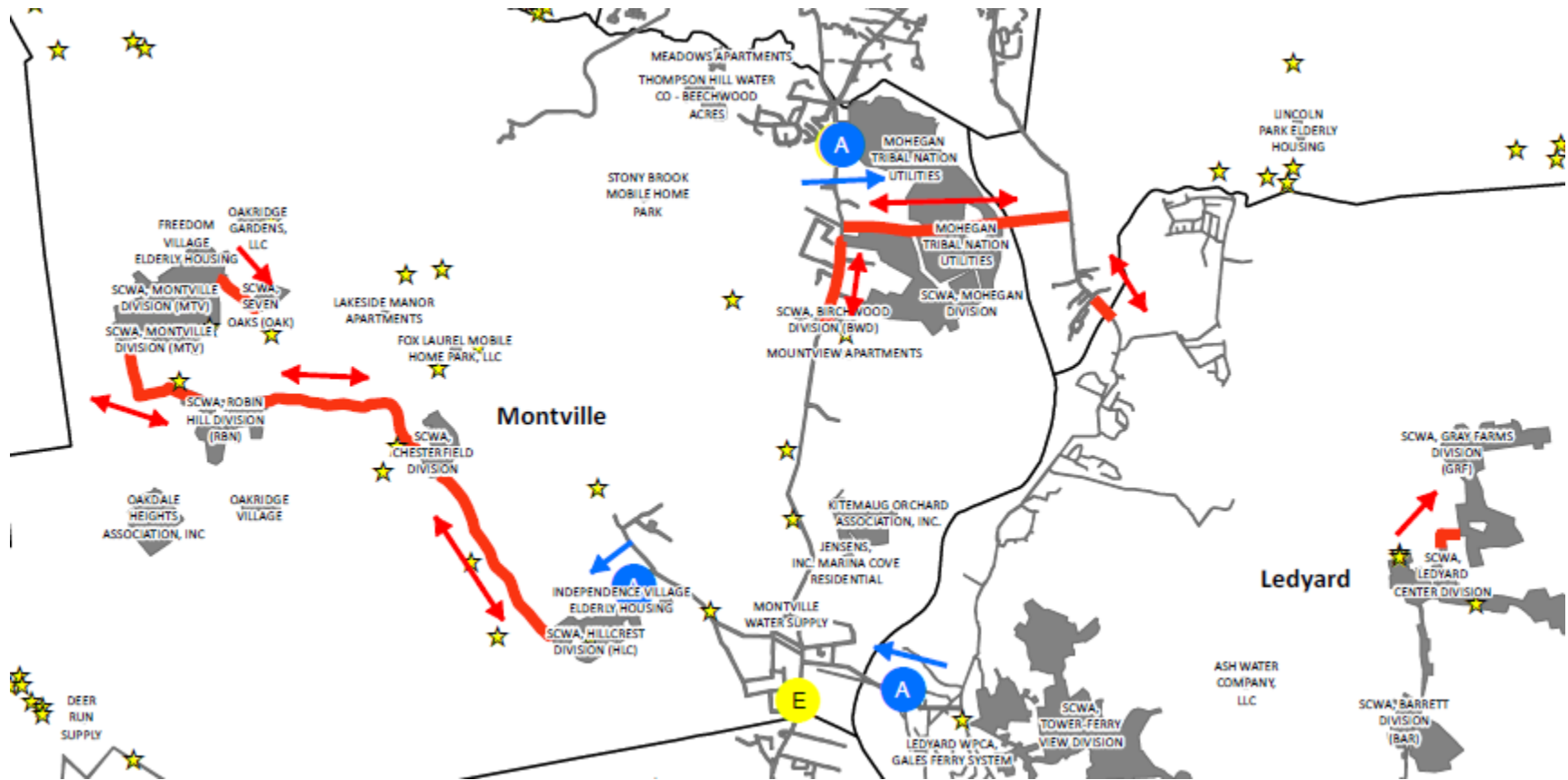
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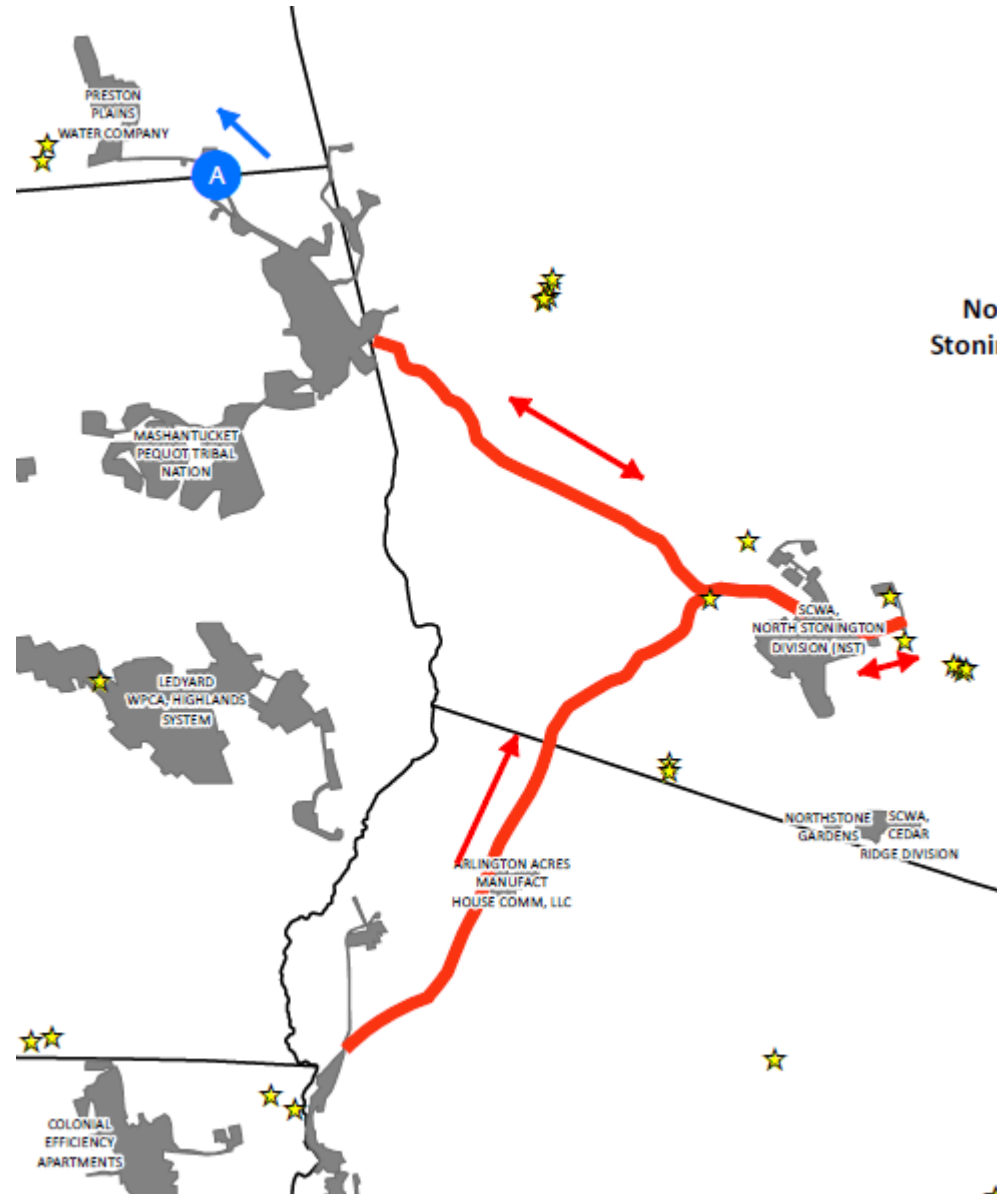
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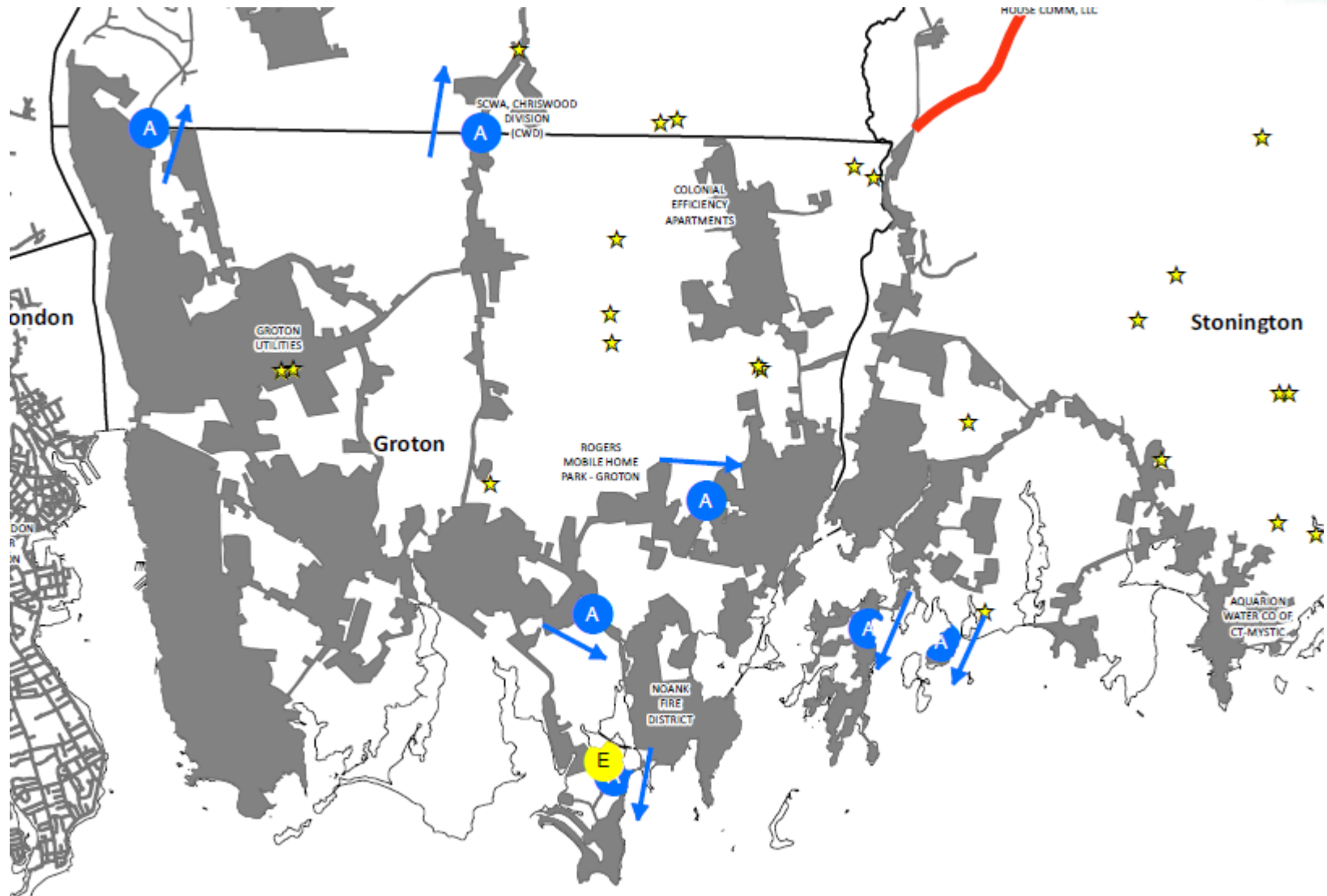
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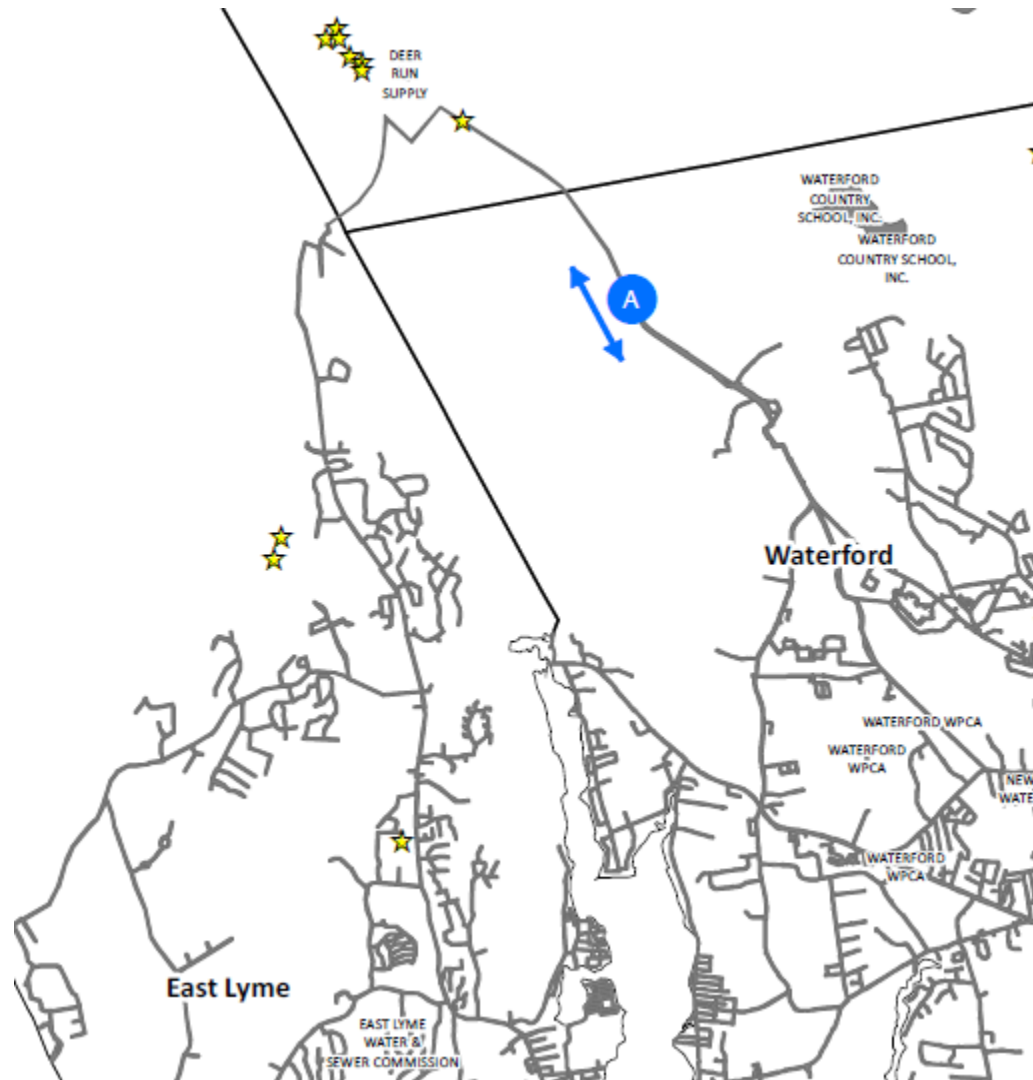
Module #11 - Interconnections



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Module #11 - Interconnections



Challenges

- Decreases in Available Water due to Implementation of the Streamflow Standards and Regulations may spur interconnections
- Emergency Interconnections do not affect Available Water
 - Expensive to construct over long distances, particularly for limited use – no recovery of capital
 - Investment in system redundancy
 - Potential to permit for limited use without affecting Available Water (Intra-regional Water Supply Response Plan)
- Active Interconnections reduce Available Water by contract amount
 - Leads to take-or-pay agreements
 - Expensive for smaller systems

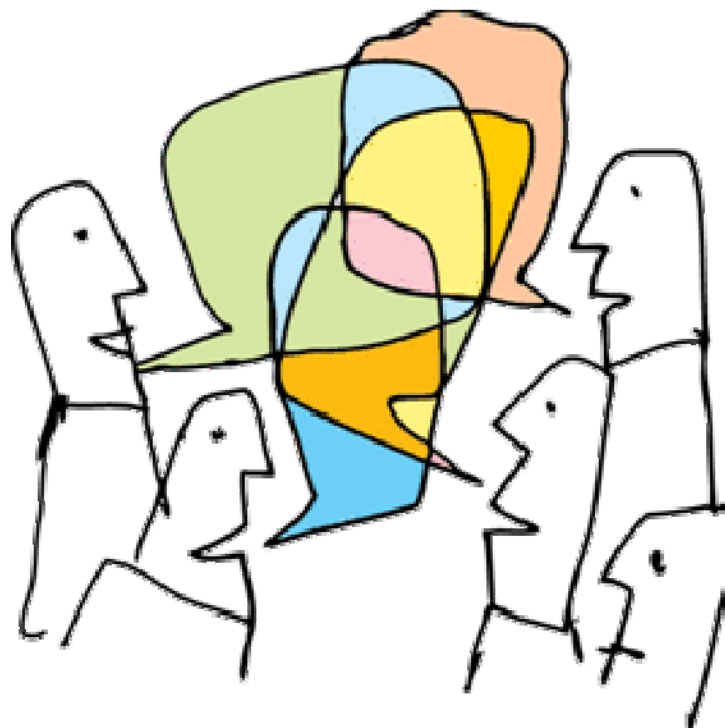
Module #11 - Interconnections



Responses from Utilities:

- Long lead time for diversion permits
- Diversion permit conditions sometimes require releases more stringent than Streamflow Regulations – harder to plan when there is no standard
- 10-year limitation on SEW permits can put utilities at risk when making significant investments; contracts that predate SEW require sales even if SEW not in place
- Requiring SEW permits for emergency interconnections is not appropriate as there is no commitment to sell excess water
- Negotiations take a long time; contracts requiring imposition of drought restrictions for active interconnections are necessary
- New contracts should be contingent on receiving permits, permits must be obtained prior to construction
- Redundancy in critical interconnections is necessary

Module #11 Discussion



Module #12 – Impacts of Climate Change

Situation

- World's average temperature has risen 1.4° Celsius since 1900
- Prior to that, world's average temperature rose 3.9° Celsius over past 20,000+ years
- Many interrelated effects:
 - Higher temperature extremes
 - Changing rainfall patterns
 - More intense rain – erosion, turbidity, flash flooding
 - Sea level rise
 - Increased incidence and strength of hurricanes
- Long-term effects are uncertain



Module #12 – Impacts of Climate Change



Higher Temperatures

- Higher rates of evapotranspiration
 - Influences surface water safe yield calculation
 - Treatment process concerns
 - Lower water levels – exposed reservoir banks susceptible to erosion
- Drier foliage – wildfire risk
 - Water quality concerns
 - Increased erosion entering reservoirs
 - Less pollutant capture



Module #12 – Impacts of Climate Change



Changing Rainfall Patterns

- More rainfall overall, but...
- More frequent intensive rainfall
 - More erosion
 - Overwhelmed stormwater systems
- Potential for less frequent smaller storms
 - Longer dry periods – could impact surface water safe yield
 - Increased activation of drought response plans
 - Less infiltration = lower groundwater levels – could affect groundwater safe yield



Module #12 – Impacts of Climate Change



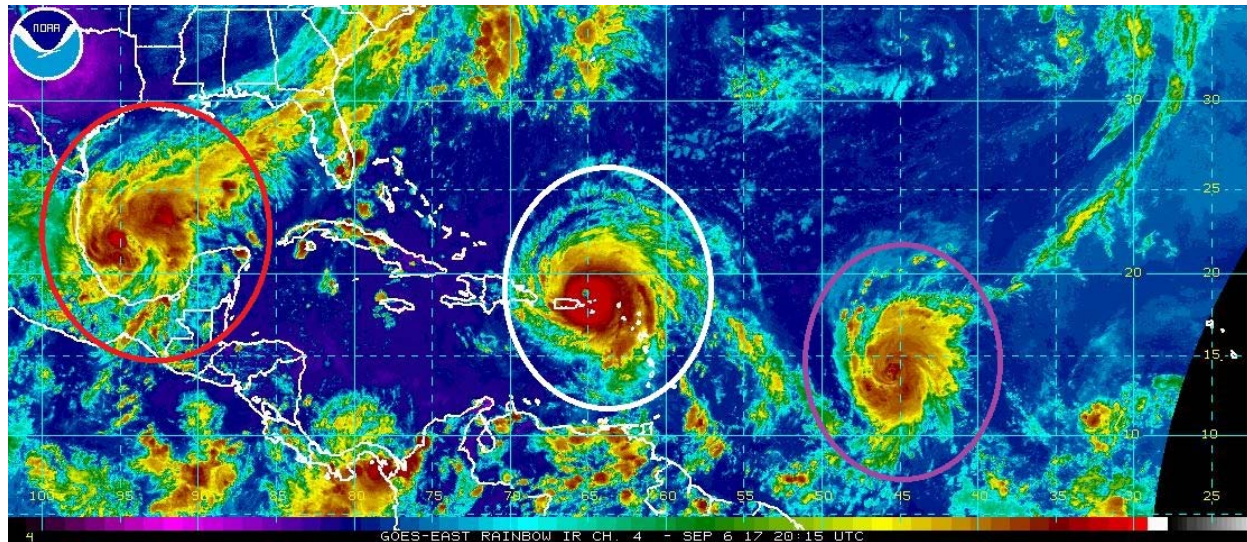
Increased Flooding

- Water quality concerns for reservoirs
- Increased risk for dam damage or failure
- Dam modifications are \$\$\$
- Increased risk for damage to infrastructure in floodplains
 - Changing flood frequencies and stages – are wells and pumphouses still high enough?
 - Sea level rise



Module #12 – Impacts of Climate Change

More Frequent and/or Stronger Hurricanes



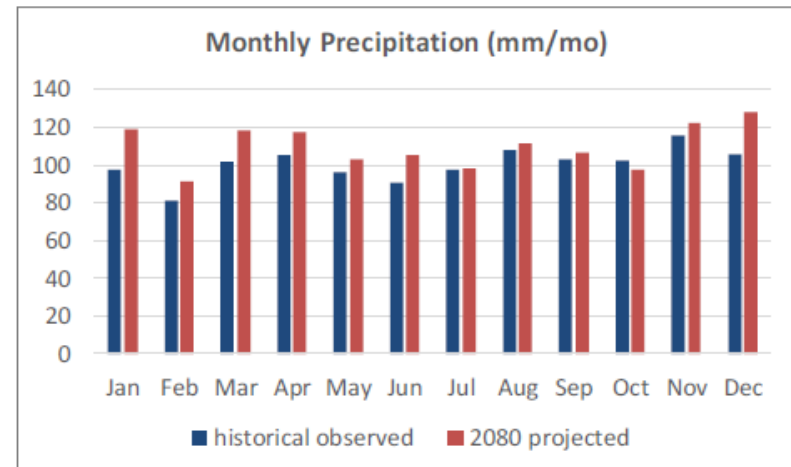
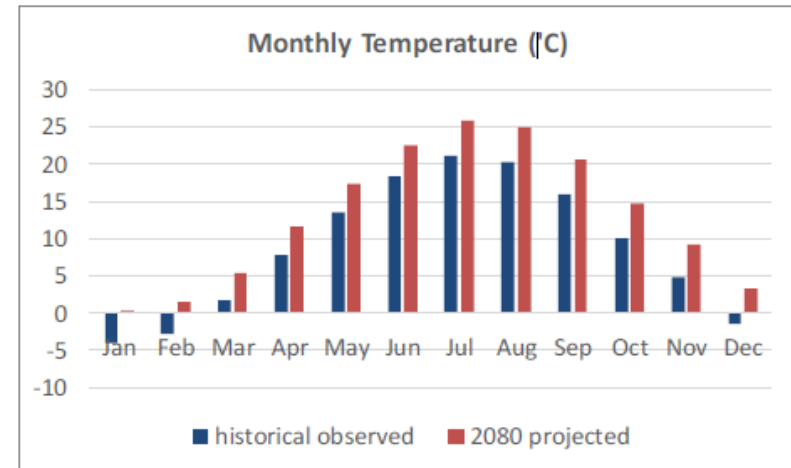
- Widespread wind damage and usually widespread flooding
- Storm surge
- Power outages
 - How long can you operate without outside assistance?
 - What if you cannot get fuel?

Module #12 – Impacts of Climate Change



Consistency with State Water Plan

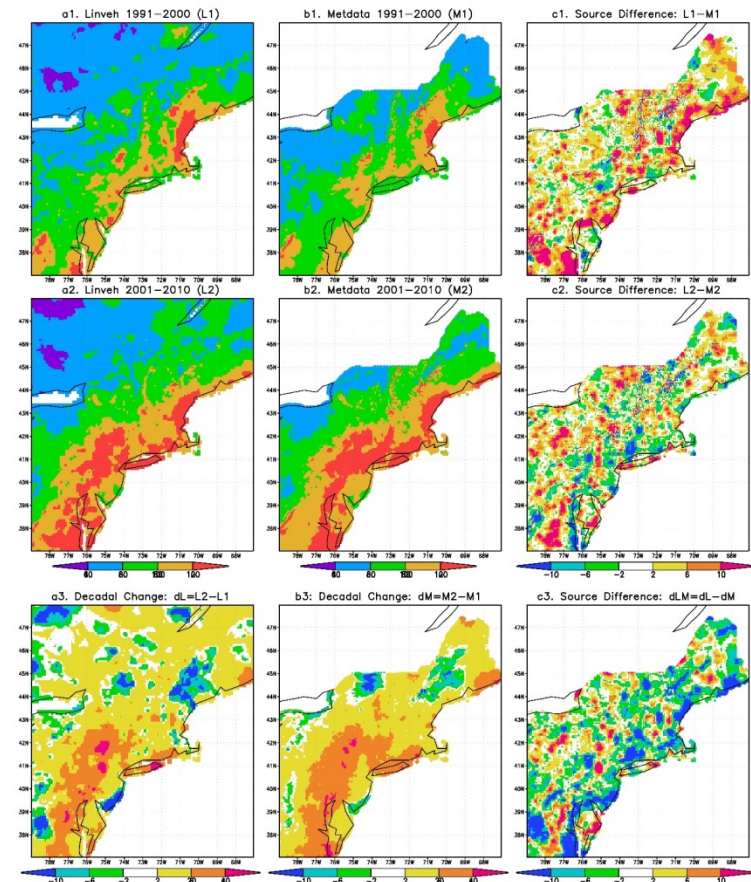
- Climate change analysis by CDM Smith
- Analyzed four future scenarios – warm/dry, hot/dry, warm/wet, hot/wet
- On a month-by-month basis, temperatures and precipitation will likely increase for all four scenarios
- Increased evaporation, flooding, turbidity all could result



Module #12 – Impacts of Climate Change

Consistency with DWS Vulnerability Assessment and Resiliency Plan

- Climate change analysis by UConn and CIRCA
- Analysis is not complete. Next steps:
 - Examine sensitivity of results to the specific time period selected as reference
 - Apply the precipitation analysis to the gridded future projections
 - Hydrological modeling for future scenarios
 - Drought analysis



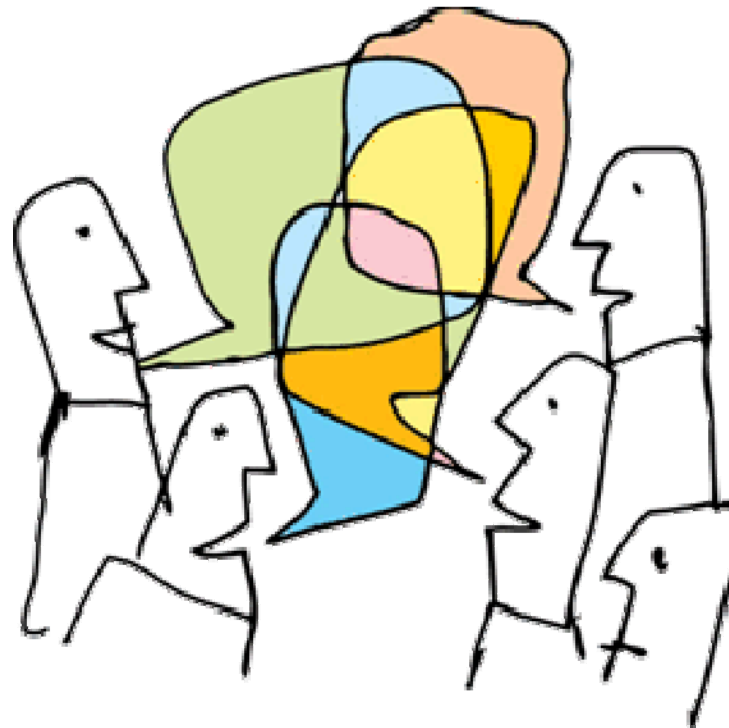
Module #12 – Impacts of Climate Change



Responses from Utilities:

- Vulnerable to many types of hazards; loss of power and access to facilities and fuel is greatest risk; staffing concerns
- Extreme riverine flooding can take well sources offline
- Deeper reservoir drawdowns are a concern, and less inflow may affect safe yield
- Severe droughts can increase erosion -> nutrient loading -> algae blooms
- EPA's Climate Resilience Evaluation and Resilience Tool (CREAT) was very helpful for evaluating potential impacts
- Suggestion to have technical presentation on climate change
- Generators are prevalent for emergency backup power, solar capabilities generally limited

Module #12 Discussion



Module #13 - Regulations



Challenges

- Regulations:
 - Necessary to ensure protection of public health
 - Enacted to improve overall quality of life
 - May be perceived as unfunded mandates

- Recent regulations have resulted in limitations on Available Water and required additional testing and/or treatment
 - Streamflow regulations could result in Available Water reductions of 10% to 20% or more for systems utilizing reservoirs – some implementation delayed until after diversion permits expire
 - Larger systems are generally better equipped to respond to new regulations
 - Smaller systems may find it challenging to respond technically, managerially, and financially

Module #13 - Regulations



Upcoming Regulations

- Unregulated Contaminant Monitoring Rule
 - All PWS serving >10,000 and selected other PWS
 - Provides data for future regulatory actions to protect public health
 - Next round likely January 2018 through December 2020

Module #13 - Regulations

Proposed Regulations

- Lead and Copper Rule revisions under consideration:
 - Lead service line replacement
 - Improving optimal corrosion control treatment requirements
 - Health-based benchmarks
 - Point-of-use filters
 - Clarification / strengthening tap sampling requirements
 - Increased transparency / public education requirements



Module #13 - Regulations

Proposed Regulations

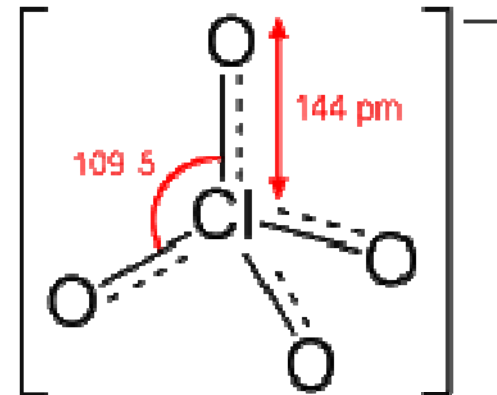
- Ban use of “lead free” pipes, fittings, fixtures, solder, and flux for drinking water
 - Redefine “lead free plumbing products” to be consistent with definitions in Reduction of Lead in Drinking Water Act and other Acts
 - Introduces labeling requirements
 - Requires manufacturer certification



Module #13 - Regulations

Proposed Regulations

- Perchlorate
 - Naturally occurs, also is manufactured (found in rocket propellant, explosives, fireworks, road flares)
 - Disrupts normal function of thyroid gland in children and adults
 - Treatment is required for removal



Module #13 - Regulations

Potential Regulations

- Chromium is under review by EPA
 - Current standard is for Total Chromium
 - Chromium-3 is an essential human dietary element
 - Found in vegetables, fruits, meats, grains, yeast
 - Chromium-6 occurs naturally or through industrial processes
 - Selected systems monitored for Chromium-6 under UCMR 3



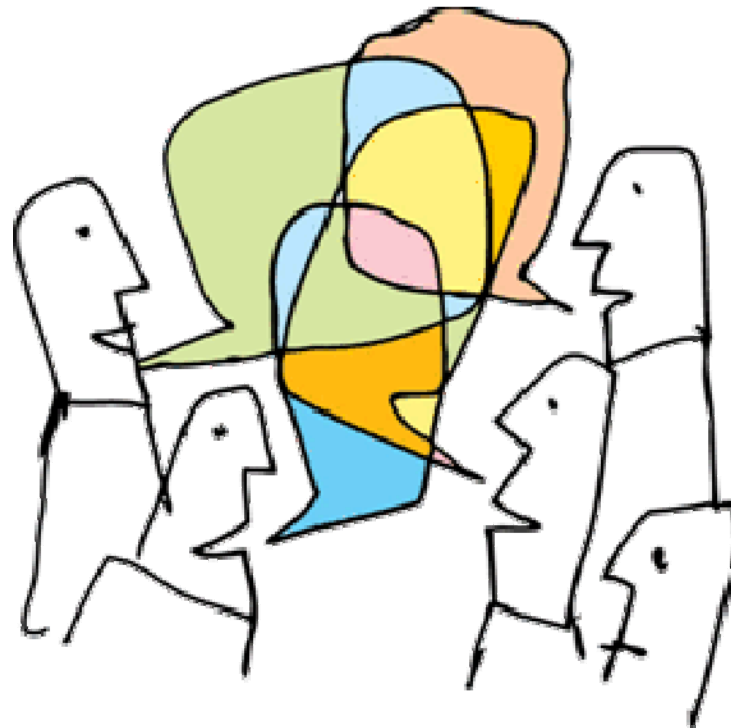
Module #13 – Regulations



Responses from Utilities:

- Public notification requirements for RTCR raw water samples may be excessive where systems have disinfection
- Modifying the TTHM MCLs would pose a challenge for balancing disinfection and DBPs for regionally interconnected systems
- Water conservation and interconnections will initially offset Available Water impacts from Streamflow Standards and Regulations; bringing inactive or standby sources online is next
- Limiting groundwater withdrawals through future legislation could have an even more significant impact on Available Water than the reservoir release requirements, for some systems
- Modifications to the WUCC statutes and regulations do not appear necessary at this time, as the current language will be practical going forward

Module #13 Discussion



Upcoming Modules



Begin:

- ✓ 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
- ✓ Consistency with other planning efforts

7. Other Business

Potential Agenda for November 8, 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 (5 minutes)
6. Integrated Report Module Discussion (85 minutes)
 - Potential Impacts of the Plan on Other Uses of Water Resources
 - Regional projected service population, safe yield, excess water
 - Consistency with other planning efforts
7. Other Business (5 minutes)