

State Water Plan Implementation Workgroup
Drought Subcommittee
Meeting Notes
September 6, 2019; 10:00 – 11:30
DEEP Hartford CT

Attendees:

Alicea Charamut	WPCAG Co-Chair
David Day	City of Danbury
Virginia De Lima	Implementation Workgroup Chair
Steve Harkey	DPH
Doug Hoskins	DEEP
Eric Lindquist	OPM
Denise Savageau	CT Association of Conservation Districts
Jeff Ulrich	Aquarion Water Company
Steve Rugar	IWG Drought Subcommittee Chair

Topics of Discussion

Self-Introduction of Attendees

Review of Subcommittee Goals

- SR provided a handout listing potential goals for subcommittee (attached)
- Potential goals taken from State Water Plan Section 5.3.2.8 and Interagency Drought Workgroup cover letter forwarding State Drought Plan to Water Planning Council
- Subcommittee will be working on Items 3, 6 and 8 from handout
- Subcommittee will conduct a review of actions of Interagency Drought Workgroup in 2016 drought to evaluate effectiveness of State Drought Plan, and how to address improvements recommended in Items 3, 6, 8.
 - Item 3 – Interpretation of state and local drought indices, response levels
 - Item 6 – Additional statutory and regulatory powers needed
 - Item 8 – Adoption of municipal water use restriction ordinances
- Subcommittee will meet on an approx. monthly basis, with goal of completing work on these tasks within a year

Interagency Drought Workgroup – Functional Overview

- EL presented an overview of the Interagency Drought Workgroup (IDW)
- IDW is a creation of Water Planning Council, no separate authorizing statute or regulation
- IDW consists of 5 agencies:
 - Department of Agriculture
 - OPM
 - DPH
 - DEEP

- Department of Emergency Management
- Additionally, the USGS and NOAA weather offices attend meetings
- OPM (either EL or Bruce Wittchen) is the point of contact for information
- Monitor US Drought Monitor List serve
- IDW meets at least twice a year if no drought
- Any of the agencies can initiate a meeting by contacting OPM
- Discuss data for state or any portion of the state
- Professional judgement allowed in determining a drought level has been reached – no automatic reliance on indicators
- Unanimous decision to recommend drought level required to proceed
 - Office of Governor issues
- If IDW does not reach unanimous decision, re-evaluation and vote in 14 days
 - Simple majority required for re-vote; each agency has one vote
- Meetings typically held at OPM
- Attendees can attend in person or by phone
- Meeting minutes are posted on the internet
 - <https://www.ct.gov/waterstatus/cwp/view.asp?q=502292>

Next Steps

- Group review of IDW 2016 drought related meeting minutes
- AC will also present an overview of HB 5154 (drought related legislation)

Future Meetings – Schedule and Location

- Attendees agreed that the DPH office in Hartford is a good location for future meetings.
- SR to schedule next meeting in early October

State Water Plan Implementation Workgroup
Drought Subcommittee
Meeting Notes
October 9, 2019; 10:00 – 11:30
DEEP Hartford CT

Attendees:

Alicea Charamut	WPCAG Co-Chair
Steve Harkey	DPH
Doug Hoskins	DEEP
Eric Lindquist	OPM
Jeff Ulrich	Aquarion Water Company
Steve Rupar	IWG Drought Subcommittee Chair

Topics of Discussion

Review of 9/6/19 Meeting Notes

- Meeting notes were approved as drafted.

Current Drought Status

- Discussed recent actions by the Interagency Drought Workgroup (IDW)
- Drier than normal conditions observed in much of CT the last 3 months.
 - National Drought Mitigation Center – Drought Monitor has area in D-0 status (first level)
 - DPH Public Water Reservoir status reviewed, 3 systems in “Drought Alert” or equivalent as of end of September
 - Non-agency attendees agreed that IDW should have been meeting by this point
- Bruce Wittchen (OPM) sent an email on 9/23/19 soliciting interest in having an IDW meeting
 - No IDW meeting actually happened
 - Mixed response to email, some no response
 - Agency attendees reported that decision making needs to be addressed
 - Agencies report need for upper level approval for having a meeting, and for actions during a meeting
 - Are agency staff appropriately empowered?

2016 IDW Actions

- Reviewed 4/3/2012 minutes collectively
- Attendees agreed that reviewing minutes prior to future meetings is important to progress of this subcommittee – collective review is not productive
- Noted that IDW minutes are posted as draft on the website, never officially approved

HB5154 Overview

- Intent to give Water Planning Council control over state drought response

- Concerns over control over utility, standardized triggers
- Both CWWA and Rivers Alliance recommended changes

Next Meeting

- We will meet at the DPH Rocky Hill facility in November
- December meeting will be at Aquarion's Shelton facility

AGENDA

State Water Plan Implementation Workgroup Drought Subcommittee

November 22, 2019; 9:00 – 11:00

DPH - Rocky Hill, CT

In attendance: Denise Savegeau, Steve Rupar, Eric Linqvist, Alicea Charamut, Jeff Ulrich, Steve Harkey, Sam Gold, Virginia deLima

1. Review 10/9/19 Meeting Notes
 - a. Eric notes a change to be made to section >>>>
 - b. There were no other suggested changes to the notes

2. Current Drought Status
 - a. The IADW will meet in December to discuss readiness and preparedness.
 - b. The national drought monitor is now normal for all regions.
 - c. Many reservoirs have bounced back although some remain in drought stage
 - d. Virginia asked about a lag in posting reservoir status summary reports. DPH is trying to push for an automated system (online entry). There are issues with authorization of posting on the website. This led to a deeper discussion about how data is received and reported to the public
 - i. There was a general discussion about how the data is submitted and if reporting is consistent.
 - ii. Virginia mentioned that there is a desire to have a database for private well information. She asked if the agencies could work together to design a database that would work cross agency so that each agency isn't designing their own systems. Eric said he would like to see GIS utilized.
 - iii. The issue has been pushed to the National Information XXX in hopes that an online data portal can be created.
 - iv. Steve H asked if it would be beneficial to have the agencies get together to discuss. Eric agreed that a meeting should be scheduled. Virginia said that she is hearing this across workgroups. This should be pushed to the WPC as a priority.
 - v. Steve R said that it is more difficult for some systems than other.
 - e. Virginia said that after reading through the minutes of the last meeting that there should be a deeper bench of potential representatives from each agency to ensure that when there is call for a meeting when conditions warrant it, there can be an affirmative response. She also encouraged electronic meetings.
 - f. Denise said that drought emergencies happen at the local level. The disconnect is when there is a threat of drought conditions, decisions are driven at the agency level without considering how utilities and local municipalities can be supported. Eric said that this is exactly the discussion that will be had at the December meeting with more emphasis on

the planning and making sure that municipalities and utilities are up to speed. Steve said they should have a rep from the WUCCs and the COGs because they do have that connection to the municipalities and the utilities.

- g. When drought conditions are imminent and there is a call for a meeting, the conditions that support the need for a meeting should be provided when the call is made for a meeting of the IADW.
 - h. Jeff said Aquarion went to the first selectmen in July because there was concern about imminent drought. Town officials seemed unwilling to take any action unless DPH weighed in on the necessity for conservation or heightened awareness emphasizing the need for cross communications with municipalities/DPH/and utilities.
3. 2016 IWG Meeting Minutes – Review and Discussion
- a. Eric said consistent messaging is important.
 - b. Sam said that having readily accessible information about the severity is important.
 - c. There was a discussion about conservation and the impact that it has on water utility revenue.
 - d. The minutes of IADW for 10/20/2015, 01/22/2016, and 06/27/2016
 - e. Steve R asked if we can get the criteria for each month.
 - f. Steve asked if the plan at the time allowed for regional drought. Eric said that this was a point of contention at the time. It was decided that the plan didn't give guidance and the data should be analyzed at the county level.
 - g. 10/20/15 – how would things have been done differently under the current plan. Eric thinks that we would have been under Stage 1. Stage 2 could have been a possibility but there may have been push back against all of the indicators not being met for a stage 2.
 - h. 01/22/2016
 - i. Steve R noted that there was a drop in attendance at this meeting. Steve asked who attends today? Eric said that it is whoever the agency wants to send. There was a lengthy discussion about how agencies decide which staff members are sent to the meeting. Steve R said he liked Sam's suggestion that regular meetings be put on the schedule at the beginning of the year and more meetings could be added, if necessary.
 - ii. It was noted that a decision was made to meet again in March but the next meeting was not until June. Eric will look into the communications that went around at that time to review discussions about a March meeting.
 - iii. Steve also noted that Lori has said that it would be good to have a consultant that can analyze the data. Eric has mentioned in the past that it would be good to have someone do the models. Alicea brought up that at the last WPCAG meeting, one of the members felt strongly that more mathematical modeling should be done for decision making purposes. There was discussion about work being done at the University of Maryland. Steve R. feels that it would be difficult to have any one model that will capture everything and take all conditions that have to be taken into consideration based on unique circumstances at the time.
 - iv. Steve R asked if item 2 under the course of action was followed up on.
4. Next Meeting
- a. The next meeting will be at the Aquarion office in Shelton
5. Other

Meeting Notes

State Water Plan Implementation Workgroup Drought Subcommittee

January 10, 2020; 1:00pm to 3:00pm

Aquarion Water, Shelton, CT

In attendance: Steve Rupar, Eric Linqvist, Alicea Charamut, Jeff Ulrich, Steve Harkey, Doug Hoskins

1. Review 11/22/19 Meeting Notes
 - a. There were no suggested changes to the notes

2. Current Drought Status
 - a. The IADW met in December to discuss readiness and preparedness.
 - b. Representatives from COGS, WUKS, State Agencies, Emergency Planning Regions.
 - c. The national drought monitor is now normal for all regions.
 - d. Discussion on following topics:
 - i. Establishing standing monthly meetings
 - ii. How to get towns more involved
 - iii. How to maintain consistency of people attending meeting
 - iv. How to improve coordination and communication across the group
 - e. Reviewed handout from Brenda Bergeron (DEMHS) e-mail discussing Drought Working Group
 - i. Need for discussion around communications with agencies/towns
 - ii. State Statute 28-7 requires establishment of Emergency Management Director
 - f. Many reservoirs have bounced back although some remain in drought stage

3. 2016 IWG Meeting Minutes – Review and Discussion
 - a. Reviewed the minutes of IADW for 06/24/2016
 - i. Drought Advisory was issued
 - ii. A lot of discussion around communicating the message
 - b. No background in minutes to preface what is going on and how meeting was planned.
 - c. Went back to look at reservoir data. Conditions were not concerning in May but quickly deteriorated.
 - d. The group did not recollect the State issuing a Drought Advisory in June.
 - e. Looked at website and found the Drought Advisory press release by DPH
 - f. Discussion around who should issue the press release and how to get to get the message out more noticeably.

4. Next Meeting
 - a. The next meeting will be on February 7, 2020 from 1-3 pm

5. Other

Meeting Notes

State Water Plan Implementation Workgroup Drought Subcommittee

February 7, 2020; 1:00pm to 3:00pm

DPH Public Health Laboratory, Rocky Hill, CT

In attendance: Steve Rupar, Eric Lindquist, Alicea Charamut, Steve Harkey, Doug Hoskins, John Mullaney (guest speaker – USGS)

1. Review 1/10/20 Meeting Notes
 - a. Eric Lindquist suggested technical corrections to the notes.

2. USGS Historic Groundwater and Streamflow Tool
 - John Mullaney of USGS Water Science Center in East Hartford presented on USGS initiatives for streamflow and groundwater analysis. John began with an overview of the CT Office of the New England Water Science Center located in East Hartford:
 - New England Water Science Center primary focus is on water quality; water quantity is secondary focus.
 - CT DEEP is largest funding partner. Funding began in 1973. State funds are matched by USGS.
 - Surface water gauges have diverse funding mechanisms — mostly DEEP funded
 - Some partners (permitted diverters) are required to fund a gauge as a condition of the diversion permit.
 - Groundwater monitoring network — 3 sites are funded by USGS; the rest funded by DEEP. \$5,000-6,000 per year for real-time groundwater gauge.
 - Strict procedures in place for creating a new real-time site.
 - USGS approves all real-time records within 120 days (challenging with existing staffing).
 - Beavers are an occasional issue with real-time gauges.
 - DEEP Integrated Water Resource Planning is adding new surface gauges for quality monitoring.
 - Groundwater gauges are all pressure transducers. Surface gauges have a mixture of measurement tools.
 - Many users of the Groundwater Watch and Waterwatch networks. Not just for floods and droughts.
 - There is currently some web engineering taking place for a successor to Groundwater Watch.
 - John presented a new R-Shiny application he has been developing to improve analysis of historic streamflow and groundwater levels. The application has the potential to drastically improve the Interagency Drought Workgroup's ability to evaluate past conditions as they relate to the drought stage criteria in the State Drought Plan.

- Discussed the need to identify streamflow and groundwater sites affected by regulation as opposed to natural flow.
 - The application uses manual monthly readings for most groundwater gauges — if multiple readings in a month, the reading closest to the 25th is used. If a continuous gauge, the application uses the real-time value for the 25th of the month.
 - John extracted non-growing season precipitation for each well (Oct-Apr)
 - For the purpose of calculating # of months at or below normal, the application uses prior month-to-month data leading up to the month in question. February gauge readings are missing for several years due to funding cuts. In instances where this occurs, January to March would be considered consecutive months.
 - Steve R. asked John for his perspective on streamflow and groundwater data for the 2016 drought. John's perspective is that the monitoring network can always be enhanced. There are some areas that would benefit from additional monitoring sites. "More is always better" when it comes to data points.
 - There was some discussion about succession planning and expertise at the USGS East Hartford Office. Is there anyone else who shares John's talents and expertise? Concern about the IDW relying on the personal knowledge/expertise/skills of one person. John said he has about five years until he retires, but most new hires have been technicians.
 - Alicea C stated that it is important for the public to be able to access and utilize the USGS analytics tools. John's R-shiny application is not currently publicly available.
 - John demonstrated a new USGS tool (developed out of a Virginia office) for calculating drought streamflow probabilities in the Northeast region.
https://va.water.usgs.gov/webmap/drought_ne/ There was further discussion.
3. 2016 IWG Meeting Minutes – Review and Discussion
- This item was tabled for the next subcommittee meeting
4. Next Meeting
- The next meeting will be on March 6, 2020, 1-3:30pm
5. Other

Meeting Notes

State Water Plan Implementation Workgroup

Drought Subcommittee

May 21, 2020; 2:30 pm to 4:00 pm

Microsoft Teams meeting

In attendance: Alicea Charamut, Virginia de Lima, Steve Harkey, Doug Hoskins, Iris Kaminski, Eric Lindquist, Denise Savageau, Jeff Ulrich, Steve Rupar

1. Review 3/6/20 Meeting Notes
 - a. Approved with one change – add note to Item 5 indicating that March 27, 2020 meeting was cancelled due to impacts of the coronavirus pandemic – revised notes are attached.

2. Intros and Subcommittee Membership
 - a. Welcomed new member Iris Kaminski
 - b. Peter Galant (Tighe & Bond) would like to join the subcommittee
 - i. Discussion on procedure for new members and need for balance; Virginia de Lima reported that there is no official membership list for Implementation Work Group subcommittees and no official need for balance. Balance will be achieved and work adjusted, if needed, by the Implementation Work Group.
 - ii. Members agreed that Peter will bring technical expertise and is welcome to join.

3. 2016 Interagency Work Group (IWG) Meeting Minute Review
 - a. August 5, 2016 Meeting
 - i. CT status was Drought Advisory entering meeting
 - ii. Decision of IWG to remain in Drought Advisory appears appropriate
 - iii. IWG also decided to issue a press release calling for voluntary conservation, which was not released, due to a period of wet weather
 - b. September 6, 2019 Meeting
 - i. IWG minutes do not include printouts of data analyzed at meetings – and would be helpful to include for future analysis
 - ii. IWG appears to have focused on statewide data, vs local conditions and response
 - iii. IWG relied on July reservoir data which appears to have been overly optimistic
 - a. Utility reporting of reservoir levels should be more frequent
 - b. Steve Harkey will circulate regulations concerning level reporting to the Drought Subcommittee.
 - iv. Jeff and Denise discussed their recollection of Fairfield county conditions
 - a. Jeff to circulate Aquarion's follow-up report

- v. Observation that winter drought conditions are a much larger problem than summer drought conditions
 - a. Separate drought plan triggers may need to be developed for winter vs summer
 - b. Precipitation trigger was based on 2 month total, may not reflect longer term deficits appropriately. This is still the case in current plan
- vi. IWG decided to issue a press release calling for conservation
 - a. Document not available on state web site – Doug is to look for and circulate if available

4. Next Meeting and Schedule

- a. Next meeting will be on June 12, 2020.
- b. Steve R will send a meeting invite – meeting will again be virtual
- c. Goal is to complete review of 2016-17 drought in next 2-3 meetings, then progress to analysis and drafting of report, to be submitted to Implementation Workgroup in November 2020.

Meeting Notes

State Water Plan Implementation Workgroup Drought Subcommittee

March 6, 2020; 9:00 am to 11:00am

DPH Public Health Laboratory, Rocky Hill, CT

In attendance: Steve Rupar, Alicea Charamut, Virginia de Lima, Steve Harkey, Doug Hoskins, Denise Savageau, Jeff Ulrich

1. Review 2/7/20 Meeting Notes
 - a. Steve Rupar suggested adding John Mullaney's comments that February 2016 well data were missing due to funding constraints.

2. WPCAG Comments on Drought goals

Overall, it was felt that the Subcommittee was addressing these concerns.

 - a. The WPCAG commented on the work of the Drought Subcommittee:
 1. How might response have been different if the new drought plan had been in effect?

See agenda item 3, below

There was some discussion that "professional judgment" may have played a larger role if the new plan was in use. Also, DESPP/DEMHS staff are now involved in the Interagency Drought Workgroup, which is a recommendation of the new plan
 2. Relate to State's emergency and response framework.

Denise said that because Emergency Responders focus on planning and preparedness and are well funded, they could play a central role in a drought; they "get it" and can push the issue. Often the key person is the fire marshal because of the importance of dry hydrants (typically a pond and used in areas not hooked up to a water supply). There was discussion of privately-owned ponds (e.g., in a development) and the need for a robust agreement with the town or fire district, the challenge of ice cover, and if the pond is on a stream. Denise felt that volunteer fire departments were as diligent at monitoring the ponds as were professional departments.

Denise also mentioned that all towns must have a hazard-mitigation plan, which would include a drought plan
 3. Distinguish between State's and utilities' drought responses.

Virginia commented that it will be very difficult to have a single drought message. The highest stages will be clearer because the Governor takes control when the situation is dire. The group will look at whether a particular agency to take the lead for different types of drought at the lower stages.

This issue is outside the bounds of the State Drought Plan, but the group emphasized the need for clear communication to the public, clarifying which

entity they should listen to under what conditions. Which agency would take the lead must be determined.

- b. Discussion of schedule for remaining work:
 1. General consensus that WPCAG requests noted above can be accommodated within current work of the subcommittee
 2. Attendees agreed that another 3-4 meetings needed to review 2016-17 drought actions, followed by a few months to draft a report
 3. Attendees agreed that a November 2020 completion date for subcommittee work appears reasonable.
3. 2016 August Meeting Minutes – Review and Discussion
 - a. Alicea compared what was in the minutes to stages in the current plan and, with the exception of it not being targeted enough on regional areas, found them to be similar.
 - b. Steve R. noted that there had been 39 days between meetings. The group speculated that there had been several rain events during that time, which may have lessened the urgency of meeting. It was noted that there could have been more focus on the cumulative precipitation deficit.
 - c. The DPH had issued a warning in July, which was appropriate. However, it didn't generate much action.
 - d. The minutes noted the discrepancies with utilities but didn't say what else could have been done.
 - e. The minutes noted a Press Release would be drafted, but the September minutes indicated the Press Release was delayed, then it rained, so it was never issued.
 - f. The IADWG appeared focused (again) on a statewide response, despite some review and reporting on regional conditions.
4. General comments
 - a. Issue of commitment to the process.
 1. Decision to have the IADWG hold standing meetings has gotten pushback.
 2. Issue of inconsistent attendance of agency staff. (It was noted that emergency-responder staff probably would be more consistent)
 3. Towns have not yet identified a "Water Coordinator."
 4. Could there be virtual, on-line meetings, perhaps around a specific topic, and/or zoom meetings?
 - b. Messaging
 1. Develop templates so press released can get out quickly
 2. Drought Plan has some check lists
 3. UCONN did a good job after Super Storm Sandy.
 4. Steve H. suggested we consider a table-top exercise to increase awareness. Virginia mentioned the table-top exercise done in the Pomperaug basin about 10 years ago, but didn't know what ever came of it. [This article describes the exercise, but the link to the white paper is broken. I've asked Mike Dietz if he can find it. <https://today.uconn.edu/2009/10/water-resources-institute-helps-develop-state-drought-emergency-management-plans/#>]
 - c. The group felt we need a single person who could be the driving force. As it is, nothing appears to be moving forward or saying we need to DO things. What is the state doing to prepare for the next drought? There was some discussion of whether it would be

more appropriate for this person to be a political appointee or a technical/agency person.

5. Next Meeting

- The next meeting will be on March 27, 2020, 1-3:30pm at the DPH lab in Rocky Hill

Meeting Notes

State Water Plan Implementation Workgroup Drought Subcommittee

March 6, 2020; 9:00 am to 11:00am

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more appropriate for this person to be a political appointee or a technical/agency person.

5. Next Meeting

- The next meeting will be on March 27, 2020, 1-3:30pm at the DPH lab in Rocky Hill
- NOTE – meeting was subsequently cancelled due to impact of the coronavirus pandemic

State Water Plan Implementation Workgroup
Drought Sub-Workgroup
5/5/21 Meeting Notes

Attendees:

- Alicea Charamut, Peter Galant, Steve Harkey, Doug Hoskins, Eric Lindquist, Steve Rugar, Denise Savageau, Jeff Ulrich

Meeting Notes:

- Subcommittee has not completed review of the combined draft report.
- Collectively reviewed draft report through Charge 1 during 5/5/21 meeting:
- Background discussion
 - Agreed official name of our group should be the “Drought Sub-Workgroup”.
 - Agreed that official list of active members to be included in the report will not include inactive members David Day or Sam Gold.
- Charge 1 Discussion
 - Revised recommendation to emphasize that number of gages and monitoring wells should be increased, as well as maintaining existing gages and wells
 - Discussed suggestion to incorporate climate change into DPH guidance related to drought triggers. Agreed that guidance should consider climate change.
- Action Items and Schedule
 - May 10 - Eric Lindquist to provide paragraph on 2016-2017 drought (timeline, duration, high level statistics) for background section.
 - May 11 – IWG Meeting – Agreed that draft report will not be ready for distribution. Steve will give an overview of the report. Additionally Steve will consolidate the recommendations into one document for distribution to IWG.
 - May 18 – All members agreed to review and provide edits to the report by May 18.
 - May 18 – Sub-group will have a final meeting to review the report. Agreed this will be the last opportunity for edits and comment, draft report will be issued after this meeting.
 -

Meeting Notes

State Water Plan Implementation Workgroup
Drought Subcommittee

May 18, 2021; 1:00pm to 3:00pm

Via Zoom

In attendance: Steve Rupar, Eric Lindquist, Jeff Ulrich, Pete Galant, Denise Savageau, Doug Hoskins, Iris Kaminski

Notes

1. Steve Rupar provided an update to the Implementation Work Group
 - a. No significant feedback
 - b. Anticipated completion date extended to the end of June
2. The group continued to edit the current document as a group.
3. Group agreed that another meeting will be required to finalize.
4. Next meeting scheduled for May 27, 2021 at 2:30 pm

Meeting Notes

State Water Plan Implementation Workgroup Drought Subcommittee

June 12, 2020; 1:30 pm to 3:00 pm

Microsoft Teams

In Attendance: Alicea Charamut, Virginia de Lima, Peter Galant, Steve Harkey, Iris Kaminski, Erick Lindquist, Steve Rugar, Denise Savageau

1. Reviewed and approved 5/21/20 Meeting Notes
2. Reviewed the subcommittee's primary charges:
 - a. Does the State Interagency Drought Workgroup (IDW) need additional authority?
 - b. Are existing drought triggers and responses appropriate on the state and local level?
 - c. Recommendations for use of municipal ordinances in drought response.
 - d. Would the 2018 State Drought Plan have adequately addressed the 2016 drought?
3. 2016 Interagency Drought Workgroup (IDW) Meeting Minutes Review
October 14, 2016 Meeting Minutes

IWG Meeting Highlights

1. Meeting followed shortly after State Water Supply Emergency Declaration in Southwest Fairfield County (Greenwich, Stamford, Darien and New Canaan).
2. DPH reported that Stamford, Darien and New Canaan are proposing municipal ordinances (Greenwich already had one) for water use restrictions, that enforcement will be different in each case, and that they must deal with effects on landscaping businesses that use water.
3. Mandatory water use restrictions were to apply to private wells in addition to customers of public water supplies.
4. OPM suggested that water suppliers might need new threshold triggers.
5. DPH indicated that new and more frequent reservoir level data will be collected.
6. State was in a statewide Drought Advisory
7. IDW decided to recommend going to statewide Drought Watch despite criteria indicating only at the cusp of the trigger but not there yet.

- 7.1. Using month-end September data no county had the required 4 out of 7 (majority) of indicators triggered for the Drought Watch level. Most counties had 3 of 7.
8. OPM to draft a Press Release regarding change in drought phase for review by IWG members.
9. OPM to circulate a list of action items required by IDW under Drought Watch.
10. IDW recommended increasing meeting frequency to bi-weekly.

Subcommittee Observations

1. It is good that the Plan allowed IWG to apply professional judgement to declare a Drought Warning even though the objective criteria were not met.
2. Are reservoir data current on DPH website?
3. Peter Galant expressed confusion regarding the roles of the IWG vs local water utilities and towns in declaring and responding to droughts.
4. A coordinated message between the State and utilities regarding drought status and required responses is needed to avoid public confusion.
5. DPH has the authority over public water system drought triggers and responses. What, if any, role should the IDW have?
6. There was no inclusion of water utilities, towns or WUCCs in the IDW decision making. Should there be?
7. DPH has changed their reservoir level monitoring from % full to days supply remaining and vs individual utility triggers.

December 9th, 2016 Meeting Minutes

IDW Meeting Highlights

1. There was agreement that, contrary to the Drought Plan, it does not make sense to consider crop moisture or fire danger when assessing winter drought conditions.
2. IDW agreed to keep current drought declarations in place:
 - 2.1. Drought Advisory – New London and Windham Counties
 - 2.2. Drought Watch – All other counties
3. OPM proposed creation of a workgroup to review and update agency roles as defined in the CT Drought Plan.
4. OPM asked towns to designate a municipal drought coordinator as called for in the CT Drought Plan
 - 4.1. 18 of 169 towns have complied to date
5. OPM said that the model ordinance in the CT Drought Plan is flawed.
6. OPM stated that CT Drought Plan calls for implementation of a Drought Task Force but does not define what it is.
 - 6.1. Include private sector, non-profit, water suppliers and environmental groups?
7. IDW members asked to
 - 7.1. Review state agency actions in CT Drought Plan
 - 7.2. Think about role of municipal drought coordinators
 - 7.3. Think about Drought Task Force
8. Required communications in Drought Plan should be updated (e.g. exclude PSAs and include social media)
9. Next meeting to be in one month.

Subcommittee Observations

1. October meeting concluded that the next meeting should be in two weeks. Why was the next meeting almost two months later during a Drought Advisory/Watch?
 - 1.1. Does 2018 Plan specify a meeting frequency?
 - 1.2. IDW should consider meeting virtually to enable increased frequency.
2. October meeting recommended a state-wide Drought Watch, yet current status is mixed Advisory/Watch by county. What changed between meetings?

- 2.1. The Governor, not the IDW, has the authority to declare a drought so things can change between meetings. Subgroup felt it appropriate for the authority to remain with the Governor.
- 2.2. Need record of decision making between meetings.
3. Codifying the IDW would result in transparency and public access to information.

DRAFT

Draft Meeting Notes

State Water Plan Implementation Workgroup

Drought Subcommittee

June 26, 2020; 1:30 pm to 3:00 pm

Microsoft Teams meeting

In attendance: Alicea Charamut, Steve Harkey, Doug Hoskins, Eric Lindquist, Denise Savageau, Jeff Ulrich, Steve Rupar, Peter Galant, Bruce Whitten

1. Review 6/12/20 Meeting Notes
 - a. Approved – Steve will finalize and send to the group
2. Review of Current Interagency Drought Workgroup (IDW) Activities and Current Drought Status
 - a. There have been two meetings of the IDW so far with another meeting scheduled for next week.
 - b. Current status is Stage 1 – Below Normal Conditions
 - c. OPM working with DEMHS to update municipal drought contacts as required by drought plan.
 - d. Alicia asked if DPH had sent out a circular letter and Steve H. replied that one went out last Monday to larger community systems and one for this Monday for smaller systems to remind to report data such as well levels and reservoir volumes.
 - e. Jeff reports that they've received a good response to their (Aquarion's) drought notifications that they've reached their first drought triggers. Will likely hit their next two triggers in the coming month as per their current forecasting efforts. Seeing highest demands ever in spite of calls for conservation possibly due to everyone being home from work. Most reservoirs at around 90% with Greenwich at 86%.
 - f. Steve R. reviewed state's new drought webpage. Specifically asked about OPM's letter to Governor notifying of 1st drought stage and why the Governor didn't have to approve this declaration. Bruce responds that Stage 1 is really a preliminary stage with no set determining criteria and is triggered simply by virtue of assembling the IDW in response to droughty conditions.
 - g. Bruce will distribute emails regarding New Hampshire's current drought status and their sample drought ordinance. Peter volunteered to review them and report back to group.
3. 2016 IWG Meeting Minutes – Review and Discussion
 - a. Wrap-up on 12/16 minutes
 - i. Peter asked about mention of a Task Force and Drought Coordinators. Bruce replied that the Task Force as included in old drought plan was set

to take over from the IDW at higher drought stage levels with a wider, heightened scope of responsibilities such as the inclusion of municipal coordinators. Doug reminded that this higher level administration is replaced in the current drought plan with activation of existing DEMHS's infrastructure.

- b. Begin 1/17 minutes
 - i. Steve R. mentioned it had been 42 days since last meeting and thought this was a little too long. Holidays may've been a factor. Bruce agreed that meeting more frequently, particularly in winter would catch more subtle indicators that would appear at this time of year.
 - ii. Steve R. asked about PURA's role in the IDW. Replies were that they regulated investor-owned utilities and had a different perspective on public water utilities than DPH including information on specific PURA dockets (cases) that may be occurring.
 - iii. Steve R. concerned that the minutes didn't reflect enough regional, as opposed to state-wide, analysis given there were two different stages set for the state at this time – Drought Advisory and Drought Watch.
 - iv. A lively discussion ensued regarding the specific roles/duties that different jurisdictions (i.e. local, regional, state, water companies) have during a drought and the mixed public messages that may result. An opinion was raised that water companies should be the primary messenger regarding public water supply issues due to their expertise on and control over those systems, and the state could focus on ecological/agricultural and private well issues. Others commented that due to the variety of public water systems (e.g. rate structures), the role of local politics, and the different mixtures of jurisdictions in the state, there needs to be a unified public voice, particularly during higher drought stages, and that it should be the state.
4. Set Next Meeting
 - a. It was determined the next meeting would be 7/24/20 at 1:30.
 - b. Steve assigned all to list their top 10 recommendations that they would like to see in our final report.
 - c. Steve R. thought we may need two more months to go through May and Oct 2017 minutes.

Notes by Doug Hoskins

Draft Meeting Notes
State Water Plan Implementation Workgroup
Drought Subcommittee
July 24, 2020; 1:30 pm to 3:00 pm
Microsoft Teams meeting

In attendance: Alicea Charamut, Doug Hoskins, Eric Lindquist, Denise Savageau, Steve Rupar, Bruce Wittchen, Iris Kaminski, Steven Harkey

1. Review 6/26/2020 Meeting Notes
No comments, minutes approved.
2. Current drought status from IDW, from yesterday, July 23, 2020:
 - a. Bruce - keeping the current drought stage. Suggests to meet every other week (as drought status maintains), with option to cancel meetings if they are not necessary.
 - b. OPM is looking how to structure the meetings. Precipitation indicator may trigger the 65% measure more broadly.
 - c. Minutes should include the indicators (from DPH, Meteorological Center, etc.)
 - d. Fairfield: abnormal amount of rain; just need to stop people from irrigating their lawns.
 - e. The rain yesterday may have helped in stopping people from irrigating their lawn but was insignificant regarding drought measure.
 - f. Alicea – Very low stream flow in North W Ct.
 - g. Eric L. – The meeting yesterday statewide, national weather report indicated how much rain is needed to avoid going into drought.
Need to keep an eye on North W Ct, to see if will persist in Sep.
 - h. Private wells: 5 requests for permits to drill new wells.
3. Agenda item 2: New Hampshire ordinance, committee decided not to review today.
4. Continue reviewing IWG 2016-2017 meeting minutes:
 - 2a. There was a gap in the minutes available between January to May 2017; Steve R. - there is a need for a regular meeting.
Doug found minutes for a March 8, 2017 meeting (minutes attached).
Apparently, February 2017 was the third warmest February recorded for Ct.

- 2b. Review minutes from May 3rd, 2017:

Relationship and responsibilities of agencies:

Denise – What is the relationship between the different agencies? Mentioned that DPH was very involved in the drought and did a lot of work related to the drought at the time.

The question is to better define the Roles of each agency and the Communication structure. All agencies have things they are supposed to do.

Report of conditions (May 3rd):

- a. Drought moved from drought watch to drought advisory. There was improvement; and still some towns were operating under emergency declarations. Aquarian was maintaining water restrictions due to forecast and drought preparedness. These restrictions kept them out of drought in 2017.
- b. Nicole reported on level of precipitation and looked at the “Year-long deficit”. Year-long deficit or “winter drought” is a parameter that is often neglected.

Current precipitation trigger:

Stage 2 – 2 out of 3 months below 65% avg precipitation.

Stage 3 - 3 months below 65% avg precipitation.

Stage 4 – 4 out of 5 months below 65% avg precipitation.

How to deal with long term dry periods?

- i. Bruce -Water missing from 18 months ago may have devastated Oaks, and this plan may overlook these long-term impacts. Groundwater is the most important indicator.
- ii. Denise – The challenge, there are very limited groundwater monitoring stations that are online or real time.
- iii. There stream gages; how long will it take for a stream to get back to normal?
- iv. Denise – concerned about current model used to predict precipitation because they may not include correct corrections due to climate change. Aquarian, for example, has used historical data going back 100 years – is this relevant data in face of climate change? Climate change needs to be part of the discussion.
(How do these models look at “splash events”, predicting flooding. Do municipalities have ability to control flood events?)
- v. Frozen ground data is important.
Evapotranspiration is also important factor – we may have more evapotranspiration due to frozen grounds. This is why it is so important that the models are using the data correctly. Historic data is not going to fit.

The Process (re minutes?):

Steve R: What is the approval method?

Bruce: in the past – the process wasn't being approved.

The Process (re: drought declaration/issuance):

Doug (?): the outcome for Oct 2016 (?) was not to warrant drought stage, because of past and near future precipitation forecast.

Doug – June 14 meeting – still no drought issuance.

Doug will forward minutes from June 14 minutes (2017).

Winter Drought:

Denise - in June (2017?) lifted the drought, the end of the summer got dryer. We were still in a state of deficit, (winter drought) when the drought was lifted.

In Greenwich, 20 years ago, there was a winter drought that was lifted in the spring due to rain while ignoring groundwater levels. Reservoirs fill quickly and things looked OK.

Needs to be highlighted: how we look at long term and groundwater conditions.

Water use:

Bruce – just notice that an average family can generally go by with 1000 gal/week for all indoor usages. 1 acre of lawn will use 27,000 gal (per one use) ... Mansions (?) irrigation triples the amount of water use (according to these numbers, more than triple, IK). (there was a remark regarding Aquarium that I missed, IK)

Infra-structure:

Doug – Deficiency in storage. Infra-structure is OK for 80% but lacking for 10-20% occurrences.

Water quality:

Denise – Water quality in droughts is impaired: streams are low quality is problematic. Aquarium was dealing with Algae bloom during the drought; (not the harmful algae, though these are being monitored). Concentrated blooms drive water quality down.

Climate Change:

Bruce – Climate change will also impact precipitation patterns, and there are expected to be more rainstorms, and harsh runoffs is expected to

flow into reservoirs; not concerning drought, but also part of long-term planning.

5. Other

- a. Potential drought Subcommittee Action Items.
Steve R. - reviewed his top ten (see attached).
- b. Other comments:
 - i. Doug – do we need a roaster?
 - ii. Bruce – RI stopped drought meetings after drought stopped; they have 20 members on their drought committee.
 - iii. Steve R– if government does not respond to a communication, needs to be re-communicated (?).
 - iv. Steve H. – need a process that works at the county level, included data. (Steve R.'s number 8: that IDW is mainly Statewide response)
 - v. Data collection
 - Steve R.: Do we have groundwater info.
 - Steve H.: There are thousands of systems; this is a giant task. This is holding us back. Reporting system changed and data doesn't go directly to the excel sheet designed for it. Need to focus on a data portal that is not provided to us by state agencies.
 - Denise – precipitation data from Bradley has a different pattern than other areas.
 - Doug (?) need data collection all around the state.

6. Next meeting: Friday Aug7, 2020 at 1:30 PM.

- a. Steve R.- reminder to send our priority lists by next Friday.
- b. Denise will reach out to Jeff from Fairfield County.
- c. What is next: next step is to create something by November.
Suggests to brainstorm.

From the Ct's water plan:

The draft Drought Plan identifies the following five stages of increasingly dry conditions:

- Heightened Awareness
- Below Normal Conditions
- Moderate Drought
- Severe Drought
- Extreme Drought The draft

*

According to the National drought monitor mitigation center with collaboration with the University of Nebraska:

<https://droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification.aspx>

Short-term drought indicator blends focus on 1-3 month precipitation.

Long-term blends focus on 6-60 months. (Iris)

MEETING NOTES

State Water Plan Implementation Workgroup Drought Subcommittee

August 28, 2020; 1:30 – 3:00

1. Review 7/24/20 Meeting Notes
 - Add Steve Harkey to the list of attendees
 - There was a discussion of a section that referred to a roster for the IDW that may have been misrepresented. The group determined that this section should be revised. Steve H said he would send updates to Steve R on the matter.
2. Current Drought Status
 - Northern counties were elevated to Stage 2. Southern counties remain at Stage 1.
 - Jeff U said that demand is back to normal for this time of year and that reservoir levels for Aquarion are improving. He does not have concerns about the rest of the year considering forecasts and demand decrease going into the fall season.
 - There was a discussion as to how IDW decisions are communicated.
 - DEMHS has offered to communicate through their channels
 - DPH has drafted a circular letter that will go out on Monday
 - A press release came out on Wednesday with a special mention to pay close attention to messages from your local utility.
3. New Hampshire Municipal Drought Ordinances by Peter Galant
 - Notes from Peter's review that were distributed prior to the meeting:
 - The newspaper article that sated "New Hampshire is Officially in a Drought" appears to be referencing the latest release of the North East Drought Monitor map, and not any declaration by any state agency.
 - The article does mention that a number of water systems are urging people to conserve water use and some have banned outdoor watering, but there is no discussion of the authority or basis for those bans.
 - The second notice was from the Village District of Eastman (VDE). VDE is a municipal overlay district that provides drinking water and wastewater to portions of three towns. Len DeJong was recently appointed to their Board.
 - VDE has a water use restriction ordinance established under the NH State Regulations excerpted below. It is unclear to me whether this regulation provides the same authority to private water companies, but I think it can be read that way. Of note is that VDE, as the water authority adopted, and has the right to enforce, the ordinance and not each individual municipality that it serves.
 - The VDE Water Use Restrictions Ordinance provides 4 levels of water use restrictions. The levels are triggered at the discretion of the Board of Commissioners and requires public notification.
 - The VDE ordinance does not apply to private well owners unless it can be clearly demonstrated that the use of such water clearly impacts public water supply.
 - Municipalities and village districts have the authority to implement lawn watering restrictions applicable to all water users (including those using private wells and public water systems) under state declared drought conditions (see below). Note

that the municipal authority is limited to lawn watering and the water utility authority above can more broadly apply to all uses.

- At the State level droughts in New Hampshire are coordinated by a 31 member Drought Management Team led by DES.
 - The DMT publishes a list of public water systems that have imposed voluntary or mandatory water use restrictions.
 - The attached Municipal and Village District Lawn Watering Restrictions guidance references the legal authorities and provides a model regulation for lawn watering restrictions. The VDE ordinance follows this model guideline.
 - The New Hampshire Drought Management Plan is also attached.
 - The State is divided into drought management areas
 - The Plan has five drought stages with drought criteria and responses for each stage (pages 10 and 11). It is not specifically stated, but there must be “professional judgement” applied to the criteria.
 - Municipalities and village districts have the authority to implement lawn watering restrictions applicable to all water users (including those using private wells and public water systems) under state declared drought conditions (see below). Note that the municipal authority is limited to lawn watering and the water utility authority above can more broadly apply to all uses.
 - Utilities have enforcement powers without towns having to adopt ordinances
 - Model ordinances pertain to municipal utilities and not investor-owned.
 - Doug H said he would like to know what the uptake of model ordinances in NH is and what their experience has been.
 - Jeff U said that Aquarion can issue violations but not fines. They can shut off but has never had to use that authority. 90% of first warnings do not require a second, follow-up warning. And a very low percentage require a third notice.
 - Denise said that Aquarion looked at Dallas, TX as a good model for year-round conservation messaging (savedallaswater.com)
 - Jeff U said fatigue of the word conservation caused them to utilize the phrase “most appropriate water use.”
 - Denise S emphasized that we need preparedness in the drought plan not just drought response. There is no mitigation in the current plan.
 - Peter G said that savings through mitigation could also be used for growth.
4. Review and Discuss Initial Findings and Recommendations
- After a discussion of how best to look at the compilation of recommendations that each member would resubmit in a Google Sheet with each recommendation and it’s associated finding falling under a charge of the group with an extra category for misc.
 - Steve R said that he felt that we didn’t have much in the way of recommendations on model ordinances. Doug H asked if there are any changes that should be made to statute that might make adopting model ordinances easier. Denise S said that benefits and downsides of model ordinances should be outlined in the report. Alicea C recommended that, in addition, the group should recommend that the IWG or WPCAG form a workgroup of broad stakeholders to work on the model ordinances.
5. Action Items
- Steve R will send dates for the next meeting and Alicea will send out a Doodle Poll.

- Denise will set up a Google Sheet. For those who do not know how to use Google Sheets, they can fill out a spreadsheet and send it to her. Members should fill out the sheet with their recommendations.
6. Set Next Meeting - Steve R will send dates for the next meeting and Alicea will send out a Doodle Poll.
 7. Other – None
 8. Meeting Adjourned at 3:55 PM.

MEETING NOTES

State Water Plan Implementation Workgroup
Drought Subcommittee
September 18, 2020; 1:00 – 2:30
Microsoft Teams Meeting

Attendees:

Alicea Charamut
Denise Savageau
Eric Lindquist
Iris Kaminski
Peter Galant
Steve Rupar
Jeff Ulrich (joined late)
Steve Harkey (left early)

1. Review 8/28/20 Meeting Notes

Notes were accepted without changes.

2. Current Drought Status

Eric Lindquist provided an overview of the ongoing drought situation and the work of the Interagency Drought Workgroup (IDW). New London county was added to the four northern counties at Stage 2 and Eric said part of the state will be entering Stage 3 at the end of the month if it continues to remain dry.

Steve Harkey gave an overview of public water systems that are in or approaching drought stages in their water supply plans.

Steve Rupar asked if the work of this subcommittee was being used in any way to proactively make functional improvements for the current drought response. Eric responded affirmatively and outlined the administrative changes were made since the 2016-2017 drought: more frequent/regular meetings, status tables and written conditions briefings, a more formal meeting structure, and the implementation of a "drought action team."

Alicea Charamut commended the improvements made on the operation of the IDW.

There was discussion of the intended purpose and functionality of the "municipal water coordinators" specified in the State Drought Plan. Iris Kaminski asked if she could be made aware of water coordinators for the greater New Haven area and Eric said he would get back to her.

Alicea asked what the recourse is if a water supplier doesn't adhere to the drought metrics and actions in its approved water supply plan. There was significant discussion and it was agreed that input from DPH would be needed.

3. Review and Discuss Initial Findings and Recommendations

Denise Savageau overviewed the Google Doc spreadsheet that the subcommittee used to tabulate finding and recommendations. There was some discussion about the best way to review as a group – there were over 70 individual findings with associated recommendations.

Steve Rugar said in his initial review he found some findings and recommendations that were not discussed by the subcommittee and/or did not appear to be supported by one of the four “charges” of the subcommittee. Steve suggested the subcommittee should only review and include those items that were discussed and that are supported by a charge.

Steve Rugar suggested a homework assignment for members to review each of the findings/recommendations and answer three questions:

Do you agree with the finding?

Do you agree with the recommendation?

Do you agree with mapped charge?

Alicea Charamut suggested trying to condense or group similar findings/recommendations as there may be some repetition.

There was further discussion about the best way to analyze, summarize, and rank each item in the spreadsheet. Iris Kaminski suggested breaking up the workload and setting up meetings to review findings/recommendations by category.

There was a suggestion to separate into small sub-groups and spread the work out that way.

There was unanimous agreement to have the members do homework: review the spreadsheet and answer the three questions above for each of the listed findings/recommendations. Denise Savageau suggested that SurveyMonkey could be a good platform to keep thoughts organized and there was general agreement. Denise offered to put a survey together.

Steve Rugar suggested the group discuss what is considered a valid finding or valid recommendation. Something that is valid needs to be documented as having been a topic of discussion by the subcommittee. Steve said that although a recommendation/finding may be true, if it did not receive serious discussion from the subcommittee it should not be included as a validated recommendation/finding from the subcommittee

Alicea Charamut explained her interpretation of Charge #1. She said that it is more about coordination and communication to make sure that everyone understands where everyone else is at during a drought. There was further discussion and general agreement that Charge #1 is worded confusingly.

Steve Rupar suggested using the last 30 minutes to begin reviewing some findings/recommendations as a group prior to doing homework and there was agreement. Steve highlighted an example of a finding & recommendation that may or may not be considered valid depending upon whether it was actually discussed as a group.

Eric Lindquist suggested that if a topic hasn't been discussed to-date but seems like something important, then it might be worthwhile to discuss right then and there. Steve Rupar said that the homework should reveal whether something generally supported by subcommittee members and if there is a split then it could be discussed.

4. Action Items

Steve R. summarized the plan/homework for the subcommittee going forward. Denise Savageau to send out SurveyMonkey link.

5. Set Next Meeting

Next meeting was set for Monday October 5 at 3pm. Eric Lindquist made a suggestion to avoid spending so much time discussing current drought conditions and that such discussion be limited to 5-10 minutes at future meetings. Steve Rupar concurred.

6. Other

Meeting closed at 2:26pm.

Meeting notes prepared by Eric Lindquist, OPM

MEETING NOTES - DRAFT
State Water Plan Implementation Workgroup
Drought Subcommittee
October 5, 2020; 3:00 – 4:30

In attendance: Alicea Charamut, Steve Harkey, Eric Lindquist, Denise Savageau, Jeff Ulrich, Steve Rugar, Peter Galant, and Iris Kaminski.

Minutes from 9/18/2020 approved.

Drought Status: No improvement; recent rain was minimal. IWG met on Oct 1, 2020 and will announce.

Drought stages for Connecticut were upgraded to the following:

(<https://portal.ct.gov/Water/Drought/Drought-Home>)

- STAGE 3 -- MODERATE DROUGHT for Hartford, Tolland, Windham, New London counties.
- STAGE 2 -- INCIPIENT DROUGHT for Litchfield, Middlesex counties.
- STAGE 1 -- BELOW NORMAL CONDITIONS for Fairfield, New Haven counties.

Stage 3 messaging includes to end all outdoor water use. Residence to be mindful of fire. Agriculture to be mindful of their resources; may have to prepare to have water delivered. The forecast is not good.

DPH is engaging with water suppliers and encouraging them to react quickly. The Governor is advised to be prepared to coordinate efforts. No emergency yet, but Governor to be prepared. The good news is that usually in fall there is less demand. Still asking to tighten water use.

South-Western: Aquarian in Fairfield County – there is more of a demand problem; asking to voluntarily reduce use has not worked.

Jeff Ulrich pointed out that between May – Oct this year there were less rain days than in 2016.

Denise said that the drought in fall 2015 set up the drought for 2016; and all the rain won't compensate for these deficits.

Review of charges:

Charge 1

The WPC, through its committees, could develop a template for interpreting statewide drought indices to local risk levels and response measures for use by utilities at the local level, based on storage, demand levels, type of system, etc.

This charge has been clarified; see below (Steve Rugar's email from Oct 14, 2020).

The recommendations were reviewed by the committee members. There was no discussion if there was 100% agreement.

1.01 67% agreement; 17% disagree

Recommendation:

Look at new methods for forecasting water supplies during dry periods and droughts – e.g. look at what Aquarian is doing. Also determine if 100 year of record is good given climate change? A standard should be set for what data is used as with stormwater calculations

Findings:

It appears that there is no standard for predicting supply and specifically what rainfall predictions models to use. Although it is recognized that all systems vary, the rainfall data use for projections should be standardized and reflect the newest data given climate change. It is noted that weather patterns including precipitation amounts and intensity have been changing. UConn CLEAR has the latest recommendations for rainfall data for stormwater management, is this something that can be used for water supply?

- What are the roles of DPH vs IWG; not clear.
- How would the state benefit from forecasting?
- Aquarian decided not to use this approach; comment from the grid:
This recommendation is insightful; however, the enormity of the task would be too much to develop and continually implement by and across the State. Aquarian's models help them to determine the state of the capacity in the future. Doing such modeling would be difficult with the differences between the sources of supply and the watersheds for each system. Each model would have to be tailored for each system.]

Steve R- Do we have the technical ability, people, money to do fulfill on this task?

Jeff U- should the drought curve be updated every 10 years?

Peter: recommendation – DPH to ask to demonstrate why utilities approach is effective?

Steve agrees with Peter that utilities use this approach.

Peter - this approach works for reservoirs.

Denise – concerns that using past rain fall models are inadequate. Do we need more experts?

Peter: Rainfall is not a significant direct factor. Climate change is more significant for the margins of safety.

Jeff U - When your draw the lines. We need to use the most updated model (?). Do we include the great drought from the 1960s?

Denise clarifies global warming did not start 5 years ago; it has been going on for over 100 years.

1.02 Agreed by 33%; disagreed by 50%

Recommendation:

A template for evaluating drought indices at a local level is not necessary.

Finding:

Individual PWS drought risk is to site specific to manage with statewide templates.

The question if we need a template for local towns? Do we need to develop triggers?

Denise - IWG templates to be used.

Peter - Need to clarify templet to help IGW.

Steve H - If the templates are being filled locally and sent to the IGW – IGW can interpret what is going locally. The towns, and/or the drought coordinators should send all the metrics to the IGW. This way the IGW can do the interpretation for the towns.

Steve H- Very technical; May need to use someone from UCONN to create a template. Maybe we can use Eric's template. If it is a template from the state to the local.

Denise – we don't support a template for utility drought plan.

1.03 100% agreement with the recommendation. 67% with the finding.

Recommendation:

Increase number of stream gages and groundwater stations to improve ability to monitor conditions locally.

Findings:

The IDW appears to have focused on statewide review and response in 2016-2017, and with some exceptions did not appear to consider conditions/response on a more local level

1.04 67% agreement; 33% disagree.

Recommendation:

Develop committee through the Water Planning Counsel to determine the need for a template for interpreting statewide drought indices and if needed to engage subject matter experts and stakeholders to develop a template for interpreting statewide drought indices. More localized templates may then be able to be developed but without making the resolution so narrow that it becomes an overwhelming task.

Finding:

The drought indices that are the most appropriate should be continually monitored for effectiveness and a template should be developed to help develop those indices and utilize them at varying levels throughout the state and by various stakeholders. Some small public water systems do not have the means to develop those indice on their own.

Steve H: Most towns don't have the ability to know what drought stage they are in and are surprised when drought happens. It's great to have a template! But what are these indices that towns should look at?

Peter: local towns can use the IDW (indices/template?)

Steve H: Does IDW ongoingly update towns? There may be a disconnect. Should IGW do more communications, for example on a weekly basis?

Denise: A template may work that way; if we get towns to look at the same criteria.

Maybe a link can be provided to the drought situation. (for towns to update, or for towns to get updated)?

Can we develop the template – or do we need more time/expertise?

We are not going to change the water utility (plan/templates) but create something for others who do not have them.

1.05 100% Agreement

Recommendation:

The State in coordination with Federal partners should develop an online portal for public water systems to report their various surface water and ground water capacities as well as the other metrics required by regulation.

Finding:

The State in coordination with Federal partners should develop an online portal for public water systems to report their various surface water and ground water capacities as well as the other metrics required by regulation.

Steve H - Recommend an online portal: NIDIS – the National Integrated Information System; this program was created in 2006, under NOAA.

(<https://www.drought.gov/drought/what-nidis>)

Other issues:

- Funding.
- Getting data in a timely manner.

Alicea pointed out to section 5.3.2.8 in the water plan regarding this charge (charge 1): “Develop and recommend strategies to address climate resiliency including the impact of extreme weather events”. Page 58 appendix F and page 334 Section 5.

1.06 83% agreement

Recommendation:

Instead of a template, which may be too prescriptive, develop a checklist for press releases, messaging, and public outreach materials that will be issued by the IDWG or lead agency. Examples of messaging that should be included:

- Clear messaging about the status of regions effected (or not) by dry conditions or drought.
- Language encouraging those on public water supply to pay close attention to their providers as conditions and restrictions will vary depending on the source.
- Information about the status of groundwater supplies and instructions for residents on private wells.

Findings:

The workgroup acknowledges that regional droughts and variability of supply conditions across utilities as well as the difficulty in messaging when a significant portion of residents rely on wells for supply makes blanket statements about drought conditions impossible and sometimes unhelpful.

This recommendation refers to public messaging and the language.

Steve H says we should do this part.

Denise- this is related to communication 1.06 should be included under section 4 (of ?)

Peter agrees that “the communication” should be under one category.

Eric – IDW had the same discussion; including creating a communication flow chart to coordinate the message; DPH has its flow chart; DEEP and utilities need to create a flow chart.

1.07 100% agreement

Recommendation:

Maintain allowances for regional declarations and professional judgement in the State Drought Plan

Finding:

Analysis of IDWG discussions and actions prove that declaring drought by region is advantageous. The current State Drought Plan allows for regional declarations as well as professional judgement.

1.08. 50% agreement; 50% disagree.

Recommendation:

Direction should be included in the current drought plan under Stage 1 actions that local authorities should be alerted to a Stage 1 declaration in order to communicate and coordinate with their local water supplier(s) and be prepared to take action if conditions progress to Stage 2.

Finding:

The current drought plan does not have specific provisions for outreach to local authorities by the IDWG for Stage 1. Current dry conditions have proved this "pre drought" stage beneficial in preparing the agencies to act if conditions progress to drought.

This recommendation is regarding what to communicate at State 1.

Alicia – Referred to Bruce past communication, that we are not directed to talk with drought coordinators at this stage. (?)

Denise – this is included in the water communication.

Alicea – There is no flow from IDW to communicate to utilities/municipalities

1.09 has been discarded.

1.10 100% agreement

Recommendation:

Reporting should be consistent and clear, "below normal" and "drier" should follow with numbers; what ever is relevant, if inches or percentiles.

Finding:

Reporting should be consistent and clear, "below normal" and "drier" should follow with numbers; what ever is relevant, if inches or percentiles.

1:11 50% agreement; 17% disagree.

Recommendation:

Climate change drought patterns and predictions should be included in how we define drought - long term sustainability should be included.

Findings:

Climate change drought patterns and predictions should be included in how we define drought - long term sustainability should be included.

No discussion.

(comments are included in the grid)

1.12 17% agree

Recommendation:

Needs to be a way to distinguish between a supply problem and a consumption problem.

Findings:

The reservoir indicator is prone to be triggered due to excessive water use rather than a lack of adequate supply

Denise – the process works well.

End of discussion of Charge 1

Charge 2: At present, the Drought Plan and the Interagency Drought Workgroup exist in an ad hoc capacity under the collective executive branch authority of the Water Planning Council. The Council should consider developing legislative recommendations to improve the authority and implementation of the Drought Plan for consideration during a future legislative session

2.01 50% agree; 17% disagree

Recommendation:

Better define the role of the IDW as a whole, not just by agency. Statewide only? Regional? What is its primary role during a drought? E.g. – DPH is the lead in terms of dealing with local water utility. How does the IDW support this.

Findings:

Upon review of the workings of the IDW during the 2016 drought, the role is somewhat unclear in terms of drought preparedness. DPH is the main contact with the water utilities and towns. Is the IDW there only to determine the level of drought. Now that DEMHS is involved, is there a role for better communications/coordination with Towns.

Comment on the grid: The current drought plan clearly address its (IDW) role and purpose.

Eric recommended to include John Mullaney from USGS to these discussions.

Eric - We have analytic people looking for replacement for drought categories.

Eric and Bruce are not happy with the criteria (?). Mentions that we can go from a normal level to below normal really quickly. The trigger levels are reported on a monthly basis, not strong for developing drought, or for short term.

Need gauges to give us info for how fast the drought is developing.

Most of the measurements are at the end of month; "ground water watch"

John – Another option: discrete groundwater station analysis

New sites run by analytics vs. old sites by hydrologist; to show basics which wells are at which station.

Monthly measurements are a limitation.

Funding is Flat.

Eric – need more frequent reporting.

John – build a network. In order to get value of this we need at least 10 years of reporting. Also, there is a difference between hilltop wells and wells that are downstream.

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Alicea – The prediction is for more precipitation, but less charging for Groundwater because if the additional precipitation occurs in the winter when the ground is frozen, it won't compensate for the dryer summer.

John – the origin of the 2016 drought goes back to 2012...

Eric – to john's groundwater site – how can you improve, what do you want to see at groundwater watch (USGS), at CT network?

Virginia has requested (to use?) the “national drought monitor”.

Steve H – NDM (National Drought Monitor at: <https://droughtmonitor.unl.edu/>) uses a “blend” of indexes. Goes from short term to long term. They use many criteria to get conclusions, but they don’t always look at the local conditions, and sometimes miss it. NDM has a tutorial.

Eric – There is a difference in how many years you would expect a type of drought (comparing NDM and Ct stages).

There was a discussion of the differences in which drought monitor was more sever.

Steve R – should we use the national monitor and just focus on the response?

Steve H – we are one step behind of NDM; we should have started earlier. Steve is not in favor of Virginia suggestion (see email).

- We should be responding to local issues, such as drying wells, drying crops, etc.
- For example, the NDM did not pick on the drought in Fairfield County, it stated that it had no drought, and this is not true.

End of meeting. Next meeting Friday Oct 16 at 2pm

Clarification of charge 1 (from David Murphy and from Kirk Westphal):

Hi Steve

This was definitely not a recommendation aimed at replacing or changing the individual water supply plan drought triggers and actions. Kirk and I have a reasonable understanding of how water utilities work and what the Water Supply Plan Regulations already require, so we understood that a push-down from the WPC was not appropriate. However, while on this topic, I will say that something more likely to come in the future are changes in the Water Supply Plan Regulations that require more frequent critical reviews of drought triggers (if you’re plugged into the GC3, you may be aware of this; or, see Betsy Gara’s email from yesterday). But that’s a little ways off, and not presently called for in the State Water Plan.

To answer your question, I believe this recommendation was the last thing you suggest: aimed at improving the two-way process (or perhaps, a three-way process with the State, water utility, and local municipality as the three entities). This recommendation seems to provide a lot of flexibility for the implementation work group. You could focus on how to filter down the messages from the State and the Drought Preparedness and Response Plan; or you could focus on messages between towns and water utilities. I think there’s a lot of room for seeing what makes sense.

Also, there is a response from Kirk that I have not read. I’ll send that next.

David Murphy, P.E., CFM
Manager of Water Resources Planning

99 Realty Drive, Cheshire, CT 06410
203.271.1773 x 2247 | mminc.com
[Facebook](#) | [Instagram](#) | [LinkedIn](#) | [Twitter](#)

View our Coastal Resilience Planning e-book [here](#).
View our Flood Hazard Mitigation e-book [here](#).

And here is Kirk's reply

David Murphy, P.E., CFM
Manager of Water Resources Planning

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From: Kirk Westphal <Kwestphal@BrwnCald.com>
Sent: Tuesday, October 13, 2020 3:17 PM
To: Dave Murphy <DMurphy@mminc.com>
Subject: RE: State Water Plan Implementation - drought recommendation

Hi David,

Always nice to hear from you. My 45-second answer is that the original intent of that recommendation was "c," (the third option): "improving the two way process (local to state as well as state to local), and recommending improved focus of our state drought response at a more local level (vs the generally statewide response that we have seen at least until recently)." In my mind, it had everything to do with avoidance of localities being too early (costly) or too late (water shortage) with drought measures based solely on state guidance, which is based on hydrologic conditions instead of the storage dynamics of individual supplies. So, while it's not meant to replace local DMPs, the intent was to help "reconcile" or "calibrate" the State Drought status to local response plans as a useful indicator, so that local officials can gage their own response against the state drought status. For example, a community with a very small reservoir might see the state issue its first drought alert and say, "Good, we started our own measures two months ago based on our storage level." MDC might see the same alert and say, "OK, we have 6 months before we need to start worrying about supply shortage." Local water suppliers can calibrate their own responses to state-issued drought levels, and also report back to the state about how consistently (or not) the state drought levels align with local practices and storage dynamics.

Does that make any sense?

-Kirk

MEETING NOTES

State Water Plan Implementation Workgroup

Drought Subcommittee

October 16, 2020; 2:00 – 3:30

Microsoft Teams Meeting

Attendees:

Alicea Charamut

Denise Savageau

Eric Lindquist

Iris Kaminski

Peter Galant

Steve Rupar

Steve Harkey

1. Review 10/5/20 Meeting Notes

Due to meeting notes level of detail it was decided that they not be approved at this time in order to give more time for review.

2. Current Drought Status

Eric Lindquist provided an overview of the ongoing drought situation and the work of the Interagency Drought Workgroup (IDW). Still 10-12" rainfall deficit. Recent rains not enough to change current drought status as stream flows did respond to precip but now receding with no significant rainfall in forecast. IDW finishing list of Municipal Water Supply Coordinators (renamed "Municipal Drought Liaison" – see item #6 below) for each town. DPH doing significant outreach to public water systems.

3. Review of Report Template

Alicia indicated report will include recommendations and findings with a cross-reference to subcommittee charges. Steve R. said the report could use more introductory materials and that he would generate. Doug recommended that raw data be included as an appendix. Steve R. reviewed his discussion with State Water Plan consultants regarding subcommittee charge #1 ("The WPC, through its committees, could develop a template for interpreting statewide drought indices to local risk levels and response measures for use by utilities at the local level, based on storage, demand levels, type of system, etc.") with group concluding that even with consultants' explanations the meaning of the charge is not clear but most likely alludes to improving general communication during drought between levels of government and water companies. Steve R. directed that any

other comments regarding report template should be sent to Alicia. Alicia recommended that draft report be reviewed by group using Google Docs and group agreed.

4. Schedule update

Original November date for report completion no longer reasonable. Steve R. spoke with the Implementation Workgroup and extension to end of year was acceptable.

5. Clarification on WPC Charge

See above under item #3 – “Review of Report Template”

6. Review and Recommendation of Findings

Steve R. suggested we proceed to charge #3 recommendations as this is the shortest and may be the easiest. Much discussion ensued with consensus reached on all recommendations except for 3.02 - “The IDW should work with all municipalities to adopt water use ordinances to implement restrictions for all users in response to each phase of IDW declared droughts. PWS could use the same restrictions for each phase of their drought plans.” Doug Hoskins believes this charge is outside the responsibilities of the IDW. Denise recommended grouping recommendation 3.03 and 3.05 together due to their similarity and group agreed. Doug Hoskins commented the IDW recently agreed to change the title “Municipal Water Coordinator” to “Municipal Drought Liaison” with Eric mentioning that this title more accurately describes their job duties. Steve R. asked how many towns have drought ordinances and Eric said he’ll research this and also inquire of these towns how it has worked out for them.

7. Action Items

- Group is to review minutes from last meeting so we can approve at next
- Group will send any Report Template suggestions to Alicea
- State agency group members should forward google email address to Alicea to enable report review/comment using Google Docs
- Steve R. will draft some introductory materials for report
- Eric will research how many towns have drought ordinance as well as towns’ experience using them

8. Next Meeting

Set for Tuesday 10/27/20 at 2:15

State Water Plan Implementation Workgroup
Drought Subcommittee
10/27/20 Meeting Notes

Attendees:

- Alicea Charamut, Peter Galant, Steve Harkey, Doug Hoskins, Iris Kaminski, Eric Lindquist, Steve Rugar, Denise Savageau, Jeff Ulrich

Meeting Notes:

- Notes from 10/5/20 meeting were approved.
- Notes from 10/16/20 meeting were approved.

Current Drought Status:

- IDW last met on 10/1/20.
- Based on recent rainfall and weather forecast next meeting is scheduled for 11/5/20.
- Improvement seen in surface water metrics, but groundwater and baseflow still low.
- No change in State drought status.
- USDA declared several NE counties as agricultural disaster zones due to drought making financial assistance programs available.

Charge 2: At present, the Drought Plan and the IDW exist in an ad hoc capacity under the collective Executive Branch authority of the Water Planning Council. The Council should consider developing legislative recommendations to improve the authority and implementation of the Drought Plan for consideration during a future legislative session.

- What would be accomplished by providing additional legislative authority to the IDW?
- There have been issues in the past with membership, attendance at meetings and communications to the public and executive branch that could be addressed through legislation or regulation.
- It is appropriate for the Executive Branch to have the authority to declare drought stages at the recommendation of the IDW.
- Steve Rugar volunteered to take the lead for drafting this report section.

Review of Findings/Recommendations Survey (Charge 2):

- Green = consensus (not necessarily unanimous)
- Orange = non-consensus (may still go in report – needs further discussion)

2.01	Recommendation: Better define the role of the IDW as a whole, not just by agency. Statewide only? Regional? What is its primary role during a drought? E.g. – DPH is the lead in terms of dealing with local water utility. How does the IDW support this.	Findings: Upon review of the workings of the IDW during the 2016 drought, the role is somewhat unclear in terms of drought preparedness. DPH is the main contact with the water utilities and towns. Is the IDW there only to determine the level of drought. Now that DEMHS is involved, is there a role for better communications/coordination with Towns.
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- Subcommittee generally feels that the role of the IDW is well defined as statewide in the State Drought Preparedness and Response Plan.
- Role during a drought is to review data and make drought declarations and monitor actions as appropriate.
- IDW has formed a new Drought Action Team with staff from each agency responsible for taking and monitoring actions under each drought stage.

2.02	Recommendation: A regular schedule of IDW meetings should be established	Findings: Meetings of the IDW were irregular during the 2016-2017 drought.
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- Consensus recommendation. No discussion needed.

2.03	Recommendation: The IDW should have clearly designated leader.	Findings: IDW representation and attendance at meetings were inconsistent during the 2016-2017 drought
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- Has been addressed in the revised plan with a lead agency (OPM) and a directory including agency representatives (Commissioner’s designee) and support staff. Voting is outlined in Section 5 of the drought plan.
- Recommendation should be changed to read “OPM should continue to lead the IDW as per the current drought plan and keep a current roster of agency representatives and alternates.”
- Should now review adequacy of representation. Do we have the right people at the table? Should there be non-voting members?

2.04	Recommendation: A lead and backup member should be designated for each agency on the IDW	Findings: IDW representation and attendance at meetings were inconsistent during the 2016-2017 drought
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- This recommendation would be covered by suggested change to 2.03.

2.05	Recommendation: All towns should be required through statute or regulation to have an official drought coordinator. Using an established position like Emergency Management should be considered before creating a new position.	Findings: Public messages issued during the 2016-2017 drought may not have been effective
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- There was agreement with the need for official drought coordinators, but legislation or regulation may not be needed to make it happen.

Recommendation:	Reporting frequency of water levels and actions taken by water utilities should be increased to weekly during a drought	Findings:	Data reporting from water utilities in 2016-2017 generally met regulatory requirements, but timing of reporting was not adequate for timely decisions by the IDW
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- Some disagreement with finding that reporting was not adequate
 - DPH changed from monthly to weekly, which was adequate.
 - Drought plan requires increase to weekly under Stage 2 and should be OK. No need for change.
 - Currently have regulatory authority to require weekly. No change needed.
- Monthly was bumped up to weekly during 2016 drought
- Move to Charge 4

2.07	Recommendation: The required authorities to implement the plan would need to be identified and a significant effort would be needed to draft statutory language and be enacted if the authorities were part of the statute to establish the IDW.	Findings: If the State Drought Plan and the IDW are authorized in statute, it would still rely on the authorities of the agencies that make up the group to enact the different aspects of the drought plan.
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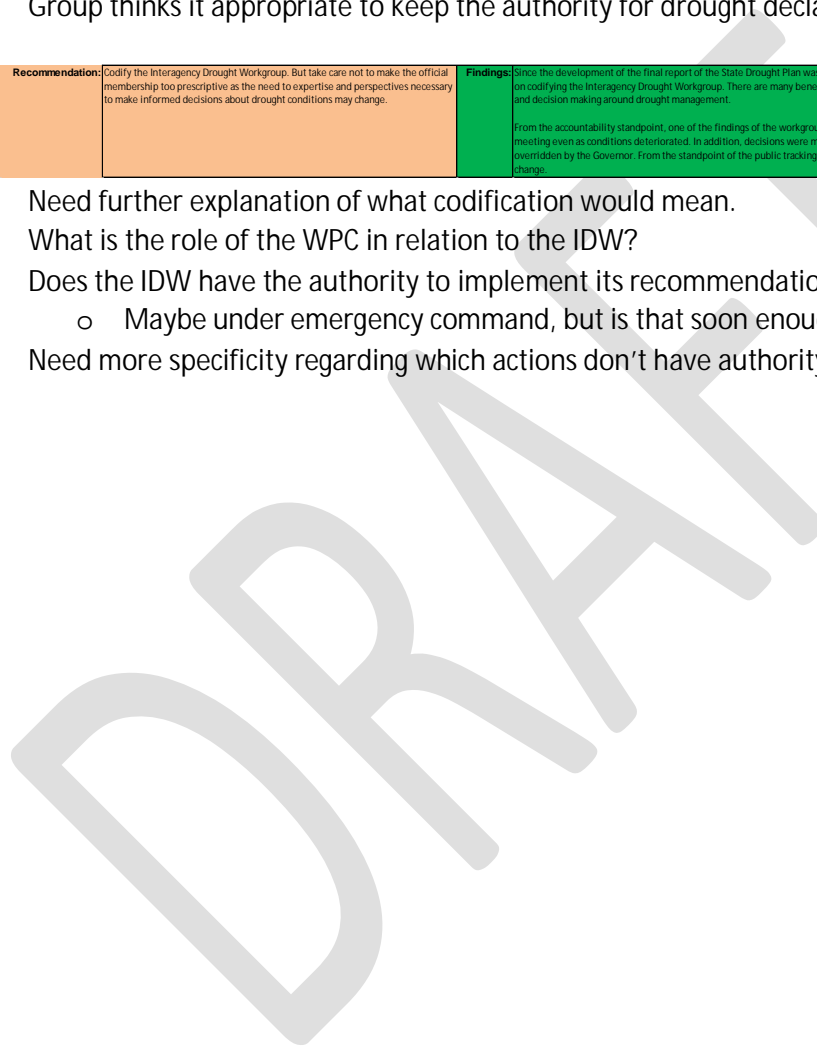
- No further discussion

2.08	Recommendation: The agencies that make up the IDW have a mandate and an obligation to follow while implementing the drought plan without any real consideration to the politics of such actions. Their actions are to enforce their regulations, protect public health and the environment and to ensure an adequate supply of safe drinking water.	Findings: If the IDW was to be authorized by statute, there is a concern that the make-up of the group would include political entities whose mandate and responsibilities are not that of the agencies and may contradict the regulatory requirements of each agency creating conflicts.
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- Not really a recommendation.
- Plan acknowledges politics by taking IDW recommendations to the Governor’s office for approval.
- Group thinks it appropriate to keep the authority for drought declarations with the Governor.

2.09	Recommendation: Codify the Interagency Drought Workgroup. But take care not to make the official membership too prescriptive as the need to expertise and perspectives necessary to make informed decisions about drought conditions may change.	Findings: Since the development of the final report of the State Drought Plan was developed, the Water Planning Council has adopted the plan. The focus should be on codifying the Interagency Drought Workgroup. There are many benefits, particularly in the realm of accountability and the public’s access to information and decision making around drought management. From the accountability standpoint, one of the findings of the workgroup’s review of the 2014-2017 drought was that the group went months without meeting even as conditions deteriorated. In addition, decisions were made during an IDWG meeting but were not carried out when decisions were overridden by the Governor. From the standpoint of the public tracking actions of the IDWG, there would be no explanation or reason behind the decision change.
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- Need further explanation of what codification would mean.
- What is the role of the WPC in relation to the IDW?
- Does the IDW have the authority to implement its recommendations for action
 - Maybe under emergency command, but is that soon enough?
- Need more specificity regarding which actions don’t have authority and need codification.



State Water Plan Implementation Workgroup
 Drought Subcommittee
 11/13/20 Meeting Notes - DRAFT

Attendees:

- Alicea Charamut, Peter Galant, Steve Harkey, Doug Hoskins, Iris Kaminski, Eric Lindquist, Steve Rupar, Denise Savageau, and Jeff Ulrich

Meeting notes:

Notes from 10/27/2020 approved.

Charge 2: At present, the Drought Plan and the IDW exist in an ad hoc capacity under the collective Executive Branch authority of the Water Planning Council. The Council should consider developing legislative recommendations to improve the authority and implementation of the Drought Plan for consideration during a future legislative session.

(copied from previous meeting):

- What would be accomplished by providing additional legislative authority to the IDW?
- There have been issues in the past with membership, attendance at meetings and communications to the public and executive branch that could be addressed through legislation or regulation.
- It is appropriate for the Executive Branch to have the authority to declare drought stages at the recommendation of the IDW.
- Steve Rupar volunteered to take the lead for drafting this report section.

Review of Findings/Recommendations Survey (Charge 2):

- Green (or blue) = consensus (not necessarily unanimous)
- Orange = non-consensus (may still go in report – needs further discussion)

Charge 2, continuing:

2.10	Recommendation: Further discussion needs to be had about the need to legislate the State Drought Plan. It is my own personal opinion that the document itself should only need the blessing of the WPC as it should remain dynamic as we learn lessons from each successive drought.	Findings:	<p>Since the development of the final report of the State Drought Plan was developed, the Water Planning Council has adopted the plan. The focus should be on codifying the Interagency Drought Workgroup. There are many benefits, particularly in the realm of accountability and the public's access to information and decision making around drought management.</p> <p>From the accountability standpoint, one of the findings of the workgroup's review of the 2016-2017 drought was that the group went months without meeting even as conditions deteriorated. In addition, decisions were made during an IDWG meeting but were not carried out when decisions were overridden by the Governor. From the standpoint of the public tracking actions of the IDWG, there would be no explanation or reason behind the decision change.</p>
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83% agreement.

There is agreement that further discussion is needed on what additional legislation or regulations are needed:

- Codifying:
 - Codify legislation
 - Codify the process
- Legislation or Regulation:
 - Steve R: regarding internal documents/do we need legislation if we don't have regulation
 - Steve H: Is there need for formal legislation, or regulation, based on statute: which agency and who at the agency.
 - Denise: Not clear how to put this process into regulation further than the current situation.
 - Doug: The Preparedness Response Plan has guidelines, not sure if this is regulative or legislative.
 - Peter: What specifically would you regulate or legislate?
- Accountability:
 - Who is accountable? The process needs to be open and transparent.
 - Is there a penalty for not acting according to the plan? What happens if we don't follow?
- Membership is crucial; this year consistent membership for IDWG worked.

Steve R: Do we have consensus for:

1. Strengthening the process
2. Membership
3. Reporting requirements.

- Leadership:
 - Steve H: Eric, Bruce and I are pushing this to go to the next level. Should it be within the new drought plan (2018)? Or perhaps under Lori Mathieu's leadership?
- Further discussion regarding who has the authority and what would be the impact of new legislation:
 - The water plan was created by legislative and/or by statute.
 - This group has no statutory or regulatory status.
 - Alicea: Ct water plan, from March 2018 5.1.5.4: What is the reference? (Or is this 5.5.4: Plan Development Role page 5-78 ?)
 - It is clear that the Interagency is in charge.
 -
- Steve R: The Governor would need to document its reasons (for acting upon IDW or for inaction)
- Should the drought plan be strengthened by statute? on one hand. We don't want to tie our hands. We want to leave some flexibility.
 - Steven R: Need to ask state agency people if statute will bind you or tie your hands.
 - Regulation won't work because there are a few agencies.
- Steve H: Governor needs to document his reason for his response. (Why he did not comply with the IDWG).
- Doug: Refrain from legislation. See current Drought Plan section 3.

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Denise – Concerns about legislation, there is more than one way. You need to have some flexibility; rather than legislation make sure it is included in the preparedness committee. We are refining it. We have come a long way since 2009. We don't want to tie our hands.

Steve R: Drought plan was not created by state statute. Does the public have an option to tie into it – or, have a say? It should be in statute. If the public thinks we are not doing a good job, is there any regulation or legislation? Where is the hook?

Denise – every 4-5 years there is a reevaluation with FEMA. Drought should be part of the state-wide plan. How does this fit with the natural Hazard Mitigation plan?

Steve R: We need to ask state agency people: "will statute bind your hands"? Regulation won't work because it is more than a few agencies. (Is this true? Who are the agencies involved? IK)

Eric: Partially agree with Doug Sentiment (to refrain from legislation). Instead of leaving it to agencies. This leaves little room for Flexibility need to trust agencies to make the right decisions. But there should be more? Balance Act?

Stage 5 scenario:

- Steve R: I am not a lawyer – but, what happens if water utility companies won't comply, because we are not authority?
- Eric: Governor will declare emergency; Governor will use his authority. There is NO authority (except for the Governor's actions)
- Denise: The Drought Plan: DEEP and DPH will do their part.
- Peter: IDW needs to be adopted by?
- Doug: WCP
- Denise: We pushed to get the Water Plan published (and the Drought Plan is included?)
- Steve R: Should the Drought Plan be strengthened by statute?
- Denise: Does the statute that describes the Water Plan include the Drought Plan (of 2018)?
 - Let's propose that the Drought Plan of 2018 be included in the Water Plan.
- Steve R: There are a couple options. There is no consensus. There are Pros & Cons.
- Peter and Jeff: We are close.
- Eric: We can create draft language (for including the Drought Plan within the Water Plan?)
 - Doug is designating Eric to do this.
 - Peter: What is your authority?

<p>2.11 Recommendation:</p>	<p>IDWG meeting minutes should include the status of each defining criteria either as an attachment of reports submitted for consideration or in the heading of each criteria category in the minutes.</p>	<p>Findings:</p> <p>Since the development of the final report of the State Drought Plan was developed, the Water Planning Council has adopted the plan. The focus should be on codifying the Interagency Drought Workgroup. There are many benefits, particularly in the realm of accountability and the public's access to information and decision making around drought management.</p> <p>From the accountability standpoint, one of the findings of the workgroup's review of the 2016-2017 drought was that the group went months without meeting even as conditions deteriorated. In addition, decisions were made during an IDWG meeting but were not carried out when decisions were overridden by the Governor. From the standpoint of the public tracking actions of the IDWG, there would be no explanation or reason behind the decision change.</p>
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- 100% agreement. Consensus recommendation. No discussion needed.
- (IK: in the findings there is a repeat of the demand to codify the Interagency Drought Workgroup, from 2.10)

<p>2.12 Recommendation:</p>	<p>Consider that the responsibilities of the Interagency Drought Workgroup (IDW), will be delegated to one office/agency or maybe one authority.</p>	<p>Findings:</p> <p>It is not enough that different agencies have reported below normal conditions and their was no action taken.</p>
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- Non-consensus.

<p>2.13 Recommendation:</p>	<p>Non-essential water use and or different water use should be prioritized or redefined.</p>	<p>Findings:</p>
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- Consensus.

2.14 Recommendation:	Declaration of drought should not be political	Findings:	ref above, row 54; comparing to response to Covid: the difference between having politicians giving instructions and guidance vs. CDC and public health officials.
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- Consensus
- Declaration of drought should be based on science.
- There was no evidence from the past that actions were political based.
- Denise: In the past the governor was waiting for future rain, and delayed action.

Charge 4: Would the current state drought plan have been effective during the 2016-2017 drought?

4.01 Recommendation:	Identify/demarcate drought regions for the state in the Drought Plan and analyze data on a regional basis (recommend counties as this has been a precedent)	Findings:	Droughts can occur locally/regionally and the Drought Plan, although offering the ability for the IDW to declare drought on a regional basis, makes no attempt to define regions and to specify which data should be analyzed regionally
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100% Agreement. Consensus recommendation.

4.02 Recommendation:	Need to maintain a record of data analysis/drought status for each IDW meeting, in order to provide a record and context for the meeting minutes and any decisions that were made	Findings:	Difficult to ascertain historical conditions from reading minutes alone
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100% Agreement. Consensus recommendation.

4.03 Recommendation:	Make sure plan has a focus on mitigation not just response by focusing on statewide water conservation, especially outdoor water use. Hazard Mitigation Planning isn't only about response but mitigation and resiliency.	Findings:	Part of the successful response to the 2016-17 drought was to adopt outdoor water restrictions and keep them in place to be pro-active about drought preparedness. The current plan still looks at only the response to an emergency and not mitigating for the emergency.
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50% Agreement. 50% Disagree

- Denise: We have a drought preparedness plan. Response plan can be preparedness + mitigation.
 - For example: Aquarian is demonstrating how important conservation is.
 - We talk about conservation separate from the drought plan; I think this is a mistake when dealing with drought, because when it happens, we need to put good water management in place.
- Steve H: Water utilities have plans but cities that don't have water utilities do not have plans (is that right, how many cities do not have plans? IK)
- Doug: Long-term planning and preparedness, see pages 15-19 in the drought plan (2018).
- Denise: For the rate workshop private utilities are stepping up, while public utilities are not. Public utilities are not worried about rates and selling water. This needs to be fixed.
- Mitigation:
 - Peter: agrees with mitigation and conservation. This is not in the drought plan.
 - Denise: it is in the drought prevention plan (?)
 - Steve R: Should need more teeth.
 - Public needs to have a say.
 - Stronger legislation is required.
 - Overview mechanisms are necessary.
- Eric acknowledges the IDWG for doing outstanding work this year. Based on 2016-7, this current drought is worse. Recommends that our charge, looking forward, can use documents from the current drought. While in the mist of it can be beneficial.

Summary of who is taking on each charge:

Charge 1: Alicia and Peter

Charge 2: Steve R., Iris and Eric

Charge 3: Denise and ?

Charge 4: ?

Committee recommendation for each charge should follow the following template:

- Brief introduction
- Finding
- Discussion

MEETING NOTES

State Water Plan Implementation Workgroup
Drought Subcommittee
March 19th, 2021; 9:00 -10:00 AM
Microsoft Teams Meeting

Attendees: Alicea Charamut, Denise Savageau, Douglas Hoskins, Eric Lindquist, Iris Kaminski, Peter Galant, Steve Rugar and Steve Harkey

1. Summary:

Charge 1: Alicea Charamut and Peter Galant – April 2nd

Charge 2: Eric Lindquist, Iris Kaminski and Steve Rugar; background is missing – April 5th
- Eric will draft the legislation language proposal.

Charge 3: Denise Savageau – done.

Charge 4: Denise Savageau and Jeff; This is a big charge, will need more input from others. May need help from IDW, Steve Harkey. Need to look at the last drought and add to Charge 4.

2. Template:

- a. Background
- b. Consensus action items
- c. Should capture discussion (when there is not 100% agreement, for example if there is 60%-40% agreement).
- d. **Templates are slightly different for charge 3, need to unify.**

3. Challenges:

- a. Content/context: Some of the issues are overlapping.
 - b. Technical: what platform to use. Google docs or TEAM.
 - c. No dead line to complete this report. Consider meeting on a weekly basis.
Aiming to complete the individual charges by April 5th.
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Workgroup Charges:

1. The WPC, through its committees, could develop a template for interpreting statewide drought indices to local risk levels and response measures for use by utilities at the local level, based on storage, demand levels, type of system, etc.
2. At present, the Drought Plan and the Interagency Drought Workgroup exist in an ad hoc capacity under the collective executive branch authority of the Water Planning Council. The Council should consider developing legislative recommendations to improve the authority and implementation of the Drought Plan for consideration during a future legislative session
3. The WPC should consider collaborating with municipalities and public water suppliers to improve and promote the model water use restriction ordinance.
4. Would the current state drought plan have been effective during the 2016-2017 drought?

State Water Plan Implementation Workgroup
Drought Subcommittee
4/9/21 Meeting Notes

Attendees:

- Virginia De Lima, Peter Galant, Steve Harkey, Doug Hoskins, Iris Kaminski, Eric Lindquist, Steve Rugar, Jeff Ulrich

Meeting Notes:

- Notes of last meeting were reviewed and accepted.
- Report should have a background section with an overview of our focus on the 2016/2017 drought, sub-group and consensus approach taken, how the charges were selected.
- Agreed to report section format that listed the findings followed by the recommendations with each recommendation mapped to its associated finding(s). vice versa?)
- Will not include full findings/recommendations spreadsheet in the report.
- Report should include an Executive Summary (~2 pages) with the top (no specific number) recommendations that can exist as a standalone document.
- Subgroups will work on individual word documents and then consolidate into a Google Doc for shared editing.
- Charge 2 Discussion
 - Challenge defining IDW authority in statute or regulation. Preferred to document recommendations in next Drought Plan update.
 - The IDW is currently creating an after-action report for the 2020 drought. This IDW report should be referenced in our report.
- Schedule
 - April 23 – Draft of sub-group report sections
 - April 23 – Draft Background Section (Rugar)
 - April 30 – Subcommittee comments on sub-group report sections
 - April 30 – Subcommittee meeting to review comments
 - May 7 – Draft report to Implementation Workgroup
 - Send to Ali Hibbard with copy to Radka and De Lima

MEETING NOTES
State Water Plan Implementation Workgroup
Drought Subcommittee April 30, 2021; 8:00 – 10:00
Microsoft Teams Meeting

In attendance: Denise Savegeau, Steve Rupar, Eric Linquist, Alicea Charamut, Jeff Ulrich, Steve Harkey, Peter Galant, Virginia deLima

1. Meeting minute review – the notes from the previous meeting were not available at the time of the meeting.
2. Report review and comments – a representative from each charge briefly went through their sections to discuss any larger issues that had to be resolved prior to the group reviewing, commending and making recommended edits.
 - a. Introduction and Background (Steve Rupar)
 - b. Charge 1 – Drought Indices (Alicea Charamut, Peter Galant)
 - c. Charge 2 – Authority for IDW (Iris Kaminski, Eric Lindquist, Steve Rupar)
 - d. Charge 3 – Municipal ordinance (Denise Savageau)
 - e. Charge 4 – Effectiveness of Drought Plan (Peter Galant, Steve Harkey, Denise Savageau, Jeff Ulrich)
3. Review Assignments and Schedule – Steve Rupar offered the services of one of his staff members to format the document and edit for grammar and consistency. After a discussion of how to proceed in order to get a draft product that the committee is comfortable sending the IWG for their next meeting on May 11th, it was determined that Alicea will put all the reports into the Google Doc, members will make edits and comments, and the group will meet next week in order to go over the comments and edits. The WSP staff member will then complete the formatting, etc task.
4. Set Next Meeting – the group will meet on Wednesday, May 5th at 9 am to review comments and recommended changes.