

Water Quality Standards Advisory Committee (WQSAC)

MEETING SUMMARY

Thursday, April 12, 2018 1:30 pm – 3:30 pm

NH Department of Environmental Services (NHDES)
29 Hazen Drive, Concord, NH
Rooms 112-114

Attendees

Name	Organization	Attended WQSAC Meeting?
Jeff Andrews	NHDES	√
Bill Arcieri	Vanasse, Hangen, Brustlin, Inc. (VHB)	√
Dan Arsenaault	EPA Region 1	√ webinar
Clifton Bell	Brown and Caldwell	√ webinar
Gregg Comstock	NHDES	√
Sarita Croce	Town of Merrimack	√
Ted Diers	NHDES	√
Sam Demeritt	NH Wildlife Federation	√
Haley Franz	NHDES	√
Peg Foss	NHDES	√
David Green	City of Rochester	√
John Hall	Hall and Associates	√ webinar
Don Kretchner	DK Water Resource Consultants	√
John Magee	NH Fish & Game Department	√
Brian Maloy	Monadnock Paper Mills	√ webinar
Peter Nourse	City of Rochester	√
Cheri Patterson	NH Fish & Game Department	√
Dean Peschel	Peschel Consulting	√
Kenneth Rhodes	Associated General Contractors of NH	√
Ron Rhodes	Connecticut River Watershed Council	√
Robert Robinson	City of Manchester EPD	√
William Schroeder	NH Lakes Association	√
Lindsey Shields	Wright Pierce	√ webinar
Stergios Spanos	NHDES	√
Paul Stacey	Consultant – Footprints in the Water	√
Jeanne Vorhees	EPA Region I	√ webinar
Matt Wood	NHDES	√
Sherry Young	Rath, Young and Pignatalli	√

Meeting Documents/Handouts

1. Agenda
2. Presentation 1 – Brief Recap (see “Presentation 1 for 20180412 WQSAC.pdf”)
3. Presentation 2 – Applying Flows to TP Targets Used in Other States to Merrimack River and Franklin Junction (see “Presentation 2 for 20180412 WQSAC pdf”)

4. Presentation 3-TP and chl-a Distributions and Basis for 15 ug/L chl-a threshold (see “Presentation 3 for 20180412 WQSAC pdf”)
5. Presentation 4- USACE Merrimack River Study (see “Presentation 4 for 20180412 WQSAC.pdf”)

Note: This meeting was also offered as a webinar via GoToMeeting.

1) Introductions

The meeting began with a round of introductions including those who participated remotely via the webinar.

2) DO Subcommittee Status

NHDES has provided dissolved oxygen (DO), temperature and salinity data to EPA for the Great Bay and Piscataqua River estuaries as well as many of the smaller estuaries in the area. NH Fish and Game is working on gathering information on marine fish species including where and when various life stages exist in the estuaries. Once done this information will be submitted to EPA who will run the Virginian Province (Cape Cod to Cape Hatteras) marine DO model to see what it suggests for DO standards.

4) Legislative Updates

PFC Legislation: Ted Diers stated that there are two bills; SB309 and HB 1101. HB1101 allows NHDES to create maximum contaminant levels (MCLs) for drinking water, create ambient groundwater standards for 4 PFC compounds and to hire a toxicologist and human health assessor. SB309 includes everything in HB1101 plus a requirement for NHDES to develop surface water quality standards for the 4 PFCs. NHDES does not currently have the resources to work on this.

NPDES Delegation Legislation: Ted Diers reported on SB450 which creates an advisory committee to research on how NPDES delegation would impact NHDES. The NPDES program includes stormwater via general stormwater permits such as the MS4 and CGP. NH does not currently have statutory authority to regulate stormwater. Lots of changes would be needed to take run the MS4 / CGP program.

5) EPA Updates

No updates were on the agenda for this meeting.

6) Continuation of Nutrient Permitting Discussion

- a. Recap of 1/11/18 meeting (Presentation 1): To refresh memories and to get everyone on the same page, Gregg Comstock gave a brief recap of the nutrient permitting discussion from the 1/11/18 WQSAC meeting (see Presentation 1).
- b. Applying Flows and TP Targets Used In Other States to the Merrimack River at Franklin Junction (Presentation 2). Gregg gave this presentation which is based on an analysis conducted by Ken Edwardson (who could not attend). Slide 2 compares the flow and

ambient TP target used by various states. Slide 3 shows how the ambient downstream TP loads used in permitting (equal to the ambient target multiplied by the flow from slide 2 times a conversion factor) differ among the various states. Slide 3 shows that based on the current method for calculation TP WWTF permit limits in NH, the downstream TP load is more than that allowed by Maine and Vermont and less than Wisconsin and Minnesota, Ohio and New Jersey.

- c. TP and Chlorophyll-a (chl-a) Distributions and Basis for 15 ug/L chl-a threshold (Presentation 3): Gregg gave this presentation which is based on an analysis conducted by Ken Edwardson (who could not attend). Slide 4 shows that based on NH data, only 7.5% of lakes and 30% of impoundments exceed the EPA Gold Book TP target of 25 ug/L for lakes. Slide 4 also shows that only 1.3% rivers exceed the EPA Gold Book guidance target of 100 ug/L for rivers not flowing into lakes, and that less than 19% of lakes and less than 7.5% of impoundments exceed the NH CALM threshold for chl-a of 15 ug/L. As indicated on slide 5, the 15 ug/L chl-a threshold in the CALM is to protect the swimming use. Chl-a can affect water clarity which can make a water undesirable and dangerous for swimming. Slides 6 and 7 show that 15 ug/L corresponds to a median sechi disk reading (which is a measure of water clarity) of about 8 feet. Slide 8 shows that most chl-a criteria or thresholds for other New England States are at or below 15 ug/L.

Discussion:

Clifton Bell noted that when comparing values from state to state, the duration should be considered as this may help explain some of the lower ambient target TP values used in some states.

- d. Merrimack River Watershed Assessment Study (Presentation 4): As requested at a previous WQSAC meeting, Peg Foss and Gregg Comstock gave a presentation on the Army Corps of Engineer's (ACOE or Corps) Merrimack River Watershed Assessment Study. A brief summary is provided below. For specifics, see Presentation 4. The study was primarily funded by the ACOE with contributions from others including several municipalities and NHDES. The general purpose of the study was to develop a model to better understand how different management scenarios may impact water quality along the mainstem of the Merrimack and Pemigewasset Rivers with a focus on bacteria, nutrients, chlorophyll-a and dissolved oxygen. Monitoring was conducted to calibrate and validate the model. The model was then run for various scenarios that included current and future TP loadings from WWTFs, reduced WWTF TP loadings, increases in land development and climate change (increase in water temperature). With regards to model limitations, the model is set up to evaluate large-scale water quality trends during wet, dry and average climate conditions from May through October over 15 years (2002 to 2016) ; it is not intended to represent specific conditions on a given day or conditions at a smaller scale. Model output included predicted TP, chlorophyll-a and DO values for every hour in each modeled segment of the mainstem. No exceedances of the dissolved oxygen criteria were measured or predicted by the model. Similar to monitored data, chlorophyll-a was predicted to exceed the 15 ug/L threshold near the state line.

Discussion:

Paul Stacey asked if there was any low DO data used in the calibration. Gregg responded that there wasn't.

Clifton Bell

Sarita Croce asked if the model will be used by EPA to set TP permit limits. Dan Arsenault of EPA said EPA is trying to digest the model and is currently using the existing method (mass balance equation) for determining reasonable potential and TP permit limits (if necessary).

Sarita Croce asked if EPA uses the 7Q10 to establish permit limits and NHDES does not, how will that affect permit limits. Ted Diers responded, we aren't sure right now, that is why we are discussing it.

Sarita Croce said the Town of Merrimack is looking to do some TP sampling in the Merrimack River. She will contact NHDES for guidance on where to sample.

Clifton Bell stated that because every river is different, one size does not fit all. The response variable, frequency and averaging period is important.

Paul Stacey recommended determining what the natural load is to put things in perspective. This could be done in the model by removing the point sources and converting all land use to forest. Winter data gives an idea of TP concentrations without biological activity. Concentrations of soluble reactive phosphorus (SRP) in addition to total phosphorus (TP) also provides insight.

Sarita Croce stated that Lowell, MA is part of the Phase III Lower Merrimack study, and asked if those results will be included in this study. Gregg Comstock replied that we're not sure.

Robert Robinson stated that the City of Manchester has spent \$23.5M for biological phosphorus treatment upgrades and now needs to spend \$12.5M to address sludge issues.

John Hall questioned if 15 ug/L chl-a is an appropriate threshold in rivers. He also stated that it would be interesting to see the duration of chl-a exceedances predicted by the model. **Gregg Comstock stated that we do not have data necessary to conduct such an analysis but will ask CDM Smith if they will send it to us.**

7) Next Steps

- a. Participants will report back on the items in bold text above.
- b. Gregg will prepare a draft meeting summary for review.

8) Other Business

Next WQSAC meeting: The next WQSAC meeting is scheduled for July 12, 2018 at 1:30 pm.

List of Potential Future WQSAC meeting topics: A running list of potential future WQSAC meeting topics and their status (presented in no particular order) is attached.

8) Adjourn

The meeting was adjourned at approximately 3:30 pm.

List of Potential Future WQSAC Meeting Topics
Last Updated 01/08/18

Topic	Description	Status
Acute and Chronic Toxicity definitions (Env-Wq 1702.02 and 1702.10)	Should the definitions be more broad? (from July 2016 comments on IP ¹ by OOE ^{Error! Bookmark not defined.}).	
Nuisance species (Env-Wq 1702.33 and 1703.03(c)(1)d)	Should nuisance species be better defined because it's too subjective? Should it include a list of "invasive" plants? How do you determine if a waterbody is degraded by development or if it's due to the natural lake aging process? (from July 2016 comments on IP by NHFG ^{Error! Bookmark not defined.})	
Designated Uses (Env-Wq 1702.16 and 1703.01)	How should conflicts between designated uses be resolved (e.g., aquatic life (which depend on plants for habitat) and boating or swimming (which can be adversely impacted by too many plants)? (from July 2016 comments on IP by NHFG).	
Dissolved Oxygen Criteria (RSA 485-A:8 II, IIa., Env-Wq 1703.07)	In 2017, RSA 485-A:8, II was revised and 485-A:8, IIa., was added that requires DES Commissioner to adopt rules relative to DO water quality standards in a manner that is consistent with EPA guidance on fresh and tidal DO water criteria published pursuant to section 304(a) of the CWA, and other relevant scientific information. (from July 2016 comments on IP by GBMC ^{Error! Bookmark not defined.} and others)	In progress. Subcommittee formed and first meeting held 10/13/16.
Tidal nutrient related assessment procedures (Env-Wq 1703.14)	Do the nutrient related assessment procedures for tidal waters for dissolved oxygen, chlorophyll a, water clarity, macrophytes, epiphytes and eelgrass need to be revisited? (from July 2016 comments on IP by GBMC).	
EPA Human Health Criteria methodology and assumptions (Env-Wq 1703.21, Table 1703-1)	Are the risk factors, body weight, drinking water intake rates, bioaccumulation factors used by EPA to develop 304(a) recommended human health criteria appropriate? Should DES adopt the EPA 304(a) recommended criteria for 94 chemicals finalized in 2015? (from July 2016 comments on IP by OOE).	
Chloride Criteria – (Env-Wq 1703.21, Table 1703-1)	Should chloride criteria be revised? Note - EPA disapproved Missouri's proposal to adopt Iowa's criteria in 2015 (not scientifically defensible and may not be protective based on recent toxicity tests using mussels).	

¹ GBMC means Great Bay Municipal Coalition; IP means Initial Proposal; NHFG means New Hampshire Fish and Game Department ; OOE means Osprey Owl Environmental, Inc.

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Last Updated 01/08/18

Topic	Description	Status
Aluminum Criteria – (Env-Wq 1703.21, Table 1703-1)	EPA issued draft freshwater criteria for aluminum in July 2017. The comment period closed 9/26/17. Should DES adopt the revised criteria once it is finalized? (from DES, 9/7/16).	
PFOA & PFOS Criteria in Env-Wq 1700	In October, 2016, NH adopted emergency rules to establish an ambient groundwater drinking water standard of 70 ppt for PFOA & PFOS. The emergency rule lasts 180 days. There are currently no criteria for PFOA or PFOS in Env-Wq 1700 for the protection of aquatic life or human health (added by NHDES in Sept 2017)	NHDES is attending committee meetings regarding proposed legislation to develop surface water quality standards for various PFCs.
Assimilative Capacity (Env-Wq 1705.01)	Should the 10% reserve for future growth be maintained? (from July 2016 comments on IP by City of Rochester).	
River flows for calculation of permit limits (Env-Wq 1705.02)	Should the 7Q10 river flow be used to calculate nutrient related permit limits or should a seasonal flow be used? (from July 2016 comments on IP by City of Rochester).	In progress. Topic was introduced at 10/12/17 WQSAC meeting.
Bacteria: Seasonal (versus year-round) disinfection of WWTF effluent	Current regulations require year-round disinfection of WWTF effluent. Some other NE states do not require disinfection during the winter months. Should NH WWTFs be allowed to do the same? Would require rule change and likely a statute change.	
Presentation	NHDES Monitoring Strategy	
Presentation	Pollutant Tracking and Accounting Pilot Program (PTAPP) being developed for the coast	
Presentation	Trends of Mercury in Fish Tissue	
Presentation	River Order used in the Shoreland Protection Act	