

Criteria Implementation Committee (CIC) Meeting – 12/3/2020

NC Nutrient Criteria Development Plan

Attendees

CIC members in attendance:

Anne Coan
Douglas Durbin
Bill Kreutzberger
T.J. Lynch

Andy McDaniel
Peter Raabe
Douglas Wakeman

CIC meeting facilitator:

Maya Cough-Schulze

NCDEQ DWR staff in attendance:

Jim Hawhee
Chris Ventaloro
Pam Behm
Julie Ventaloro
Susie Meadows
Jeff Manning

Connie Bower
Peter Johnston
Bongghi Hong
Nora Deamer
Betsy Kountis
Karen Higgins

Ian McMillan
Jing Lin
Mike Templeton
Rich Gannon

Meeting notes

All questions, comments and answers are paraphrased

This meeting was held as a WebEx meeting

1. **Convene** (Maya Cough-Schulze)
 - a. Rollcall: CIC members and DWR staff provide names and affiliations.
 - b. Desired outcomes:
 - a. Get CIC input today on draft HRL Chl a criterion and assessment recommendations, as well as, social, economic and environmental implications of implementation and developing a fiscal impact analysis.
2. **Summary of the HRL Chl a criterion proposal** (Chris Ventaloro):
 - a. Presentation with slides.
 - b. Site-specific language that will be located in the rule for class c waters, 15A NCAC 02B .0211(4):

(a)Site-specific High Rock Lake Reservoir [Index Numbers 12-(108.5), 12-(114), 12-117-(1), 12-117-(3), and 12-118.5] Chlorophyll a (corrected): not greater than a growing season geometric mean of 35 ug/L in the photic zone based on all samples collected in a minimum of five different months during the growing season. For the purpose of this Sub-Item, the growing season is April 1 through October 31 and the photic zone is represented by a composite sample taken from the water surface down to twice the measured Secchi depth.

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Chlorophyll a shall not occur in amounts that result in an adverse impact as defined in 15A NCAC 02H .1002

- c. Adverse impact definition in 15A NCAC 02H .1002(1): “Adverse impact” means a detrimental effect upon water quality or best usages, including a violation of water quality standards, caused by or contributed to by a discharge or loading of a pollutant or pollutants.
- d. **Questions:**
- e. Anne: last sentence with adverse impact could be a problem.
- f. Chris: If the growing season geometric mean is being met, but we’re seeing something else, like high chl a along the shoreline, then uses are being impacted within the lake and could use this narrative component. The statewide chl a standard has a similar statement attached to it as well.
- g. Jim: let’s discuss this question later during the discussion period. Didn’t intend for the narrative component to supersede the numeric component.
- h. Andy M: concurs with Anne and wants to comeback to that. Also, was the 5 different months component recommended by the SAC?
- i. Chris/Pam: Yes it was recommended by the SAC, so someone couldn’t go out 5 times within the month and use that as representative of a growing season.
- j. Doug D: regarding secchi depth. Maybe say simultaneous secchi depth measurement so someone doesn’t grab a secchi measurement from a month ago or a year ago. What if in part of lake where the bottom isn’t intercepted before getting to twice the secchi depth. Maybe guide reader away from sampling there or state the photic zone extends to the bottom.
- k. Bill: Chl a is an indicator of algal growth and it may be better to talk about what it’s indicating, algae.

3. **Summary of the HRL Chl a assessment proposal** (Pam Behm)

- a. Presentation with slides.
- b. Developed draft assessment methodology for HRL that:
 - i. Is consistent with science behind the standard development.
 - ii. Consider DWR’s current monitoring schedule (provide path for additional monitoring).
 - iii. Does not discourage additional monitoring.
- c. Assessment methodology framework based on SAC:
 - i. One year of data should not drive a listing decision - minimum 2 years, minimum of 5 sampling events per growing season in separate months of (Apr-Oct).
 - ii. The methodology should be flexible enough to apply to DWR lake monitoring current schedule (one growing season every 5 years), but allow for more frequent data collection (i.e. more years of data than the current schedule of one growing season every 5 years).

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- iii. Augment Procedure – if only 1 growing season of data in current data window, keep going back until hit 2 years of geomeans, only as far as previous 5 years.
 - iv. Geomean calc. – shall only be calculated on growing season months (Apr-Oct).
 - v. Assessment should be station by station in order to be consistent with the framework from which the standard was developed (i.e. meeting 35 ug/L at mid-lake station would allow rest of the lake to be lower and protective of fishery).
- d. Proposed methodology:
- i. Minimum data requirements:
 - Minimum of 5 samples per growing season, collected during 5 separate months.
 - At least 2 full growing seasons are needed to make listing or delisting decision. Data can be augmented if there is only 1 growing season in current data window. To augment, step year by year back until there are a total of 2 years of geomeans including the current data window, only as far as previous 5 years.
 - ii. Impaired – at least 2 years Exceed Criteria:
 - 1 year in current data window – both current and augmented year exceeds growing season geomean of 35 ug/L.
 - 2 or more years in current data window – more than 1 exceeds.
 - iii. Delisting (decision for a water already listed as impaired) – at least 2 years Meet Criteria:
 - 1 growing season geomean in current data window – both current and augmented year do not exceed growing season geomean of 35 ug/L.
 - 2 or more growing season geomeans in current data window – zero years exceed growing season geomean of 35 ug/L. Unless there is a full 5 years of data – then zero exceedances in most recent 2 years of data (and max of one exceedance in 3 older years).
- e. Decision Tree when **data is augmented** (see slide). Max number of geomeans is 2.
- i. If there are <2 geomeans in data window, can't augment with 2 geomeans and is not listed as impaired = Data Inconclusive.
 - ii. If there are <2 geomeans in data window, can augment with 2 geomeans and both geomeans exceed = Exceeds Criteria.
 - iii. If there are <2 geomeans in data window, can augment with 2 geomeans, 1 geomeans exceed and is listed as impaired = Exceeds Criteria (if not listed as impaired = Data inconclusive).
 - iv. If there are <2 geomeans in data window, can augment with 2 geomeans, **no** geomean exceedances and **is not** listed as impaired = Meets Criteria.
 - v. If there are <2 geomeans in data window, **can** augment with 2 geomeans, **no** geomean exceedances and **is** listed as impaired = Meets Criteria. (**Delisting**)
- f. Decision Tree when 2 or more years available in current data window (see slide). Max number of geomeans is 5.

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- i. If there are 2+ geomeans in data window and at least 2 exceed = Exceeds Criteria.
 - ii. If there are 2+ geomeans in data window, none exceed, not listed as impaired = Meets Criteria.
 - iii. If there are 2+ geomeans in data window, none exceed, is listed as impaired = Meets Criteria. (Delisting)
 - iv. If there are 2+ geomeans in data window, at least 1 exceeds, not listed as impaired = Data Inconclusive.
 - v. If there are 2+ geomeans in data window, at least 1 exceeds, is listed as impaired, does not have 5 geomeans = Exceeds Criteria.
 - vi. If there are 2+ geomeans in data window, at least 1 exceeds, is listed as impaired, has 5 geomeans, but exceedance is not in new data = Data inconclusive. (Delisting)
 - vii. If there are 2+ geomeans in data window, at least 1 exceeds, is listed as impaired, has 5 geomeans, and exceedance is in new data = Exceeds Criteria.
- g. What's not been addressed:
- Waters less than 10 feet (does not impact any existing stations).
 - Not addressed by SAC, surface blooms (which are rare in HRL, blooms are usually suspended throughout photic zone).

4. Comments/Questions:

- a. Anne: Is slide deck available? And if 3rd parties are doing QA/QC's and the Division is going to excluded it based on different parameters, it would be useful to spell that out for them. State what those parameters are for where they need to monitor for compliance.
- b. Pam: The way it works now, if a 3rd party submits data, they must include a QAPP that shows what they are monitoring plan was/is and what parameters sampling for and follow DWRs SOPs.
- c. Jim: We have a historical and draft algal field SOP available. These proposals we have reduced to standards rule language and assessment to follow close to SAC recommendations. But, it's not a 1 in 3 methodology, but a more than one methodology we did to address earlier comments indicating a mismatch of potentially being able to impair or delist with our current monitoring frequency and cost associated with that. I'd like to also carve out time to how we address this shallow depth issue.
- d. Anne: Can you explain what Pam meant by not being able to do the 1 in 3?
- e. Jim: Special studies have been done on HRL with more intensive data collected, but it's monitored 1 season out of every 5 (5 samples within the season), which is consistent with our lakes program. If we need 3 seasonal geomeans, we're having to go over an 11 year span, so we either don't have enough data to make an assessment decision (listing or delisting) or the data becomes no longer relevant because it's too old.
- f. Anne: When writing site specific standards, you have an opportunity to write in a different monitoring strategy & you should do that. The SAC based their recommendations on a

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monitoring strategy that was more intensive than what you have. Seems like a departure from the SAC.

- g. Bill: When doing routine lake sampling, historically it looks like they were sampled through the 5 months of May-Sept. If that is the normal sampling period, the geomean will be high. How are you not biasing the data with those months?
- h. Pam: Not sure why April-Oct was selected, but gives extra flexibility based on weather. But should still be representative of the growing season with May-Sept.
- i. Bill: It might be, but in the world of modeling results, you base your model on results from Apr-Oct geomean, but data is from May-Sept. geomean then the modeled nutrient strategy that's inconsistent with your assessment methodology. Just a comment.
- j. Pam: Not sure if SAC considered that.
- k. Andy: There's a discharger coalition which takes instream samples, do they take them in the lake itself as part of their routine NPDES permit sampling?
- l. Bill: There are no required stations in the lake. There were doing lake sampling for a couple of years. They didn't do it this year. Not part of their MOA in terms of monitoring coalition.

5. **Comments/Questions on Fiscal Analysis (costs & implementation):**

- a. Maya: Let's move forward to implementation and fiscal analysis discussion. Reminder of agenda items and CIC's charge.
- b. Jim: Remind the CIC of the charge to help us with the fiscal note. You are reacting to an adaptation of SAC's recommendations and help us with costs & implementation.
- c. Julie: We've talked with the Office of State Budget about how to approach this as far as doing a fiscal analysis. We're really looking at a narrative and trying to quantify a magnitude of impact rather than a monetized impact and future impacts. These future impacts merit some discussion right now and will provide for the fiscal analysis when we get to point of adopting the actual strategy. Interested to know what you think the implementation challenges will be and what parties might be impacted.
- d. Anne: Going back to issues raised, the fiscal impact will be affected by specifying if shallow waters won't be included. It's also important for the fiscal impact for them to know before going out and sampling if the data will be used.
- e. T.J.: Agreed. Almost impossible to come up with costs if we don't know the nutrient management strategies requirements are going to be. Could be off by tens or hundreds of millions if we don't know the end game. Also, what is the cost of a monitoring event? That should be put into perspective with the long-term costs to municipalities that would be affected by the nutrient management strategy requirements if we make decisions based on bad data.
- f. Jim: We would need additional resources above what we have now.
- g. Pam: Agreed, making decisions on bad data isn't good, but that's why we go through extensive quality control when we're gathering and doing the assessment. Cost of

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monitoring is cost of the trip and staff across the entire state. We need an increased budget.

- h. T.J.: Insufficient data would be better to say. Don't like "augmented" data. Would rather see new data.
- i. Pam: felt the consistent high chl a values over the many years would still be representative if need to augment data.
- j. Andy: In terms of the regulatory impact analysis, I think there's a body of knowledge out there with respect to work done in other parts of the state, that we have a general understanding that to meet the numeric Chl a standard it's going to be a big dollar value. But that assessment is based on the 35 ug/L geomean within the growing season. So, we've got an understanding of what it means in order of magnitude as to what it could take to achieve that. Based on that part of the proposed water quality standard. However, I want to circle back to a comment Anne made about the last sentence of the rule language of adverse impact. I think it throws a wrench into the effort to try to quantify the regulatory impact analysis because that body of knowledge we've learned in other parts of the state is mute with that statement. Item 2 in the .211 rule covers you adequately with respect to ensuring attainment to water quality standards. Violating best uses is what defines the water quality standard and not violating a detrimental effect threshold that's undefined. I don't think it should be included and strongly consider removing the last sentence.
- k. Julie: Will need to look into how they have been done in the past.
- l. Jim: Appreciate the comment and we are trying to balance the SAC's suggestion that we use narrative criteria and trying to adopt this new chl a geomean standard.
- m. Peter R: I think it's fine for the last sentence to be there based on CWA and antidegradation. I agree, I don't know how you quantify that, but I think there is legal backing to support that phrasing.
- n. Bill: I agree, but I think it's covered in item 2 and also in the last part of the chl a criterion above the new site specific for HRL. There's a narrative in there too that cover that. Could have that language in the site specific.

6. General Comments/Questions:

- a. Jim: Curious about this groups perspective on SAC's impairing a water body based on a narrative standard.
- b. Chris: I put on the screen the current and new chl a language.
- c. Anne: Has this language been problematic (the current chl a language)?
- d. Chris: As far as I know, no.
- e. Andy: Historically, they used to do assessments based on narratives. Understand it gets more difficult to defend the judgements these days.
- f. Pam: Yep, it's hard to write a methodology based on a narrative decision.
- g. Andy: With a site-specific standard we have an opportunity to customize it. This WQ standard as written is in the mold of other ones we already have and as a site-specific

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standard, we have the opportunity to make it better. Can add more specificities as to where in the lake the samples can be taken.

- h. Jim: Questions: include more language into the standards language, moving some assessment language to rule language. And look at 1 in 3. What would be the difference?
- i. Pam: The 1 in 3 was methodology developed around evaluating for toxic impacts. This is not a toxic parameter. 1 in 3 you need more than 1 year seeing an exceedance to make a decision, so I thought we captured that in our proposal.
- j. Jim: Andy is there a specific reason you wanted to see it in there?
- k. Andy: The SAC had recommended it, but not sure why, would need to look.
- l. Chris: Keep in mind what goes into the standard will be reviewed by EPA & assessment is approved by EMC & not EPA.
- m. Pam: Yes, if EPA doesn't agree with it, they can put waters back on the list.
- n. Anne: If in rule, it has more permanency.
- o. Doug D: One thing that's frustrating is when there's a rule, but other pieces are somewhere else. There's a legacy and a history. If part of the implementation of this criterion is a temporal component in addition to the 5 different months in the growing season, I feel like it really needs to be represented here.
- p. Bill: Agreed, but on the standards side, you have to make sure it's right because it does take a long time to get anything changed. Should consider the temporal component but need to make sure it's flexible enough to deal with a situation where you only have data once every 5 years.
- q. Peter R: Not a monitoring person but thinking about the costs of the rule. How to make sure we have the best science behind this.... Wondering if there's some way to see, for places with site-specific standards to know the costs to support monitoring.
- r. Connie: Yes, this is new territory.
- s. Jim: If we're investing time/energy in an implementation strategy it would be nice to have a monitoring strategy as well. A nightmare scenario is HRL being on the 303d list indefinitely.
- t. Bill: I think Andy's recommendation is a good one. To include language that says if 3 years of data is available, then you would assess it based on more than 1 in 3. Gives an incentive for others to collect more data.
- u. Pam: Would like to see more defense of the 1 in 3 before going down that road. Look at the flow chart, I think we've encompassed it without tying us into the 3.
- v. Bill: Well what do you do?
- w. Pam: Still going through that discussion with EPA and they are looking at it.
- x. Jim: We recognize it's not the SAC's 1 in 3, but we tried to capture the spirit of it. Are there concerns beyond that?
- y. Anne: Let's go back to the depth issue.
- z. Jim: Understand it's a problem, but are there other implementation challenges that we may have missed?

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- aa. T.J.: The fact your going away from SAC in some areas, do you have to state why?
- bb. Connie: Disagree, we tried to take what SAC said into rule, but if we missed something. We didn't deviate away from it.
- cc. T.J.: Not an extreme deviation, just some things keep coming up, like depth.
- dd. Jim: We've done our best & are trying to justify it. We are trying to justify it but, aren't doing more beyond the fiscal note.
- ee. Pam: The standards submittal should have some explanation as to why we came up with what we did, so 25 years down the road people will know.
- ff. Bill: Should the CIC members put together a document like they did for pH. Maybe within the next month. Would it be useful?
- gg. Jim: My concern is the timeline & logistics.
- hh. T.J.: Does the nutrient management strategy have to go through rule making?
- ii. Jim: Yes.
- jj. Anne: why does it have to go through the triennial review package?
- kk. Jim: It doesn't, but when we open a rule, we open the whole and it's subject to comment. We've also been going over it for 5 years now.
- ll. Peter R: Implementation, if only monitoring for a period of time, would N & P input operators have to operate during the seasonal monitoring period or year-round?
- mm. Jim: Standard shouldn't limit the application of those nutrient regulations to a seasonal approach. We tend to look at annual loading and what's required to meet the chl a levels we've established as our standard. We have a year-round implementation approach.
- nn. Connie: I'm on an implementation workgroup with ACWA relating to the released of the EPA Nutrient Lake Criteria and that topic came up & EPA thought we would regulate facilities April to October, which was surprising.
- oo. Bill: SAC recommended 2 options for pH: one was changing the max pH of 9.5 & the other was keeping it at 9.0 and averaging. HRL is also impaired for pH.
- pp. Jim: Chl a will be driving the modeling, nutrient strategies and implementation.
- qq. Andy: What Bill said about pH, was an extension of what we recommended. I think it's a good idea for us to document what we recommend and for DWR to document the thought process behind how they took the SAC's recommendations and put them into the form of a water quality standard. Agree with Connie that there is not a good way to take what the SAC recommended into rule & there is a translation. But, having a document that describes the thought behind it would be helpful for transparency, trust, public understanding and so on. I think you should consider putting together that kind of document.
We have the opportunity to put the minutes in cohesive discussion of what people said. Would like to have a record of what CIC members suggested rather than who said what.
- rr. Jim: Are the CIC members up for creating a summary of today's meeting?
- ss. Bill: My idea was to agree for CIC members to document issues raised & comments & CIC members should approach this with an outline, circulate it, add to it.
- tt. Jim: We'll have an interim check. Bill will you coordinate with fellow CIC members?

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uu. Bill: Yes.

vv. Andy: The meeting notes are very useful & if we can get that very soon & Pam's slides/charts.

7. **Closing** (Maya Cough- Schulze)

a. We're at the end of our time and we will adjourn the meeting.

DRAFT