STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY

REPORT OF PROCEEDINGS TO THE ENVIRONMENTAL MANAGEMENT COMMISSION ON THE PROPOSED CHANGES TO THE SURFACE WATER QUALITY CLASSIFICATIONS AND STANDARDS FOR THE PROTECTION OF SURFACE WATERS REGULATIONS

TRIENNIAL REVIEW AND RULE READOPTION

15A NCAC 02B .0100-.0300

Environmental Management Commission
July 11, 2019

Public Hearings

Date: **July 2, 2018**
Location: **Piedmont Triad Regional Council,**
1398 Carrollton Crossing Drive,
Kernersville, NC 27284

Date: **July 11, 2018**
Location: **Ground Floor Hearing Room,**
Archdale Building,
512 North Salisbury Street,
Raleigh, NC 27604

***NC Register*: Publication of Notice of EMC Intention to Readopt Rules in accordance with NCGS §150B-21.4 and NCGS §150B-21.3A**
Proposed Text Volume 32, Issue 22, pp. 2411-2493
May 15, 2018

Contents

INTRODUCTION

This report is the official record of proceedings related to the North Carolina Department of Environmental Quality, Division of Water Resources' proposal to revise the water quality classifications and standards protections in Chapter 15A of the North Carolina Administrative Code 02B .0100 - .0300. These proposed amendments comprise the state's Triennial Review of Surface Water Quality Standards mandated by the Clean Water Act and the readoption of rules pursuant to North Carolina General Statute §150B-21.3A. The North Carolina Environmental Management Commission adopted updated aquatic life protective concentrations, effective January 1, 2015. In April 2016, DWR received notice from Region 4 of the Environmental Protection Agency that certain executing provisions were not approved for purposes under the Clean Water Act. This disapproval created a situation where state rules conflicted with federal rules regarding North Carolina's implementation of National Pollutant Discharge Elimination System permits for regulated parties within the state. This report includes background material, written comments received during the public comment period related to Rule Readoption and the Triennial Review, and relevant exhibits.

This report includes comments and actions to be undertaken by staff for the next Triennial Review. Lastly, it includes the final recommendation of the Hearing Officer as to the proposed revisions to the "Surface Water and Wetland Standards" for consideration by the Environmental Management Commission.

TABLE OF ABBREVIATIONS AND ACRONYMS

The abbreviations and acronyms used in this report are defined as follows:

Abbreviation	Meaning
APA	Administrative Procedures Act
CA	Critical Area
CEC	Contaminant of Emerging Concern
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEMLR	Division of Energy, Mining, and Land Resources
Department	Department of Environmental Quality
DEQ	Department of Environmental Quality
Division	Division of Water Resources
DWR	Division of Water Resources
EMC	Environmental Management Commission
EPA	US Environmental Protection Agency
Future Issues	Comments that address topics for consideration during the next Triennial Review
HHWQC	EPA Human Health Water Quality Criteria
NC	North Carolina
NCAC	North Carolina Administrative Code
NCGA	North Carolina General Assembly

NCGS	North Carolina General Statutes
NPDES	National Pollution Discharge Elimination System
PFAS	The family of per- and poly-fluorinated substances
PNA	Primary Nursery Area
RRC	Rules Review Commission
SL	Session Law
SSAB	NC DEQ Secretaries' Science Advisory Board
TMDL	Total Maximum Daily Load
WQC	Water Quality Committee

BACKGROUND

The protections in 15A NCAC 02B have been reviewed by NC DWR staff, DEQ staff, the public, the EMC, and the EPA for several reasons. First, every three years the State is required by the Clean Water Act to review its surface water quality classifications and standards to determine if any amendments are needed and, if necessary, to enact those changes. This process is known as the "Triennial Review." In addition, as part of the Triennial Review, the CWA mandates an evaluation of any variances to surface water quality standards that have been issued by the state. The previous Triennial Review was completed, with EMC adoption, Rules Review Commission (RRC) approval and a NC effective date of January 1, 2015. For Clean Water Act purposes, adopted state classifications are not to be implemented until approval is granted by the EPA. In April 2016, DWR received notification from Region 4 EPA that certain executing provisions were not approved. This disapproval created a situation where NC protections conflicted with implementing procedures used to regulate NPDES permittees with respect to metals discharges.

Concurrently, NCGS §150B-21.3A[1] ("Periodic Review and Expirations of Existing Rules") enacted in 2013 as Session Law 2013-413 (sometimes referred to as NC House Bill 74), required state agencies to review existing rules, and readopt as necessary, every 10 years. Under NCGS §143-214 and 215, the EMC establishes protections in 15A NCAC 02B and procedures for development of surface water quality classifications and standards. The 15A NCAC 02B rules, in accordance with NCGS §150B, were proposed for revision and readoption by the Planning Section of the Division of Water Resources, and have proceeded through the required readoption rulemaking process.

Pertinent dates are as follows:

Session Law 2013-413, August 23, 2013:

> Modifies NCGS §150B-21.4 by requiring changes to submission of materials related to fiscal notes on rules that require expenditure or distribution of funds subject to the State Budget Act (Chapter 143C of the NCGS)

[1] https://www.ncleg.net/Sessions/2013/Bills/House/PDF/H74v5.pdf

Modifies NCGS §150B-21.3A by requiring RRC to establish a process and schedule for agencies to comply with the law, and to require analysis and review of all active rules

Triennial Review for CWA purposes already underway:

Scoping Public meeting	November 19, 2013
Comment period ends	January 10, 2014
EMC is presented recommendations for proposed changes	March 13, 2014
EMC approves package for Public Comment	May 8, 2014
Triennial Review Revisions/ Fiscal Note is published in *NC Register*	June 16, 2014
Public Hearings	July 15 and 16, 2014
EMC approval of package	November 13, 2014
Office of Administrative Hearings, RRC approval	December 2014
State adoption effective	January 1, 2015

Rules Readoption [NCGS §150B-21.3A(c)(1)]:

Rule Readoption Table[2]

Public Comment Period: March 17, 2014 – May 21, 2014

NCGS §150B-21.3A RRC Report for 15A NCAC 02B[3] submitted to the Joint Legislative Administrative Procedure Oversight Committee (APO) on October 20, 2014

NCGS §150A (c)(1) Agency Review of Rules completed by DWR in December 2014 and determined need to readopt some rules as "Necessary with substantive public interest" and remaining rules as "Necessary without substantive public interest" [NCGS §150B-21.3A(a)(3) and (4)]

Stakeholder Input: Raleigh, March 24, 2015
(*Note*: 15A NCAC 02B .0311 and .0315 were named in Session Law 2016-94 for additional considerations. From that point forward these rules are a part of the Falls Lake and Jordan Lake rule readoption process.)

The Report of Determinations, which designates each rule as being "necessary with substantive interest," "necessary without substantive interest," or "unnecessary," was approved by the RRC on November 19, 2015. Rules designated in the report as "necessary without substantive public interest" remain in the code unchanged, and rules designated as "necessary with substantive public interest" must be readopted by the appropriate agency by the deadline set by the RRC of October 31, 2019.

[2] https://deq.nc.gov/about/divisions/water-resources/water-resources-regulations-guidance/dwr-classifications-standards/rule-readoption-process
[3] https://www.ncoah.com/rules/Final%20Reports%20Submitted%20to%20APO/15A%20NCAC%2002B%20Report%20with%20Comments%20and%20attachments.pdf

DWR received the partial approval letter for the previous Triennial Review package from EPA Region 4 on April 19, 2016.

The subsequent Triennial Review proposed amendments to water quality standards, in accordance with Section 303(c) of the Clean Water Act, were initially presented to the Water Quality Committee (WQC) on January 11, 2017 with a request to obtain permission to address the EMC with a proposal to go to Public Hearing and Notice. The request included draft language to correct portions of the 15A NCAC 02B protections disapproved by the EPA, other minor clarifications, and an acknowledgement that these proposals and public hearings would bring the state in alignment with federal protections and with EPA recommendations to remove certain provisions (previously adopted by NC). These amendments also met the legislatively mandated Rules Review (SL 2013-413). After substantive discussion on the EPA disapprovals of several portions of the previous Triennial Review package, the WQC postponed approval of the proposed rule package and the request to proceed with formal rulemaking and public hearing to a future WQC meeting. The date of that future meeting was not established by the WQC, at that meeting, to allow for further evaluation.

On March 8, 2017, DWR staff provided an information item to the WQC on the SL 2013-413 review which includes 15A NCAC 02B water quality classifications and standards protections. This information item identified numerous stakeholder sessions, internal review by NC DEQ, additional stakeholder sessions planned for April 2017, and the intention of DWR to return to the WQC in September 2017 with a second request to proceed to the EMC with the goal of going out for public hearing and comments.

In April 2017, in accordance with NCGS §150B, the rule drafts were posted online, and additional stakeholder information sessions were held to provide an opportunity for interested parties to receive an update on the latest versions of the rules. These rule drafts are located in the "Rule Readoption" spreadsheet[4].

On September 13, 2017, DWR staff presented WQC action item documents as well as the request for approval to proceed to the EMC with amendments to the Water Quality Program Rules in 15A NCAC 02B. The WQC changed the proposed action item to an "information item," requesting additional stakeholder input on rules unrelated to the Triennial Review and surface water quality standards and classifications.

DWR staff presented information to the WQC on November 8, 2017 that included a presentation on the rule readoption requirements of Session Law 2013-413 and updates from stakeholder meetings held in October 2017.

On January 10, 2018, DWR staff presented an overview of actions related to the Triennial Review including timelines of SL 2013-413 Rules Review (2014), the EPA-disapproved parts of 15A NCAC 02B (2016), and stakeholder review (2015 and 2017). The amendments presented to the WQC proposed to address organizational issues, needed clarifications, and deletions of unnecessary or outdated components. Amendments were proposed to address EPA's disapprovals,

[4] https://deq.nc.gov/about/divisions/water-resources/water-resources-regulations-guidance/dwr-classifications-standards/rule-readoption-process

specifically regarding the use of "Action Level" NPDES implementation regulations for copper, silver, and zinc. Removal of these "Action Level" components created the necessity for a revision to the Fiscal Note (required under NCGS §150B) previously approved by the EMC and the NC Office of State Budget Management (OSBM). The action item included a statement that the *NC Register* public notice would provide the community with the opportunity to comment on potential future revisions for toxic pollutants currently in state protections and any possible additions to state standards/classifications to align NC with EPA's "National Recommended Water Quality Criteria" published by the EPA. Additionally, the OAH "Notice of Text" would include a request for comments on the state's existing water quality variances. The request for agreement to move forward to the EMC with the rule amendments to request approval for Public Notice and Public Hearing was granted by the WQC.

On March 8, 2018, staff requested that the EMC grant consent to proceed to Public Notice and Hearings for both the proposed above-mentioned Rule Readoption and the proposed Triennial Review amendments. Approval was granted, and the required (45-day-prior-to-public-hearing) public notice appeared in the *NC Register*[5] on May 15, 2018 (Volume 32, Issue 22). The *NC Register* announcement provided two hearing dates, with two readily accessible locations within the state. In accordance with state and federal rules, a 60 (+) day comment period was provided to the public (from May 15, 2018 to July 16, 2018). Members of the public subsequently requested an extension of the "comment period," noting that the hearings were scheduled during summer holiday timeframes. The EMC Chairman and the Hearing Officer extended the comment period to August 4, 2018 at the July 12, 2018 EMC meeting. This extension was noted on websites and interested parties were contacted to assure additional timeframes were made public.

Reclassification Rulemaking Actions

Additional rulemaking actions regarding reclassifications of specific waterbodies have been taken by the EMC since January 1, 2015. The following three waterbodies have been reclassified:

Cape Fear River, Brunswick and New Hanover Counties, Cape Fear River Basin
- SC -> SC Sw with Water Quality Management Plan (effective 6-30-2017)

Catawba River, Burke and McDowell Counties, Catawba River Basin
- WS-V&B, C -> WS-IV CA, WS-IV CA&B, WS-IV (PA) (effective 7-1-2017)

Bill Moore Creek (Enka Lake), Buncombe County, French Broad River Basin
- C -> B (effective 1-1-2019)

The Cape Fear reclassification added a supplemental classification designation and water quality management plan to surface waters resulting in allowable lower ambient levels for certain parameters if caused by natural conditions:

A segment of the lower Cape Fear River was reclassified from SC to SC Swamp (Sw) with a water quality management plan. The Sw reclassification allows, if caused by natural

[5] https://www.oah.nc.gov/rules-division/north-carolina-register

conditions, the pH of the subject waters to reach as low as 4.3 compared to the current requirement of 6.8 – 8.5, and the Dissolved Oxygen (DO) to be lower than the current requirement of 5 mg/l. The water quality management plan helps to implement the current permitting strategy for new individual NPDES wastewater discharges and expansions of existing individual NPDES wastewater discharges to the subject waters. The reclassification and management plan provide a path forward for these discharges and guidance for future planning purposes in local communities.

After the public hearing on February 5, 2015, the EMC approved the Cape Fear proposal on September 10, 2015, and it was subsequently submitted to the RRC for approval. RRC legal staff submitted a written request to DWR for technical changes to 15A NCAC 02B .0227 that primarily addressed rule language in existence prior to rulemaking for the proposal. DWR staff responded to this request and subsequent e-mailed technical change requests, which culminated in rule revisions that addressed all RRC concerns. EMC legal counsel reviewed the responses from DWR, and requested that the RRC revisions should be submitted to the EMC for approval. EMC approved the RRC technical revisions to go out to public notice at their November 5, 2015 meeting, and the revised rule was publicly noticed with a 60-day comment period. The opportunity to request a public hearing was included in the public notice, but no hearing was requested. A citation correction noted by DWR and included in a comment letter was subsequently made to the published version of the rule.

The revised 15A NCAC 02B .0227, including the citation correction, was approved by the EMC on May 12, 2016. The proposed amendments to 02B .0227 for a Cape Fear River segment water quality management plan and the proposed amendments to 02B .0311 for a reclassification of the same Cape Fear River segment to Class SC Sw were approved by the RRC during the summer of 2016. Sufficient objection letters requesting the proposal be sent to the 2017 legislative session were received. A bill was introduced regarding the proposal during the 2017 legislative session, but was not passed, and the proposed rule amendments became effective at the end of the legislative session (June 30, 2017). The rule amendments were submitted to EPA for final approval on April 9, 2018. The EPA Region 4 responded on July 24, 2018 with the disapproval of the reclassification and a portion of the water quality management plan.

DWR received a petition for rulemaking from the Cape Fear River Watch and Waterkeeper Alliance in care of the Southern Environmental Law Center (SELC) in January 2019. The petition requests that the EMC "…remove the supplemental swamp waters classification from the lower Cape Fear River," which would result in the removal of (t) from 15A NCAC 02B .0311 Cape Fear River Basin. After review by the EMC Chairman, DWR staff, and EMC counsel, the petition for rulemaking was deemed to be complete and was referred to the Water Quality Committee (WQC) for review. DWR presented the petition at the May 2019 WQC meeting and the WQC voted to forward the petition to the EMC for its review at the July 2019 meeting. In the meantime, DWR plans to review the reasons provided in the petition for repeal of the existing rule language for the Swamp designation, and assess the impacts of repealing this language.

The Catawba River reclassification provided additional protections for a drinking water supply (WS) source in Burke and McDowell Counties as follows:

> A portion of a Catawba River segment was reclassified from Class C to Class WS-IV Critical Area (CA) and WS-IV (PA), and the remaining portion, Lake James, was reclassified from Class WS-V & B to Class WS-IV & B CA. This reclassification allows for a new drinking water supply intake to be constructed in Lake James and utilized by McDowell County. A public hearing was held on January 5, 2017, and final action was taken on it by the EMC on May 11, 2017, with an effective date of July 1, 2017. The rule amendments were submitted to EPA for final approval on August 25, 2017, and EPA responded with written approval of this reclassification on November 8, 2017.

The Class B reclassification provided additional protections for Enka Lake in Buncombe County, French Broad River Basin (15A NCAC 02B .0304), as follows:

> A portion of Bill Moore Creek (Enka Lake) was reclassified from Class C to Class B (primary recreation) to protect the existing waters' primary recreational uses. A public hearing was held August 8, 2018, and final approval by the EMC occurred on November 8, 2018, with an effective date of January 1, 2019. DWR will submit the Enka Lake reclassification to EPA for final approval in June 2019.

Future Issues

During this Triennial Review, DWR requested and accepted suggestions for topics to be considered in the next Triennial Review. Suggestions include but are not limited to: revisions or improvements to DWR policies, rules and guidance related to designated uses, water quality criteria, antidegradation, and variances. These topics will be carefully reviewed and prioritized for inclusion in the next cycle of the Triennial Review. Comments regarding issues to be addressed in the next Triennial Review are referred to as "Future Issues."

FISCAL ANALYSIS PROCESS AND SUMMARY

A fiscal note, as well as a subsequent revision to the fiscal note to account for changes to proposed metals standards, were prepared in conjunction with this rulemaking per NCGS §150B-21.4. DWR staff conducted outreach activities to potentially affected parties, including members of the regulated community, environmental groups and state agencies, and used that information in the fiscal analysis. The EMC approved publication of the draft fiscal note on March 8th, 2018. The fiscal note and its revision were approved by the NC Office of State Budget and Management (OSBM) on April 16, 2018.

As measured from the baseline conditions, it was conservatively estimated that the rule revisions will result in a total cost of $376.7 million over 30 years (Net Present Value). The largest share of the costs will be related to implementation of metals standards by wastewater treatment facilities. The largest benefits are expected in the form of improvements to water quality and protection of aquatic life. The total benefit could not be monetized, however, because the effect size (amount of improvement in water quality) could not be determined with the available data. To

give an idea of the potential magnitude of the benefits, it was estimated that the benefits of the rule revisions could be expected to exceed the costs if water quality improves in 0.5% or more of North Carolina's water bodies over 30 years. This equates to approximately 1,600 acres of lakes and 200 miles of river.

The finalized fiscal note can be viewed on the OSBM website[6].

PUBLIC HEARINGS

The first public hearing was held on July 2, 2018 at 6 pm at the Piedmont Triad Regional Council, 1398 Carrollton Crossing Drive, Kernersville, NC 27284. The second hearing occurred on July 11, 2018 at 6 pm in the Ground Floor Hearing Room of the Archdale Building, 512 N. Salisbury Street, Raleigh, NC 27604. Dr. A. Stanley Meiburg, the EMC-appointed Hearing Officer, presided over both of these hearings. Additional information about this process and these hearings is available on the DWR Surface Water Standards Website[7]. This website also contains the audio recordings of the July 2[8] and July 11[9] public hearings.

RESPONSES TO PUBLIC COMMENTS

Between May 29, 2018 and August 4, 2018, DWR received 510 public comments which are posted on the 2017-2019 Triennial Review section of DWR's Surface Water Standards[10] website. Five-hundred and nine of these comments were submitted via email, and one was submitted by hand. Most of these letters were one of three form letters. Many of the remaining non-form letters contained some of the same content as the form letters, but, had additional information.

Other letters went into more detail and consisted of scientific and/or technical documentation including scientific studies, documents, diagrams and charts created by trade groups, environmental groups, or other state agencies. Two letters requested "petitions" and had multiple signatories.

These comments are organized into categories listed in alphabetical order. Each category corresponds to a headline below. There was significant overlap between many of the comments, so this report groups similar comments together, rather than addressing each comment individually. For each comment category, the category is identified as "Future Issue" where appropriate, the comments are summarized, and then *DWR's responses to the comments are listed in italics and indented*.

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[6] https://files.nc.gov/ncosbm/documents/files/DEQ_2018-04-16.pdf
[7] https://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/surface-water-standards#TriennialReviewInfo
[8] https://files.nc.gov/ncdeq/csrrb/public_comments_2018/2017to2019_2b_tri_rev/Tri_Rev_15A_NCAC_02B_.0100_.0200_.0300_07.02.2018_Kernersville.MP3
[9] https://files.nc.gov/ncdeq/csrrb/public_comments_2018/2017to2019_2b_tri_rev/Tri_Rev_15A_NCAC_02B_.0100_.0200_.0300_07.11.2018_Archdale.MP3
[10] https://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/surface-water-standards#TriennialReviewInfo

Ammonia Standards – Future Issue

These comments made statements for and against the DWR/EMC adoption of the EPA's ammonia standards, or otherwise requested protections against ammonia in water.

Wake Up Wake County, a citizen advocacy group, requested the EMC adopt EPA's 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater (EPA 822-R-13-001). Approximately 393 commenters, using various form letters, supported the adoption of a standard for ammonia, indicating its toxicity to fish.

The NC Water Quality Association (NCWQA), representing more than 50 public water, sewer, and stormwater utilities in NC, did not support the adoption of an ammonia criterion and urged DEQ to identify where union [unionid] mussels are present. Additionally, it urged the state to take advantage of reasonable implementation flexibility such as using the 50th percentile pH and temperature rather than a higher percentile value.

The North Carolina Sierra Club, representing ~92,000 members and supporters, submitted comments of support for the derivation of standards for ammonia to protect aquatic life.

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance comments were submitted jointly related to the need to protect aquatic life by adopting an ammonia standard.

> *DWR will consider the 2013 EPA aquatic life National Recommended Water Quality Criteria for Ammonia - Freshwater (EPA 822-R-13-001) for adoption into the state's standards. The EPA ammonia criteria is a "formula" based criterion which will involve investigation of the state's available water quality data for appropriate pH and temperature variables to be included. Additionally, consultation with our aquatic biologists will provide assurance that our actions protect the designated use. This work has already begun, including discussions with NPDES permitting staff related to permit implementation. DWR is committed to protecting the surface waters of the state in a transparent manner.*

Analytical Procedures

NCWQA expressed the need to clarify that the Director of DWR could establish alternate test procedures when determining compliance with standards. See 15A NCAC 02B .0103.

> *15A NCAC 02H .0800 gives the Director authority to establish procedures when the need to use additional methods is warranted.*

Aquatic Life Protections – Future Issue

Comments indicated that water quality standards enacted to protect aquatic life should be set at levels that don't impair and disrupt behaviors and lifecycle, as opposed to levels that are lethal.

John Wagner requested the EMC consider the cumulative and combined adverse effects of toxins when establishing surface water quality standards for the protection of aquatic life. He refers to the increasing body of scientific knowledge in this area and cites a recent scientific paper titled *Severing Ties: Different Responses of Larval and Adult Aquatic Insects to Atrazine and Selenium* (Henry B. L. et al., Environmental Science & Technology, 2018, 52 (15)). Mr. Wagner stressed the importance of considering sub-lethal effects when establishing surface water standards for aquatic life and the protection of freshwater mussel populations.

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly submitted comments of support for consideration of sub-lethal impacts and mixtures of pollutants.

About 63 commenters, using a form letter titled "Water Quality Standards," support the consideration of sub-lethal impacts when establishing standards for the protection of aquatic life.

Approximately 49 commenters, using a form letter titled "Improve and Set Standards for Toxic Pesticides," support the consideration of sub-lethal impacts when establishing standards for the protection of aquatic life.

Wake Up Wake County requested that the EMC set water quality standards to prevent sub-lethal effects in fish.

> *Protecting against the combined effects of toxic substances in surface water is challenging because there is limited toxicological information for many chemical combinations. The potential for these interactions to adversely impact the health of aquatic communities is recognized and protective options to address this concern will continue to be investigated.*
>
> *Sub-lethal effects of toxic substances may currently be considered as part of existing state surface water quality protections where appropriate toxicological information is available. For example, the current water quality standard for selenium is based on the potential for adverse effects to reproductive systems in fish as opposed to being based on mortality. DWR is investigating the need for additional language in rule to address this concern.*

Attainable Uses Definition

NCWCA opined that the proposed definition of "Attainable Uses" is materially inconsistent with the federal definition for this term and should be revised, also noting that DEQ's

process for determining best usage should take into consideration 40 CFR Part 131, but should not "follow" Part 131 (15A NCAC 02B .0101). NCWQA believes NC should "…retain as much flexibility as possible when determining the best usages of its waters" and "…should ensure it maximizes its authority under the (Clean Water) Act." They objected to automatic incorporation by reference of federal reference changes without the ability to comment and review.

> *EMC's rules are a reflection of a state program, not just a federal program, and the proposed rules do not add or remove authority to or from the state. The comments provided by the commenter about best usage, which request flexibility, seem to contradict the comments provided about attainable uses and the need to match federal definitions. NC is required to implement the CWA, which "federal regulations" is assumed to mean in their comment, including any future modifications. EPA did not provide comments on the definition of attainable uses.*

The EPA requested the 15A NCAC 02B .0202 (6) definition of "attainable uses" reflect that effluent limits can be either technology based (TBELs), or water quality-based limits (WQBELs).

> *This seems unnecessary, as WQBELS and TBELs are defined in the wastewater treatment rules in the 02B .0403 rule as follows (Staff notes that this is the pre-RRC draft rule, and may be modified slightly due to technical corrections):*
>
> *(13) "Technology-based effluent limitations (or limits)," or "TBELs," means those effluent limits that are based on a required level of treatment performance.*
>
> *(15) "Water quality-based effluent limitations (or limits)," or "WQBELs," means those effluent limits that are established to ensure that a discharge does not cause or contribute to a contravention of state surface water quality standards.*
>
> *In addition, 15A NCAC 2B .0404(a) reads:*
> *The basis of these water quality effluent limitations shall be maintenance of water quality standards.*
>
> *Lastly, the EPA Permit Writer's Handbook, implemented by the NPDES permitting section, mentions 'attainable uses' once, in the Water Quality Standards: At a minimum, uses are deemed attainable if they can be achieved by the implementing effluent limits required under CWA sections 301(b) and 306 [TBELs, including BAT] and by implementing cost effective and reasonable best management practices (BMPs) for nonpoint source control.*

Automatic HQW Status Change for WS-I and WS-II Petitioned Waters and PNAs

North Carolina Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New

Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly submitted comments focused on specific aspects of the proposed amendments to 15A NCAC 02B .0224. These commenters were against proposed language that "removes waters that have been petitioned for reclassification to WS-I or WS-II from the list of automatic HQWs (High Quality Waters)." The commenters provided the following suggested language to the end of the published version of 02B .0224 (b): "When a water has been petitioned for reclassification as WS-I or WS-II, it shall temporarily, pending a final adoption or rejection of the petition by the Commission, be managed under the provisions of this section."

These commenters are concerned that proposed language "strips the self-executing designation of a PNA or "other functional nursery areas" as an HQW." The commenters provided the following suggested language to the end of the first sentence of the published version of 02B .0224 (b): "…and other functional nursery areas designated by the Marine Fisheries Commission or the Wildlife Resources Commission…"

The EPA expressed concerns about the impact of DWR's proposed language regarding PNAs, asking about the impact of the proposed language on existing HQWs.

The NC Conservation Network was concerned that the fiscal note's discussion of the changes related to PNAs (15A NCAC 02B .0224 (b)) is not adequate to satisfy the state's requirements.

> *The goal of the proposed changes in 15A NCAC 02B .0224 is to make clarifications. As in the past, waters rated excellent will need to go through rulemaking to receive the HQW classification. DWR is awaiting clarification from EPA that may affect these issues. Specifically, page 8 of the July 24, 2018 EPA disapproval of revisions to 15A NCAC 02B .0311 and .0227 contains language that may affect future decisions. The sentence reads as follows: "Criteria must apply for all purposes under the CWA, and cannot be implemented for only some purposes under the CWA, such as NPDES permitting."*
>
> *Regarding WS-I and WS-II petitioned waters: The jointly submitted commenters' language recommends an approach that appears to exceed the EMC's authority. The language requested by commenters would create an effective reclassification to HQW before rulemaking for an HQW designation is completed, potentially violating the state's Administrative Procedures Act. While presumably the "temporary" status of the petitioned water would ultimately be resolved through the rulemaking process, the petitioners' proposal would change the status of the petitioned water body during the status of the rulemaking process, and this does not appear consistent with the intent of state law.*
>
> *Regarding PNAs and other functional nursery areas: The intent of DWR's proposed language is to make it clear that a newly designated PNA, meaning a PNA designated after the effective date of this rule readoption, will be required to go through the reclassification process, including a fiscal analysis, in order to receive the HQW classification. DWR researched the rulemaking that established the existing language, and the record revealed that HQWs were <u>not</u> to be automatically assigned to nursery areas but rather assigned through rulemaking. In recognition of past practice, PNAs that historically have been assigned the HQW designation automatically will have*

their HQW classification "grandfathered," so that existing HQWs will not be stripped of their HQW status. Prospectively, however, newly designated PNAs will need to go through the rulemaking process.

The proposed language does not impact existing HQWs, so the fiscal note for this rulemaking will not be affected.

Boat Slip Length in Outstanding Resource Waters

Michael King submitted comments related to boat length limitations in the 15A NCAC 02B .0225 Outstanding Resource Water rule. Although he incorrectly referred to Subchapter 02O, he recommended that the maximum length of boats, as specified in (e)(7) of 15A NCAC 02B .0225, be increased from 21 to 24 feet, in order to be consistent with the Coastal Area Management Act (CAMA) and town ordinances.

DWR staff had discussions with various DEQ staff, including CAMA and Division of Marine Fisheries (DMF) staff, and all are agreeable to this recommendation. These staff indicated that the inconsistency between the protections of these agencies pertaining to boat length for marinas in ORWs has led to confusion, and permits for marinas in ORWs have erroneously been issued for boats up to or equaling 24' in length rather than up to or equaling 21' in length.

The current DMF protection allows, from its effective date of June 1, 1989 on, exemptions from shellfish closures for new marinas with boats equal or less than 24'. For marinas built prior to this rule, this rule states that boats 21' or less in length would be exempt from a shellfish closure. The ORW rule utilized the 21' boat length perhaps to prevent shellfish closures in ORW waters with marinas built before the June 1, 1989 effective date of the DMF protection.

This recommendation would likely not result in water quality issues due to the restriction that the involved boats have no toilets (heads) that is included in the existing and proposed ORW rules. Thus, DWR staff will propose that the Hearing Officer agree to modify the "21" feet restriction to "24" feet in (e)(7) as well as (e)(8) of 15A NCAC 02B .0225. This modification will not necessitate a change to the fiscal note because, in accordance with NCGS §150B-21.A(d), a fiscal note is not required when a rule is amended to impose a less stringent burden on regulated persons.

Chlorophyll *a*/Nutrient Comments

These comments refer to modifications in 15A NCAC 02B .0211 (4) and .0220 (3)

NCWQA expressed concerns with the proposed averaging period for chlorophyll *a*, and the manner of statistical averaging, suggesting that DWR should await outcomes of the on-going NC Nutrient Criteria Development Plan process (NCDP). The City of Greensboro, the City of Burlington, and NC League of Municipalities concur with these comments.

The North Carolina Farm Bureau Federation, Inc. (NCFBF) did not support proposed revisions to the chlorophyll *a* standard and indicated general support for awaiting the NCDP process recommendations.

Mecklenburg County Storm Water Services did not support proposed revisions to the chlorophyll *a* standard but does support language that would clarify that samples should be taken as integrated composite samples from the photic zone (defined as twice the Secchi depth) to standardize procedures among various sampling entities.

The Lower Neuse Basin Association/Neuse River Compliance Association (LNBA/NRCA), consisting of combined comments from 22 of its members, submitted concerns with respect to the proposed chlorophyll *a* language. These remarks ranged in scope from needing clarity on the duration and frequency components of the proposal, recommending appropriate statistical averaging, and comments reflecting the need to provide an opportunity to develop a site-specific standard. They offered examples related to judgements for Clean Water Act Section 303(d) impaired waters assessments.

The Upper Neuse River Basin Association (UNRBA) submitted comments supporting a revision to the chlorophyll *a* standard but noted that the current proposal should be based upon an appropriate quantitative level and central tendency averaged over the entire growing season. They acknowledged the work of the NCDP process, support for development of site-specific standards, and suggestions for changes outside the scope of standard development related to Clean Water Act Section 303(d) assessment methodology (Hereinafter referred to as 303(d)).

Approximately 63 commenters, using a form letter titled "Water Quality Standards," supported the derivation of "algal bloom standards."

American Rivers, NC Conservation Network, and Sound Rivers jointly submitted comments on the need for nutrient criteria, recommendations for chlorophyll a criteria and comments on the NCDP process. They comment that the NCDP Scientific Advisory Council (SAC) has gotten off track and appears to be deadlocked. They request the EMC establish numeric nutrient criteria for nitrogen and phosphorous, a periphyton standard, and benthic nitrogen & phosphorus criteria. It also states that the Dissolved Oxygen (DO) standard should apply to the whole water column and that chlorophyll *a* should be established as state-wide rather that site-specific standards. This letter also discusses geometric averaging related to chlorophyll *a* standards.

EPA comments that the modification of the chlorophyll *a* standard to include language regarding monthly averaging will require documentation that describes how the modification will support designated uses in surface waters. EPA states that it may be premature to make changes to the existing chlorophyll *a* language while the NCDP SAC process is ongoing.

> *DWR has long maintained water quality standards (chlorophyll a, turbidity, pH, DO, etc.) for the purpose of eutrophication (nutrient) control. A seasonal duration component appeared as part of the original chlorophyll a surface water standard adopted into rule on August 9, 1979. This language was removed effective October 1, 1989 for unknown*

reasons. The proposed language reintroduces a seasonal duration component to better align the existing chlorophyll a standard to the intent of the original chlorophyll-a standard.

DWR staff agrees that this language may change in the future as a result of new information and/or recommendations resulting from the NC Nutrient Criteria Development Plan process. That said, the NCDP SAC has been focused on examination of one lake, High Rock Lake. This examination may or may not lend itself to adoption of revised standards for other lakes.

With respect to an opportunity to derive "site-specific standards," current protections in 15A NCAC 02B .0226 provide for these exemptions on a case-by-case basis reviewed by the EMC. This language is retained.

NC water quality standards do not include 303(d) assessment methodology. Section 303(d) assessment methodology is not the subject of this rulemaking. Implementation of the rules is considered by the EMC and OSBM in the development of all water quality standards. The EMC reviews and approves the DWR assessment methodology to assure that proper protections are in place. The EMC has the final authority as to the manner in which the waters are assessed for surface water for impairment. Assessment discussions with EPA headquarters staff are on-going through the DEQ involvement with national associations. The Chlorophyll a standard is not written as measuring a central tendency, spatially or temporally. The standard is "not to exceed" 40 ug/L. Therefore, the current assessment method is appropriate. If the current standard were to be modified to address the suggestions (geographical selection, limnologic conditions, water temperature, droughts, lake headwaters, back-coves, timing of sampling, water clarity) made by the commenters, the assessment methodology will change accordingly and will undergo review by the EMC.

Classification Comments on Hanging Dog Creek and Oconaluftee River – Future Issues

The Eastern Band of Cherokee Indians (EBCI) commented that the current NC classification of a section of the Oconaluftee River located downstream from the Reservation Boundary near Goose Creek should be Class C, and not include the existing Trout and HQW classifications. In addition, the EBCI comments that the Hanging Dog Creek arm of Hiwassee Lake near Bates Creek should be considered as a stream, not a lake, and if so, it is impaired.

Regarding Hanging Dog Creek: The last portion of Hanging Dog before it merges with Hiwassee Lake is considered part of the lake based on the DWR classification description.

Regarding Oconaluftee River: Nearly all the waters of interest are backwaters to the hydropower generator. To remove the Tr classification, evidence showing a lack of presence of trout in these waters would need to be provided historically back to 1975 per EPA. If such evidence can be provided, then DWR can proceed with further review of a potential waterbody reclassification.

Note: EBCI received EPA treatment in a manner similar to a state (TAS) approval on January 26, 2015 and the EPA granted approval of the adopted standards and classifications for that program on March 28, 2019.

Lower Cape Fear River Segment Swamp Classification (15A NCAC 02B .0311/.0227)

The NCFBF comments in support of the Swamp (Sw) designation of a segment of the Cape Fear River from the mouth of Toomers Creek to a line across the river between Lilliput Creek and Snows Cut.

The SELC, on behalf of Cape Fear River Watch and Waterkeeper Alliance, as well as the North Carolina Coastal Federation and the EPA urge removal of the Swamp designation from this portion of the Lower Cape Fear River.

On January 16, 2019 DWR received a petition for rulemaking from the Cape Fear River Watch and Waterkeeper Alliance in care of SELC. The petition requested that the EMC "…remove the supplemental swamp waters classification from the lower Cape Fear River." After review by the EMC Chairman, DWR staff, and EMC counsel in accordance with the criteria outlined in 15A NCAC 02I .0501, Form and Contents of Petition, the petition for rulemaking was deemed to be complete and was referred to the Water Quality Committee (WQC) for review in accordance with 15A NCAC 02I .0502, Review by a Committee of the Commission. 15A NCAC 02I .0502 requires the WQC to review the petition and recommend action to the EMC. DWR presented the petition at the May 2019 WQC, and the WQC voted to forward the petition to the EMC for its review at the July 2019 meeting.

Contaminants of Emerging Concern (CECs) – Future Issue

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly submitted comments supporting the derivation of standards for the PFAS class of chemicals and pesticides (especially Chlorpyrifos, Atrazine, and Neonicotinoids). They also expressed concern over endocrine disrupting chemicals that may lead to physiological changes at dilute concentrations. {Staff Note: The term "PFAS" refers to the diverse and numerous per- and polyfluoroalkyl groups of man-made chemicals, including PFOS, PFOA and GenX.}

About 63 commenters, by form letter titled "Water Quality Standards," supported the derivation of "Gen X standards" and "1,4-Dioxane protections."

Roughly 323 commenters, in a form letter entitled "It's Time to Update NC Water Protections," supported the derivation of "Gen X standards" and "pesticide standards" (especially for atrazine and neonicotinoid pesticides).

Approximately 49 commenters, by form letter titled “Improve and Set Standards for Toxic Pesticides,” supported revised standards for pesticides and additions to the list of pesticides included in 02B protections as follows: chlorpyrifos, glyphosate, neonicotinoids, and atrazine.

NCWQA believes the State should develop interim criteria for four key unregulated contaminants including Gen X, bromide, 1,4-Dioxane, and PFOA/PFOS. They also urge the State to establish a workgroup which includes stakeholder input to develop a regulatory approach to address discharges of unregulated contaminants.

The American Forest and Paper Association encourages DWR to not embark into the area of CECs because it claims there are prohibitive technical challenges and costs associated with such an effort.

Individual commenters expressed concerns that pesticides and pharmaceuticals may bioaccumulate in the food chain and persist in the environment. Some also declared that neonicotinoid pesticides should be banned.

The NC Manufacturers Alliance (NCMA) offered thoughts regarding how to best manage CECs. In general, NCMA suggests that the EMC should follow the established rulemaking process, which includes public outreach, to develop scientifically supported water quality standards. In instances where quick action is required, the NCMA recommended DWR authorize the EMC to undertake temporary rulemaking so that “public health goals” can proceed through the established rulemaking process. NCMA also states that the EMC should never establish standards for CECs that lack certified analytical methods and that DWR should follow the provisions of NC Session Law 2018-5 which directs DWR’s focus on identification of per- and poly- fluoroalkyl substances.

The City of Greensboro provides an outline detailing a recommended framework for how the State could address CECs. The City recommends participating in or creating, if necessary, a national network of state regulators to address CECs. Concern is expressed regarding potential economic impacts related to protections against CECs.

Domtar, a manufacturing facility, encouraged DWR to not embark into the area of regulating CECs due to technical challenges and prohibitive costs of the effort. They expressed concern that the state will become economically uncompetitive compared to neighboring states and will create an anti-business environment. Domtar also requested that any action DWR takes regarding CECs must be limited in scope to only PFAS and must be in accordance with current law contained in the North Carolina Water Safety Act (Session Law 2018-5).

John Wagner stressed the importance of considering protections against glyphosate containing substances to protect both human health and aquatic life. He expressed concern regarding the application of glyphosate containing substances near creeks, rivers, and streams and provided references to seven scientific journal articles regarding the toxicity of glyphosate pesticides to humans and aquatic life.

Thomas Duckwell suggested that a valid and consistent strategy should be established to address CECs.

Mara Frank supports the adoption of vigorous protections for NC's water resources for Gen X and pesticides.

Wake Up Wake County requested the EMC adopt water quality standards for 1,4-Dioxane and for the class of chemicals that includes Gen X.

The Haw River Assembly, representing approximately 1,000 members in the watershed, and about 60 individual commenters, spoke of the need to add 1,4-Dioxane to the surface water quality standards. Of major concern was appropriate protection for water supplies and recreational exposure.

> *Contaminants of Emerging Concern (CECs), including: pharmaceuticals, personal care products (PPCPs), pesticides, herbicides, PFAS, and a growing number of organic pollutants are increasingly being detected in surface water and in drinking water. Therefore, there is a concern that these compounds, alone or in combination, may have an impact on aquatic life and human health. Staff of DWR are currently serving on numerous national workgroups, as participants and chairmen, to assure that the concerns faced by NC citizens, regulated parties, and regulators are heard.*
>
> *The EMC and DWR have the authority to control toxins in surface water where no water quality standard has been adopted under NCGS § 143-211, 15A NCAC 02B .0208, and the Clean Water Act, 40 CFR Part 131.11. DWR will consider establishing criteria for additional compounds, substances and other contaminants of emerging concern where the appropriate toxicological and supporting information exists.*
>
> *The DEQ, in conjunction with the Department of Health and Human Services, recognizing the limitations and need for additional research in several areas, has established a Secretaries' Science Advisory Board (SSAB)*[11] *to aid and assist with recommendations on protective values to be incorporated into water quality control measures. The SSAB has already begun work to address the PFAS family of substances. "Gen X" is the name of the manufacturing process, but is commonly used, and is used here, to refer to the chemical: 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (CAS 13252-13-6). Gen X" is one of numerous PFAS that the SSAB, the NC Collaboratory, environmental activists, EPA and research scientists are investigating to derive suitable health recommendations. This body of work will enable additional measures to be incorporated into 15A NCAC 02B protections.*
>
> *In October 2014, DWR initiated studies on the occurrence of 1,4-Dioxane in the Cape Fear River Basin with the objective of understanding changes in concentrations, identifying potential sources, and collecting data to aid in the development of a rulemaking strategy. DWR conducted outreach to affected facilities and continues to examine the Cape Fear (and two additional basins). That work continues and additional information on those*

[11] https://deq.nc.gov/news/hot-topics/genx-investigation/secretaries-science-advisory-board

efforts can be found here[12].

The 15A NCAC 02B protections do not provide the authority for DWR to ban specific substances. As noted above, they do provide the mechanism, where appropriate toxicity data exists, for protective instream values to be calculated and applied to evaluations of surface water.

DWR remains dedicated to a transparent process of handling the derivation of surface water quality standards, including stakeholder input, coordination with the EMC, and outreach to EPA and our research partners. Examinations of bioaccumulation potential, endocrine disruption, carcinogenic potential, and teratogenic and mutagenetic effects are included in these reviews. Under NC General Statutes, the costs and benefits of implementation of any revised standard or any new standard must be prepared for review/approval by the Office of State Budget Management. This requires an examination of acceptable analytical methods and technical feasibility.

Cyanotoxin Criteria – Future Issue

These comments relate to EPA's Draft Human Health Water Quality Criteria[13].

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly supported the derivation of numeric criteria for algal toxins such as microcystins and cylindrospermopsin in drinking water (to protect from exposure through consumption), as well as surface waters (to protect recreational swimmers and incidental ingestion). Several comments were related to the challenges with maintaining an ambient program to enable the state to notify citizens of potential exposures to algal toxins.

Wake Up Wake County supported adoption of standards to prevent algal toxins.

Roughly 63 form letters entitled "Water Quality Standards," supported the derivation of "algal bloom standards."

NWQA stated that DWR should defer to the ongoing NCDP process rather than adopt a finalized version of the EPA 2016 Draft Human Health Recreational Ambient Water Quality Criteria and/or Swimming Advisories for Microcystins and Cylindrospermopsin.

The NC Manufacturers Alliance (NCMA) supported and agreed with the EMC's decision to defer consideration of the 2016 Draft Human Health Recreational Ambient Water Quality Criteria and/or Swimming Advisories for Microcystins and Cylindrospermopsin for the future triennial review cycle.

[12] https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/1-4-dioxane
[13] https://www.epa.gov/wqc/draft-human-health-water-quality-criteria-and-technical-support-documents

The American Forest and Paper Association (AFPA) commented that DWR should await final publication of the Human Health Recreational Ambient Water Quality Criteria and/or Swimming Advisories for Microcystins and Cylindrospermopsin before moving to adopt in NC citing "significant technical issues" that the EPA has not addressed.

Domtar recommended that DWR defer consideration of the Human Health Recreational Ambient Water Quality Criteria and/or Swimming Advisories for Microcystins and Cylindrospermopsin until a final version is published and technical concerns are addressed.

The North Carolina Sierra Club supported the derivation of standards for algal toxins to protect drinking water sources, as well as standards to protect fish and recreational swimmers.

DWR recognizes that examination of recreational beaches and water supplies for the effects of cyanotoxins is an important effort. It has been actively involved in discussions on the national level with respect to the Draft Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin. (EPA 822-P16-002; Dec. 19, 2016), and a companion document (yet to be released) relating to implementation of this draft proposed criteria. DWR staff have also worked with colleagues in the Public Water Supply Section on the issues related to drinking water protections and the public health advisories issued by EPA in June of 2015 (EPA 820-R-15101 and EPA 820-R-15100). These Safe Drinking Water Act (SDWA) protections are not the subject of this rule making effort. However, as noted by the commenters, multiple agencies/divisions have numerous responsibilities and capabilities. DWR's Water Sciences Section now has the capability to analyze for algal toxins and perform cell counts.

DWR staff is currently working with EPA and the Association of Clean Water Administrators (ACWA) to address monetary challenges, laboratory issues, staffing issues, and how to establish a meaningful ambient program across the numerous water bodies in the state. DWR will commit to prepare this review for EMC review for the next Triennial Review.

The NCDP SAC has also considered the utility of adopting a cyanobacteria criterion for High Rock Lake.

Dissolved Metals

These comments relate to proposed language in 15A NCAC 02B .0211 and .0220

NCWQA, Greensboro, and the League of Municipalities made comments related to maintaining existing language with respect to metals standards. Additionally, NCWQA made statements requesting removal of certain provisions.

The AFPA supported DWR's use of a weight of evidence "bioconfirmation approach" when metal criteria were exceeded. Domtar supports retaining the bioconfirmation language in rule on a similar basis.

The NCMA noted support for maintaining the EMC adopted "biological confirmation approach" that allowed the Commission and DEQ to utilize biological confirmation when certain metals criteria were found to be exceeded.

The EPA disapproved language in 15A NCAC 02B .0211 and .0220 based on a determination that the language is not compliant with the Clean Water Act. The language, contained in: 15A NCAC 02B .0211(c)(ii) regarding application of a lower bound of 25 mg/L CaCO3 for calculation of hardness-dependent metal water quality standards; 02B .0211(11)(f) and .0220 (9)(c), requires biological confirmation for the impairment of surface waters due to metals; and 02B .0211(22) and .0220 (20) allowing for the use of "action levels" implementation policies in NPDES permits for certain metals.

One of the goals of the NC 2018 Triennial Review is to update the language in 15A NCAC 02B .0211 and .0220 so that there is agreement between the NC Administrative Code and the EPA decisions on CWA requirements. NC must align itself with the manner in which EPA is approving/reviewing NPDES permit limits for transparency.

Three commenters requested that the EMC remove the option to calculate a Copper criterion using the Biotic Ligand Model (BLM). The current regulation does not require the use of a BLM to replace the examination of water hardness effects. The current protections allow for the use of a BLM as a choice, where data is available, to replace the National Recommended Water Quality Criteria (NRWQC) hardness-based formula. Like the allowed use of the Water Effects Ratio (WER), DWR believes that the two options provide flexibility to a permit holder or an interested party for the assessments of potential adverse effects.

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly submitted comments of concern that this Triennial Review was not a comprehensive review of all water quality standards, but was primarily related to clearing up inconsistences with EPA disapprovals and accomplishing the legislatively mandated rules readoption. They continued with general support of the proposed changes to the metals criteria but requested more attention to be focused on the adoption of EPA proposed additional criteria for aluminum, selenium, copper and cadmium. They made comments related to support (with caution) of the Copper Biotic Ligand Model (BLM) to develop acute standards but opposed the use of the BLM for development of chronic standards, citing the need for further development of the BLM by EPA.

DWR acknowledges that it faced challenges in satisfying the numerous CWA and legislative obligations. Staff has continued to pursue examination of the metals noted above and has worked with the Association of Clean Water Administrators (ACWA) and EPA headquarters staff on questions related to the draft aluminum criteria, the selenium criteria and the cadmium criteria. This work will continue, as will an effort to determine

costs and benefits associated with adoptions of additional aquatic life protective criteria. DWR has not had any requests for a recalculation of the Copper standard using the BLM. DWR will keep the concerns related to its implementation in mind should the request be submitted.

Approximately 65 commenters had concerns that "NC has failed to meet minimum standards required by EPA … for dissolved metals...." "...and the EMC should adopt all changes required by EPA...." Additionally, many of these comments requested standards that "...prevent levels of pollution (for aquatic life protection) at sublethal concentrations...."

North Carolina, in the previous rulemaking package, adopted numerous dissolved metals surface water quality standards for the protection of aquatic life in fresh and tidal waters. These water quality protections can be found in 15A NCAC 02B .0211 and .0220. The Division will consider new and updated EPA dissolved metals recommended water quality criteria as they are published by the EPA. DWR will consider all recently published EPA NRWQC updates as part of the next Triennial Review. To date, these metals criteria include: Aquatic Life Ambient Water Quality Final Criterion for Selenium - Freshwater 2016, and 2016 Aquatic Life Ambient Water Quality Criteria for Cadmium, and Aquatic Life Ambient Water Quality Criteria for Aluminum 2018.

The Clean Water Act (CWA), established in 1972, requires that states develop and adopt water quality standards for surface waters that will protect aquatic life. North Carolina has incorporated protections to maintain the integrity of aquatic life through its Surface Water Quality Standards program as found in the 15A NCAC 02B .0200 rules. Sub-lethal impacts are addressed in these rules.

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly submitted comments of concern that the current water quality standard for mercury is not in line with recommendations for methylmercury at 0.3 mg/kg of fish tissue issued by EPA in 2001, with subsequent implementation guidance provided in 2010.

The Division of Water Quality (DWR's predecessor) completed, and the EPA approved, a Total Maximum Daily Load (TMDL) under Section 303(d) of the Clean Water Act for mercury applicable to all counties/watersheds in NC. That work was initiated in 2010. EPA approval was received October 12, 2012. The EPA and Food and Drug Administration recommended fish tissue water quality criterion of 0.3 mg/kg methylmercury (mg meHg/kg) fish was selected as the target level for this TMDL. Since fish tissues were monitored for total mercury in NC, and studies show that most mercury concentrations in fish tissues are in the form of methylmercury, the 0.3 mg meHg/kg fish tissue mercury target was applied to total mercury in fish tissues in the TMDL. To protect water bodies from impairment, the 90th percentile standardized-length Largemouth Bass fish tissue total mercury concentration was selected to meet the target level. The goal of

this action was to reduce loading of Hg to the systems and to remove the fish advisories. Reduction efforts were also implemented through the NPDES permitting program.

Dissolved Metals - Future Issues

NCWQA, representing more than 50 public water, sewer, and stormwater utilities in NC, supports updating the current cadmium and selenium criteria but recommends the State evaluate the selenium criteria adopted by West Virginia. NCWQA strongly objects to the State adopting EPA's Marine Biotic Ligand Model.

A single commenter expressed a desire that standards should be set for selenium and cadmium that protect human and aquatic life.

Approximately 65 single comments were received addressing concerns that "NC has failed to meet minimum standards required by EPA … for dissolved metals..." and "...the EMC should adopt all changes required by EPA...." Additionally, most of these comments requested standards that "...prevent levels of pollution (for aquatic life protection) at sublethal concentrations...."

NC has existing cadmium and selenium standards for the protection of aquatic life in fresh surface waters (15A NCAC 02B .0211) and tidal surface waters (15A NCAC 02B .0220). In 2016, EPA released updated NRWQC for cadmium and selenium for the protection of aquatic life. DWR has examined these updated aquatic life criteria for potential adoption as part of the next Triennial Review. Regarding human health criteria, because fish are more sensitive to selenium than humans, the current surface water standard is protective of both aquatic life and human health. EPA does not currently have human health specific NRWQC for cadmium in surface waters, however an existing National Primary Drinking Water Regulation Maximum Contaminant Level (MCL) of 5 ug/L may be applied to surface waters classified as water supplies per 15A NCAC 02B .0208, .0212, .0214, .0215, .0216, and .0218.

Although no specific metals were mentioned in the comment, in the previous rule making package, North Carolina adopted numerous dissolved metals surface water quality standards for the protection of aquatic life in fresh and tidal waters. In accordance with State regulation and 40 CFR Part 131 revisions (2015) DWR will consider all new and updated recommended water quality criteria as they are published by the EPA. To date, these metals criteria include: Aquatic Life Ambient Water Quality Final Criterion for Selenium - Freshwater 2016, 2016 Aquatic Life Ambient Water Quality Criteria for Cadmium, and Aquatic Life Ambient Water Quality Criteria for Aluminum 2018.

John Wagner requests the EMC consider the cumulative and combined adverse effects of toxins when establishing surface water quality standards for the protection of aquatic life. He refers to the increasing body of scientific knowledge in this area and cites a recent scientific paper titled *Severing Ties: Different Responses of Larval and Adult Aquatic Insects to Atrazine and Selenium* [Henry B. L. et al. Environmental Science & Technology. 2018. 52 (15)]. Wagner stresses the importance of considering sub-lethal effects when establishing surface water standards for aquatic life and the protection of freshwater mussel populations.

Protecting against the combined effects of toxic substances in surface water is challenging due to the lack of toxicological information for many chemical combinations. However, the potential for these interactions to adversely impact the health of aquatic communities is acknowledged and protective options to address this concern will be investigated further.

Sub-lethal effects of toxic substances may be considered as part of the State surface water quality protections where appropriate information is available. For example, the current water quality standard for selenium is based on the potential for adverse effects to reproductive systems in fish. DWR will investigate the need for additional language to address this issue.

DWR acknowledges that freshwater mussels are critical to aquatic ecosystems and plans to propose adoption of EPA's 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater (EPA 822-R-18-002).

E.coli as Bacterial Indicator – Future Issues

These comments relate to EPA's Recreational Water Quality Criteria[14].

The Haw River Assembly spoke of the need to address bacterial contamination using *e. coli* as the indicator species at "a geometric mean (GM) of 35 colony forming units (CFU)/100 milliliters(mL)." Comments referred to issues discovered downstream of food processing plants.

NCWQA urged that the EMC adopt EPA's updated bacteria criteria for recreational waters. While the 90-day instream averaging period is appropriate, NCWQA's support is conditioned on no changes to the monthly and weekly geometric mean-based limits for municipal NPDES permits.

Idexx Laboratories, Inc. requests the EMC amend the bacterial indicators within the Surface Water Quality Standards for freshwater (specifically Classes C, B, WS-I, WS-II, & WS-III listed within 15A NCAC 02B .0100) from fecal coliform and total coliform to *Escherichia coli (E. coli)*. Idexx wants these indicators applied statewide and to allow any EPA analytical test method listed at 40 CFR Part 136.3 for bacteria monitoring requirements. The rational for this amendment is that *E. coli* are better indicators for fecal contamination versus fecal or total coliforms and analytical test methods listed within 40 CFR Part 136.3 have been identified by the EPA as scientifically valid methods.

DWR has reviewed the EPA 2012 Recreational Water Quality Criteria (EPA 820-F-058) (Enterococci or Escherichia coli) for addition to existing standards, and will propose adoption during the next review. The revised Recreational Water Quality Criteria document is designed specifically for the protection "of the primary contact recreational use." In 15A NCAC 02B protections, the primary contact recreational use is captured under a supplemental classification of "Class B" waters.

[14] https://www.epa.gov/wqc/2012-recreational-water-quality-criteria-documents

The EPA recommended values for e.coli in fresh waters is a geometric mean value of between 100 and 126 cfu/100 mL in primary contact waters (see P. 6, Table 1 of EPA 820-F-058). DWR staff could not identify the source of the "35 cfu/100 mL" noted by the Haw River Assembly comment.

Revisions to the standard would necessitate revisions to NPDES permit limits to implement the rule.

Laboratory method choices are covered under 15A NCAC 02H .0800 protections and include references to the use of federally approved methods.

Endangered Species – Future Issue

The NC Wildlife Resources Commission (WRC), working with the US Fish and Wildlife Service (USFWS), is working to draft an aquatic species Safe Harbor Agreement (SHA) and Candidate Conservation Agreement with Assurances (CCAA), which will allow stocking of captive grown and translocated, federally listed species into currently unoccupied streams. WRC and USFWS request discussions with DWR staff to better understand the impact of these decisions on DWR programs and potential CWA issues.

DWR staff recognizes the efforts of the WRC/USFWS to reestablish populations of federally listed species in North Carolina waters. We understand the concern that components of the SHA/CCAA agreement may conflict with the aquatic life protections required by the Clean Water Act and implemented by the NC water quality standards and classifications program. Future discussions with EPA regarding the components of concern are warranted.

Update of Human Health Water Quality Criteria /Default Assumptions - Future Issue

These comments relate to EPA's Human Health Water Quality Criteria[15].

NCWQA offered comments on the revisions to EPA Human Health Ambient Water Quality Criteria (HHAWQC) indicating concerns relating to: implementation cost to NPDES permit holders, a potential lack of analytical methods capable of demonstrating compliance, and a particular concern relating to "bis," noting its presence in plastic sampling tubing used for composite sampling. The City of Greensboro concurs with these comments. Presumably, "bis" refers to bis(2-ethylhexyl) phthalate, CAS # 117817.

The NC Manufacturers Alliance fully supported and agreed with the EMC's decision to defer consideration of the HHAWQC for the future Triennial Review cycle, indicating its consistency with actions taken by several other states. NCMA urged DEQ to work to develop criteria that are directly applicable to waters in our state, citing that the EPA's proposals were developed using data generated in the Great Lakes Region and may not be transferrable to North Carolina surface waters.

[15] https://www.epa.gov/wqc/human-health-water-quality-criteria-and-methods-toxics

About 63 commenters, using a form letter titled “Water Quality Standards,” supported the derivation of criteria affording additional protections for vulnerable populations.

Approximately 49 commenters, in a form letter titled “Improve and Set Standards for Toxic Pesticides,” supported revised standards for pesticides and additions to the list of pesticides included in 15A NCAC 02B protections as follows: chlorpyrifos, glyphosate, neonicotinoids, and atrazine. They also supported the derivation of criteria affording additional protections for vulnerable populations such as infants, developing fetuses, and children in puberty.

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation , Sound Rivers, SELC, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly submitted comments related to the need to protect vulnerable populations at different life-stages, to examine age dependent factors, sex related endpoints, and genetic factors when establishing criteria. They also requested evaluation of the effects of “mixtures of pollutants” and a plea for standards established for surface water be mindful of the downstream use as a potential public water supply.

The National Council for Air and Stream Improvement, Inc. (NCASI) submitted detailed comments with respect to the need for the Division to carefully examine the revised “Human Health Ambient Water Quality Criteria: 2015 Update” (EPA 820-F-15-001). NCASI noted an attached document (“Derivation of HHAWQC: Review of Key Assumptions and Approaches” - May 2018) with extensive technical materials that support the State of NC taking a cautious approach in its criteria derivation process. State specific science-based “default” parameter choices were highlighted as follows:

- Choices of acceptable risk range for carcinogens
- Choices in Fish Consumption Rates (FCR)
- Choices of Relative Source Contribution (RSC)
- Choices of the inclusion of a Bioaccumulation Factor (BAF) or a Bioconcentration Factor (BCF)
- Choices of a Water Consumption Rate (WCR) or Water Intake Rate
- Choices related to the “combined conservatism” that may occur when a selection of conservatism is made for each of the above choices.

The American Forest and Paper Association (AFPA) incorporated by reference the NCASI comments listed above. Additionally, it commented in detail about the flexibilities afforded states by the Clean Water Act and 40 CFR protections relating to choices in derivations of standards. AFPA also listed deep concerns with implementation costs to NPDES permit holders should all the revisions proposed by the 2015 EPA updates be adopted.

Domtar supports the language submitted by AFPA and NCASI. Domtar supports delaying decision making on the updated EPA human health criteria and recommends the State carefully review the NCASI comments.

The NC Conservation Network submitted a petition, signed by 1,028 NC residents, requesting the EMC to adopt standards that protect the health of vulnerable populations, not just healthy adults.

Wake Up Wake County requests the EMC consider infants and children when setting water quality standards.

The NRWQC "Human Health Ambient Water Quality Criteria: 2015 Update" (EPA 820-F-15-001) will be considered for inclusion, in part or in selected elements, in the next Triennial Review. The review of available EPA guidance documents and the materials submitted by NCASI will be completed and information items will be provided to the EMC as details are evaluated. Discussions with other states that have, or are planning to, adopt these criteria as state water quality standards will be scheduled through our involvement with national councils on water quality management (Environmental Council of the States, Association of Clean Water Administrators (ACWA)). DWR recognizes that adoption of any, or all, of these revised "default" parameters into water quality criteria used to derive State standards can be an opportunity to improve the protections for the citizens of the State. Staff will document the implementation costs in accordance with NC General Statutes.

Because of limitations in available data, the EPA doesn't currently apply the body weights of infants and children in deriving HHAWQC, nor does it apply exposure scenarios to pregnant women, or women who may become pregnant. The same holds true for assumptions related to water ingestion rates of bottle-fed infants. While some of these evaluations have been performed for a few Safe Drinking Water Act Health Advisories, none have been adopted into the federal regulations for Public Water Supplies as Maximum Contaminant Levels (MCLs). The current 15A NCAC 02B rules provide the EMC the ability to use information, when it is available, to examine effects on sensitive populations and includes criteria for applications to protect children. DWR staff will continue to track toxicity information to address protections for vulnerable populations.

US EPA Region 4's Additional Comments

Acute Toxicity Definition

EPA requested an explanation of proposed text amending the "acute toxicity" definition. (15A NCAC 02B .0202(1)(c)).

The Hearing Officer recommends that the text be removed until further inquiry can be completed.

Chloride

EPA noted that chloride remains the only parameter listed as an "action level" and reiterates the request to remove the language.

> *DWR continues to evaluate chloride with respect its non-priority pollutant status. The Division recognizes competing priorities to manage wastewater applications and public water supply processes where, by necessity, chlorides may become concentrated due to required treatment procedures.*

Existing Uses Terminology (15A NCAC 02B .0101)

EPA noted that "and all existing uses as defined by 15 NCAC 02B .0202" is not included in proposed 15A NCAC 02B .0101(b)(2), and it was previously located at 02B .0101(f). EPA asked if this change in language was intentional or if language regarding consideration of existing uses is located elsewhere.

> *This language is located in a different location in the proposed rules. It is provided in the proposed published version of 02B .0101(b)(1).*

40 Code of Federal Regulations (CFR) Part 131 Issues

EPA requires that the State respond to revisions to 40 CFR Part 131 (effective 2015) with respect to explanatory language for any 304(a) criteria not adopted in this Triennial Review.

> *Throughout the "Response to Comments" sections of this Hearing Officer's report, DWR acknowledges that additional EPA Section 304 (a) criteria have been published as final or have been issued as draft for public review. As noted by EPA in their letter of July 31, 2018, this rule package was designed under competing priorities of both state General Statute requirements and the federal 2016 EPA disapprovals. Due to resource constraints related to the mandated timeframes, our review of the 304(a) criteria is underway, and comments on these criteria, and any other additional compounds were requested during the published public comment period. DWR will take these comments and continue to review any additional or finalized criteria for potential inclusion in the next revision to 15A NCAC 02B protections including recommendations published as follows:*
>
> - *New federal or state protections or guidance*
> - *Legal decisions involving water quality standards*
> - *New or updated 304(a) criteria*
> - *Input from members of the public*
> - *Section 305(b) reports*
> - *Attainability assessments*
> - *Additional classifications, reclassifications as appropriate*

40 CFR Part 131.10 References Within 15A NCAC 02B .0101(b)(2) and (3)

The EPA asked why parts, and not all, of 40 CFR 131.10 are referenced in 15 NCAC 02B .0101(b)(2) and (3) and suggests that 40 CFR 131.10 in its entirety be referenced in those two parts of 02B .0101.

The references to 40 CFR 131.10 cited in the proposed rules are not based on the most current version of 40 CFR 131.10. DWR reviewed the most recent 40 CFR 131.10 version and proposes changing the references in the cited rules to 40 CFR 131.10.

Native and Special Native Trout Waters Terminology (15A NCAC 02B .0224 and .0225)

The EPA noted that the phrase "native and special native trout waters" has been proposed to be removed from 02B .0224 and .0225. It asked about any impact(s) that removal of this phrase would have on waters historically designated as HQW or ORW on the basis of being native or special native trout waters.

The revisions are a clean-up of terminology that is no longer utilized in North Carolina; there no longer exists a list of native and special native trout waters in the state. These revisions do not impact HQW or ORW existing classifications for waters that were identified in the past based on the utilization of the language that is proposed to be removed, and those classifications are "grandfathered in."

Nutrient Sensitive Waters (NSWs) Phrases [15A NCAC 02B .0223 (e)]

The EPA noted that in an effort to consolidate NSW language, the proposed rules left out the phrases "requiring limitations on nutrient impacts" and "in order to limit the discharge of nutrients (usually nitrogen and phosphorus)." EPA noted that 02B .0223 (e) addresses controlling excessive growth, but still suggests keeping the cited phrases in the rules.

DWR proposes to add language to 02B .0223(e) to address this concern. More specifically, the phrase "to limit nutrients" is proposed to be added between "Commission" and "to control" in 02B .0223(e).

Propagation [15A NCAC 02B .0211(1)]

EPA stated that the term "propagation" was removed from the Class C waters description in 02B .0211(1) and recommended it be placed back in the description. EPA noted that this language originally was in 02B .0101(c).

DWR inadvertently left the term "propagation" out of 02B .0211 (1). Thus, it proposes to add the term "propagation" to 02B .0211(1) after the phrase "aquatic life."

Sandy Creek Reservoir Classification (15A NCAC 02B .0311)

EPA stated that the record will have to include documentation with regard to a 02B .0311 proposed addition. This addition addresses a change to the classification of Sandy Creek.

The following is documentation of the change to the classification of Sandy Creek within 15A NCAC 02B .0311:

A segment of Sandy Creek, which is located in Randolph County (Cape Fear River Basin), is to be reclassified from Class WS-III (Balance of the Watershed or BW) to Class WS-III Critical Area (CA). This proposed reclassification affects a portion of the Sandy Creek water supply watershed, including Sandy Creek reservoir.

Randolph County informed state staff that DWR's water supply watershed boundary information for the reservoir is different than the county's water supply watershed boundary information for the reservoir. Based on available historical and current data, DWR staff agree with the county staff. The proposed reclassification will result in an updated representation of the water supply watershed for the reservoir; thus, this proposal serves the public interest per Executive Order #70 and complies with NCGS 150B.

Per Winston Salem Regional Office (WSRO) DWR staff, the Town of Ramseur switched from using a run-of-river intake in the creek to an intake built within a reservoir on the creek in the 1990s. A map of a Water Supply classified watershed is based primarily on the location of an intake within a reservoir or a river, and the rule language pertaining to a water supply watershed results from the map. For a run-of-river intake, a CA is measured as the area ½ mile and draining to the intake whereas for an intake in a reservoir, the CA is the area measured as ½ mile and draining to the normal pool elevation of the reservoir. The remainder of the area protected as a WS-III for a reservoir intake or run-of-river intake is the rest of the watershed (beyond the CA) draining to the normal pool elevation of the reservoir or the run-of-river intake, respectively, and is called the Balance of the Watershed (BW). The proposed reclassification would result in the CA and BW for the reservoir totaling nearly 2,618 acres and 38,027 acres, respectively. There are no named tributaries affected by this reclassification proposal.

In a WS-III watershed, water supply water quality standards apply throughout the watershed. Other requirements within a WS-III watershed are no new landfills, no new residual or septage land application sites, and the allowance of only general NPDES wastewater discharges in the CA. In the BW, domestic and non-process industrial individual NPDES wastewater discharges are also allowed. There are no permitted or planned NPDES wastewater discharges that would be impacted by the proposal, and there are not any planned septage or residual land application sites or landfills in the proposed CA, according to WSRO and Central Office DEQ staff.

Guilford and Randolph Counties are the only local governments with jurisdiction in the proposed water supply watershed, and the current water supply watershed ordinances of these two local governments already meet the requirements of the proposed reclassification. Thus, these local governments would not need to modify their water supply watershed protection ordinances as a result of the proposal. A regulatory impact analysis for this proposal shows a one-time cost of approximately $2,265 to the state. These costs to the state are to be incurred for notifying staff of local governments in the proposed water supply watershed, reviewing and approving local ordinances and maps for

compliance, and updating the DEMLR interactive stormwater map and website once the proposal becomes effective.

Seasonal Dissolved Oxygen (DO) Exemption [15A NCAC 02B .0308(v)] - Future Issue

The EPA noted that in its February 27, 2009 correspondence to the state, it disapproved of an exemption regarding seasonal DO in 15A NCAC 02B .0308(v). EPA stated the sentence starting with "Between the last day of May and the first day of November, the water quality standard for Dissolved Oxygen…" should be deleted from 02B .0308(v) to address its disapproval.

The Hearing Officer recommends that this issue be revisited during the next Triennial Review. Changing the language would require public notification and require completion of a fiscal note, as it may have fiscal impacts to impacted parties by increasing compliance costs.

Fiscal Note Comments (the Fiscal Note is available here[16])

The NC Conservation Network comments that there would be no fiscal impact due to the EMC keeping or removing the changes to the metals standards language as this language has been implemented since its adoption into rule. NCCN also states that estimation of any potential cost/savings regarding these changes is not required to satisfy the APA. NCCN indicates that the fiscal note's discussion of the changes in 15A NCAC 02B .0224 isn't adequate to satisfy the state's requirements. Additional comments concerning how the DEQ and the EMC approach fiscal analysis address the use of Willingness to Accept (WTA) estimation to replace Willingness to Pay (WTP) for estimating costs/rewards and the choice of discount rate.

DWR agrees that using Willingness to Accept (WTA) can be an appropriate measure in some cases. However, due to a lack of WTA studies that can be adapted to this setting, DWR cannot estimate WTA with reasonable certainty. Although DWR doesn't have an estimate of WTA, research would support the presumption that WTA would likely be higher than Willingness to Pay (WTP). Using WTA in DWR's analysis would potentially result in the benefits exceeding costs after water quality improvements are achieved in a smaller percentage of the state's water bodies.

DWR recognizes that different analyses call for different (or possibly no) discount rates. Although DWR is bound to use the 7% discount rate required by statute, DWR considered it important to present different discount rates in our sensitivity analysis. DWR will incorporate additional discussion on this topic in future analyses, as appropriate.

The amendments to this rule proposing that the PNAs require a reclassification process prior to applying the HQW designation will apply only to areas that are designated as PNAs after the effective date of this readoption. As such, existing PNAs will not be stripped of their HQW status, and the fiscal note will not be affected. After the effective date of the

[16] https://files.nc.gov/ncosbm/documents/files/DEQ_2018-04-16.pdf

readoption, a newly-designated PNA will be required to go through the rulemaking process, including fiscal analysis, to be designated as HQW.

Gen X Ban

One commenter indicated that Gen X should be banned and that the companies who dumped it should pay the cost of cleanup.

DEQ has undertaken numerous actions with respect to the issues in the New Hanover County/Cape Fear River basin area. DEQ maintains a website[17] to keep the public informed about actions to abate these problems.

High Quality Water Treatment Requirements

North Carolina Water Quality Association (NCWQA) requests numerous changes to requirements for protection of High Quality Waters. NCWQA states that NC include "…applicable average with respect to the treatment required for wastewater discharges to High Quality Waters." NCWQA also feel that dischargers should not be required to maintain instream levels greater than a standard that goes above natural background levels. Lastly, NCWQA provides revised language for Oxygen Consuming Wastes, Total Suspended Solids, Volume, Nutrients, and Toxic Substances.

The language suggested in these comments contradicts the purpose of the HQW classification, which is to protect waters with quality higher than the state's standards. Removal of HQW protections could also cause degradation of these waters.

Industrial Discharge Definition – Future Issue

NCWQA stated that several definitions in 02B .0202 should mirror CWA language to prevent confusion. NCWQA disagrees that development of a pretreatment program "transforms the discharge from a municipal wastewater treatment plant into an industrial discharge" and notes that the usage of the term "industrial" in the 02B rules does not support this definition either. NCWQA suggested revision to the definition of the term "industrial discharge" in .0202 as follows: Industrial discharge includes: . . . ~~(c) wastewater discharged from a municipal wastewater treatment plant requiring a pretreatment program~~

DWR staff will examine this request further, as there is concern that removal or alteration may cause unintended consequences related to 15A NCAC 02B .0400 (wastewater), 15A NCAC 02H .0900 (pretreatment), 15A NCAC 02H .0100 and .1000 (stormwater) and any other protections currently under review, revision and readoption.

[17] https://deq.nc.gov/news/key-issues/genx-investigation

Mean Annual Flow

NCWQA requested DEQ to adopt the "mean annual" flow for standards to protect human health from non-carcinogens under 02B .0206(a)(4). DEQ uses the "mean annual" flow to protect human health from carcinogens, unless site-specific concerns dictate the use of an alternative design flow. NCWQA recommended using the same flow for non-carcinogens. This recommendation noted that human health criteria are based on an acceptable daily exposure over a lifetime, and it is consistent with EPA practice that matches the criteria with the longest stream flow averaging period. See, e.g., 65 Fed. Reg. 31682 (May 18, 2000). Accordingly, NCWQA suggests the following revision to .0206(a)(4)(A):

> The mean ~~7Q10~~ flow for standards to protect human health through the consumption of water, fish, and shellfish from noncarcinogens…

The NCWQA cited reference is to the California Toxics Rule which states that the "EPA is requiring that the harmonic mean flow (emphasis added) be applied with human health criteria..." (p. 31701), not the "mean annual flow." As noted previously, the "Human Health Ambient Water Quality Criteria: 2015 Update" will be considered for inclusion, in part or in selected elements, in the next Triennial Review. The review of impacts to these modifications will include an examination of the applicable flow.

Like the California Toxics Rules, the EPA also recommended in the 2015 updates to 40 CFR:

> *"G. What Design Stream Flow Should Be Used to Implement Human Health Criteria? Human health criteria represent ambient pollutant concentrations that are acceptable based on a lifetime (70 years) of exposure. Accordingly, discharges of pollutants should be regulated such that criteria will not be exceeded under stream conditions that represent long-term average conditions... With today's Human Health Methodology, EPA is revising its guidance to recommend harmonic mean flow (emphasis added) be used to implement both carcinogen and noncarcinogen human health criteria. Harmonic mean flow should be used to implement human health criteria because, by and large, human health criteria are designed to protect an individual over a lifetime of exposure." (Federal Register /Vol. 65, No. 214/ November 3, 2000).*

DWR recognizes that adoption of any, or all, of these revised "default" parameters into water quality state standards can be an opportunity to improve the protections for citizens. DWR staff will examine the risks involved and the implementation costs in accordance with NC General Statutes.

Mixing Zones

NCWQA requested that Mixing Zones include a Zone of Initial dilution (15A NCAC 02B .0204).

> *DEQ NPDES permitting applies guidance from the EPA's Technical Support for Water-Quality Based Toxics Control (TSD) (located here)[18] to help determine mixing zones. Mixing zones are discussed in Section 2.2.2 (page 33) and Section 4.3 (page 69), and the sizing criteria for acute mixing zones is found in section 4.3.3. There are no size criteria for chronic mixing zones in the TSD nor by 15A NCAC 02B rules. The TSD's goal with respect to the acute mixing zone sizing criteria is to prevent lethality to passing organisms. No definition in the current or proposed rule for "zone of initial dilution" exists, nor is that term defined in the TSD. The term, as proposed, would be the near-field mixing effects where jet and buoyant plume forces dominate the mixing. Further examination is needed to ensure that any modification is protective of the designated uses.*

Mussel Population Protections

John Wagner states that the state should assess the reduced habitat and declining quality of water that are being faced by all of the state's mussels. He mentions the potentially devastating impact of activities such as construction, trenching, river crossings, and stream crossings on various mussels. He also states that the state, when considering erosions and sedimentation, needs to include declining mussel populations in its work, and when considering surface water standards, needs to recognize the significance of current mussel populations.

> *There are existing protections in place, for instance 15A NCAC 02B .0110 as currently written, implemented and proposed, that allow for site specific strategies for threatened and endangered aquatic species. This protection has been used in Goose Creek in the Yadkin-Pee Dee River Basin. EMC established a site specific strategy in this waterbody to protect for the Carolina heelsplitter, a federally-listed endangered mussel species.*

Nonpoint Source Pollution Definition

NCWQA states that the term "nonpoint source pollution" as defined in 02B .0202(40) includes surface water runoff from undisturbed land, meaning land that human activities have not disturbed, e.g. forest land. Thus, NCWQA states that the definition of this term should have "which have been disturbed by man's activities" removed from it.

> *DWR believes the commenter's inference that nonpoint source pollution includes runoff from undisturbed lands overlooks the role of the word "pollution" in the phrase. DWR does not view runoff inputs resulting from natural conditions as pollution. DWR believes the human activity element in this definition serves an appropriate function and should be retained.*

[18] https://www3.epa.gov/npdes/pubs/owm0264.pdf

Silver Standard

The City of Greensboro requested the Silver chronic standard to be removed from the rule, as there are no Federal chronic recommended criteria for Silver. It further stated that this had been developed as a Site-Specific standard for an industrial discharger.

> *The silver standard for a chronic water quality standard is calculated in accordance with 15A NCAC 02B .0208. The commenter is correct that there is no federal counterpart for chronic silver. However, NC has protections in place against silver pollution.*
>
> *Federal requirements in 40 C.F.R. §122.44 (d)(1)(vi)[19] direct states to adopt additional water quality standards as needed to protect their waters. Therefore, while DWR acknowledges that there is currently no federal recommended chronic criterion for silver, NC developed and adopted one to address silver in wastewater effluents that could harm the aquatic ecosystem. The chronic NC water quality standard for silver was adopted in 1984. Public records indicate that the silver standard was adopted due to the state's concerns with the presence of silver in wastewater discharges. The standard was updated in 1989 to the current standard of 0.06 ug/L. It appears from public records that the 1989 revisions to the silver criterion were driven by 1987 Clean Water Act amendments requiring states to adopt numeric standards for any pollutant with a national criterion, including silver.*
>
> *Chronic and acute criteria are derived to protect aquatic organisms from different toxic impacts. Chronic criteria are meant to protect aquatic organisms from impacts such as reduced growth or reproduction due to long term exposure to low levels of a chemical while acute criteria establish the levels necessary to protect organisms from lethality due to an exposure to higher levels of a toxicant. The adoption of only an acute standard for silver would hinder the state in its efforts to protect against, and assess the potential for, harm to aquatic populations from the more sensitive and long-term exposure scenarios.*
>
> *NC must have EPA approval for all standards changes, including the deletion of water quality standards. For the EPA to approve the subsequent removal of this standard from NC protections, the state would have to show that the standard was either incorrectly calculated or no longer needed. Neither of these situations has occurred. NC's silver chronic standard is in line with Florida's (another EPA Region 4 state) adopted chronic standard as well as other states around the country that have chosen to calculate their own silver chronic standard. Florida's chronic total silver standard of 0.07 ug/L has been challenged in court by the Florida Environmental Action Committee/The Silver Coalition, which consisted of silver dischargers. Florida's silver chronic standard was upheld.*

Unnamed Tributaries to Trout Waters Classification

North Carolina Farm Bureau Federation, Inc. (NCFBF) states that there are many unnamed tributaries to Trout waters that are not able to support trout populations due to size, and 02B

[19] https://gov.ecfr.io/cgi-bin/text-idx?SID=aa6ab5702caebea6a08f8013edf0027f&mc=true&node=se40.24.122_144&rgn=div8

.0301(f)(1) states that unnamed tributaries to waters classified as Trout carry that same classification. The NCFBF indicates that the "EMC should remove the automatic Trout classification from these unnamed tributaries" and add the Trout classification back to unnamed tributaries that can support trout through the reclassification process or adopt a rule that would establish a process allowing a landowner to get the Trout designation removed from an unnamed tributary without having to go through a separate rulemaking.

> *Uses of waters downstream of unnamed waters must be taken into consideration and protected in addition to the uses of the unnamed waters. While an unnamed tributary upstream of a Trout classified water body may not itself support trout, the protection of the downstream habitat is critical for trout survival. 15A NCAC 02B .0203, entitled Protection of Waters Downstream of Receiving Waters, describes this approach as follows: "Water quality based effluent limitations or management practices for direct or indirect discharges of waste or for other sources of water pollution will be developed by DWR such that the water quality standards and best usage of receiving waters and all downstream waters will not be impacted." The practice of assigning a classification to an unnamed waterbody of the same classification as that assigned to the water to which it is tributary allows for protection of downstream waters.*

Variances

NCFBF submitted support for continuing the two chloride variances and the color variance. NCFBF recognized the pickle processing plants as important to the NC agricultural community and local economies.

> *These comments will be included in the review of the variance renewals for each facility, as required for NPDES permitting purposes.*

Vulnerable Population Protection

These comments stated that when creating water quality standards for drinking and recreational waters, the EMC should consider the most vulnerable people, such as infants and children, as opposed to only considering healthy adults.

> *DWR response to this comment is located in: EPA 2015 Update for 94 Human Health Water Quality Criteria (HHWQC) and Default Assumptions.*

Water Supply Rules Terminology

NCFBF expressed two concerns about language in 15A NCAC 02B .0200 rules regarding water supply watersheds:

> 02B .0212(1): NCFBF states that land in WS-I watersheds must be publicly owned according to the existing rule and is concerned that proposed language may lead to the interpretation that undeveloped land can be either public or privately owned. NCFBF

requests the language be clarified to make sure that it is clear that undeveloped land under consideration must be publicly owned as is currently stated in the rule. NCFBF suggests the following language: "The proposed rule should be revised to specify that land in "undeveloped watersheds" must be publicly owned."

The last phrase in the published version of 02B .0212(1) states "…waters located on land in public ownership and in undeveloped watershed," therefore, both conditions must be met in WS-I watersheds.

02B .0212 (5), .0214(5)(a), .0215(5)(a), .0216 (5)(a), and .0218(5): NCFBF disagrees with the use of "adverse impact" relating to nonpoint sources in these rules, and these rules incorporate the definition of this term in 15A NCAC 02H .1002. NCFBF indicates that this term "…could be interpreted to preclude any impact on water quality, even if water quality standards are met, and existing used are maintained." NCFBF suggests replacing the language proposed with the existing language in 02B .0212 (3)(b) of "Nonpoint Source Pollution: none shall be allowed that would adversely impact the waters for use as a water supply or any other designated uses."

The language in 02B .0212 (3)(b) of "Nonpoint Source Pollution: none shall be allowed that would adversely impact the waters for use as a water supply or any other designated uses" was compared to the language in the areas of the commenter's rules of concern (see rules listed at the beginning of the paragraph directly above). The results of this comparison are as follows:

In part (5) of the water supply rules cited above except for 02B .0212(5) "…for use as a water supply or any other designated use" does appear in existing and proposed language regarding nonpoint source pollution. However, in 02B .0212(5), the last phrase after "…adverse impact, as defined in 15A NCA 02H. 1002, …" should have read "…for use as a water supply or any other designated use" rather than "…on waters within this class." DWR staff will make this modification, as this proposed language did not match the similar language in 02B .0212 (3)(b).

DWR examined language in 02H .1002 (2): "adverse impact" means a "…detrimental effect upon water quality or best usages…" and "…including a violation of water quality standards, caused by or contributed to by a discharge or loading of a pollutant or pollutants." With the technical change mentioned in the paragraph above, each of the five proposed water supply rules applies 02H .1002's definition of adverse impact to "use as a water supply or any other designated use," therefore meeting the spirit of the commenter's suggested language.

Watershed Definition

NCFBF expressed concerns about the definition of "watershed" within 15A NCAC 02B .0202 (60). NCFBF recommends adding the references to land area and surface drainage back into the proposed published watershed definition (from the existing definition), or changing the revised definition to "Watershed means a natural land area of surface drainage…"

The definition of "watershed" as proposed and published is identical to the statutory definition. Thus, DWR's position is that the proposed/published language remains unchanged.

Water/River Flow Protections

NC Conservation Network, American Rivers, Appalachian Voices, Cape Fear River Watch, Carolina Wetlands Association, Catawba Riverkeeper Foundation, Crystal Coast Waterkeeper, Dan River Basin Association, Haw River Assembly, NC League of Conservation Voters, River Guardian Foundation, Sound Rivers, SELC Environmental Law Center, Toxic Free NC, Whiteoak-New Riverkeeper Alliance, Winyah Rivers Foundation and Waterkeeper Alliance jointly supported the establishment of a water quality standard to ensure the necessary stream flow to protect ecological integrity.

The NC Sierra Club supported protections to ensure sufficient flow in rivers for recreation uses.

Wake Up Wake County requests the EMC adopt water quality standards to address the critical relationship between flow and water quality in rivers.

About 63 commenters in their "Water Quality Standards" form letter and about 323 commenters in their "It's Time to Update NC Water Protections" form letter supported the derivation of "River Flow Protections."

In 2010, the NC General Assembly directed the creation of an Ecological Flows Science Advisory Board (EFSAB) to assist the NC Department of Environment and Natural Resources, now the Department of Environment Quality, in characterizing the ecology of the state's river basins and identifying the flows necessary to maintain ecological integrity. In 2013, after three years of work, the EFSAB produced a comprehensive report[20] that advised DEQ about the state of ecological flows in NC.

DEQ is still endeavoring to address ecological flows in the planning realm, as directed and defined in NCGS § 143-355(o). The statute directed the Department to "characterize the ecology in the different river basins and identify the flow necessary to maintain ecological integrity." The statute defines "ecological flow" as "stream flow necessary to protect ecological integrity." "Ecological integrity" is defined as "the ability of an aquatic system to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to prevailing ecological conditions and, when subject to disruption, to recover and continue to provide the natural goods and services that normally accrue from the system." The term "prevailing ecological conditions" is defined as "the ecological

[20] https://deq.nc.gov/about/divisions/water-resources/water-planning/basin-planning/ecological-flows

conditions determined by reference to the applicable period of record of the United States Geological Survey stream gage data, including data reflecting the ecological conditions that exist after the construction and operation of existing flow modification devices, such as dams, but excluding data collected when stream flow is temporarily affected by in-stream construction activity." Being in the planning realm and associated with hydrologic modeling, the statute states: "Nothing in this subsection shall be construed to vary any existing, or impose any additional regulatory requirements, related to water quality or water resources." As written, if this effort were to apply to the permitting and regulatory realm, stakeholder participation and legislative action would be required.

DWR will continue to investigate the potential for establishing stream flow criteria for NC surface waters and will bring those recommendations to the EMC. According to NCGS § 143-214.1(d)(4), when revising existing or adopting new water quality classifications or standards, the "…Commission shall consider the use and value of State waters for public water supply, propagation of fish and wildlife, recreation, agriculture, industrial and other purposes, use and value for navigation…" All these considerations could include examination of flow. Some of the complicating factors, or obstacles, towards the establishment of an ecological flow standard are hydrological and ecological variability across the state's physiographic regions, establishing the nexus between quality and quantity, pre-existing conditions and uses, individual riparian rights, essential uses, and natural variability and perturbations associated with changes in weather patterns and climatic conditions, e.g. droughts and floods. Other state and federal programs are involved, such as: DEQ's DEMLR Stormwater Program and the Dam Safety Program. Opportunities for partnerships through the National Environmental Policy Act, the Endangered Species Act, other agencies such as the National Marine Fisheries Service, the Federal Energy Regulatory Commission and the US Army Corp of Engineers exist and can be utilized.

Wilmington Drinking Water

A citizen stated that the drinking water in Wilmington, NC causes skin damage and bladder pain. Also, the commenter stated that her doctor ordered her not to drink that water.

DEQ has undertaken numerous actions with respect to the issues in the New Hanover County / Cape Fear River basin area. DEQ maintains a website[21] to keep the public informed about actions to abate these problems.

[21] https://deq.nc.gov/news/key-issues/genx-investigation

HEARING OFFICER RECOMMENDATIONS

It is the recommendation of the Environmental Management Commission-appointed Hearing Officer, Dr. A. Stanley Meiburg, that the public-noticed revisions to rules 15A NCAC 02B .0100, .0200 and .0300, as necessitated by the State's Triennial Review of Surface Water Quality Standards mandated by the Clean Water Act, the readoption of rules pursuant to North Carolina General Statute (NCGS) §150B-21.3A , and the EPA's prior disapproval regarding provisions related to metal standards, as proposed herein, be approved by the EMC with modifications noted below and shown in the attached updated rule drafts. In making this recommendation, the Hearing Officer has considered the requirements of applicable general statutes and rules. All written and oral comments received by DWR were considered.

In taking this action, the following rules will show that the Environmental Management Commission has made revisions since these rules were public noticed:

- **02B .0101 (b) (2)**: DWR proposes to change the 40 CFR 131.10 (b) (c) (d) and (g) to 40 CFR 131.10.
- **02B .0101 (b) (3):** DWR proposes to change the 40 CFR 131.10 (j) to 40 CFR 131.10.
- **02B .0201 (f):** a typographical error was made to a federal citation relating to 33 USC 1344. A correction is proposed to read "33 USC 1341."
- **02B .0202 (1) (c):** DWR proposes to withdraw the text related to the acute toxicity definition for further consideration.
- **02B .0211 (1):** DWR inadvertently struck the term "propagation." DWR proposes to reinstate the term "propagation" to 02B .0211(1) after the phrase "aquatic life."
- **02B .0211 (4) and .0220 (3):** DWR proposes to withdraw proposed text relating to the chlorophyll *a* water quality standard and await further discussion from the SAC and NCDP process.
- **02B .0212 (5):** The last phrase after "…adverse impact, as defined in 15A NCAC 02H .1002, …" should have read "…for use as a water supply or any other designated use" rather than "…on waters within this class." DWR staff will make this modification to .0212.
- **02B .0223 (e):** DWR proposes to add "to limit nutrients" between "Commission" and "to control" in 02B .0223 (e).
- **02B .0225 (e) (7) and (e) (8): DWR** proposes to change the boat length restriction from "21" feet to "24" feet.
- **02B .0304:** Enka Lake reclassification and minor technical corrections became effective January 1, 2019. Updated rule draft submitted to NC Rules Review Commission will include this previously amended and codified changes.
- Numerous minor editorial changes requested by the NC Rules Review Commission to rules in Sections **02B .0100 and .0200**. These editorial changes are shown on the attached updated rule drafts.