

EXHIBIT 12 (AR N.33)

Timeline Summary of 2008 NH 303(d) List & Great Bay Nutrient Criteria

On February 22, 2008 the Draft copy of the 2008 NH 303(d) List was released by NH DES for public comment¹ with a closing date of March 23, 2008. NH DES received a total of two comments for the 2008 listing cycle². The first comment was from the City of Keene, NH regarding the listing of the Ashuelot River for dissolved oxygen impairment. The second comment was from the Conservation Law Foundation requesting that assessment units in the Great Bay watershed be listed as impaired for aquatic life due to excessive nitrogen loading.

On September 9, 2008 NH DES posted on the Department's website the response to comments on the Draft 2008 303(d) List³. The next day on September 10, 2008, NH DES submitted the Draft 303(d) List along with public comments and DES' response to comments to EPA for approval. Based upon further consideration of the information submitted by CLF, NH DES and EPA determined that the issue of listing waters in Great Bay for aquatic life impairment due to excessive nitrogen loading warranted further investigation. Simultaneously, along with developing the 2008 303(d) List, NH DES also developed numeric nutrient criteria for Great Bay to be used as a numeric translator for their narrative criteria for nutrient and aquatic and biological community integrity. The proposed numeric nutrient criteria were reviewed by the Technical Advisory Committee for the Piscataqua Region Estuaries Partnership on November 12, 2008 and also on November 17, 2008. At this point, the Technical Advisory Committee had been expanded from its core membership to anyone who was interested in the development of numeric nutrient criteria for Great Bay⁴. NH DES received oral comments on the proposed numeric nutrient criteria at the November 17, 2008 meeting, as well as written comments from eight individuals⁴.

The draft numeric nutrient criteria for Great Bay were posted for public comment on DES' website on December 30, 2008 and stakeholder groups were notified. From December 30, 2008 until March 20, 2009, the State conducted an 80-day public comment period to solicit comments on the draft numeric nutrient criteria⁴. "Comments were solicited from the Technical Advisory Committee, the Water Quality Standards Advisory Committee, municipalities in the Great Bay watershed, neighboring states, and environmental advocacy organizations⁴." The public comment period was an open forum to specifically solicit comments on 1) The appropriateness of the numeric targets as an interpretation of the State's narrative nutrient standard, and 2) The proposed listing of additional waterbody segments in the Great Bay estuary as a result of the newly derived

¹ NH DES posted the draft 2008 303(d) list on its website:

<http://des.nh.gov/organization/divisions/water/wmb/swqa/2008/index.htm>. Additionally, 30 stakeholder organizations were notified by email that the draft list was available for public comment.

² Appendix 32: 303(d) - Public Comments Received on 2008 Draft 303(d) List. Available at:

http://des.nh.gov/organization/divisions/water/wmb/swqa/2008/documents/appendix_32_303d_pub_comm.pdf

³ Appendix 33: 303(d) - DES Response to Public Comments. Available at:

http://des.nh.gov/organization/divisions/water/wmb/swqa/2008/documents/appendix_33_303d_des_rtc.pdf

⁴ Appendix A: Responses to Comments on Review Draft – Nutrient Criteria for the Great Bay Estuary Final (June 10, 2009) Available at:

http://des.nh.gov/organization/divisions/water/wmb/wqs/documents/20090610_estuary_criteria.pdf

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numeric nutrient targets. During the public comment period, NH DES also presented the draft numeric nutrient criteria to the Water Quality Standards Advisory Committee on January 22, 2009 and on March 18, 2009⁴.

The State received one hundred thirty-five comments from twelve entities⁴, with all of the comments related to the numeric targets and no comments on the additional segments that were to be added to the 303(d) list⁵. On June 10, 2009 NH DES released the final proposed version (including response to comments as Appendix A) of the numeric nutrient criteria for the Great Bay estuary. On August 14, 2009 NH DES requested to add the additional segments in the Great Bay watershed to the Draft 2008 303(d) list⁶. Also on August 14, 2009, NH DES posted on its website the document titled “Amendment to the New Hampshire 2008 Section 303(d) List Related to Nitrogen and Eelgrass in the Great Bay Estuary⁷.” The Draft 2008 303(d) list was revised once more on September 29, 2009 to retain Wright Pond on the list as impaired for aluminum. The 2008 NH 303(d) list was approved by EPA Region 1 on September 30, 2009⁵.

A request was made by NH DES on December 15, 2009 to start the process of having the proposed numeric nutrient criteria peer reviewed through the Nutrient Scientific Technical Exchange Partnership and Support (N-STEPS) program through a contract between EPA Headquarters and Tetra Tech. This peer review was conducted as a result of a request from NH DES to have the document reviewed in order to affirm the methods and science employed to develop the numeric targets. The goal was to gain insight into the appropriateness of the numeric targets that were selected and to gather information on how to improve the technical and scientific soundness of the criteria document for future nutrient criteria development.

In April 2010 two national experts in the discipline of estuarine science initiated the independent peer review process. The reviewers received not only the draft criteria but all comments received on the draft criteria and NH DES’s response to comments for review. Robert Howarth from Cornell University and Walter Boynton from the University of Maryland concluded that the criteria document “...provides an excellent basis for protecting the estuarine ecosystem from nutrient pollution.” and “Simply said, this is a good approach to use in systems as complicated and variable as estuaries⁸.” The reviewers were supportive of the approaches that were employed and the use of extensive sampling data to develop the numeric nitrogen targets was a strong point in support of the criteria. Also, areas of uncertainty were well supported such as, “Assumptions in the Great Bay report are well explained and generally well supported by appropriate literature and reasoning⁸.” Both reviewers applauded the transparency regarding the

⁵ EPA approval document for the 2008 NH 303(d) List (September 30, 2009)

⁶ Transmittal Letter for Impairments in the Great Bay Estuary to be added to the New Hampshire 2008 303d List (August 14, 2009). Available at: http://des.nh.gov/organization/divisions/water/wmb/swqa/2008/documents/20090814_transmittal_to_epa.pdf

⁷ Amendment to the New Hampshire 2008 Section 303(d) List Related to Nitrogen and Eelgrass in the Great Bay Estuary. Available at: http://des.nh.gov/organization/divisions/water/wmb/swqa/2008/documents/20090813_303d_list_update.pdf

⁸ Independent Peer Review of Nutrient Criteria Proposal for the Great Bay Estuary (June 29, 2010) Available at: <http://des.nh.gov/organization/divisions/water/wmb/coastal/documents/20100629-peer-review.pdf>

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explanation of the methods used and the availability of the data for anyone to examine, as well as the reproducibility of the analyses that were performed⁸. The reviewers also provided comments and suggestions of ways to improve the criteria document, but overall were very supportive of the approach and methods used.