



THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

SEP 16 2015

Peter S. Thorne, Ph.D.
Chairman
Science Advisory Board
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Dr. Thorne:

I very much appreciated the early advice provided during the December 10, 2014, public meeting and in your June 25, 2015, letter on the *Ensemble Modeling Approach for Developing Lake Erie Phosphorus Objectives*. Your feedback and suggestions will help guide the U.S. Environmental Protection Agency as we work with our U.S. and Canadian federal, state and provincial partners to achieve the commitments under Annex 4 of the Great Lakes Water Quality Agreement.

We are pleased that the Science Advisory Board agrees that ecosystem simulation models and ensemble modeling are appropriate approaches for developing phosphorus-reduction targets for Lake Erie. We also appreciate the board's recognition that while the eutrophication-response indicators were valid choices, there may not be sufficient data on the phosphorus content of *Cladophora*. Indeed, the modeling of this indicator has proven to be a challenge. The EPA and Environment Canada are planning a *Cladophora* workshop during autumn to understand the state of the science and to identify information needed to set targets to address nuisance algae.

We acknowledge the board's support for a flexible, adaptive approach and agree that it will be important to periodically assess the models and their projected target loadings. We also appreciate your concern that other factors in addition to phosphorus, such as co-limitation by nitrogen, must be considered and that phosphorus cycling has likely been altered due to impacts of invasive mussels and climate change. We are currently developing an adaptive management plan that will identify the monitoring, data and analyses needed to assess progress and will adjust as necessary to achieve the phosphorus objectives.

In the meantime, I thank you for your early advice, and I look forward to your subsequent review. The draft binational phosphorus targets have been proposed, and the EPA and Environment Canada solicited public views through August. We anticipate engaging the Science Advisory Board to complete its review during the upcoming winter. If you have further questions or concerns, please contact me or Tinka Hyde, director of Region 5's Water Division, at hyde.tinka@epa.gov or (312) 886-9296.

Sincerely,

A handwritten signature in black ink, appearing to read "Gina McCarthy".

Gina McCarthy



THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

SEP 16 2015

William H. Schlesinger, Ph.D.
Chairman
Lake Erie Phosphorus Objectives Review Panel
Science Advisory Board
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Dr. Schlesinger:

I very much appreciated the early advice provided during the December 10, 2014, public meeting and in your June 25, 2015, letter on the *Ensemble Modeling Approach for Developing Lake Erie Phosphorus Objectives*. Your feedback and suggestions will help guide the U.S. Environmental Protection Agency as we work with our U.S. and Canadian federal, state and provincial partners to achieve the commitments under Annex 4 of the Great Lakes Water Quality Agreement.

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