

**U.S. Environmental Protection Agency  
Science Advisory Board  
Public Teleconference  
Meeting Minutes**

**Date and Time:** March 30, 2017, 1:00 p.m. to 5:00 p.m.

**Location:** Teleconference Only

**Purpose:** To discuss the draft (2/27/2017) SAB Review of Lake Erie Nutrient Load Reduction Models and Targets and conduct a quality review.

**Meeting Participants:**

**SAB Members**

Dr. Peter S. Thorne, Chair	Dr. Robert Johnston	Dr. William Schlesinger
Dr. Joseph Arvai	Dr. Robert E. Mace	Dr. Gina Solomon,
Dr. Sylvie M. Brouder	Dr. Mary Sue Marty	Dr. Daniel O. Stram
Dr. Alison Cullen	Dr. Kristina D. Mena *	Dr. Jay Turner
Dr. Otto Doering	Dr. James Opaluch	Dr. Jeanne M. VanBriesen
Dr. Michael Dourson	Dr. Thomas F. Parkerton	Dr. Charles Werth
Dr. Susan P. Felter	Mr. Richard L. Poirot	Dr. Robyn S. Wilson
Dr. Kimberly L. Jones	Dr. Tara L. Sabo-Atwood	

(For the full SAB see Roster<sup>1</sup>)

**SAB Staff:**

Mr. Thomas Carpenter, Designated Federal Officer (DFO), for the Chartered SAB  
Mr. Christopher Zarba, SAB Staff Office Director

**Other Attendees:** Names of those who requested the teleconference call-in number are provided in Attachment A.

**Meeting Summary:**

**Convene the meeting**

Mr. Thomas Carpenter, Designated Federal Officer (DFO) for the chartered SAB, formally opened the meeting and noted that this federal advisory committee teleconference was announced in the Federal Register<sup>2</sup>. The SAB is an independent, expert federal advisory committee chartered under the authority of the Federal Advisory Committee Act (FACA). The SAB is empowered by law, the Environmental Research, Development, and Demonstration Authorization Act (ERDDAA), to provide advice to the EPA Administrator on scientific and technical issues that support the EPA's decisions. The DFO noted that the Federal Register notice announcing the meeting had provided the public with an opportunity to provide written and oral comment.

The DFO stated that the SAB consists entirely of special government employees (SGEs) appointed by EPA to their positions. As SGEs, chartered SAB members are subject to all

applicable ethics laws and implementing regulations. EPA has determined that advisors participating in this meeting have no financial conflicts of interest or appearance of a loss of impartiality under ethic regulations specified in 5 CFR §2635 relating to the topic of this meeting. The DFO noted that recused himself and will not attend the meeting.

### **Purpose of the teleconference and review of the agenda**

The SAB Chair, Dr. Peter Thorne, stated the purpose was to hear public comment on the of the Draft Report (2/27/17) SAB Review of Lake Erie Nutrient Load Reduction Models and Targets for Quality Review and conduct the quality review of the document. He noted that one public speaker registered. Dr. Thorne reminded members that the purpose of the quality review is to determine if the report is ready to transmit to the Administrator as a SAB report and under what conditions. In reaching that determination he asked members to focus on the SAB's four quality review questions:

- Were the charge questions adequately addressed?
- Are there any technical errors or omissions in the report or issues that are not adequately dealt with in the draft report?
- Is the draft report clear and logical?
- Are the conclusions drawn or recommendations provided supported by the body of the draft report?

### Public Commenter

Dr. Thorne introduced Ms. Adrienne Nemura with Geosyntec Consultants representing Ohio Corn & Wheat Growers Association and Ohio Soybean Council. Ms. Nemura provided a written statement<sup>3</sup> in addition to providing oral comment. She expressed concern about the short notice for this teleconference and would request additional time to provide input to the panel.

She suggested the report needs clarification regarding the use of “adaptive management”. Her firm is using this in the context of a more holistic approach that goes beyond lake water quality models – and considers the need for flexible approaches to implementing nutrient controls, including research on BMPs and recognition of available funding. She expounded that successful adaptive management goes beyond modeling and monitoring and technical experts and requires successful engagement of the stakeholders that can fund and implement the necessary controls.

They believe there is a critical need to link watershed models to the lake models and a need to understand the fate and transport of various forms of phosphorus within the tributaries and resultant delivery of phosphorus to the lake. Need to consider soil erosion, surface runoff and tile drainage of total and dissolved P. BMPs targeted at one source at the expense of others will be short-sighted. They also agree with the importance of understanding the impact of legacy P in the lake and would add to legacy P within the watershed and the lag times associated with implementation of controls and water quality responses.

They are concerned about the SAB's recommendation that agricultural BMPs to reduce N be used in the basin. This is a fundamental shift for Ohio agriculture and the implementation issues are not well understood and could be significant.

Dr. Thorne then turned to Dr. William Schlesinger, the Chair of the Lake Erie Phosphorus Objectives Review Panel. The Draft SAB report provides peer review consensus advice and

recommendations on the development of nutrient-load reduction targets for Lake Erie water quality and reduce harmful algal blooms.

- The draft report was developed from a SAB panel's discussion at a public meeting (6/21/2016) and teleconference (10/12/2016) to revise drafts posted on the SAB web page to solicit public comments.
- SAB report reviews the modeling approach and results used to develop nutrient-load reduction targets for Lake Erie and provides advice on an adaptive management approach to implementing nutrient reduction goals.

The SAB report responds to six charge questions:

1. the adequacy of the evaluation of the models used to develop load-response curves;
2. whether the recommended phosphorus load-reduction targets are based on the best available information;
3. whether scientifically sound phosphorus load reductions can be developed to address growth of a nuisance alga, *Cladophora*;
4. whether nitrogen control, in addition to phosphorus, is warranted in Lake Erie;
5. recommended approaches to assess progress in reducing loadings of phosphorus; and
6. recommendations for an adaptive management approach to implement nutrient reduction goals for Lake Erie.

The Draft Report recommendations:

- Identify steps to improve the modeling effort by reducing the number of models considered,
- Agree with EPA's approach that a 40% reduction in phosphorus loads to the lake will improve Lake Erie water quality and reduce harmful algal blooms
- Identify concerns about uncertainty with some of the models and provides recommendations to improve initial predictions of biomass and fill knowledge gaps in the growth of nuisance algal species
- Find that monitoring data (discharge, flow, concentrations and loads) from significant tributaries and multiple assessment approaches be reviewed and used to evaluate efforts to reduce nutrient loadings, and
- Endorse development of an adaptive management program to implement and evaluate nutrient reduction goals for Lake Erie that includes long-term monitoring and makes annual predictions of eutrophication response indicators.

#### Lead Reviewers

Dr. Thorne thanked Dr. Schlesinger and introduced the lead reviewers to provide their comments. He noted that written comments<sup>4</sup> are posted on the SAB webpage.

Dr. Sylvie Brouder, the first lead reviewer noted the importance of this topic. She noted the Panel developed a comprehensive coverage of the charge questions. Dr. Brouder noted the EPA was pursuing an ensemble model approach however they did not use an ensemble modeling approach. It would be good to note the reason why the approach was not used and what are the consequences the agency encountered. The agency should lay out the logic more clearly used to pick models. For example, models may not have addressed the variability of the aquatic differences in Lake Erie and difficulties. She suggested using stronger language to emphasize the need to link land use with water quality and developing a list of what the adaptive management

implementation should include. A short definition of legacy phosphorus should be included in the EPA report. The draft review could also prioritize and encourage EPA to identify missing components needed for modeling.

Regarding load target development she notes there should be a discussion on uncertainty on hypoxia and the Executive Summary should discuss the multiple factors considered by the panel and agency. The loading target discussion would benefit from a recommendation to better identify long-term and short-term goals.

Dr. Kimberly Jones, the second lead reviewer agreed with Dr. Broder's comments. She noted the long-term goals are very generic and need more discussion in the body of the report. If there is not more discussion she suggested dropping the generic recommendations. She noted that short term goals should have a defined timeline and it may be helpful to create a medium time frame category. Short-term being immediate modeling and data needs and medium the first implementation steps.

Dr. Robyn Wilson was the third lead reviewer, she noted the appropriate state of the science discussion in the draft report. She agreed with Dr. Jones on better definition of short-term recommendations to define both the time line and the need for implementation.

She suggested a recommendation regarding the future changes in loads reductions need to account for upstream changes (i.e., land use practice), climate change, and seasonal variability. Best management practices (BMP) are being implemented in the tributaries and monitoring at the tributary/watershed levels to understand variability will be critical for the adaptive management approach recommended. The BMP discussion should also address behavioral science aspects. The region is using nonregulatory approaches to modify land use practices with a water quality goal as the driver for changes and BMPs

One critical element left out of the discussion in the EPA report is the tension between nitrogen and phosphorus ratios (N/P) in nutrient dynamics. While the effort is leading to a Great Lakes Standard for phosphorus in Lake Erie N/P ratios should be considered. The draft review could mention the SAB's other work and advice in this area.

She noted that her written comments provide comments on the examples used in the draft review regarding case studies, behavioral science research in the region

### Discussion and Disposition of Report

Dr. Thorne thanked the lead reviewers and asked Dr. Schlesinger to comment on the suggestions. He noted the discussion on the WLEEM model and selection process could be expanded but did not want to go in depth in providing EPA with a rigorous set of criteria, rather ask the agency to expand in their revised document on the planned ensemble approach and how the one model approach was chosen.

He believed the report could be revised to discuss and clarify legacy P and N/P ratio, uncertainty and model/data reliability. Regarding priorities the recommendations could be batched in the tiers of short medium and long. The revision could look at the list paring down or combining recommendations appropriately.

Dr. Thorne called on other SAB members for their comments.

Dr. Hamburg commented that the N/P ratio is a colimitation issue and should also note the lack of tertiary treatment for waste water by publicly owned treatment works in the basin.

Dr. Parkerton agreed with previous comments that the recommendations need a triage and prioritization. He expressed concern that the flow-based weighting of tributaries can be accomplished and stressed the calibration and fit for purpose for the model will be a critical step. He also commented that fluxes in N concentration will impact the growth rates of bio carbonaceous sources and in turn influence N’P uptake and release.

Dr Arvai expressed concern that the Adaptive management approach is being used as a panacea. The draft review discussion is very general and well implemented adaptive management scenarios are more comprehensive. The adaptive management is a good idea however, he EPA report needs more presentation on what is needed and will be implemented he noted that Dr. Wilson’s written comments have very constructive recommendations for the agency.

Hearing no further comments, Dr. Thorne called for a motion to finalize the draft review. Dr Opaluch motioned for the panel chair to revise the report with input from the lead reviewers before submitting the report to SAB Chair. Dr. Hamburg seconded the motion. Dr. Thorne asked for debate on the motion. Hearing no requests, he asked for a vote on the motion for the Panel chair to revise the report based on the discussion. The revised report will be distributed to lead reviewers for concurrence and then submit to him for submission to the agency.

The motion passed unanimously with no abstentions.

Dr. Thorne then turned to the DFO to adjourn the meeting. The DFO adjourned the meeting at 2:54 p.m.

Respectfully Submitted and Certified as Accurate,

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Mr. Thomas Carpenter  
SAB DFO

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Dr. Peter S. Thorne  
SAB Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.

## Materials Cited

The following meeting materials are available on the SAB website,  
<http://www.epa.gov/sab>, at the page for the March 30, 2017 meeting:

<https://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/c117d94be044ba63852580bc005a201f!OpenDocument&Date=2017-03-30>

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<sup>1</sup> Roster of SAB members

<sup>2</sup> Federal Register published Vol. 82 No.54. Wednesday, March 22, 2017 (14723-14724)

<sup>3</sup> Summary of oral comments presented by Adrienne Nemura on behalf of the Ohio Wheat Growers and Ohio Soybean Council

<sup>4</sup> SAB Member's Quality Review Comments as of March 26, 2017. (PDF, 23 pp., 174,356 bytes)

**Attachment A**  
**US EPA Public Teleconference**  
**March 30, 2017**  
**Members of the Public Requesting the Teleconference Information**

Lindsey Jones, TCEQ  
Lara Beaven, Inside EPA  
Ken Gibbons, Great Lakes Commission  
Mark McCabe, Gresham Smith and Partners  
David Dunlap, Koch Companies Public Sector, LLC  
Ed Thomas, The Fertilizer Institute