

9 July 2020

To: John Kreider, Chair, NOAA Science Advisory Board

CC: Robert Winokur, SAB Liaison to the Environmental Information Services Working Group

Cynthia Decker, NOAA SAB Executive Director

SUBJECT: Third NOAA SAB EISWG report to the US Congress, as required by the Weather Research and Forecasting Innovation Act of 2017 (P.L. 115-25, 18 April 2017), as amended (P.L. 115-423, 7 January 2019)

Dear Mr. Kreider:

This is the third report to the United States Congress from the National Oceanic and Atmospheric Administration (NOAA) Science Advisory Board (SAB) Environmental Information Services Working Group (EISWG). It is made in accordance with Title IV, Sec. 401(c) of the Weather Research and Forecasting Innovation Act of 2017 (P.L. 115-25, signed 18 April 2017), and as amended (most recently by P.L. 115-423, 7 January 2019) (hereafter, the “Weather Act”), which assigns EISWG the following responsibility:

“ANNUAL REPORT.—Not less frequently than once each year, the Working Group shall transmit to the Science Advisory Board for submission to the Under Secretary a report on progress made by National Oceanic and Atmospheric Administration in adopting the Working Group’s recommendations. ...”

Background and overview of process: The EISWG is committed to delivering valuable insights to NOAA and the Congress, and works closely with the NOAA Line Office liaisons to carry out its assigned role in assessing NOAA’s progress toward meeting the objectives of the Weather Act. An important part of this close collaboration is a prioritization process that both ensures attention to the critical topics and also recognizes the limits on what the working group can do based on resourcing. The EISWG also continues to explore ways to optimize both the review process and the value of its feedback, including: leveraging additional information gathering opportunities; engaging NOAA experts more frequently and informally; and designing a more efficient internal report-writing and review process. As a result, the EISWG is becoming increasingly effective at addressing topics within the Weather Act identified and systematically prioritized through this collaborative process.

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In the past two years, EISWG efforts have generally followed a reactive review process guided by the release of individual NOAA reports mandated by the Weather Act. Upon receipt of a publicly released report a small task group of EISWG members and outside experts is formed. A brief report is then prepared by this task group. The report contains prioritized findings and recommendations, is reviewed by the EISWG membership, and is forwarded to the NOAA SAB for its consideration and transmittal to NOAA leadership. Unfortunately, through this period we have found this process to be slow given many of the reports are complex and subject to extended periods of internal review. Currently, EISWG members are not allowed to preview any report prior to it being made public (after this lengthy internal review). However, if EISWG members were to become Special Government Employees (SGE), previews would be allowed. This designation has been discussed, but no action has been taken.

So, in addition to reviewing the Weather Act mandated reports as they become available, the EISWG has shifted to a more proactive approach to fulfill its responsibilities. Going forward, in each of its face-to-face meetings, the EISWG will review how NOAA is progressing within a key Weather Act topic. Such reviews will involve presentations by NOAA staff and outside experts. A similar task group approach as described above will be used to compile and report on this review as with each of the formal NOAA reports. This proactive process was used in the EISWG's review of the use of Observing Systems Simulation Experiments (OSSE) within NOAA. It is worth noting that the EISWG's OSSE report has been accepted for formal publication in the scientific literature; specifically, in the American Meteorological Society's Bulletin (BAMS).

New reports received: As of this writing, EISWG has received one new report required to be delivered by NOAA to the Congress. This report is on the Hurricane Forecast Improvement Program (HFIP). The EISWG has formed the task group and it is in the process of reviewing the report. We anticipate submitting the report to the SAB in the fall of this year.

Additional opportunities: A new program, the Earth Prediction Innovation Center (EPIC), appears prominently within the 2019 National Integrated Drought Information System (NIDIS) reauthorization of the Weather Act (PL-115-423). Given this visibility, the EISWG committed considerable attention to the rapidly emerging community conversations around this new program. Over this past year, we committed significant time during one of our face-to-face meetings on the topic with presentations from NOAA and other stakeholders. The EISWG also sent representatives to a community workshop on EPIC (August 2019, Boulder, CO), and, finally, prepared a report with

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recommendations to the NOAA Science Advisory Board concerning the Earth Prediction Innovation Center (EPIC). In its report the EISWG strongly endorsed the EPIC initiative but also called out several significant concerns that must be overcome if EPIC is going to be successful. These concerns include, but are not limited to, topics around governance, infrastructure, resources, and community commitment. In addition, while it may be more a matter of timing, the current program efforts prioritize infrastructure and lack an emphasis on enabling critical scientific advancement in support of EPIC. Finally, as presented, to become a successful and highly impactful program, it will need to be funded at considerably higher levels than currently prescribed. The EISWG EPIC report is included here as Attachment A.

NOAA prepared a written response to the EISWG regarding the EPIC report early this year and the EISWG met with NOAA Leadership in February of 2020 to discuss their feedback. NOAA's written response to the EISWG's findings and recommendations regarding EPIC is included as Attachment B.

The EISWG will continue to prioritize EPIC and monitor its progress. Future reports will include updates and assessments on NOAA's progress with this highly visible and potentially valuable effort.

NOAA response to EISWG findings and recommendations: Our 2019 annual report contained two reports with findings and recommendations for NOAA regarding:

(1) the use of Observing Systems Simulation Experiments (OSSE) in NOAA; a focus area identified by the Science Advisory Board (SAB) and one that appears in several key areas within the Weather Act.

and, (2) the NOAA report to Congress, *Tornado Warning Improvement and Extension Program Plan* produced by the NOAA Office of Oceanic and Atmospheric Research. This is a required report from the Weather Act legislation.

In December 2019, the EISWG received a summary report from NOAA with a response to each of our recommendations in these two reports, of which there were five (5) in the OSSE report; and eight (8) in the Tornado Warning Improvement and Extension Program Plan report. NOAA's report is included as Attachment C. While the responses to each recommendation were brief, and generally without significant detail, they were highly valuable in that they provided the EISWG important visibility into the thoughts and priorities of the NOAA Leadership Team - as well as future plans and directions. This summary report, which was also submitted to the Senate Committee on Commerce, Science, and Transportation in December 2019, is attached here for reference. The

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EISWG feels strongly that similar written feedback following future EISWG submissions of findings and recommendations will prove to be an important part of this overall Weather Act review process.

In summary, the EISWG is generally satisfied with NOAA's attention to, and progress toward, achieving the objectives of the Weather Act (and the NIDIS reauthorization).

We have found our access to NOAA experts and Leadership productive and collaborative.

Nonetheless, some frustration remains around the pace of development of required reports within the NOAA line offices and even more so with the slow delivery of the completed reports to the Congress due to the slow onerous internal review process mandated by the Executive Branch. Not only does this make it more difficult for EISWG, and the Congress, to monitor NOAA's progress regarding the Weather Act, but the pace and delay are such that the content when finally released is often outdated and less relevant. We will continue to leverage other approaches to help mitigate this challenge. We note that granting SGE status to EISWG members has the potential to improve this situation.

On behalf of the members of the EISWG, Co-Chairs:

John T. Snow

Brad Colman

Attachments:

- A. Environmental Information Services Working Group (EISWG) Report and Recommendations to the NOAA Science Advisory Board concerning the Earth Prediction Innovation Center (EPIC)
- B. NOAA response to the EISWG's report on EPIC
- C. NOAA response to the EISWG's 2019 Report to Congress