



Building a Community-Driven Vision for the Next Generation Weather Enterprise:

Update on Project Development

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- A private, non-profit organization charged to provide advice to the Nation on science, engineering, and medicine.
- Committees produce 250+ consensus reports each year on a wide range of topics.
- Committees are composed of experts who serve pro bono, carefully chosen for expertise, balance, and objectivity
- All reports go through stringent peer-review and must be approved by both the study committee and the institution.
- Full text and PDF summaries of reports available AT NO COST at <http://nationalacademies.org>

Board on Atmospheric Sciences and Climate

... advance understanding of the earth's atmosphere and climate, and serve as a source for objective, independent advice to the federal government and others.

Recently Completed BASC Studies

- *Weather Services for the Nation: Becoming Second to None* (2012)
- *Extreme Weather Events and Climate Change Attribution* (2016)
- *Next Generation Earth System Prediction* (2016)
- *Integrating Social and Behavioral Sciences Within the Weather Enterprise* (2017)
- *Improving Characterization of Anthropogenic Methane Emissions in the United States* (2018)

Current BASC Activities

- Advice to the US Global Change Research Program
- Developing a Research Agenda for Carbon Dioxide Removal and Reliable Sequestration



BASC Members

A. R. Ravishankara [*chair*], Colorado State Univ.

Shuyi S. Chen [*vice-chair*], Univ. of Washington

Cecilia Bitz, Univ. of Washington

Mark A. Cane, Columbia University

Heidi Cullen, Climate Central

Robert B. Dunbar, Stanford University

Pamela Emch, Northrop Grumman Aerospace Systems

Arlene Fiore, Columbia University

Peter Frumhoff, Union of Concerned Scientists

William B. Gail, Global Weather Corporation

Mary Glackin, The Weather Company, an IBM Business

Terri S. Hogue, Colorado School of Mines

Everette Joseph, Univ. of Albany, SUNY

Ronald N. Keener, Jr., Duke Energy Corporation

Robert Kopp, Rutgers University

Ruby Leung, Pacific Northwest National Laboratory

Jonathan Martin, Univ. of Wisconsin-Madison

Jonathan T. Overpeck, Univ. of Michigan

Allison Steiner, Univ. of Michigan

David W. Titley, Pennsylvania State University

Duane E. Waliser, Jet Propulsion Laboratory

OSB Liaison

David Halpern, Jet Propulsion Laboratory

“Given the ever evolving nature of the weather enterprise I would submit we need an active and ongoing strategic planning process as could be achieved by Congress requesting a decadal survey for the weather enterprise inclusive of mid-way assessments and subsequent follow-on surveys.”



Statement of
Antonio J. Busalacchi, Jr., Ph.D.
before the
Subcommittee on Environment
Committee on Science, Space and Technology
U.S. House of Representatives
June 8, 2016

Scoping Meeting Held April 18, 2017

Meeting objectives:

- Discuss emerging societal needs, technology and science changes, and other future challenges and opportunities for the weather enterprise with community leaders.
- Take stock of current approaches for setting weather priorities (including research to meet those priorities), and identify what's working and not working in these current approaches
- Discuss whether a National Academies activity could help address current challenges and, if so, how it could be structured to be most useful.

Our take aways...

- Time is ripe for an effort that brings the community together around a clear framework for future coordination.
- Areas that could benefit from more coordination include:
 - Model development
 - Sustainability of observations
 - Research priorities and funding
 - Education and workforce development
 - Connections between research, operations, and decision making
 - International components

Our take aways...

- However, many questions were raised about the specific nature of a possible new National Academies activity, such as:
 - Interface with existing coordination and strategic planning efforts?
 - How to build on past guidance?
 - How to design a process that allows for robust participation by all sectors?
 - Is the traditional “decadal survey” approach a good fit?

Desired characteristics

- Builds on existing coordination activities, strategic planning efforts, and reports
- Emphasis on community engagement; development of shared vision
- Focus on longer-term [10-25 years?] horizon
- Elevates public awareness of national investment in weather
- Confronts the hard issues that limit collaboration
- Products recognized as authoritative by government oversight entities
- Mechanism to build accountability into the process
- Expectation that process would be repeated at regular intervals



Building a Community-Driven Vision for the Next Generation Weather Enterprise

Draft Statement of Task

The committee will **engage the broad weather community** to develop a shared vision for the U.S. weather enterprise, identify a set of shared goals for advancing the enterprise during the next decade, and recommend critical investments, institutions, and coordination mechanisms to make rapid progress towards meeting these goals. Existing agency missions, laws and other Congressional guidance, strategic plans, and reports (e.g., research agendas, observational priorities) will serve as a foundation for their analysis. The committee will not make recommendations that conflict with agency missions or Congressional guidance. Their report will:

- 1. Describe the weather enterprise today.**
- 2. Consider how the weather enterprise may change in the next few decades.**
- 3. Describe a comprehensive ideal vision of a robust and successful weather enterprise for the next decade and beyond.**
- 4. Recommend key steps to enable the weather enterprise to achieve the vision.**

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Draft Statement of Task (cont.)

In addressing its charge, the committee shall engage the broad weather community and **consider the full continuum from research to decision making**, including:

- A. Research in the physical, natural, and social and behavioral sciences
- B. Development of next generation modeling and data assimilation capabilities
- C. Space based and in situ observations/platforms – both traditional and novel approaches
- D. Education and work force development
- E. Weather-related decision making

Community Engagement

- **Request(s) for input**

- **Virtual engagement**

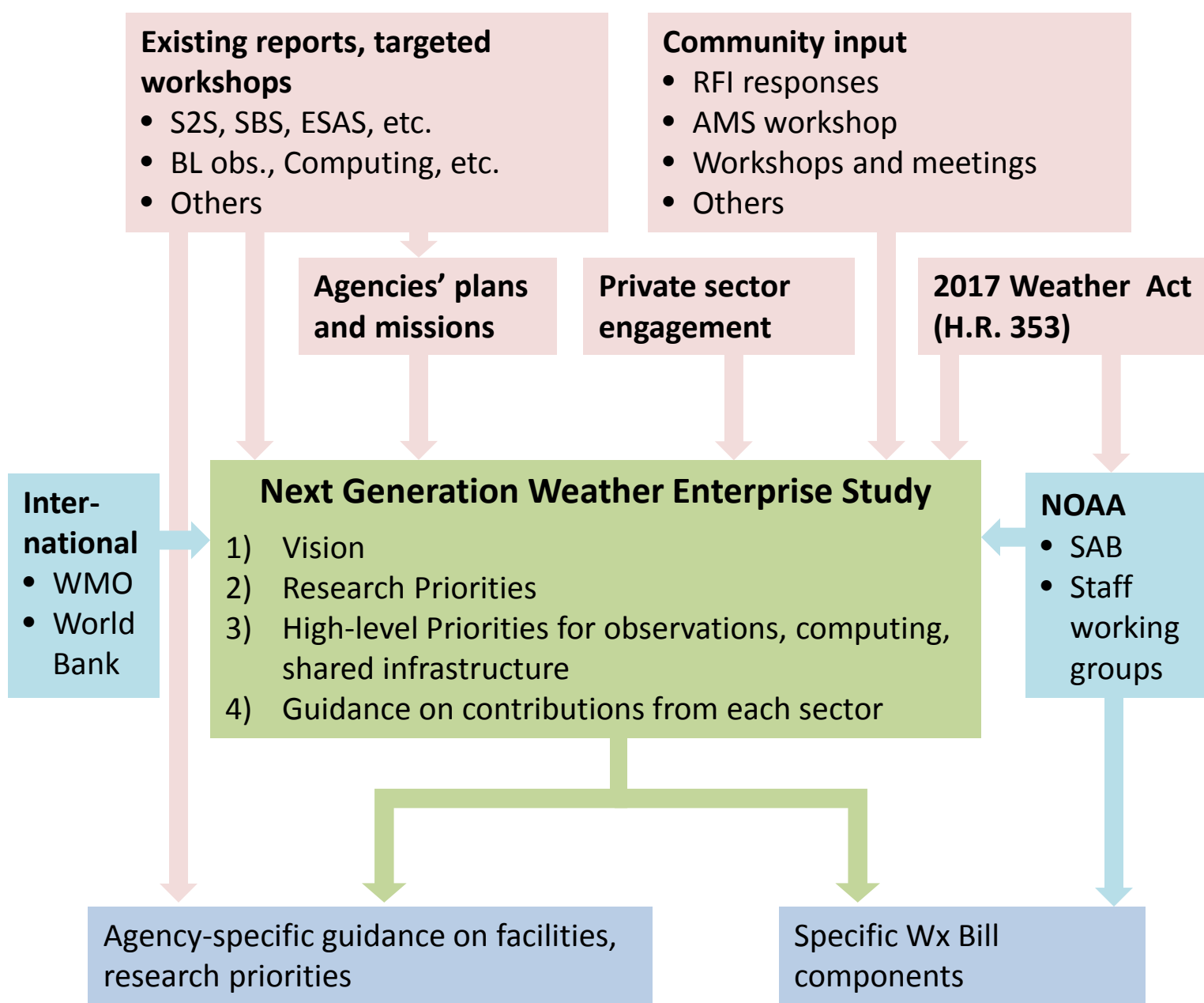
- discussion threads facilitated by committee members
- a repository of relevant reports and recommendations
- the collection of responses to the RFI
- videos of presentations made to the committee
- outputs of the community workshop

- **In-person engagement**

- community workshop(s)
- open sessions at committee meetings
- town halls and other events at professional meetings



- **Input to committee deliberations**
- **Insights to be gained along the way**
- **Better understanding, stronger connections among parts of the community**
- **Opportunities to provide feedback along the way**



AMS Summer Community Meeting

- **August 7:** BASC planning discussions on the weather enterprise
 - Focus on: How the weather enterprise may change in the next few decades
 - Panel sessions on societal needs and drivers, the scope of the weather enterprise, technology drivers and trends, and enabling partnerships
 - Include representatives from public and private sectors, academia, and international
- **August 8:** AMS planning discussions
 - Commission on the Weather, Water, and Climate Enterprise (CWWCE)
Board on Enterprise Communication
- **August 9:** NOAA partners meeting

Location: NCAR Center Green, Boulder, CO

Thank you!

To provide input on proposed Weather Enterprise study:

- Amanda Staudt – astaudt@nas.edu

For more info on BASC activities:

- <http://dels.nas.edu/basc>

BASC spring meeting:

- May 21-22, 2018, in Washington DC
- Register to attend in person or participate virtually:
<http://dels.nas.edu/basc/Upcoming-Events>