



Science Advisory Board

# Update on Priorities for Weather Research (PWR) Study and Report

25 August 2021

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# PWR Briefing Agenda

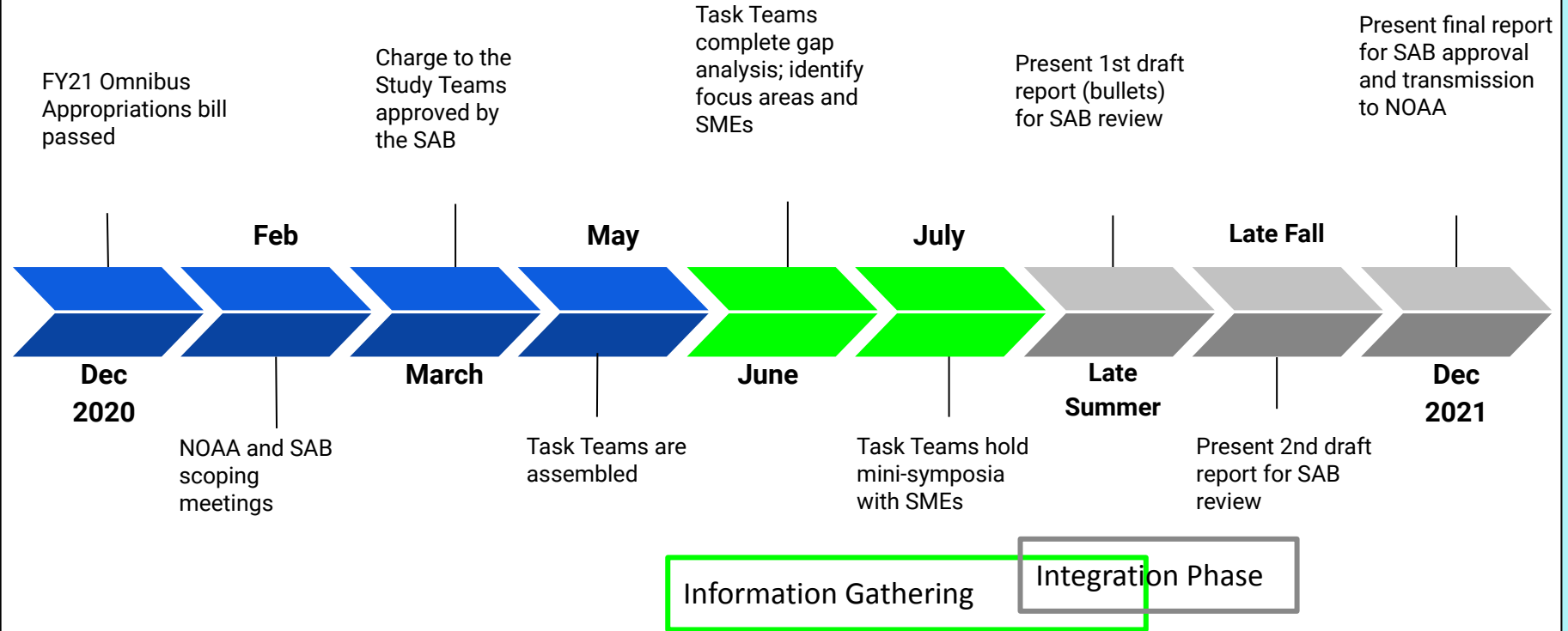


- Goals for today
- Quick update on timeline and progress
  - “Touch points” with the SAB through December
- Overview of Extended Outline TOC
- Priority Discussion topics
- General Discussion

# Goals for Today

- First: Thanks to the entire PWR team for their enthusiasm, dedication, & collaborative effort to get to this point. Much has been accomplished
- Update you on the status of the PWR Project
- Get your feedback on the report structure, flow, and high-level content
- Drive toward alignment on a few key priority topics
  - Prioritization process
  - Linkages to NOAA requirements
  - Capturing “The Why”

# PWR Timeline



# SAB Timeline and Participation

- Special SAB Meeting (Today): Seeking your feedback and guidance on the extended report outline
- PWR Team will deliver first draft of report for SAB review by mid-October
- Working session(s) with interested SAB members (timing TBD)
- SAB Meeting - TBD (after review process) - Final brief and report approval decision prior to publication

# Table of Contents

- Section 1: Charge from the U.S. Congress (Language from 2021 Omnibus Act) (1 page)
- Section 2: Executive Summary (2 pages)
- Section 3: Introductory Sections (3 pages)
  - Urgency, Purpose, Scope, Strategic Framework (3 Pillars + 4 Foundational Elements)
  - Prioritization criteria, consensus approach, and balanced portfolio
- Section 4: External World - Overarching Trends, Environmental Equity, Risks & Opportunities (2 pages)
- Section 5: Priorities for Federal Investment:
  - Narrative Themes (5 pages)
  - Pillars (21 pages)
  - Foundational Element Cross-cut Priorities (5 pages)
- Section 6: Immediate Priorities and Common Challenges (2 pages)
- Section 7: Concluding Remarks and Suggestions for Follow-up (1 page)
- Appendices: Approach, Participants, Meeting Log, NOAA Document Repository, etc
- 42 Pages Total + Appendices

## **Section 5: Priorities for Federal Investment:**

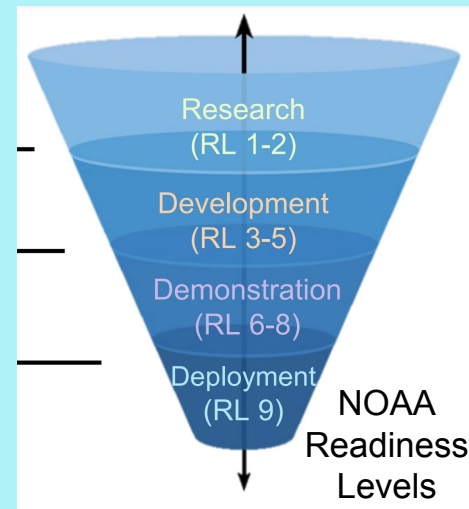
- Narrative Themes (~1 page each)
  - A. Mission Critical Mile
  - B. Pathway to Global Leadership in Weather Prediction
  - C. High Impact Weather
  - D. Improved Prediction of Water Cycle Extremes and their Cascading Impacts
  - E. Achieving Highly Reliable, Fully Accessible Weather Information
- Pillars (~7 pages each)
  - A. Observations and Data Assimilation
  - B. Forecasting
  - C. Information Delivery
- Foundational Element Cross-cut Priorities (~1 page each)
  - A. Science
  - B. Computing
  - C. Workforce
  - D. Weather Enterprise
  - E. Candidate mini cross cuts

# Prioritization

## Consensus Approach To A Balanced Portfolio

- The Legislation requests: “*...a report,... , that provides policymakers with the relevant information necessary to prioritize investments...*”
- Guidance was provided to each team on what characterized a high priority recommendation.
- Task Teams used many discussions, the mini-symposia, and the larger Study Team to reach consensus.
- Recommendations will not be ranked within each sub-section (generally clusters of 3-5)
- Technical readiness levels, MSAs, and linkages to GPRA goals, will identified (as appropriate) in a summary table.

PWR Study Team	40
AA's on Scoping Team	3
NOAA Support Team	12
External SMEs	51
NOAA SMEs	26
Support Staff	4
<b>TOTAL People</b>	<b>136</b>

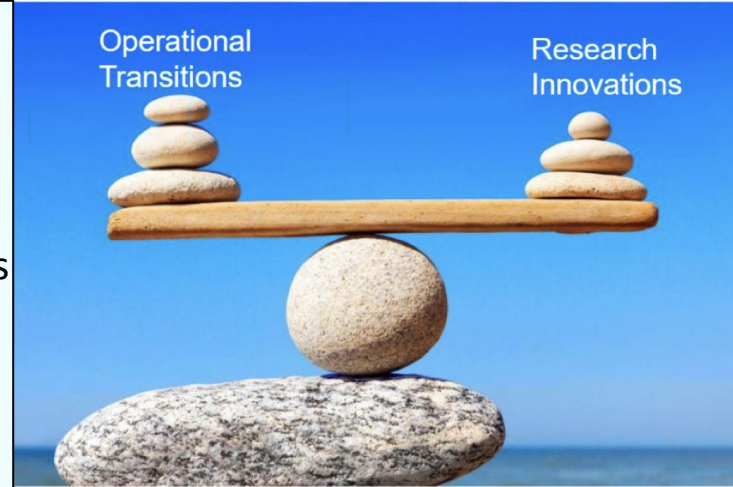




# Setting priorities - seeking a balanced portfolio

## High priority recommendations:

- Must have high reward and benefit (gap filling, core, or innovation) with a clear connection to value, impact, or transformational potential
- Has strong linkage to NOAA through identified Requirements or aligned with Mission Service Areas (MSAs)
- Is clearly advantageous (value, impact, or transformational) to achieving NOAA's weather mission
- Has favorable context with respect to the Enterprise and the changing external World
- Reflects a favorable balance between probability of success and reward



# Linkages to NOAA Requirements

**GPRA (Government Performance and Results Act) Goals** are focused on the results of government activity and services, supporting congressional oversight and decision-making, and improving the managerial and internal workings of agencies within the federal government. GPRA is unique in its requirement that agency "results" be integrated into the budgetary decision-making process.

## TPIO Requirements (Briefed in [May](#))

01

### Mission Requirements

NOAA responsibilities resulting from one or more requirements drivers. Should be understandable, outcome - oriented, concise, and actionable, and should identify the need but not prescribe specific solutions. Protect life and property from severe weather event

02

### Business Requirements (Products / Services)

Describe why the organization is undertaking the project. They state benefits that customers expect to receive from the products and services. Issue tornado warnings to public with >10-minute lead time to prevent loss of life and property

03

### User Observation Requirements

System independent, validated user needs of their environmental parameters, with their associated attributes required to produce specific products and services to meet mission objectives.

Wind Profile: Speed; Geo: CONUS+AK+HI+US; Territories; Horizontal: 150 nm; Vertical Res: 100ft; Meas Acc: 2m/sec; Sampling Interval: 20min

04

### Observing System Requirements

The building blocks developers use to build the system. Traditional "shall" statements that describe what the system "shall do." System requirements are classified as either functional or supplemental. Shall be a weather radar with dual polarimetric capability

05

### Sensor Requirements

The technical specification for a sensor attached to the observing system. Spectrum width 0.5 degree azimuthal by 250 m range gate resolution to a range of 300 km

## WEATHER READY NATION (WRN)

### Mission Service Areas

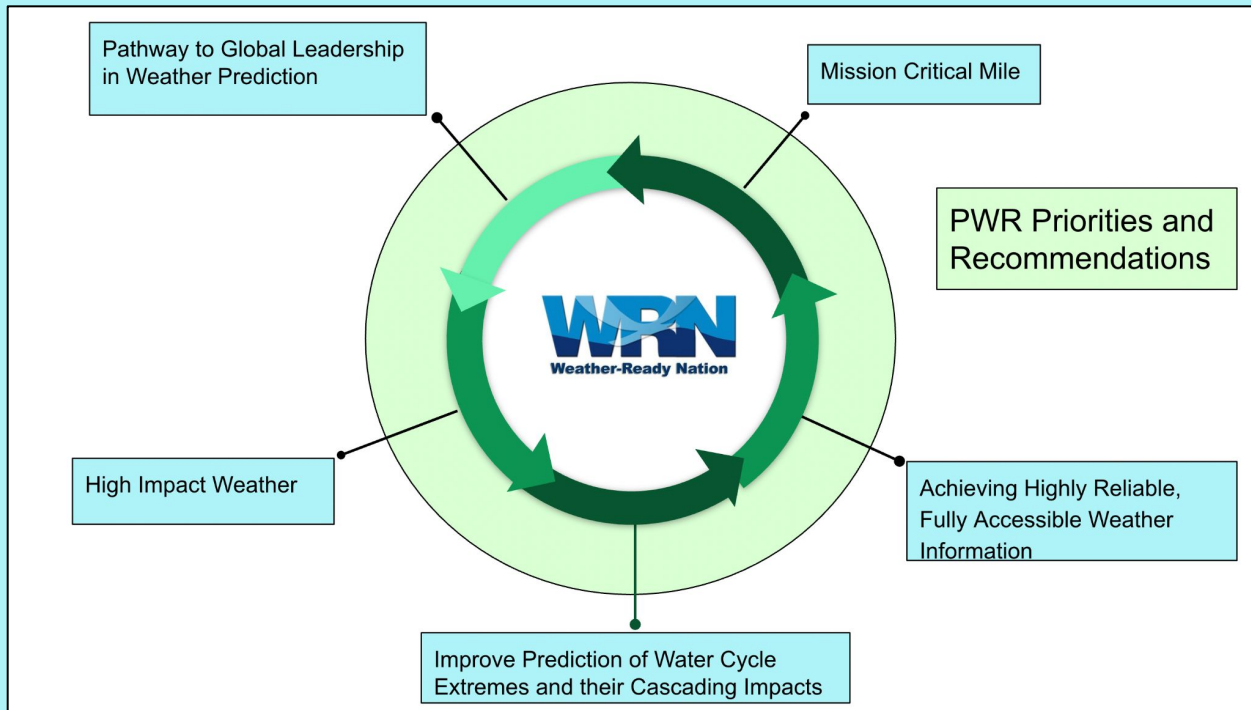
#### National Weather Service

1. **Aviation Weather & Volcanic Ash** (WRN-AWX)
2. **Fire Weather** (WRN-FWX)
3. **Hydrology & Water Resources** (WRN-IWF)
4. **Marine Weather & Coastal Events** (WRN-MWX)
5. **Hurricane/Tropical Storms** (WRN-HUR)
6. **Routine Weather** (WRN-RWX)
7. **Severe Weather** (WRN-SEV)
8. **Space Weather** (WRN-SWX)
9. **Tsunami** (WRN-TSU)
10. **Winter Weather** (WRN-WWX)

#### 11. Science, Services and Stewardship

# Congressional audience is interested in the “Why’s”

- **Narrative Themes** are designed to be compelling stories to illustrate the “Why”
- Each **Topic Area** in the Pillars & Cross-cuts is introduced with a paragraph on “Why”



# Discussion

- Feedback on the report structure, flow, and high-level content
- Is something missing? Something you expected to see but do not?
- Questions on the content shared in the extended outline