



Weather Research and Forecasting Innovation Act of 2017

NOAA Science Advisory Board

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Deputy Director
National Weather Service

August 31, 2017



Weather Research and Forecasting Innovation Act



Sec. 101 – Directed toward the NOAA Weather Mission

15 USC 85011.

SEC. 101. PUBLIC SAFETY PRIORITY.

In conducting research, the Under Secretary shall prioritize improving weather data, modeling, computing, forecasting, and warnings for the protection of life and property and for the enhancement of the national economy.

- Reauthorize USWRP, HFIP, Tornado Research

- **201 – Improving Sub-seasonal and Seasonal Forecasts**
- **301 – Weather Satellite and Data Innovation**
- **401 – Federal Weather Coordination**
- **501 – Tsunami Warning, Education, and Research**

Signed into law on April 18, 2017



Observing Capabilities



- Observing System Planning
 - Observation data requirements/prioritization
 - Assessments and options
 - Observing System Simulation Experiments (\$500M)





Commercial Satellite Data



- Importance of Satellites
- Microsatellites
- Future satellite systems and data
- Commercial Weather Data Pilot (CWDP)



Impact-Based Decision Support



Public Law 115–25
115th Congress

An Act

To improve the National Oceanic and Atmospheric Administration through a focused program of investment on affordable and in observational, computing, and modeling capabilities to improve in weather forecasting and prediction of high impact events to expand commercial opportunities for the provision of other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Research and Forecasting Innovation Act of 2017”.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Definitions.

TITLE I—UNITED STATES WEATHER RESEARCH AND IMPROVEMENT

Sec. 101. Public safety priority.
Sec. 102. Weather research and forecasting innovation.
Sec. 103. Tornado warning improvement and extension program.
Sec. 104. Hurricane forecast improvement program.
Sec. 105. Weather research and development planning.
Sec. 106. Observing system planning.
Sec. 107. Observing system simulation experiments.

Signed into law on April 18

131 STAT. 108

PUBLIC LAW 115–25—APR. 18, 2017

(b) PRIMARY ROLE OF WARNING COORDINATION METEOROLOGISTS.—The primary role of the warning coordination meteorologist shall be to carry out the responsibilities required by this section.

(c) RESPONSIBILITIES.—

(1) IN GENERAL.—Subject to paragraph (2), consistent with the analysis described in section 409, and in order to increase impact-based decision support services, each warning coordination meteorologist designated under subsection (a) shall—

(A) be responsible for providing service to the geographic area of responsibility covered by the weather forecast office at which the warning coordination meteorologist is employed to help ensure that users of products of the National Weather Service can respond effectively to improve outcomes from weather events;

(B) liaise with users of products and services of the National Weather Service, such as the public, media outlets, users in the aviation, marine, and agricultural communities, and forestry, land, and water management interests, to evaluate the adequacy and usefulness of the products and services of the National Weather Service;

(C) collaborate with such weather forecast offices and State, local, and tribal government agencies as the Director considers appropriate in developing, proposing, and imple-

Collaboration

(1) IN GENERAL.—Subject to paragraph (2), consistent with the analysis described in section 409, and in order to increase impact-based decision support services, each warning coordina-



Research to Operations

More Timely, Accurate & Reliable
NWS Forecasts & Warnings



**Improved
science behind
extreme & severe
weather events**



**Better
models,
computing &
observations**

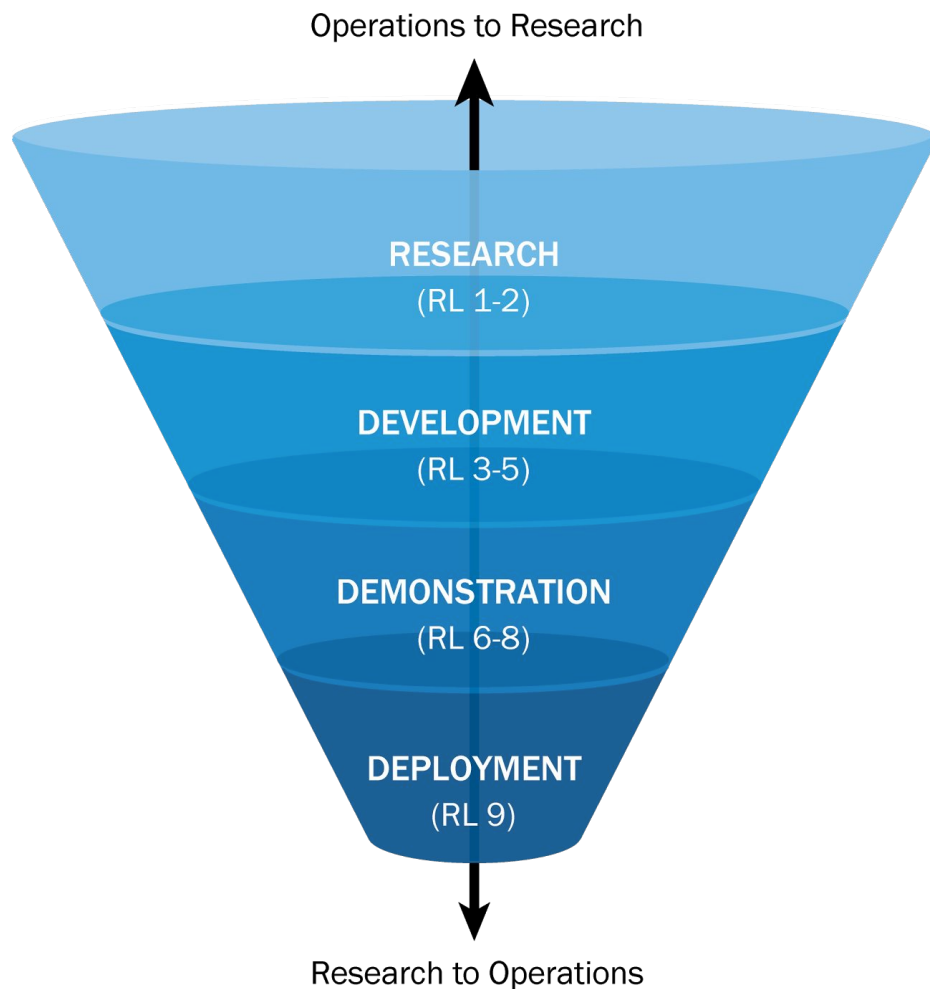


**More social
science to
improve risk
communication**





Research to Operations



OAR Weather Spending (FY16)

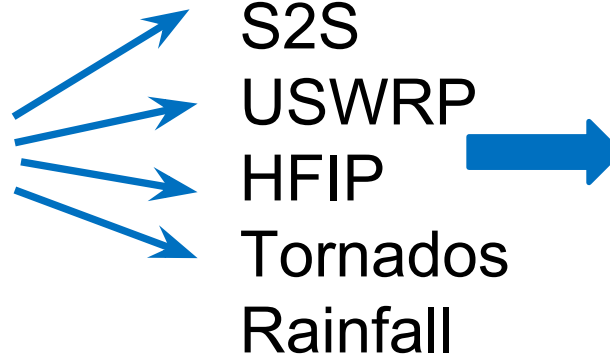




Connection to NOAA Initiatives



Weather Research and Forecasting Innovation Act 2017



S2S

USWRP

HFIP

Tornados

Rainfall

Decision Support
Social Science

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Public Law 115-25
115th Congress

An Act

To improve the National Oceanic and Atmospheric Administration's weather research through a focused program of investment on affordable and attainable advances in observational, computing, and modeling capabilities to support substantial improvement in weather forecasting and prediction of high impact weather events, to expand commercial opportunities for the provision of weather data, and for other purposes.

Apr. 18, 2017
[H.R. 353]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

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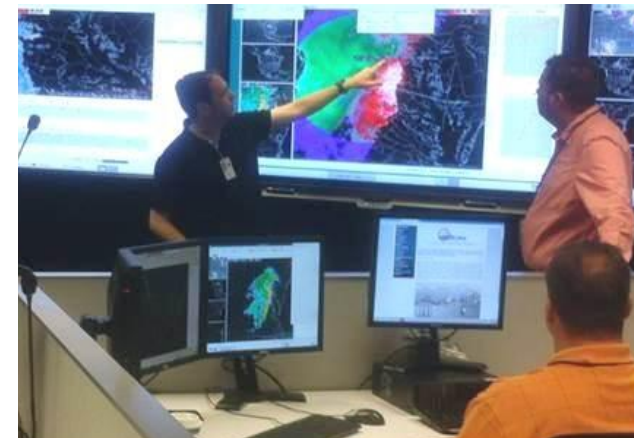
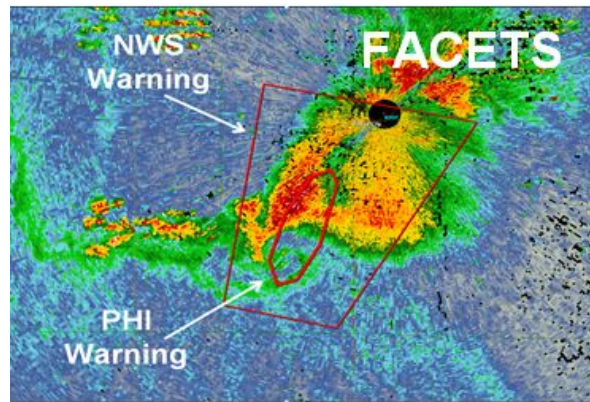
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Weather
Research
and
Forecasting
Innovation Act
of 2017.
15 USC 8501
note.





SAB Working Groups

Title IV - Federal Weather Coordination

- Codifies EISWG for advice on
 - prioritizing weather research initiatives
 - emerging technologies
 - communications improvement

Title V

- Existing SAB WG serve as the Tsunami Science and Technology Panel



Strategic Questions



Programmatic weather, water, climate science and service goals as defined in 2017 Weather Act, previous academy reports, etc. required to achieve Strategic Goals



Enterprise Physical Science Priorities
required to achieve science and service
goals above

- Products supporting IDSS at all timescales
- Modeling
- Data assimilation
- Observing
- Computing / Dissemination

Enterprise Social Science & Service
Priorities required to achieve science and
service goals above

- Communication & applications
- Behavioral sciences
- Understanding changing risk assessment
- Core partner & public needs
- Is the enterprise meeting the changing needs of customers and users (public and private)?

Key Questions:

- What are the key priorities (see boxes above)?
- How can all sectors of the weather enterprise and across the value chain partner to advance these priorities given the changing enterprise?
 - How are the contributions from the different sectors of the enterprise changing?
 - How should the government best implement Title IV – Fed. Weather Coordination? Title II? Title III?
- How can the social science and physical science research communities come together to advance these enterprise priorities?
- Can we define the educational basis/need for change to achieve impact-based service-oriented outcomes that link forecasts and warnings to decision makers?
- How will advances in science and technology impact the service needs of our stakeholders? How will the weather enterprise respond to reflect these future needs?



Harvey

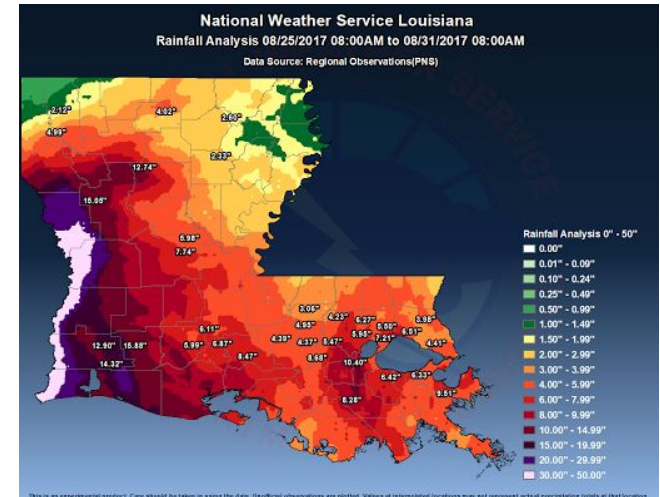
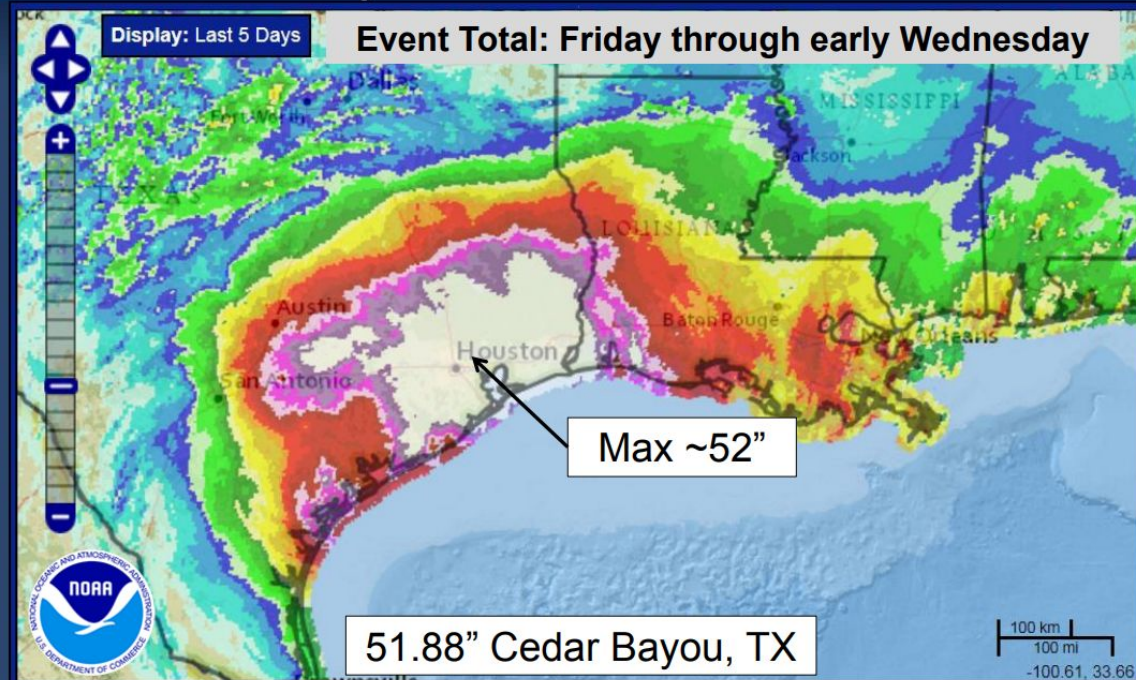


Follow

This event is unprecedented & all impacts are unknown & beyond anything experienced. Follow orders from officials to ensure safety.

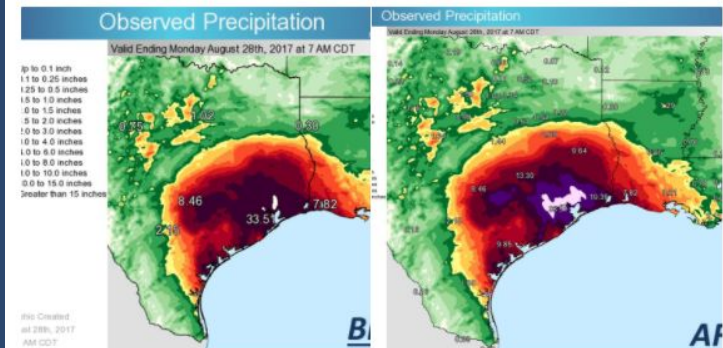
#Harvey

Harvey Observed Rainfall



Follow

#Harvey in perspective. So much rain has fallen, we've had to update the color charts on our graphics in order to effectively map it.



7:21 AM - 28 Aug 2017