Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR)

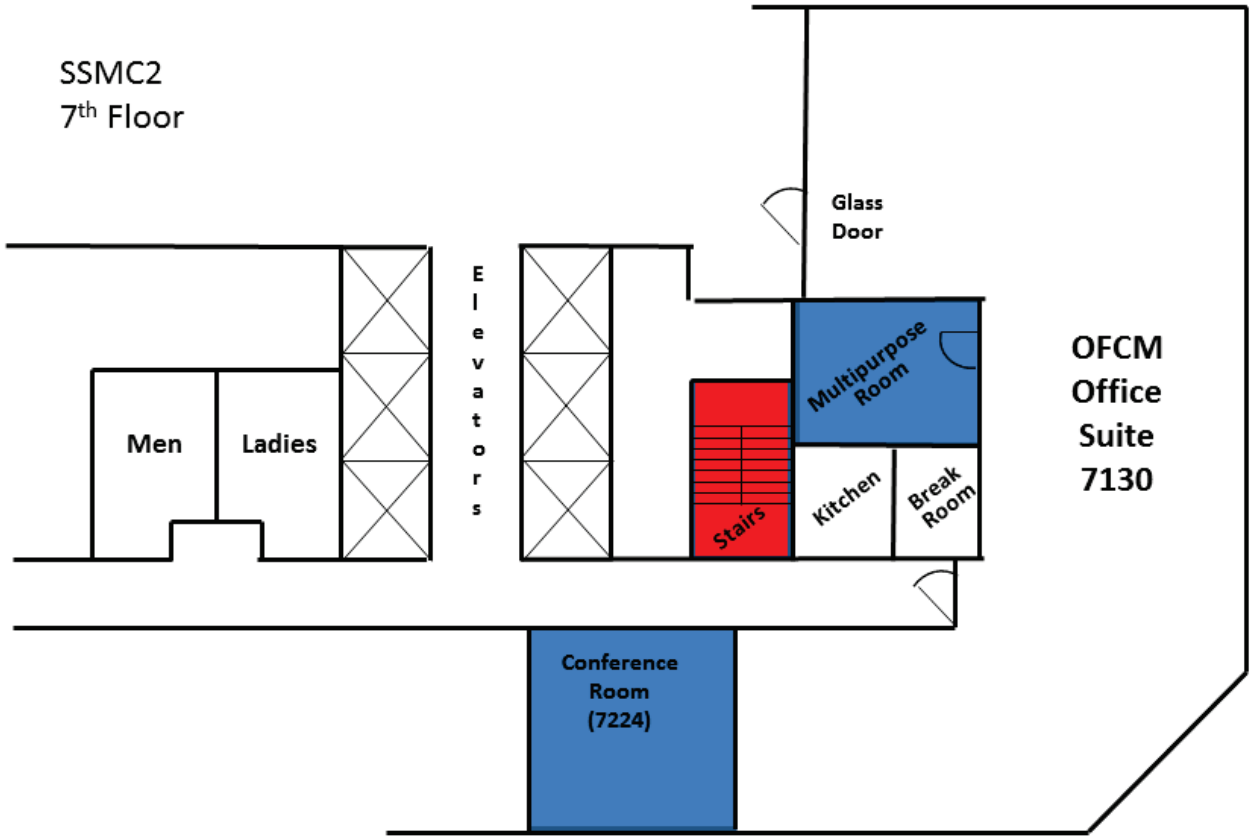
Meeting 2017-4

Nov 28, 2017

Administrative Info

- **Meeting will be recorded**
- **Facilities**
- **Telecon / GoToMeeting**
  - Dial-in 1-888-680-9581, passcode 535430#
- **GoToMeeting:** https://global.gotomeeting.com/join/293418653
- **Slides posted at:** http://www.ofcm.gov/icmssr/meetings.htm
  - **Please advise us of any sensitivities**

OFCM Floor Plan



Opening Remarks

Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR)

Mr. Craig McLean (NOAA)
Chair, ICMSSR

- **Welcome**
- **Roll Call**
- **Approve Agenda & Record of Action.**

Today's Agenda

- **OPENING REMARKS:** Craig McLean (NOAA OAR)
- **FEDERAL COORDINATOR'S UPDATE:** William Schulz (OFCM)
- **IMPLEMENTING THE WEATHER RESEARCH AND FORECASTING INNOVATION ACT: SECTION 402.:** William Schulz (OFCM)
- **COPC UPDATE:** Vanessa Griffin (NOAA NESDIS)
- **WEATHER ACT: SEASONAL-SUBSEASONAL PROVISSONS:** Fred Toepfer, Dave DeWitt (NOAA NWS)
- **FCMSSR/ICMSSR FUTURE AGENDA ITEMS:** William Schulz (OFCM)
- **OPEN DISCUSSION**
- **ACTION ITEM REVIEW:** Michael Bonadonna (OFCM)
- **CLOSING COMMENTS / ADJOURN**

FEDERAL COORDINATOR'S UPDATE

Bill Schulz
Federal Coordinator

Federal Coordinator's Update

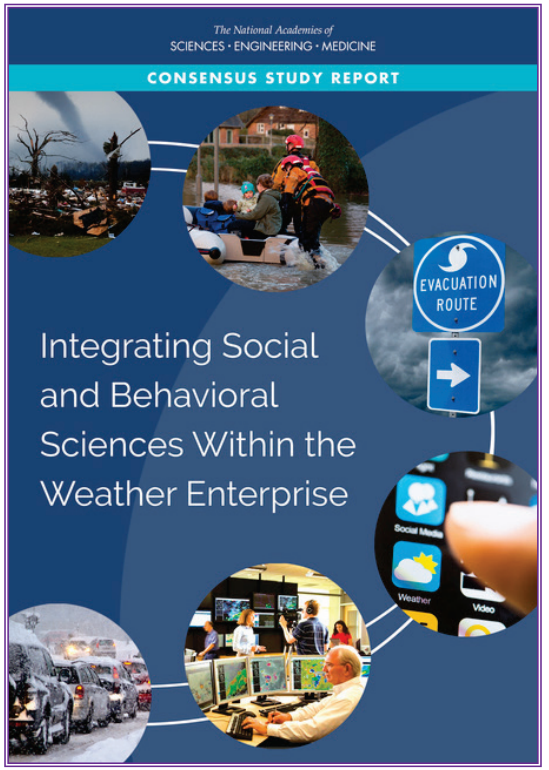
1. National Academies of Science Consensus Report: Integrating Social and Behavioral Sciences
2. Budget and Coordination Report FY19
3. ICMSSR Chair

Integrating Social & Behavioral Sciences

- NOAA (NWS and OAR) and FHWA sponsored the National Academies of Sciences Board of Atmospheric Sciences and Climate to produce a Consensus Study Report on integrating social and behavioral sciences (SBS) into the weather enterprise.

- Released in November, the report includes recommendations that merit consideration by ICMSSR and FCMSSR.

- Spurred by challenges in effectively communicating weather hazards with inherent uncertainties, informing decisions about evacuations, developing resilient infrastructure, and providing response/recovery support.



Why integrate SBS?

Weather is shaped by physical processes …

… Weather impacts are shaped by how individuals, households, organizations, communities, respond to weather information, and how it informs decisions and behaviors.

Finding: Realizing the greatest return on investment from advancing meteorological research and numerical weather prediction requires fully engaging the social and behavioral sciences across the weather enterprise.

Why now?

Weather Research and Forecasting Innovation Act of 2017

- "enhance the integration of social science knowledge into weather forecast and warning processes"

SBS is not just for external communication … It can help us understand transition of research into operations throughout the entire forecast process.

Examples of SBS Research Needs

- **Proliferation of weather information sources:** How people are affected by differing information from NWS, TV news, social media, websites, apps?
- **Warn-on-Forecast:** How do longer hazard lead times affect the ways that people react to warnings? How should probabilistic information be displayed for the public ? How should warn-on-forecast information be displayed for forecasters?
- **GOES-R satellite information:** How does a new influx of information affect forecasters' decision-making? What is the most useful mix of displays to aid the forecaster?
- **Hydrometeorological modeling/forecasting advances:** How to best use National Water Model output to create useful products for decision makers?
- **Automated/connected vehicles:** What is the right balance between providing real-time alerts to drivers and encouraging drivers to focus on the road instead of a screen?
- **Climate change and extreme weather risks:** How does communication about weather hazards need to adapt when historical weather patterns are changing?

Previously Identified Research Suggestions

- Bean et al. (2015). *The study of mobile public warning messages: A research review and agenda.*
- Carbin et al. (2013). *Current challenges in tornado forecast and warning*.
- Daipha (2015). *Masters of uncertainty: Weather forecasters and the quest for ground truth*
- Droegemeier et al. (2015). *Living with extreme weather workshop: Summary and path forward.*
- Lindell and Brooks (2013). *Weather ready nation: Science imperatives for severe thunderstorm research.*
- Nigg (1995). *Risk communication and warning systems.*
- NOAA Social Science Committee. (2015). *Vision and strategy: Supporting NOAA's mission and social science.*
- NOAA National Weather Service. (2013). *Weather-Ready Nation roadmap*.
- NRC (1996). *Understanding risk: Informing decisions in a democratic society.*
- NRC (2003). *Fair weather: Effective partnerships in weather and climate services.*
- NRC (2003). *Communicating uncertainties in weather and climate information: A workshop summary*.
- NRC (2005). *Decision making for the environment: Social and behavioral science research priorities*.
- NRC (2006). *Completing the forecast*.
- NRC (2007). *Research and networks for decision support in the NOAA sectoral applications research program*.
- NRC (2012). *Weather services for the nation: Becoming second to none*.
- Sorensen (2000). *Hazard warning systems: Review of 20 years of progress.*
- Sullivan (2013). *Vision and strategies for a Weather-Ready Nation.*

Finding: Numerous previous reports going back many years have highlighted needs similar to those noted here. Overcoming these challenges and making progress is *not idea limited, but rather, is resource limited.*

Integrating Social & Behavioral Sciences

General findings:

- New tools and models are making it possible to collect, analyze, interpret and apply different types of data and information, enabling SBS research and applications.

- Financial support for SBS is currently mostly from NOAA, NSF, DHS (FEMA).

- Research progress has been inhibited by challenges arising in fostering interdisciplinary work (social vs physical sciences)
  (Similar challenges exist for R2O efforts as well.)

Integrating Social & Behavioral Sciences

Collectively, the weather enterprise should consider the following recommendations as priority actions:

1. Invest in leadership to build awareness

2. Build capacity throughout the weather enterprise

3. Focus on critical knowledge gaps
   a. Weather enterprise system focused research
   b. Risk assessments and responses, and factors influencing these processes
   c. Message design delivery interpretation and use.

Integrating Social & Behavioral Sciences

Collectively, the weather enterprise should consider the following recommendations as priority actions:

1. **Invest in leadership to build awareness**

- Spread awareness to key constituencies and stakeholders about how SBS can advance organizations goals in preparedness, hazard monitoring, assessment, forecasting, emergency management and response, and recovery.

- Organizations within the weather enterprise need to augment their leadership teams to include execs/managers with social science backgrounds to establish policies and affect necessary organizational changes.

Integrating Social & Behavioral Sciences

Collectively, the weather enterprise should consider the following recommendations as priority actions:

2. Build capacity throughout the weather enterprise

- Dependent on sustained funding and increased intellectual resources, including staff trained in SBS research and applications.
- Current ad hoc approaches in supporting SBS have made it difficult to build sustained momentum.
- NOAA should strive to build sustainable SBS institutional capacity.
- NSF, FHWA and FEMA must help advance these capacity building efforts.
- Federal agencies along with private sector companies should begin a planning process to identify specific investments and activities that collectively advance research at the SBS-weather interface.
- Planning process should address critical supporting activities for research assessment , agenda setting, information sharing, and developing methods to track funding support for the suite of activities at the SBS-weather interface.

Integrating Social & Behavioral Sciences

Collectively, the weather enterprise should consider the following recommendations as priority actions:

3. **Focus on critical knowledge gaps**

    a. Weather enterprise system focused research
        i. Multiple subjects suggested
        ii. Examples: studies of forecaster decision making & how they use numerical guidance, asses economic value of weather services; organizational behavior

    b. Risk assessments and responses, and factors influencing these processes
        i. How to reach special interest populations
        ii. How people interpret and react to weather messaging

    c. Message design delivery interpretation and use.
        i. How to communicate uncertainty
        ii. Impacts of context, and new communication technologies

Integrating Social & Behavioral Sciences

Report Conclusions:

Efforts to advance meteorological research and numerical weather prediction should continue, but realize the greatest return on investment from such efforts requires engaging the social and behavioral sciences.

Will take patience and persistence, but success using SBS has been illustrated in other realms such as public health; requires high level leadership and vision, consistent financial support, and innovative partnerships.

Federal Coordinator's Update

1. ~~National Academies of Science Consensus Report: Integrating Social and Behavioral Sciences~~
2. Budget and Coordination Report FY19
   - Working Group formalized
   - Guidance on FY19 data call under development
3. ICMSSR Chair
   1. Agreed to a rotational system at our last meeting.
   2. Agencies in or out of the rotation:
   - IN: DoD, Commerce, USDA (but not quite yet), FAA
   - OUT: OSTP, NRC, EPA, STATE, NTSB, OMB, DHS/USCG
   - Still Thinking About it: Energy, DHS/Other, Interior

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Implementing Section 402 of the Weather Bill

From FCMSSR meeting 24 October 2017:

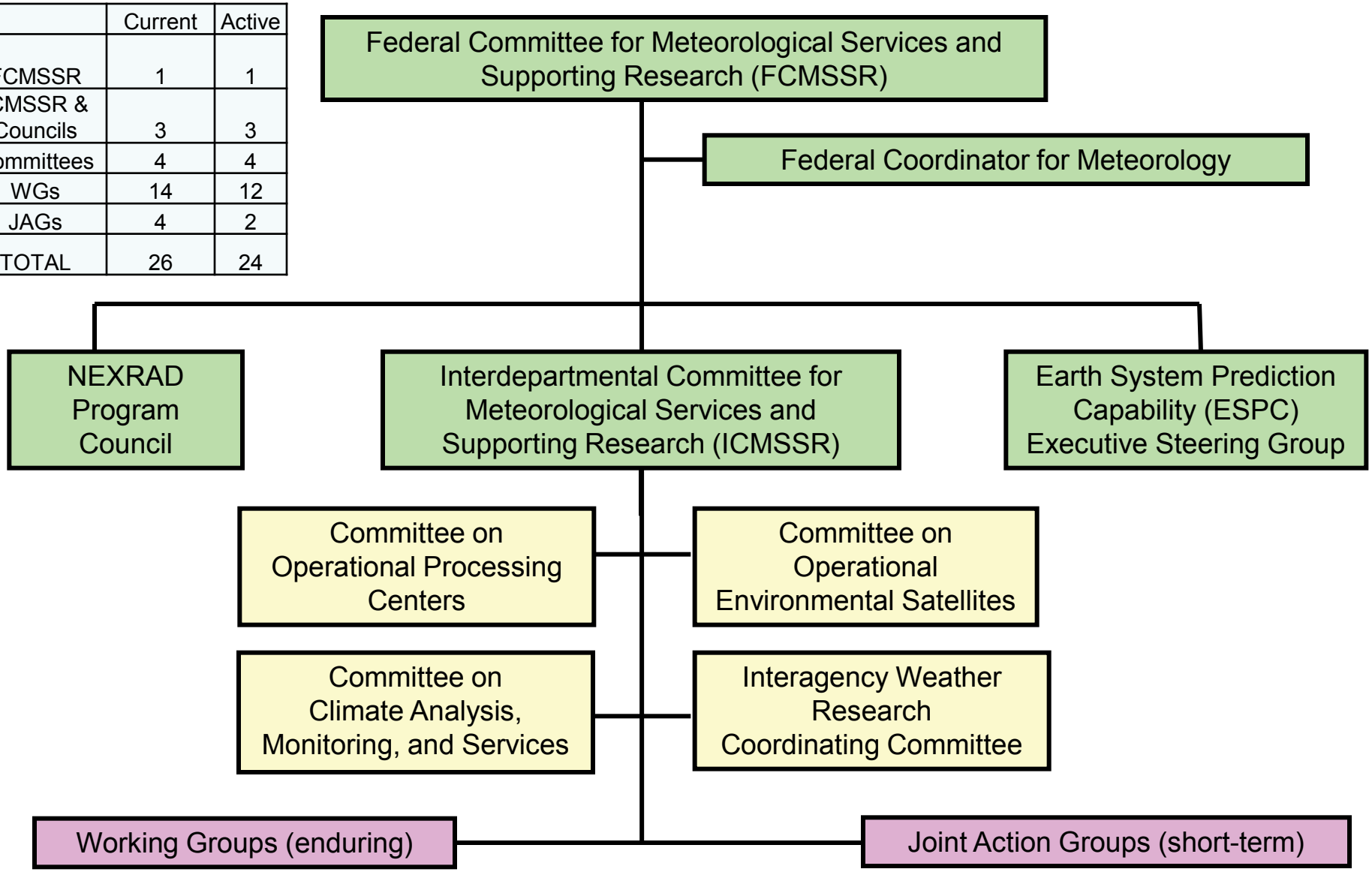
"Action Item 2017-2.1. Reconvene Joint Action Group for Interagency Committee for Advancing Weather Services (JAG/ICAWS) to develop options to broaden FCMSSR Chairmanship beyond the Undersecretary of Commerce for Oceans and Atmosphere. Draft a modified FCMSSR charter to include ICAWS duties as outlined in Section 402 of the Weather Research and Forecasting Innovation Act of 2017 and secure ICMSSR concurrence."

At the meeting, FCMSSR members stated they wished to see a "pros and cons" approach to different options for FCMSSR leadership.

Administrator of the FWE Coordinating Infrastructure

Part 1

	Current	Active
FCMSSR	1	1
ICMSSR & Councils	3	3
Committees	4	4
WGs	14	12
JAGs	4	2
TOTAL	26	24



Weather Act of 2017

402. Interagency weather research and forecast innovation coordination

(a) Establishment

The Director of the Office of Science and Technology Policy shall establish an Interagency Committee for Advancing Weather Services to improve coordination of relevant weather research and forecast innovation activities across the Federal Government. The Interagency Committee shall—

(1) include participation by the National Aeronautics and Space Administration, the Federal Aviation Administration, National Oceanic and Atmospheric Administration and its constituent elements, the National Science Foundation, and such other agencies involved in weather forecasting research as the President determines are appropriate;

(2) identify and prioritize top forecast needs and coordinate those needs against budget requests and program initiatives across participating offices and agencies; and

(3) share information regarding operational needs and forecasting improvements across relevant agencies.

(b) Co-Chair

The Federal Coordinator for Meteorology shall serve as a co-chair of this panel.

(c) Further coordination

The Director of the Office of Science and Technology Policy shall take such other steps as are necessary to coordinate the activities of the Federal Government with those of the United States weather industry, State governments, emergency managers, and academic researchers.

Option 1: Status Quo

NOT PREFERRED, shown as a baseline

(assumes FCMSSR charter re-written to include ICAWS duties)

FCMSSR Chair: NOAA Administrator

PRO:

- As status quo, easiest to implement
- NOAA is largest manager of weather resources

CON:

- Other departments (i.e. 'same tier' agencies) are uncomfortable with constantly following peer agency.
- Tends to create a NOAA-centric agenda, which may decrease other agency interest
- Viability of FCMSSR is dependent upon a single person, long-term
- Lacks OSTP leadership (implied as a desire in Section 402)
- Need to have EOP issue directive listing full membership of FCMSSR as part of the "other agencies involved …. as president determines are appropriate"

Option 2: Two, Equal Chairs: NOAA and OSTP

(assumes FCMSSR charter re-written to include ICAWS duties)

FCMSSR Chair: NOAA Administrator and senior OSTP representative

PRO:

- Satisfies spirit of 115-25 by having OSTP-led committee
- Other departments comfortable with EOP-level leadership
- Precedent for this model in CENRS

CON:

- OSTP does not want to be responsible for managing lower level committees and associated “ground-level” or “tactical” issues **(NOT A SHOW STOPPER)**
- Need to have EOP issue directive listing full membership of FCMSSR as part of the “other agencies involved …. as president determines are appropriate”

Option 3: Two Chairs: NOAA permanent + rotator

(assumes FCMSSR charter re-written to include ICAWS duties)

FCMSSR Chair: Rotates among agencies; 1 or 2 serving concurrently

PRO:

- Other agencies provide balance to NOAA
- Committee gets a fresh perspective

CON:

- Lacks EOP leadership periodically
- Need to have EOP issue directive listing full membership of FCMSSR as part of the “other agencies involved …. as president determines are appropriate”

Option 4: Two Chairs: OSTP permanent + rotator

(assumes FCMSSR charter re-written to include ICAWS duties)

FCMSSR Chair: Rotates among agencies; 1 or 2 serving concurrently

PRO:
- EOP leadership
- Committee gets a fresh perspective

CON:
- Large administrative burden on OSTP
- Influence of major weather resource managers periodically diminished
- Need to have EOP issue directive listing full membership of FCMSSR as part of the “other agencies involved …. as president determines are appropriate”

Additional Considerations and Path Forward

Other Options considered: Rotational Chairs w/o NOAA, OSTP; ICMSSR as ICAWS

Could consider making a name change: FCMSSR to ICAWS

- Satisfies law
- Could fit better using Weather Act as coordination mandate (vice rescinded A-62)
- Still reference 1962 budget aggregation law
- Need to specify other agencies as participants

Risk of agencies departing FWE during re-charter?

Path forward:

- Take feedback from ICMSSR to JAG (JAG meeting 6 Dec 17)
  - Adjust/refine/create options as directed
- JAG adjusts FCMSSR charter; sends to ICMSSR reps; iterate
- ICMSSR approves charter changes and leadership option recommendation by February 2018 meeting
- Send to FCMSSR reps, present draft charter and recommended leadership structure at April 2018 FCMSSR meeting
- Submit to OSTP as recommended plan, or JAG/ICMSSR goes back for re-work

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COPC Update to ICMSSR

Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR) Meeting
November 28, 2017
(OFCM – Silver Spring, MD)

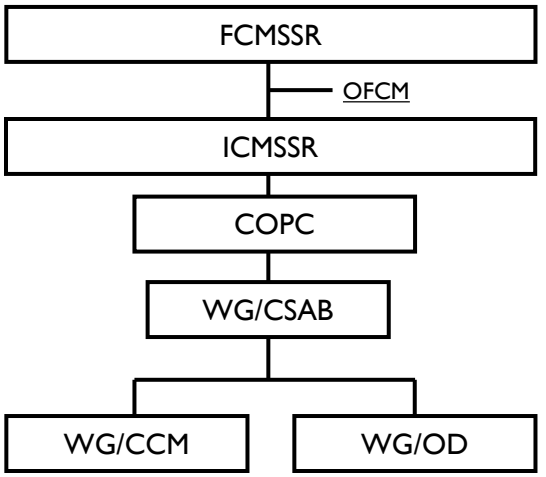
Vanessa Griffin
NOAA/NESDIS
OSPO Director

COPC Mission

- The Nation requires timely, reliable and accurate analyses and predictions of atmospheric, hydrological, oceanographic, space environmental, and land conditions to minimize economic losses, enhance business and personal opportunities, save lives and protect property, support national security, and maximize our combat forces' situational awareness and information advantage.
- Cooperative sharing of data, technology, and products among the national meteorology, oceanography, and satellite operational processing centers (OPC) has proven to be critical to fulfilling mission requirements.
- COPC facilitates the cooperative support and exchange of observational data, modeling products, and backup of services between the member organizations:
  - NWS National Centers for Environmental Prediction (NCEP), College Park, MD
  - NESDIS Office of Satellite and Product Operations (OSPO), Suitland, MD
  - Air Forces' 557 Weather Wing, (557 WW) Offutt AFB, NE
  - Fleet Numerical Meteorology and Oceanography Center (FNMOC), Monterey, CA
  - Naval Oceanographic Office (NAVOCEANO), Stennis Space Center, MS

COPC Coordinating Structure

- COPC was a working group in the early 80's and became a standing Committee for ICMSSR in 1988.
- COPC meets twice a year (spring and fall), rotating the meeting location between the 5 Centers with the host location acting as chair.
- COPC has 3 supporting working groups:
  - The Working Group for Cooperative Support and Backup (WG/CSAB) serves as the executive agent for the COPC. The principal focus of the WG/CSAB is to coordinate and document the cooperative support and outage mitigation requirements related to the data collection and processing, and the development and dissemination of meteorological, oceanographic, and satellite products.
  - The Working Group for Centralized Communications Management (WG/CCM) coordinates communications issues between the OPCs, monitors the effectiveness of those communications, and performs capacity planning and forward projection of capability needs.
  - The Working Group for Observational Data (WG/OD) facilitates the acquisition, processing, exchange, and management of observational data and metadata among the Federal Agencies, the OPCs, the World Meteorological Organization, and other related data centers.



Cooperative Support/Outage Mitigation

- Recent Completed Activities
  - **Indian Ocean Data Coverage (IODC)** – worked with OSPO and STAR to establish Met-8 data exchange to avoid geostationary coverage gap in that region
  - **IDP** – worked with NCO to establish data exchange with both IDP College Park and IDP Boulder to ensure greater redundancy/availability
  - **NWSTG** – Transitioned the NWS Telecommunications Gateway (NWSTG) from a single legacy site into the new IDP system to provide a **full backup** for the NWSTG/GTS services for the first time and eliminate single point of failure.
- Ongoing/Future Activities
  - **PDA/DAPE Gateway** – coordinate the coexistence and transition from the legacy satellite exchange on the DAPE Gateway to the PDA enterprise distribution system and established the appropriate agreements for continued data exchanges
  - **WMO data** – establish diverse data routes/access from UK, JMA, and Germany for added redundancy.
  - **Coordination with other groups** - continue work with COES to be proactively involved in the planning process to potentially obtain data "operationally" within a reduced timeline
    - Enable potential research satellite efforts and leverage commercial satellite uses.
  - **Documentation** - finalize the FCM-P14-2017 Federal Plan for Cooperative Support and Outage Mitigation Among Operational Processing Centers.

Network Communication Improvements

- Completed Activities
  - **Out-dated ATM Technology removed** – moved COPC operational circuits off old DATMS-U (TOC to Pentagon circuit) equipment onto high-speed, multi-gigabit capable , fiber-optic transmission platforms with scalable bandwidth (OTN/MSPP.) [2009]
  - **Fiber/OTN upgrades in Suitland** – upgraded the operational circuits from 100 Mbps copper to 400 Mbps fiber optic; connections moved from TOC to NSOF (Suitland) with DoD interconnect via NMIC. [2012]
  - **Alternate COPC path** – developed, and implemented secondary COPC connections between NOAA Boulder and Buckley ANGB using the DISA backbone network. Allows automatic fail-over of the operational circuit for any of the 3 DoD/NOAA connections, which has significantly reduced data outages. [2015]
  - **New fiber redundancy install** – installed an additional 24-strand fiber cable in Suitland for testing new USCYBERCOM IA requirements; avoids impact to operational circuits and allows for scaling up capacity. [2017]
- Ongoing/Future Activities
  - **Test latency impact of DoD IA requirements** – use new fiber line to run throughput tests across two new security constructs, JRSS & MPG/NFG. (Boundary protection suite of diverse firewalls, IDS, web proxy, deep packet inspect, monitoring.)
  - **Long range** - once latency is quantified, potentially migrate each OPC's primary and then alternate circuits through the two MPG's @ Columbus, OH & San Antonio.

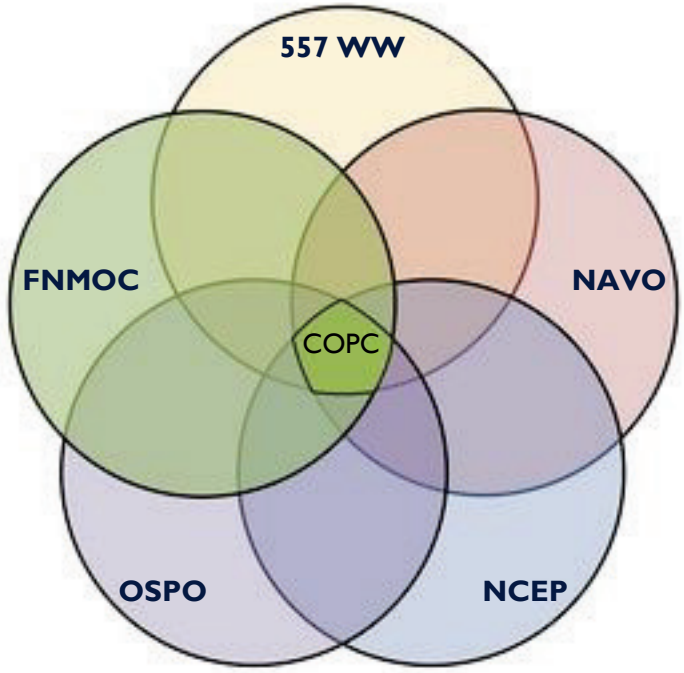
Satellite Observations

- Completed Activities
  - **Satellite data requests** – official request process for satellite data exchange amongst the OPCs.
    - Example - NESDIS requested from NAVO the Sentinel-3A Sea Surface Height Anomaly data for use in Ocean Heat Content (OHC) system.
  - **Himawari-8 data** – coordinated how each OPC would receive the H8 data.
  - **PDA** – coordinated the Data Distribution System transition to PDA.
- Ongoing/Future Activities
  - **Backup** - coordinate future CIP and CBU activations to monitor the OPCs impacts.
  - **GOES-16 transition** – coordinate to mitigate the impact of the GOES-16 to GOES-East transition.
  - **AMVs** (satellite winds) – working to mitigate the AMV data gap due to the change of GOES-East.
  - **JPSS-1/NOAA-20 data exchange** – coordinate the implementation of JPSS data to the OPCs.
  - **DOMSAT MSG (Met-10/11) service changes**– coordinate to mitigate the impacts of proposed data removal off the commercial domestic satellite feed.
  - **DOD follow-on efforts** – keep all the OPCs abreast of post DMSP efforts.

Conventional Observations

- Ongoing/Future Activities
  - Interagency implementation of WMO data management procedures
    - WMO is migrating from Traditional Alphanumeric Code (TAC) forms to Binary Universal Form for the Representation of meteorological information (BUFR)
    - WMO is implementing WIGOS and OSCAR/Sfc data management systems
  - Developing U.S. concept/strategy for implementation of new WIGOS station IDs
    - Much longer station IDs will require very complex OPC software changes
  - Providing assistance to the National Science Foundation -- options for GTS distribution of Antarctic meteorological and ocean observations
  - Tracking to implementation, High resolution BUFR radiosonde data in real time on the GTS for U.S. stations
    - As of 18 Oct 2017, OPCs receiving 72 out of 81 WFO transition sites (incl. Guam & Puerto Rico)
  - Mitigate NWP impacts of data gaps from GOES-16 Transition to GOES-East
  - Spring/Summer 2018 -- 2nd Observational Data Workshop

Conclusion



COPC and the active working groups provide a forum for issue discovery and consistent work to maintain and improve an interagency cooperative and coordinated approach to benefit our Nation through shared efficiencies and leveraging joint mutual exploitation of capabilities.

Questions / Discussion

Abbreviations/Acronyms

- 557 WW-Air Force 557th Weather Wing
- AMV-Atmospheric Motion Vectors
- ANGB-Air National Guard Base
- ATM-Asynchronous Transfer Mode
- BUFR-Binary Universal Format for Data Representation
- CBU-Consolidated BackUp
- CIP-Critical Infrastructure Protection
- COPC-Committee for Operational Processing Centers
- CSAB-Cooperative Support and Backup
- DAPE-Data Acquisition, Processing, and Exchange (Shared Processing Program replacement)
- DATMS-U-DISA Asynchronous Transfer Mode Service-Unclassified
- DDS-Data Distribution System
- DISA-Defense Information System Agency
- DISN OTN-Defense Information System Network-Optical Transport Network
- DOMSAT-Domestic Satellite
- FCMSSR-Federal Committee for Meteorological Services and Supporting Research
- FLENUMMETOCCEN-Fleet Numerical Meteorology and Oceanography Center (FNMOC)
- GOES-Geostationary Operational Environmental Satellite
- GTS-Global Telecommunications System
- IA-Information Assurance
- ICMSSR-Interdepartmental Federal Committee for Meteorological Services and Supporting Research
- IDP-Integrated Dissemination Program
- JPSS-Joint Polar-orbiting Satellite System
- JRSS- Joint Regional Security Stacks
- METEOSAT-Meteorological Satellite (European Organization/EUMETSAT)
- METOC-Meteorological and Oceanographic
- MOA-Memorandum of Agreement
- MPG/NFG-Mission Partner Gateway / NIPRNet Federated Gateway
- MSPP-Multi-Service Provisioning Platform
- NAVOCEANO-Naval Oceanographic Office (NAVO)
- NCEI-National Centers for Environmental Information
- NCEP-National Centers for Environmental Prediction
- NCO-NCEP Central Operations
- NESDIS-National Environmental Satellite, Data, and Information Service
- NIPRNET-Non-Secure Internet Protocol Router Network
- NMIC-National Maritime Intelligence Center
- NOAA-National Oceanic and Atmospheric Administration
- NPP-(Suomi) National Polar-orbiting Partnership
- NSOF-NOAA Satellite Operations Facility
- NWS-National Weather Service
- NWSTG-National Weather Service Telecommunication Gateway (NCEP)
- OFCM-Office of the Federal Coordinator for Meteorological Services and Supporting Research
- OPC-Operational Processing Center
- OSCAR-Observing Systems Capability Analysis and Review
- OSPO-Office of Satellite Product Operations (NESDIS)
- OTN-Optical Transport Network
- PDA-Product Distribution and Access
- SST-Sea Surface Temperature
- USAF-United States Air Force
- USN-United States Navy
- WG-Working Group
- WG/CSAB-Working Group for Cooperative Support and Backup
- WIGOS-WMO Integrated Global Observing System
- WMO-World Meteorological Organization

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PL115-25 (S2S Provisions) Briefing for Interdepartmental Committee on Meteorological Services and Supporting Research

28 November 2017

David DeWitt, Director, Climate Prediction Center

Fred Toepfer, STI Modeling Programs Manager

S2S Provisions
PL 115-25 Weather Act

- What are they?
- What do they require?
- What we need to do?
- Where do we stand?
- Issues

Weather Act S2S Provisions
What are they?

- Short Title - Weather Research and Forecasting Act of 2017
- TITLE II – Addresses “Sub-seasonal and Seasonal Forecast Innovation”
  - Section 201 “Improving Sub-seasonal and Seasonal Forecasts” is the only section in TITLE II
  - Section 201 Amends Food Security Act of 1985
- Scope: Defines and authorizes NOAA’s Sub-seasonal and Seasonal (S2S) forecast and coordination responsibilities
- Authorizes $26M in each of the years 2017 and 2018 for the NWS to meet the provisions of the Act

Section 201
What does it require?

- Section 201 amends Section 1762 (Weather and Climate Information in Agriculture) of the Food Security Act of 1985 (Public Law 98-198; 15 USC 313)
- Specifically, it amends punctuation in Subsections **a. Findings** and **b**. **Policy** and adds Subsections **c. Functions** through **i. Definitions**

a. Findings

- Accurate and timely reporting of weather information can prevent damage to agricultural and silvicultural operations
- Maintenance of our current weather and climate analyses and information dissemination systems and Federal, state, and private efforts to improve these systems is critical to mitigate damage from atmospheric systems
- Agricultural and silvicultural weather services should be maintained
- Efforts should be made to expand use of weather and climate information

b. **Policy**

- It is, therefore, the policy of Congress that it is in the public interest to maintain an active Federal involvement in providing and improving the use of weather and climate information, among users and private providers of this information.

c. Functions

- The Undersecretary, acting through the **Director, National Weather Service shall**:
  - Collect and utilize information to make usable, reliable, and timely foundational forecasts of sub seasonal and seasonal forecasts of temperature and precipitation
  - Leverage existing research and models from the weather enterprise to improve these forecasts
  - Determine and provide information on how the forecasted conditions may impact
    - Number and Severity of droughts, fires, tornadoes, hurricanes, floods, heat waves coastal inundation, winter storms, high impact weather, or other relevant natural disasters;….
    - Snow pack; and
    - Sea Ice Conditions
  - Develop an Internet Clearing House to provide both forecasts and impact information on both a national and regional level

d. Communication

- The **Director, National Weather Service, shall**:
  - Provide the information (forecasts and impacts of forecasted conditions) to the public, including public and private entities engaged in planning and preparedness
  - “Public” includes National Weather Service Core Partners at the Federal, regional, State, Tribal and local levels of Government

e. Cooperation

- The **Undersecretary shall** build upon existing forecasting and assessment programs and partnerships, including—
  - By designating research and monitoring activities related to sub-seasonal and seasonal forecasts at 1 or more Cooperative Institutes
  - By contributing to the ESPC
  - *By consulting with Secretary of Defense and Secretary of Homeland Security to determine highest priority* ***S2S needs to enhance national security***

Suggested Action: Required Formal NOAA Consultation with DoD and DHS should occur through the FCMMSR

f. Forecast Communication Coordinators

- **Undersecretary shall** foster effective communication, understanding, and use of S2S forecasts by intended users in (d.) This may include assistance to state forecast communication coordinators.
- For each state that requests assistance, the Undersecretary may provide assistance to an individual in that state to enable local interpretation and planning
  - To serve as a liaison between NOAA and other Federal users, the weather enterprise, the state, and relevant interests in the state
  - Receive forecasts and impact information and disseminate such within the state to counties and tribal governments
  - Matching funds may be required
- Assistance is limited to $100K per year per state

g. Other Federal Partners

- ***Each Federal Agency and Department shall cooperate*** *with the Undersecretary in carrying out these this section as appropriate*

Suggested Action: Each Federal Agency and Department member of the ICMMSR should formally define their own appropriate level of cooperation with NOAA in meeting the provisions of this Act.

h. Reports

- Not later than 18 months after date of enactment, the Undersecretary shall submit to Congress (relevant House and Senate Committees) a report including:
  1. An analysis of how NOAA's S2S forecasts are used for public planning and preparedness,
  2. NOAA's specific plans and goals for the continued improvement of an S2S forecasting capability, including products to meet the need described in 1., and
  3. An identification of the needed research, monitoring, observing and forecasting requirements for number 2.
- The Undersecretary shall consult with relevant Federal, regional, State, tribal, local government agencies, research institutions, and the private sector in the development of this report.

i. Definitions

- **Foundational Forecast** – basic weather observation and forecast data, largely in raw form, before further processing is applied.
- **Core Partners** – Government and non-Governmental entities directly involved in the preparation of or dissemination of, or discussion involving hazardous weather weather or emergency information put out by the NWS
- **Sub-seasonal** – 2 weeks to 3 months
- **Seasonal** – 3 months to 2 years
- **State** – a state, territory, possession, commonwealth or DC
- **Undersecretary** – Undersecretary of Commerce for Oceans and Atmosphere
- **Weather Industry** and **Weather Enterprise** – interchangeable terms and includes individuals, and organizations from public, private and academic sectors, both providers and primary consumers of weather information

What Do We Need to Do?

- Implement provisions of Act not already Implemented
  - Formulate budget requirements for needed funding
- Maintain Capabilities already Implemented and Funded
- Develop and Implement Capability for Inter-Agency Consultation, as needed
- Write and Deliver Report to Congress by October 17, 2018

Where We Stand?

- NWS is leading a Panel to develop plan for S2S program and write required report
  - Cross-NWS, NESDIS, and OAR membership
    - NWS - CPC, EMC, OPPSD, OWP, STI and AFS
    - OAR - OWAQ, CPO, GFDL, ESRL/GSD, ESRL/ PSD
    - NESDIS - NCEI
    - Panel Work plan under development
  - Charter under development
    - Looking to NOAA Climate Board to Charter and oversee the work of the panel Panel
    - NOAA Climate Board (an AA level Board) can provide for Administrator approval of Plan and Report

Issues

- Working to define all needed consultation and coordination as well as mechanisms
- Would like to use ICMSSR and FCMSSR as appropriate to meet needed formal federal Agency and Department consultation

Today's Agenda

- **OPENING REMARKS:** Craig McLean (NOAA OAR)
- **FEDERAL COORDINATOR'S UPDATE:** William Schulz (OFCM)
- **IMPLEMENTING THE WEATHER RESEARCH AND FORECASTING INNOVATION ACT: SECTION 402.:** William Schulz (OFCM)
- **COPC UPDATE:** Vanessa Griffin (NOAA NESDIS)
- **WEATHER ACT: SEASONAL-SUBSEASONAL PROVISSONS:** Fred Toepfer, Dave DeWitt (NOAA NWS)
- **FCMSSR/ICMSSR FUTURE AGENDA ITEMS:** William Schulz (OFCM)
- **OPEN DISCUSSION**
- **ACTION ITEM REVIEW:** Michael Bonadonna (OFCM)
- **CLOSING COMMENTS / ADJOURN**

FCMSSR Agenda Topics

Next ICMSSR: February

- **Interagency Weather Research Coordination Committee Update**
- **Finalize Weather Act Section 402/FCMSSR Chair Recommendation**
- **Budget Coordination Report FY2019 update**

Next FCMSSR: April

- **Weather Act Section 402 Recommendation**

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FCMSSR Action Items

AI #	Responsible Office	Text	Comment	Status	Due Date
2017-.1.2	ICMSSR	Present proposals to FCMSSR to implement P.L.115-25 S 402 requirements for the Interagency Committee for Advancing Weather Services.	Presentation given. See AI 2017-2.1	Closed	10/24/17
2017-.1.3	ICMSSR, OFCM	Produce the *FY18 Annual Report on Federal Weather Coordination* (the replacement for the *Annual Plan for Meteorological Services and Supporting Research*) as presented during the 26 April 2017 FCMMSR Meeting.	Published 9/22/17	Closed	08/31/17
2017-.1.4	ICMSSR, OFCM	Produce the *Strategic Plan for Federal Weather Coordination*.	Presented to FCMSSR. See AI 2017-2.2	Closed	10/24/17
2017-2.1	OFCM, FCMSSR Agencies	Reconvene JAG/ICAWS to develop options to broaden FCMSSR Chairmanship. Draft a modified FCMSSR charter to include ICAWS duties as outlined in P.L.115-25 S 402 and secure ICMSSR concurrence.	JAG/ICAWS convened. Options will be presented to ICMSSR then FCMSSR with a revised Charter	Working	04/24/18
2017-2.2		Publish the *Strategic Plan for Federal Weather Coordination* as presented during the 24 October 2017 FCMMSR Meeting.	Mtg set with RADM (Ret) Galludet to review and sign cover letter.	Working	11/03/17

ICMSSR Action Item Review

AI #	Responsible Office	Text	Comment	Status	Due Date
2016-2.2	OFCM, NWS, FAA, DHS	Continue interagency engagement on MPAR and the related radio-frequency spectrum auction. Regularly present updates to the ICMSSR and FCMSSR. (replaces ICMSSR AI 2015-1.2)	Will remain open until executed regularly	Open	Quarterly
2016-4.2	OFCM	Provide a copy of the Terms of Reference for the new Committee on Climate Services for ICMSSR review.	Still debating the definition of Climate Services	Open	02/10/17
2016-4.5	OFCM, NWS/OOE	Develop a proposal for ICMSSR consideration on how OFCM and the FWE engage in Information Decision Support System (IDSS) interagency coordination.	BASC report may drive a need for a Social & Behavioral Science working group	Open	06/15/17
2017-1.4	OFCM	Establish a Joint Action Group to review OPM 1340 standards and make a presentation to the ICMSSR with recommendations.	No action taken	Open	06/07/17
2017-2.1	OFCM	Secure a government sponsor and funding source for the 2018 SWEF.	SWEF planning will begin after the holidays. Government funding may not be needed for 2018	Open	09/30/17

ICMSSR Action Item Review

AI #	Responsible Office	Text	Comment	Status	Due Date
2017-2.2	OFCM	Schedule a date for the 2nd Observational Data Workshop.	Target Dates Set	Open	07/30/17
2017-3.1	OFCM	Poll the ICMSSR members to determine which Departments and Agencies are interested in serving as ICMMSR Chair. Develop a rotation scheme and secure ICMSSR concurrence at the December meeting.	To be discussed at ICMSSR meeting 2017-4	Closed	12/15/17
2017-3.2	OFCM	Update and publish FMH-1. Follow up with a revision once the ice pellet / small hail reported requirements issue has been resolved.	Changes regarding reporting of cloud layers above 12,000 will be held until FAA concurs . All other changes were accepted. The final version of FMH-1 will be published by the end of November.	Open	01/31/18
2017-3.3	OFCM	Review all OFCM groups to ensure they support the FWE Strategic Plan. Report out at December ICMSSR meeting.	All FWE are needed to execute the Strategic plan and will prepare input for the ABR on StratPlan Goal progress	Closed	12/15/17
2017-3.4	OFCM	Contact NESDIS/SAB to examine their potential inclusion on OFCM groups involved in disaster response i.e. WG/DIAP	Action completed. NESDIS/SAB will participate in WG/DIAP	Closed	10/30/17

Wrap Up