



# **NOAA Surface Weather Program and MADIS Transition Update**

**Sixth *Clarus* Initiative Coordinating Committee Meeting  
Reno, Nevada**

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# The NOAA "Big Picture"

## NOAA Headquarters

Oceanic and  
Atmospheric  
Research

National  
Environmental  
Satellite, Data  
and Information

National Ocean  
Service

National  
Weather  
Service

Program  
Planning  
and Integration

NOAA Marine  
and Aviation  
Operations

National Marine  
Fisheries  
Service

Ecosystem Goal Team

Climate Goal Team

Weather and Water Goal Team

Commerce and Transportation Goal Team



# Commerce and Transportation Overview



- **Surface Weather**
- **Aviation Weather**
- **Marine Weather**
- **Marine Transportation System**
- **Geodesy**
- **Emergency Response**





# Commerce and Transportation Key Strategies



## *“Information that Moves America”*



- NOAA has enhanced the American Public's ability to:
  - Know where they are
  - Get where they are going safely and efficiently
  - Make appropriate decisions for a safe, secure, efficient, and environmentally sound transportation network.
- NOAA's essential services are uninterrupted and available during emergencies and critical events



# NOAA's Surface Weather Program

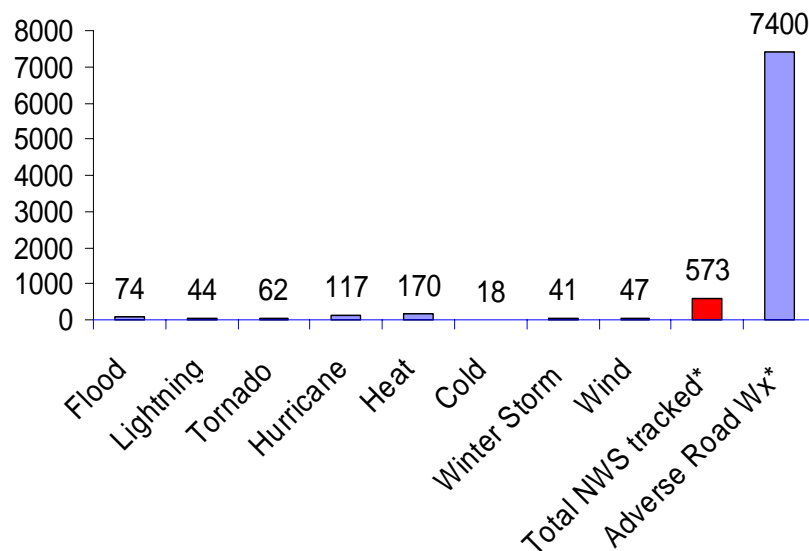


NOAA is responsible for protecting life and property and promoting safe and efficient commerce and transportation

Weather contributes to over 7,400 fatalities, over 600,000 injuries, and 1,400,000 weather-related highway crashes per year

Representing the needs of all surface transportation sectors, i.e., roadways, rail, transit and pipeline operations

Opportunity to improve safety with timely weather information that is transportation-relevant



Annual weather averages for the years 1997-2006; adverse road conditions from 1996-2005. Compiled from *Storm Data*, NWS and NCDC and the DOT Fatality Analysis Reporting System





# Surface Weather within NOAA's Commerce & Transportation Goal



- “Port to Door”
- **Meteorological Assimilation Data Ingest System (MADIS) Transition to Operations**
  - National Surface Weather Observing System (NSWOS)
  - Hosted at the NWS’ National Centers for Environmental Prediction (NCEP)
  - Integration with DOT’s *Clarus* Initiative
- **MADIS transition is key to providing data management support for NOAA/C&T and NWS mission**
  - Integration of other NOAA and non-NOAA networks
  - NOAA essential services and customer requirements



# NOAA's Surface Observations Requirements



- Maintaining/enhancing NOAA's observing systems and leveraging existing and emerging partner and citizen platforms are necessary to address all requirements NOAA has for observations
- NOAA service requirements for observations are composed primarily around three elements:
  - Required accuracy
  - Station density
  - Reporting interval
- Metadata – increased awareness and importance throughout the weather, climate, and partners' sectors



# MADIS – An Overview

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- Developed by NOAA Research's Earth System Research Laboratory's Global Systems Division (formerly FSL)
- Data management system that's flexible, expandable and interoperable
- Provides government and non-government mesonet, upper-air, and coastal data to NOAA and partners
- Data are stratified and informed by metadata
- Transitioning MADIS to NWS operations will provide 24x7 maintenance support with offsite system backup
  - Leverages NOAA's extensive data management infrastructure and investment



# MADIS Transition Update

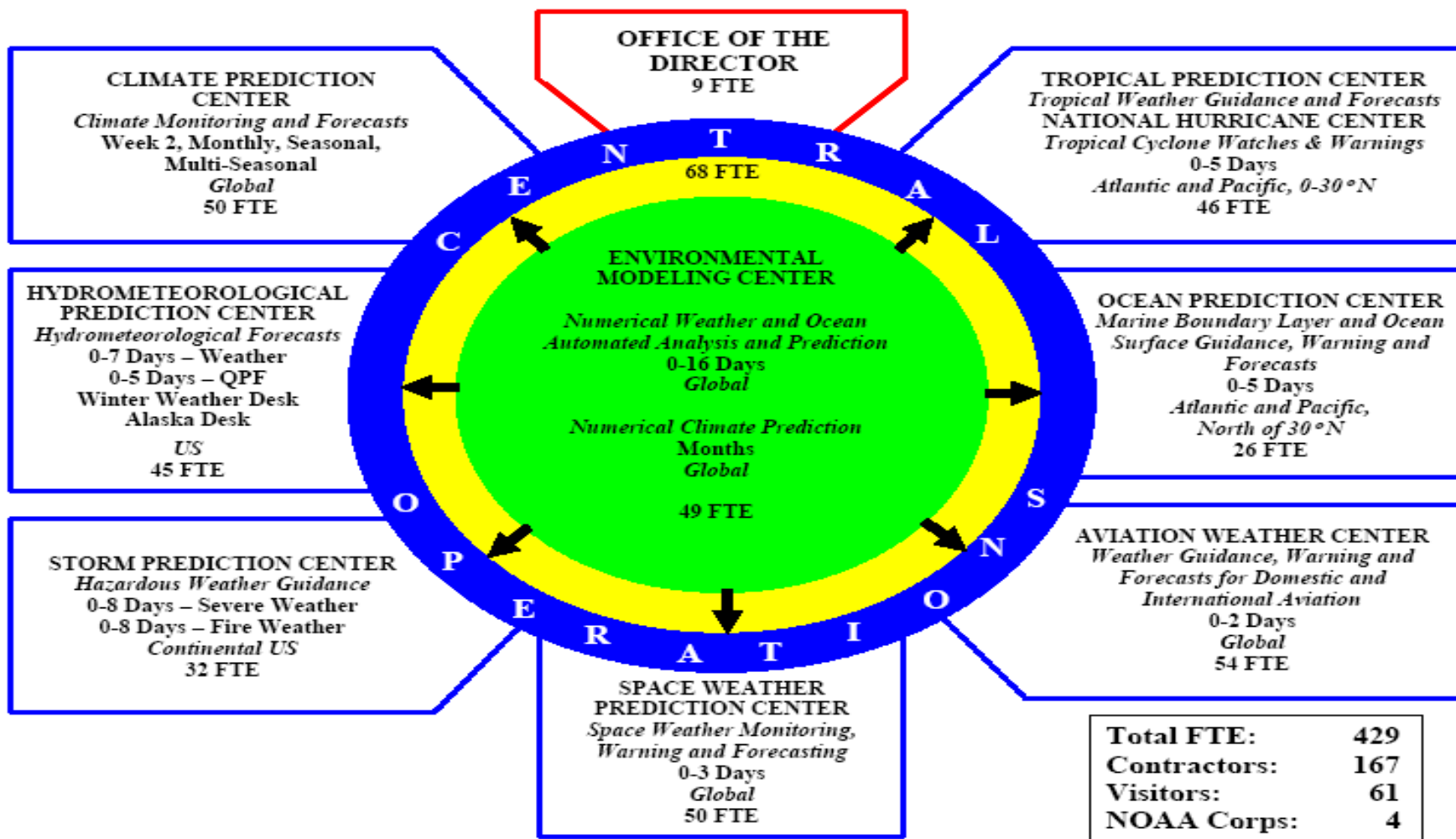


- **At end of May, NWS and NOAA Research leadership recommended change to NWS Director:**
  - **Hosting of MADIS moved to NWS' National Centers for Environmental Prediction (NCEP)**
  - **Data ingest and dissemination still at NWS Telecommunications Gateway**
- **Aligns operational MADIS with respective organizational missions**



# NCEP Overview

## NATIONAL CENTERS for ENVIRONMENTAL PREDICTION





# MADIS Transition Update



- **NWS Office of Science and Technology (OST) and NCEP are evaluating impacts of recommendation**
- **Assessment began mid-July and expected to continue through FY09 Q1**
  - **Technical and Fiscal costs**
  - **Customer Service Components**
  - **IT Certification and Accreditation**
- **All previous NWS-approved documentation still in effect**
  - **Review needed pending technical assessment**
- **Requirement to include DOT observations still valid**



# MADIS Transition Update

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- Three risk reduction activities completed
  - Prove blade concept could fit into operational concept and virtualize part of current MADIS code
  - Complete a thread of data to obtain same output as ESRL
  - IT Security
- Documents to be reviewed in coordination with NCEP:
  - CONOPS/Operational Requirements
  - System Requirement Specifications
  - Functional Requirements Documents (draft)



# Conclusions

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- **NOAA Surface Weather Program:**
  - Priority is obtaining quality observations
  - Work with private and public weather and transportation partners
- **MADIS transition to NWS operations key to meet NOAA essential services' needs and customer needs**
- **Requirements for DOT observations and integration with *Clarus* has not changed**



# NOAA Surface Weather Program

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