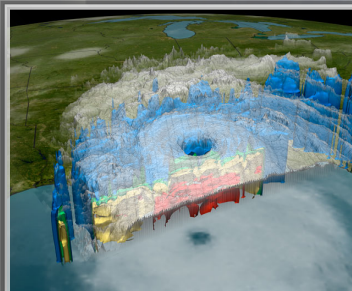
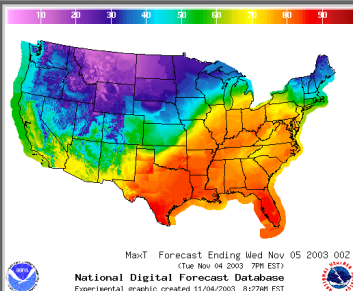
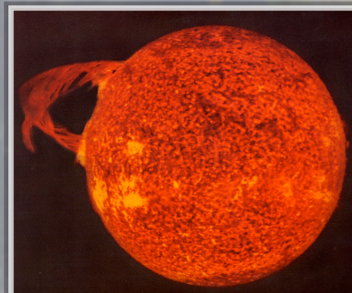
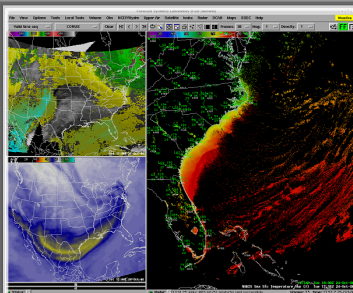


# Panel Session 8: Current Capabilities and Future Plans for Surface Transportation Weather Support



Andrew Stern  
Chief Operations Officer, OCWWS  
NOAA/National Weather Service

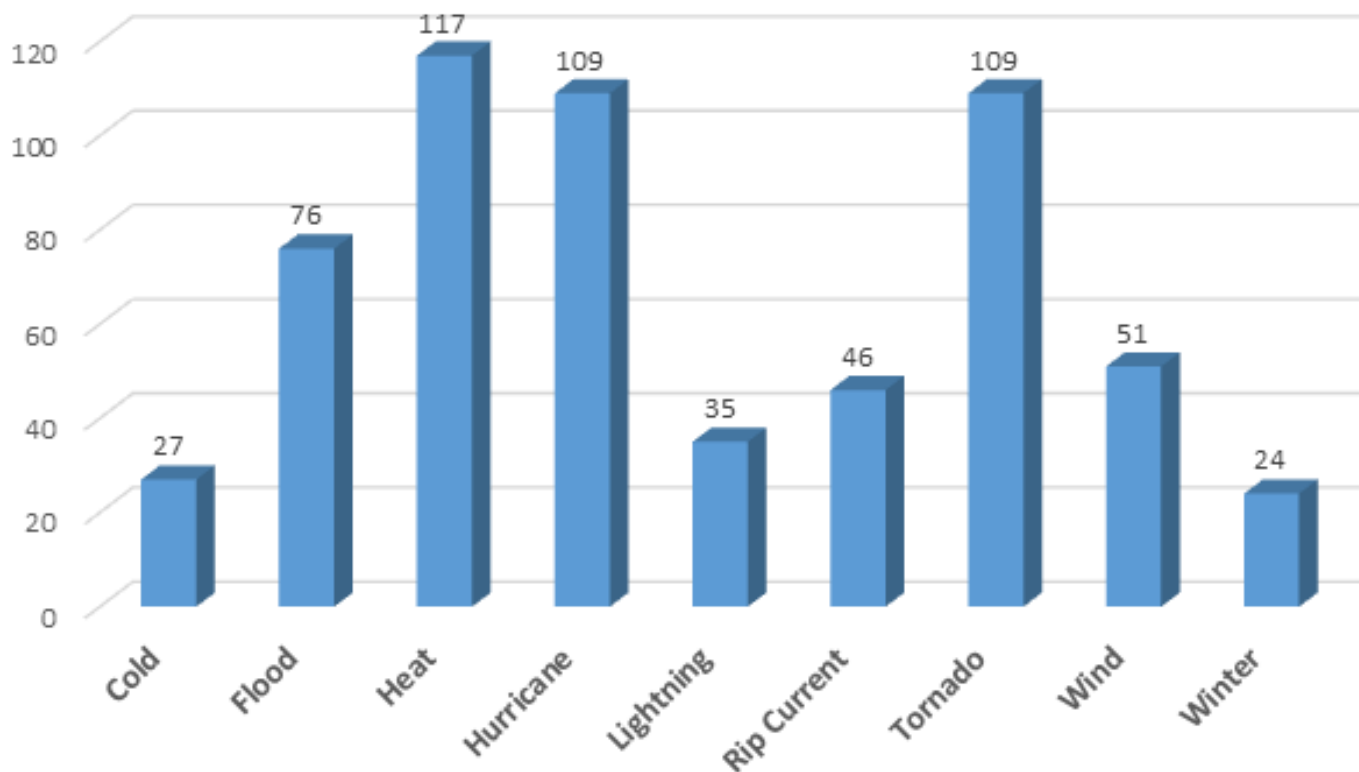


AMS Washington Forum, April 3, 2014



# Weather-related Fatalities

Weather Fatalities by Phenomena (as tracked by NWS)  
10 Year Average (2003-2012)



Source: <http://www.nws.noaa.gov/om/hazstats.shtml>

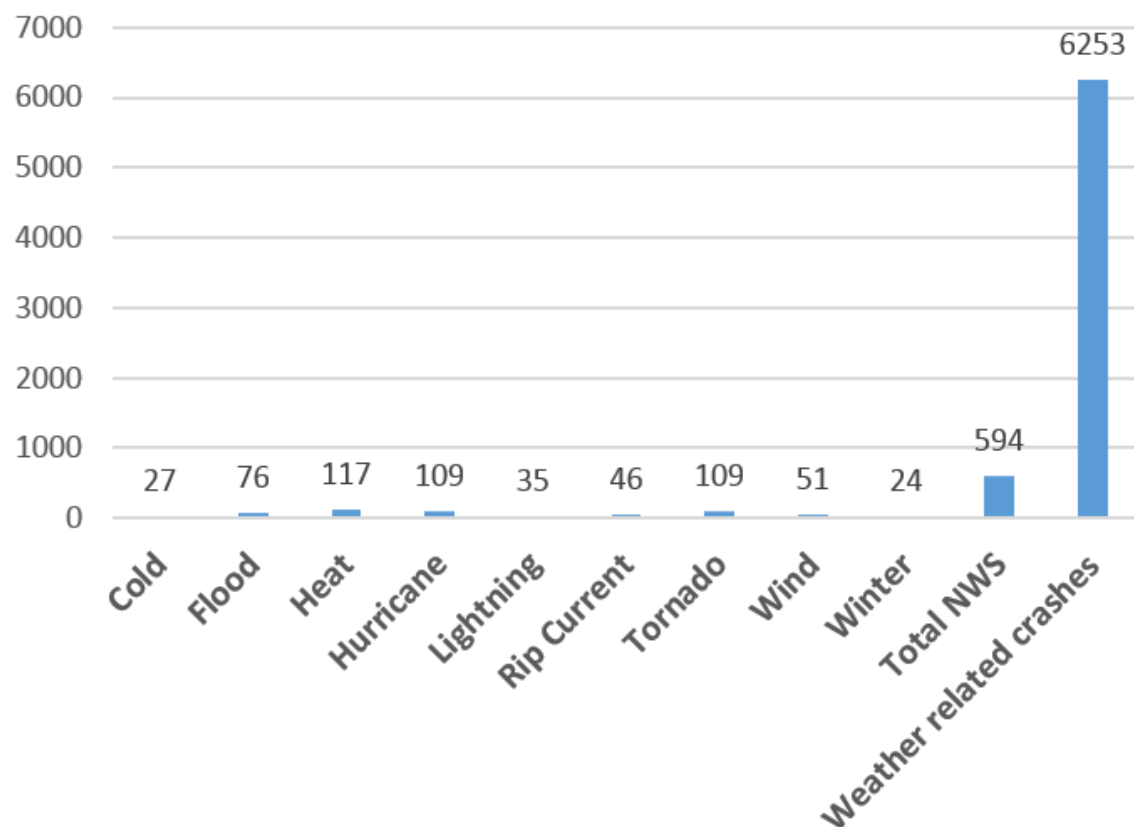


# Putting it into Perspective

**10 Times** more people die in weather-related crashes each year than all (NWS tracked) weather phenomena combined!



Weather Fatalities by Phenomena  
vs. Fatalities in  
Weather-related Crashes







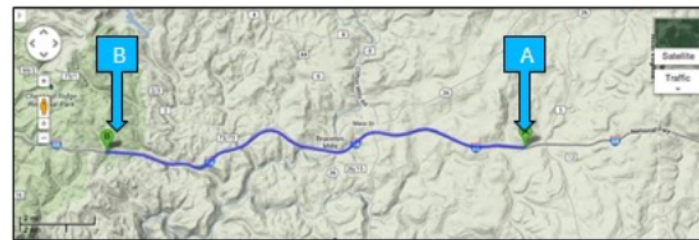
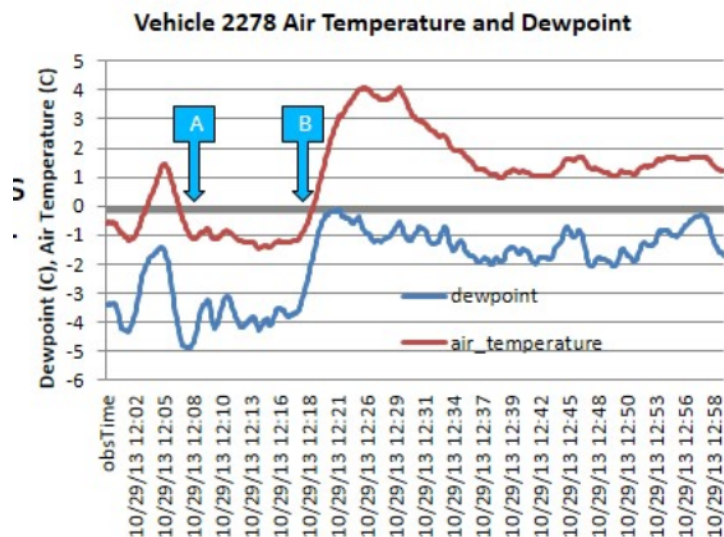
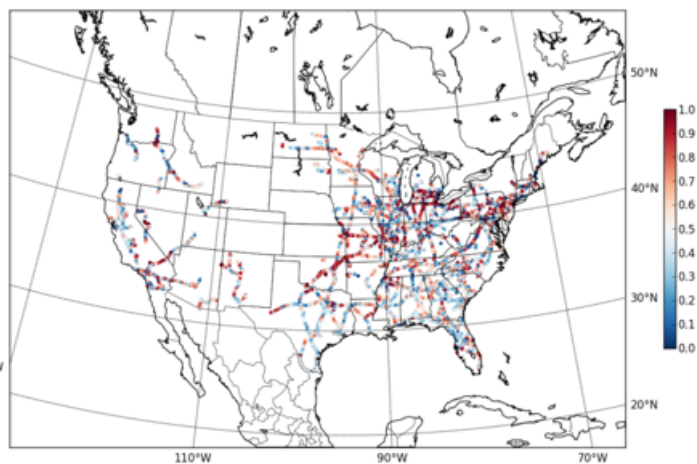
# Improved Data Integration

- **Transition of MADIS into NWS Operations**
  - The Meteorological Assimilation Data Ingest System (MADIS) collects, integrates, quality controls, and distributes observations from partnerships with local to national and international data networks (<http://madis.noaa.gov/>)
  - *Clarus* capabilities are being incorporated into MADIS – operational at end of CY14
  - *Clarus* QC routines will become operational in MADIS in early CY15
  - Currently reaching out to State DOTs to sign data agreements for MADIS
  - Surface transportation observations from MADIS will be made available to
    - Real-Time Mesoscale Analysis (RTMA) – which recently added visibility and wind gust speed in addition to temperature, dew point, wind speed and pressure
    - Un-Restricted Mesoscale Analysis (URMA) – RTMA performed with 6



# Expanding Data Sets

- Mobile platforms being explored to fill data gaps and detect hazards
- Mobile weather data are being assimilated into Univ. of Utah system to test data impacts on analyses
- Mobile data could eventually be included within RTMA



*A mobile platform transit pinpoints geography along Interstate 68 in West Virginia with sub-freezing air temperature – and a risk for icing.*



# Model Improvements

- **March 2014:** Short Range Ensemble Forecasts (SREF) upgrade – improves prediction of fog & cloud base heights
- **May 2014:** Upgrade HiResWindow to 3-4 km grid running more frequently on expanded domain
- **July 2014:** Upgrade to North American Mesoscale (NAM) model with improved physics and assimilation; Guidance downscaled to NDFD (2.5-3km) grid size
- **Sept 2014:** High Resolution Rapid Refresh (HRRR) model to run hourly at 3km (CONUS) out to 15 hours
- **Future:** HRRR Ensemble (HRRRE) - Multiple hourly runs of NAM nests & HRRR to construct an ensemble at convection-allowing scale



# Pathfinder Project

## Pathfinder: Surface Transportation Weather Collaboration Project

### Motivation:

- There are significant safety and mobility impacts of weather on the surface transportation system
- These impacts are, in part, due to gaps in timely, accurate, relevant and consistent information

### Objective:

- Based upon successful demonstration in Salt Lake City, study how NWS WFOs can improve consistent messaging which improves safety and decision making

### Pathfinder Project:

- A Partnership between NOAA/NWS and the FHWA involving WFOs and DOTs responsible for I-80 corridor from CA to WY

### Metrics:

- Improved collaboration between NWS and State DOTs
- Success will be measured by relevant changes in social and economic activity as a consequence of improved collaborative messaging before winter storms

Participating NWS WFOs  
Sacramento, King, Riverton  
Reno, Salt Lake, Cheyenne  
Participating State DOTs\*  
CA, NV, UT, WY  
Participating HQ  
• NWS OCWS, FHWA RWM  
\*includes State DOT private sector consultants as appropriate



# Moving Forward

- **Strategic Direction for NWS**
  - Proposing restructuring of NWS HQ into a more flexible/agile organization to better accommodate the needs of core partners and the enterprise
    - To include staff to better collaborate with FHWA and State DOTs
  - Working to meet strategic goals set forth in Weather Ready Nation Roadmap, NAPA/NAS reports and recent post-storm assessments. Examples include:
    - Improve internal consistency of products
    - Make more data available to the enterprise
    - Focus on climate-weather linkage to provide better foundational outlooks for planning (especially in weeks 3 and 4)
    - Working with partners to improve message consistency