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
10 Times more people die in weather-related crashes each year than all (NWS tracked) weather phenomena combined!
• **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 hour delay
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
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: 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 collaboration 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, Elko, Riverton, Reno, Salt Lake, Cheyenne

Participating State DOTs*
CA, NV, UT, WY

Participating HQ
NWS OCWWS, FHWA RWM

*includes State DOT private sector consultants as appropriate
• **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