

BACKGROUND

Recent events like Hurricane Katrina in 2005 and the Deepwater Horizon oil spill in 2010 demonstrated that each of the National Weather Service's core partner requirements quickly emerge and continuously evolve, and are not necessarily tied to traditional NWS products and services. The agency learned that more agility is needed to meet with each partner's needs and better fulfill the mission of protecting life and property.

The New Orleans/Baton Rouge county warning area has a population of 2.9 million, the #1 port system in the country, nearly one-fourth of the country's daily natural gas and petroleum production, numerous major events such as the Super Bowl and Mardi Gras, and 7500 miles of fragile coastline. The NWS New Orleans/Baton Rouge office was picked to host one of the six new NWS Impact-Based Decision Support (IDSS) Pilot Projects, with a special focus toward decision support in a marine environment. The goal of the Pilot Project is to test and evaluate the concepts of IDSS which will include on site support during major planned events or natural disasters. The team of Emergency Response Specialists will enhance this type of support by developing new technology, leveraging research being accomplished throughout NOAA, completing an IDSS-oriented training plan, utilizing social science research, and forming an impacts catalog and "playbooks" for major events.







Impacts Catalog

• "Adopt a county/parish" concept – document core partner thresholds and required response times

- Document critical thresholds for partner groups during deployments and partner meetings
- Develop NIMS-compliant playbook for major events

• Work with NOAA line offices to ensure that future software, products, and services have flexibility and adaptability to meet partner needs



Decision Support Laptops/Thin Client: • RedHat Linux Enterprise 5 – 32 bit OS • Linux version of AWIPS II Thin Client **D2D/CAVE running with LIX localization** VMPlayer to run Windows applications: HurrEvac, GR2Analyst, GREarth



NWS New Orleans/Baton Rouge IDSS Pilot Project: Impact-Based Decision Support Services in a Marine Environment

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Enhanced Interactive Training

- Emergency Response Specialist Tropical Training Short Course National Hurricane Center/Miami (with 21 subject matter experts – enhanced media training and simulations included)
- NOAA Science of Oil Spills Course
- **Decision Support Services "Bootcamp" (NWS Operations Proving Ground)** Hazardous Prediction and Assessment Capability (HPAC) Plume-Modeling **Course with Defense Threat Reduction Agency**
- Louisiana Homeland Security and Emergency Preparedness Training **Program (LaHEPP)**
- Other training collaborations with US military agencies, Coast Guard, FEMA, and other NOAA line offices

Development/Adaptation of New Technology



Hazard Prediction Assessment **Capability (Defense Threat Reduction** Agency

 Enhanced plume modeling capabilities with forecast model input



Web-Based "Mobile Tool" for EMs: • Smart phone "One-stop shop" for weather information Links to radar data, hourly forecasts, river and tide information

- Enhanced Data Display Software:
- Internal agency use for DSS
- Overlay of observational/model data on Google Maps background
- "One stop shop" for river gauge and tide data





- **3km resolution local WRF:**
- Physics altered as needed locally
- Soil conditions initialized with NASA LIS data
- Short-term convective trends to aid in decision support
- Simulated composite radar "forecasts" every 2 hours out 18 hours



- Wasp
- 3000 servicemen and women and 120,000 visitors
- Direct briefings to military high command
- Weather support coordinated with METOC office on **USS Wasp and Navy Fleet Weather Center in Virginia**
- Critical decisions based on DSS including military flight ops, airshow, major fireworks display, outdoor events, and ship movements up/down the river

Additional Deployments to City of New Orleans:

- Mardi Gras Endymion Parade February 18, 2012
- NCAA Final Four weekend March 30-April 2, 2012
- Pallas Hotel building implosion July 22, 2012

Collaboration with National Hurricane Center/Hurricane Forecast Improvement Team



FUTURE WORK

- Major Deployments: Super Bowl 2013 and Mardi Gras 2013 in New Orleans Technical Goals: Develop a Mile Marker Forecast for the Mississippi River which will provide river pilots and other interests with both a threat table and point-and-click forecast information for specific hazardou points along the river. Create a "one-stop shop" (web-based) for tide and river gauge information.
- **<u>Collaboration with NHC Hurricane Forecast Improvement Team</u>: Further testing of the proposed Storm** Surge Warning. Partner meetings to evaluate proposed inundation graphics. Enhanced partner training on probabilistic surge and proposed Storm Surge Warning.
- **<u>Training</u>: Contribution to a proposed Tropical Professional Development Series (PDS) and Marine PDS.</u>** Participation in HAZMAT and Hurricane exercises. Pre-season hurricane simulations at the office.

Hurricane Isaac: August 27-September 4, 2012

- Significant storm surge flooding in LaPlace, Braithwaite, and the north shore of Lake Pontchartrain. Major river flooding event following the Hurricane with two potential dam failures
- Meteorologists and hydrologists deployed to four locations: Louisiana State EOC in Baton Rouge, City of New Orleans, Mississippi Crisis Action Center in Gulfport, and City of Slidell (with SWERV)
- Hands-on decision support to dozens of federal, state, and local government agencies
- Over 350 briefings and 90 media interviews given
- Press conferences with Governors of Louisiana and Mississippi and Mayor of New Orleans
- Successful run of AWIPS thin client in the field

 Proposed Storm Surge Warning: "in house" test of proposed warning during **Tropical Storm Debby and Hurricane Isaac**

 Storm Surge Marketing Project: social scientists working with partner groups to evaluate new surge forecast products/graphics

 Product and graphical improvements in NWS tropical cyclone program tested including tropical cyclone impact graphics (TCIG) and enhanced briefing techniques

 Tour of the New Orleans Risk Reduction System (US Army Corps of Engineers levee system)

