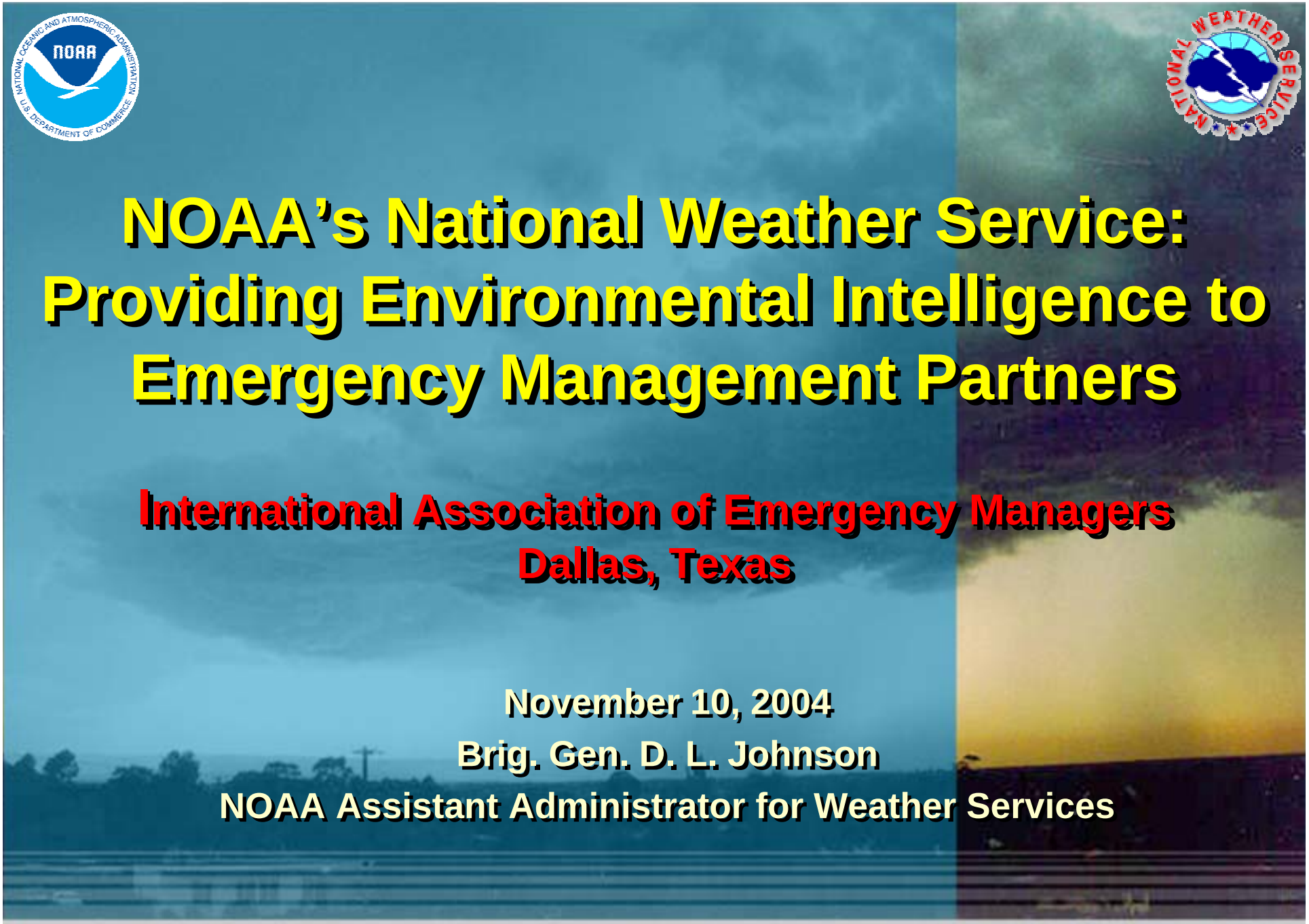


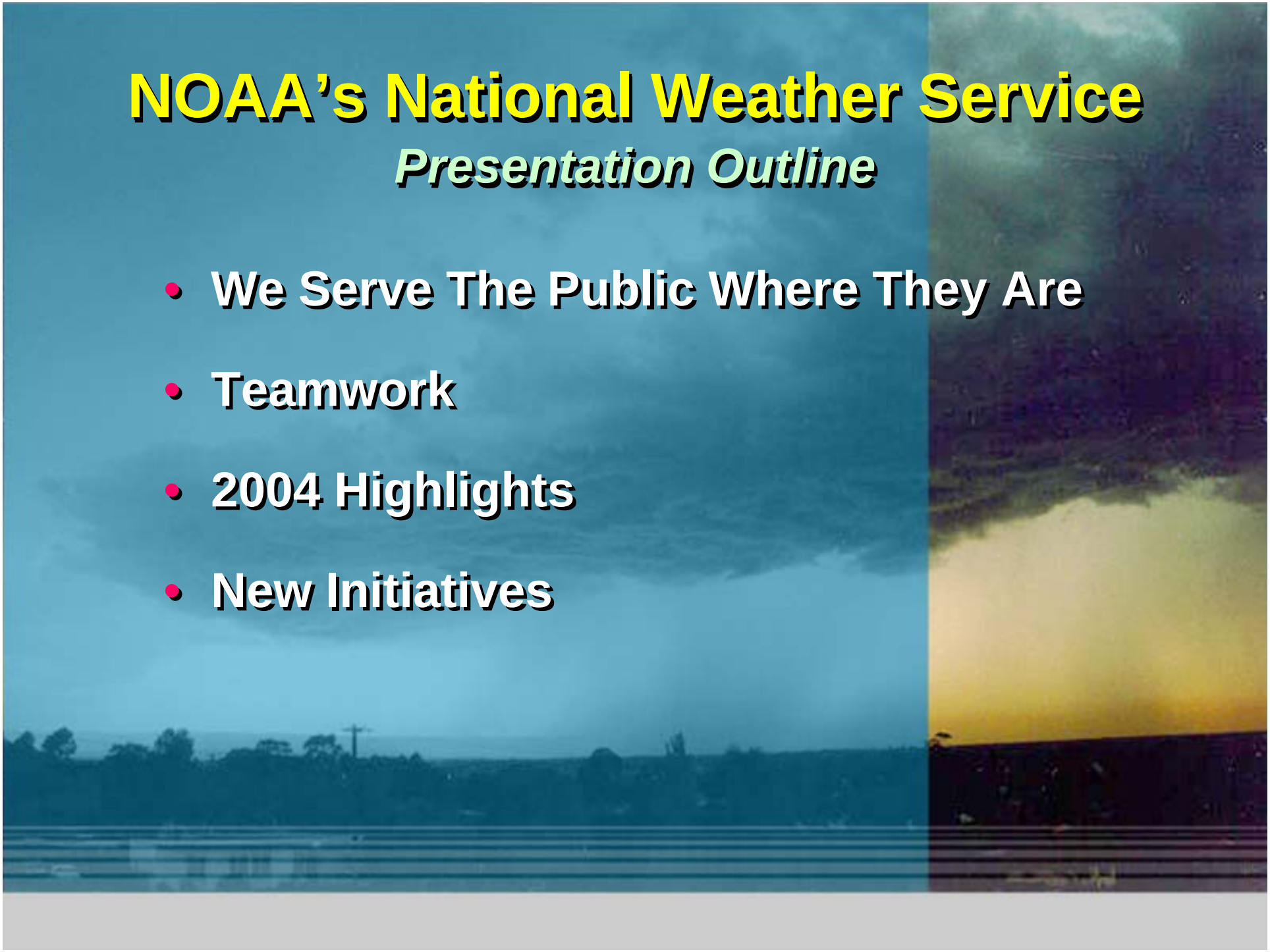
NOAA's National Weather Service: Providing Environmental Intelligence to Emergency Management Partners

International Association of Emergency Managers
Dallas, Texas

November 10, 2004

Brig. Gen. D. L. Johnson
NOAA Assistant Administrator for Weather Services

Certificate of Appreciation presentation to Bob Goldhammer for his support of the NWS StormReady Program



NOAA's National Weather Service

Presentation Outline

- We Serve The Public Where They Are
- Teamwork
- 2004 Highlights
- New Initiatives

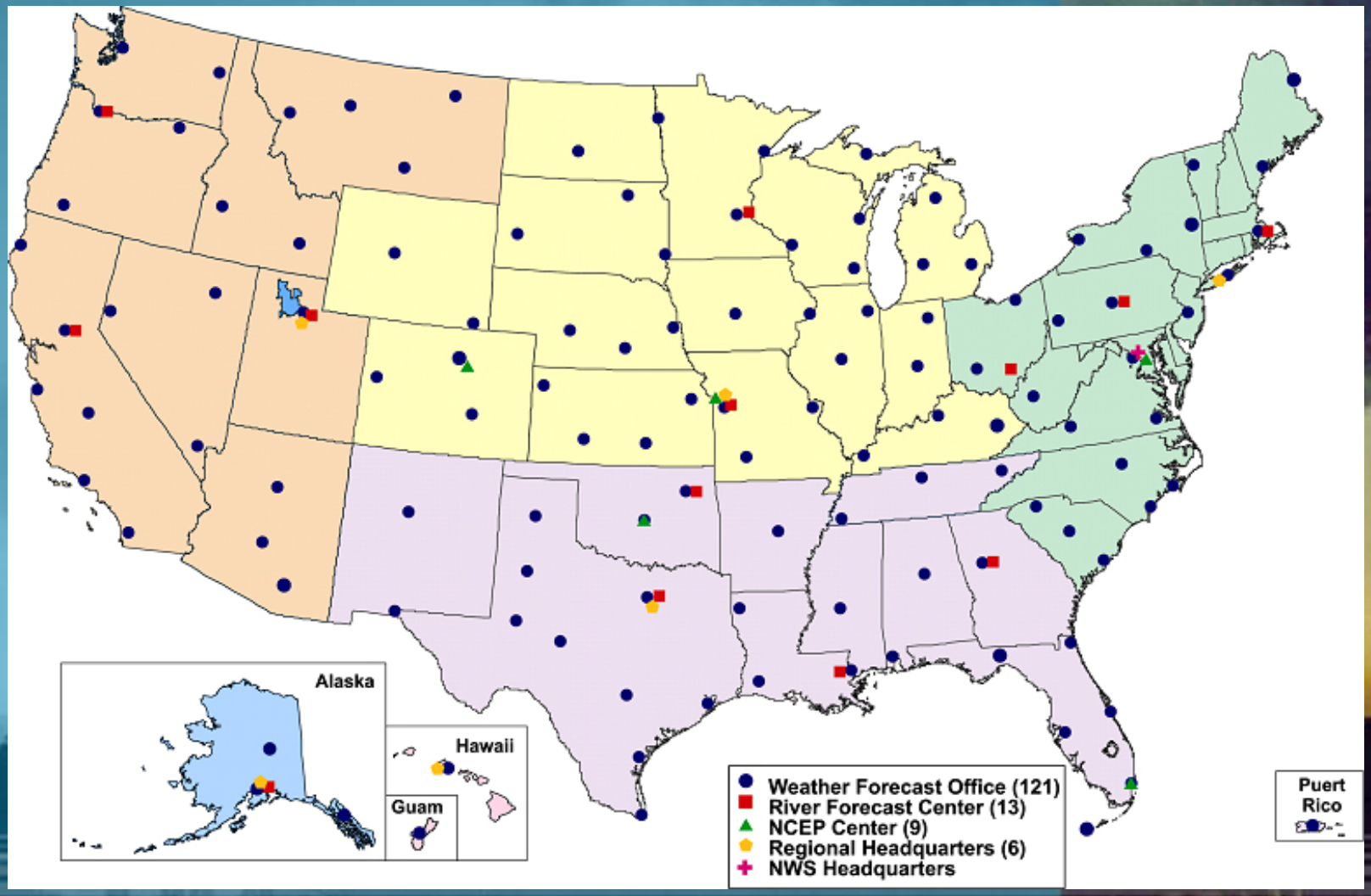
Bad things are going to happen!

What is our Goal?

Modify publics behavior to get them to take appropriate actions.

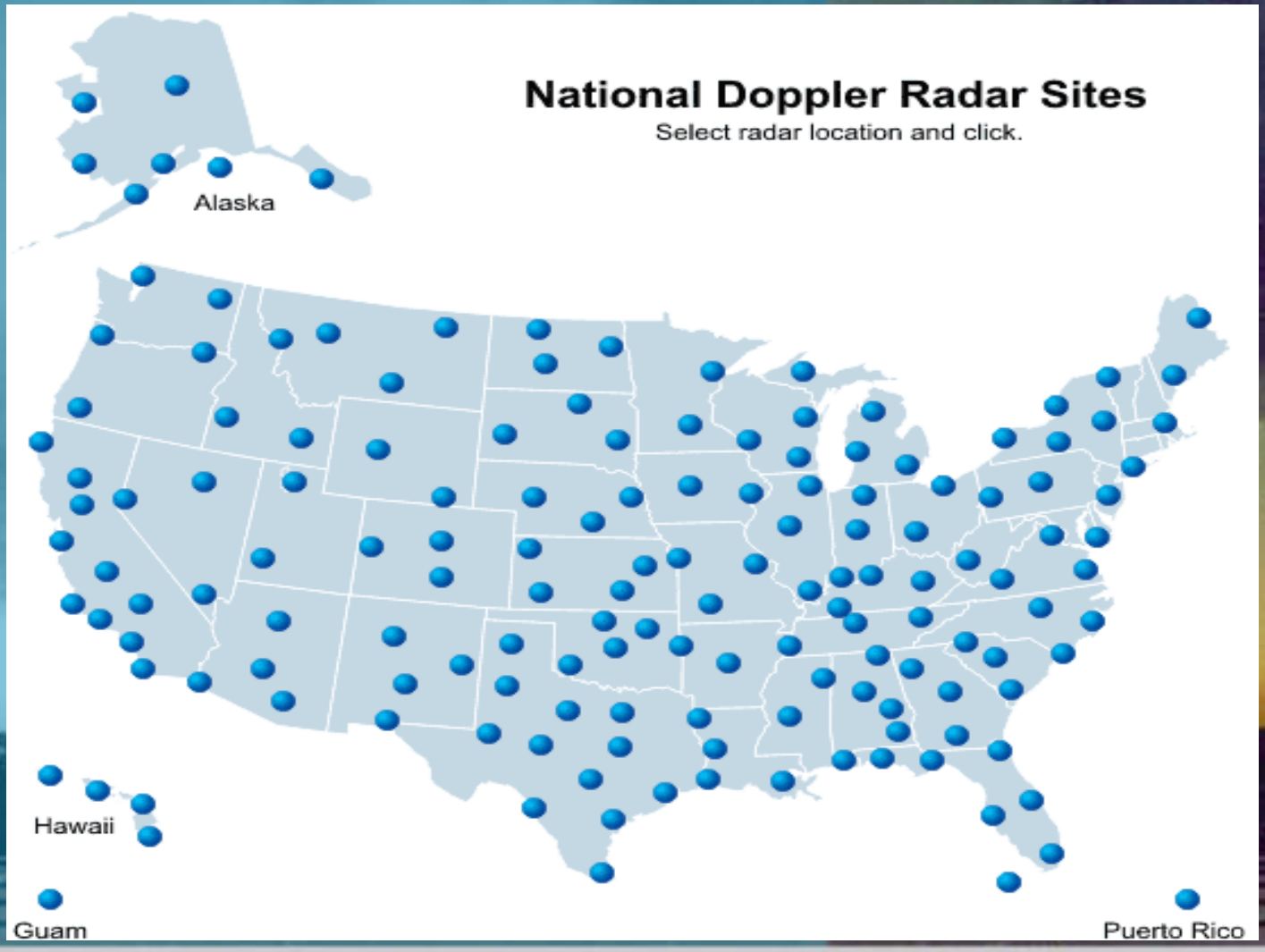
Field Office Structure

We Serve The Public Where They Are



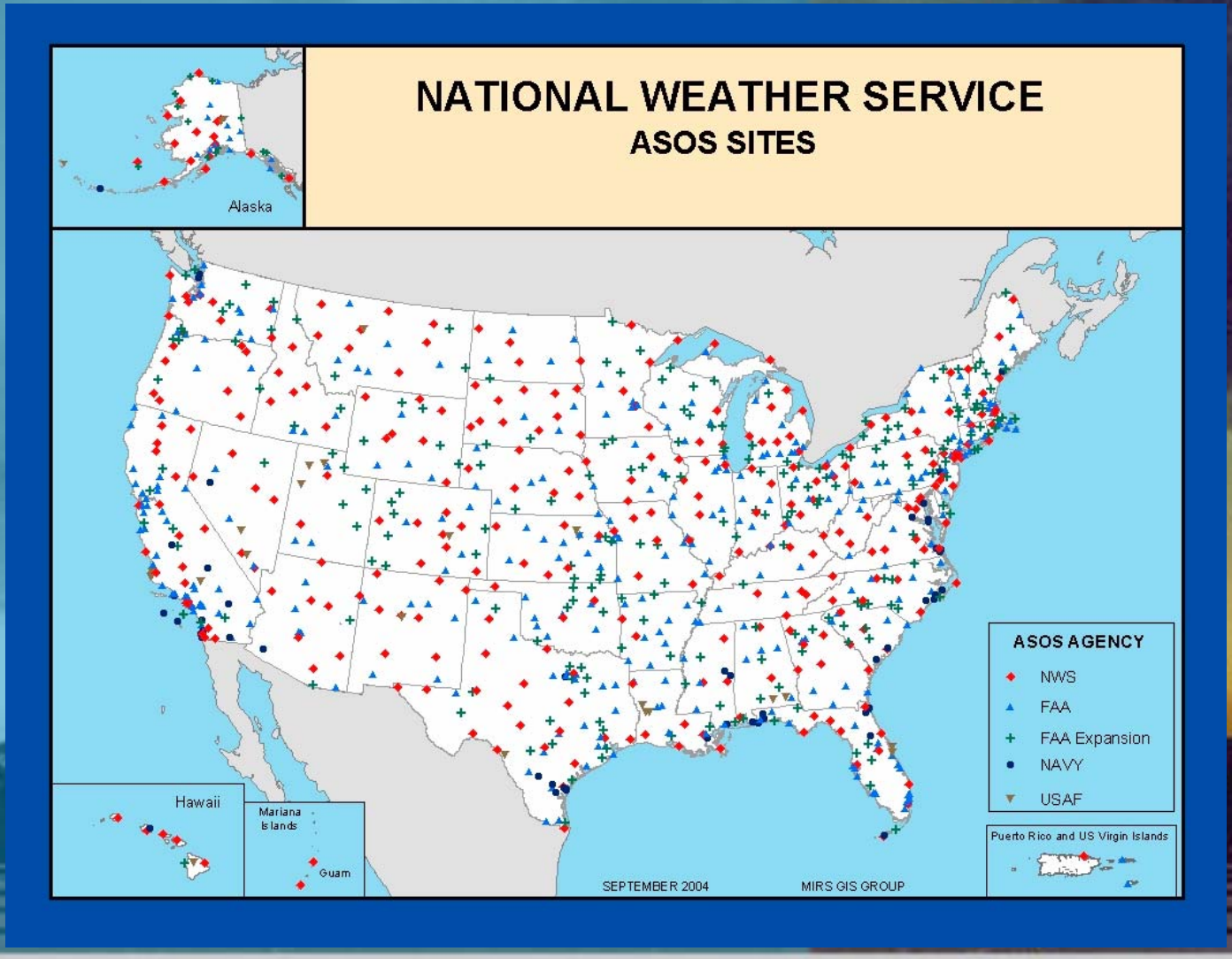
Doppler Radar Network

We Serve The Public Where They Are



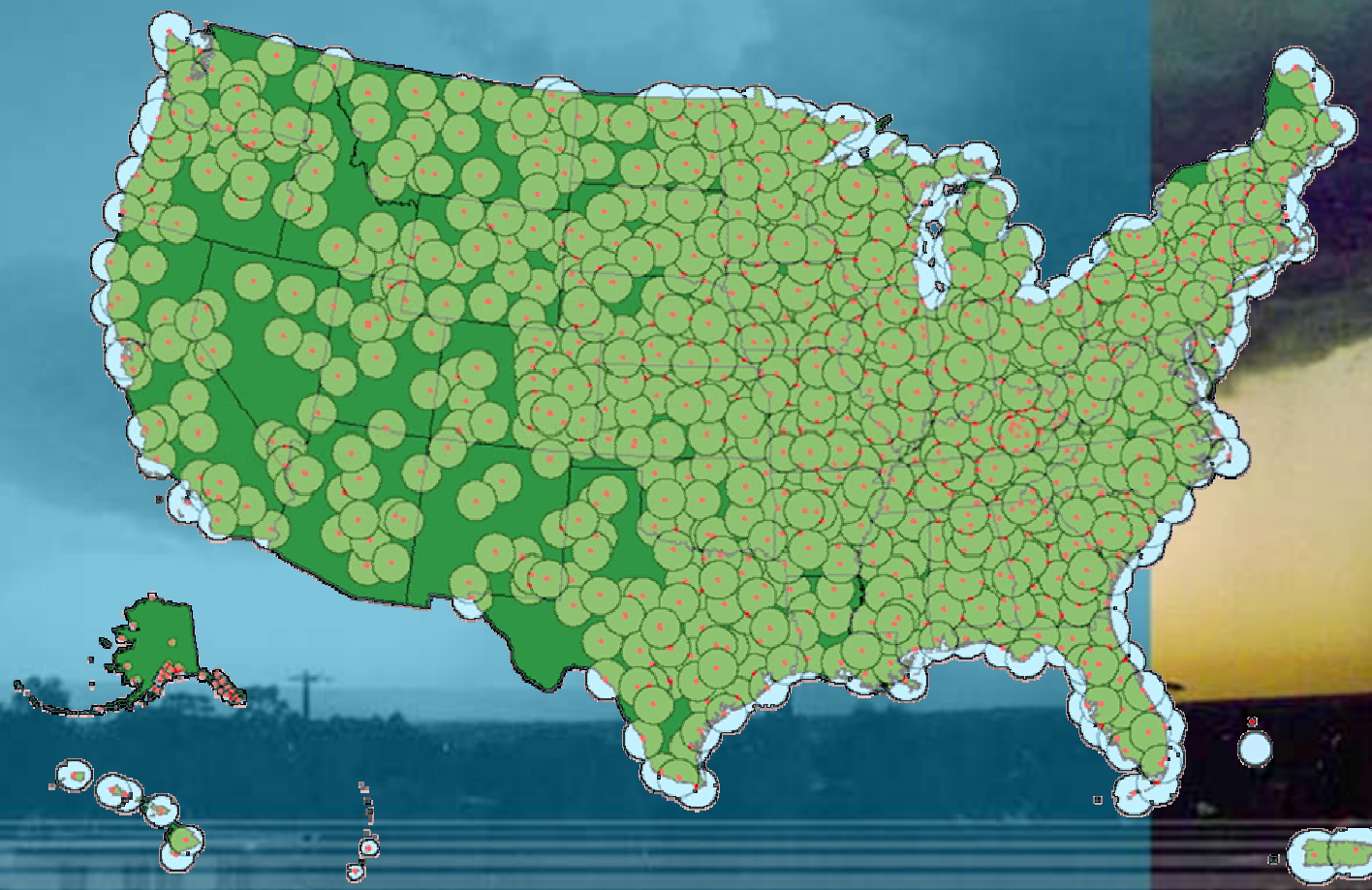
Automated Surface Observing System

We Serve The Public Where They Are



NOAA Weather Radio
All Hazards Network

We Serve The Public Where They Are



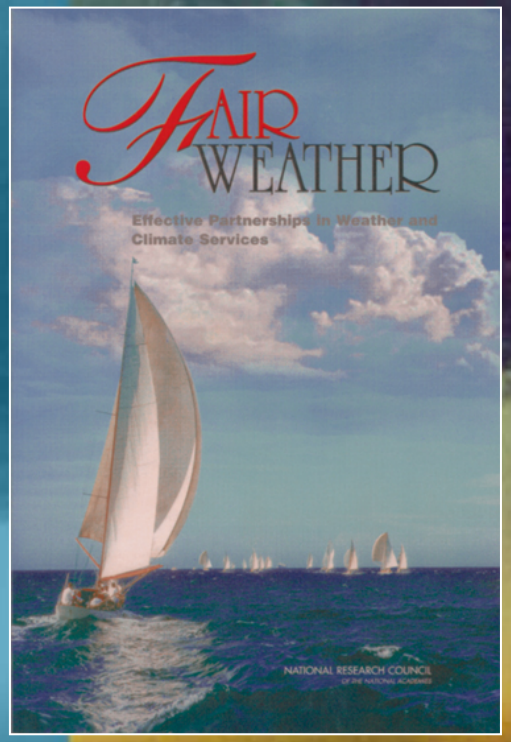
Teamwork

iAEM
International Association of Emergency Managers
CNN
INTERACTIVE
THE WEATHER CHANNEL
www.weather.com
USGS
science for a changing world
FEMA
meteorlogix™
StormReady
NATIONAL WEATHER SERVICE
NEMA
Red Cross

Teamwork

National Research Council's Report

Fair Weather: Effective Partnerships in Weather and Climate Services

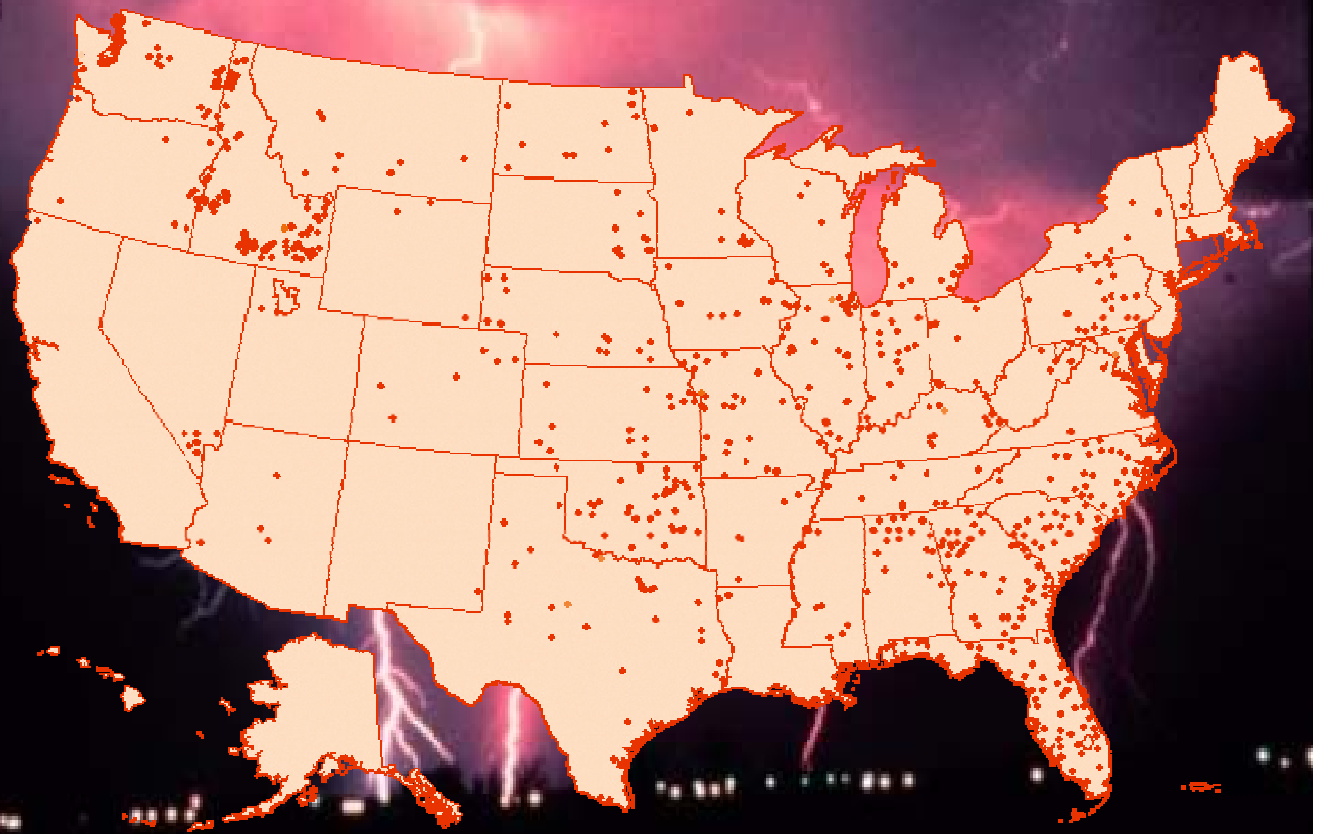


- *Today's partnerships are sound and functioning well*
- *Recommendations include:*
  - Congressional Mandate - protect life and property
  - Public/Private Partnership Process
  - Data and Products in standardized format
  - New/Discontinue Products
  - Communicate Uncertainty

http://www.nws.noaa.gov/fairweather

Teamwork

- *815 Communities Nationwide*
- *119 new Communities recognized since January 1, 2004*
- *47 States*



StormReady Success!

Van Wert, Ohio F4 Tornado - 11/10/02

Detection & Warning

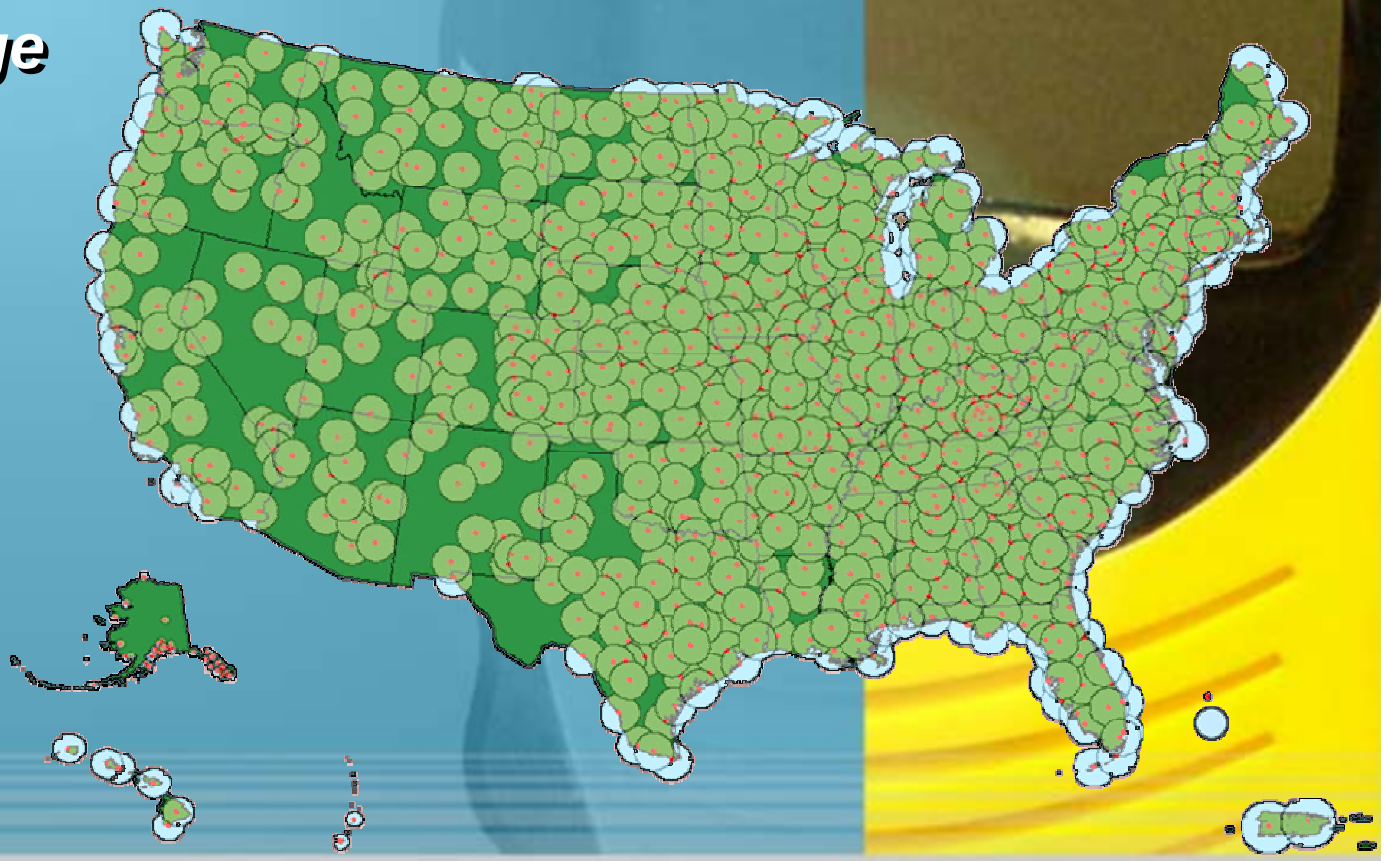
Dissemination

Response

Communication

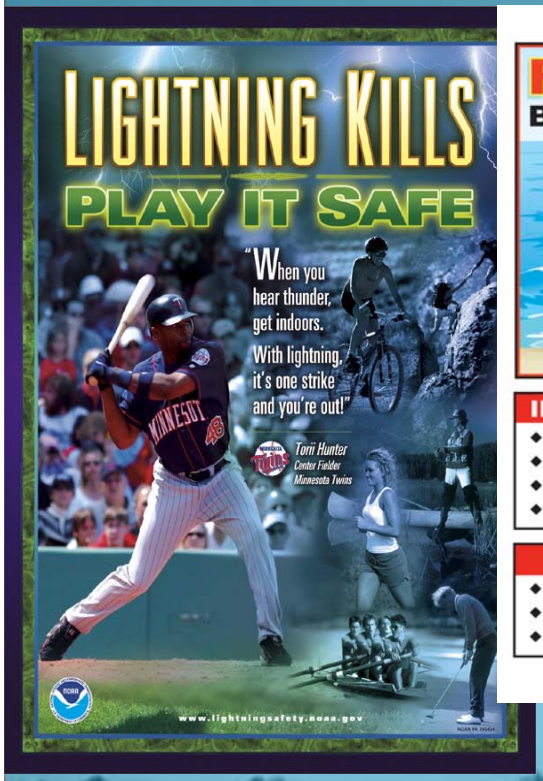
Teamwork

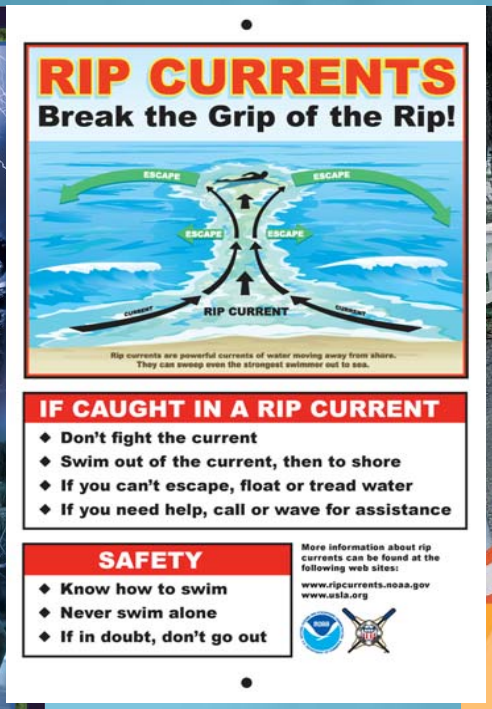
- *918 total transmitters*
- *54 new transmitters added FY04*
- *95% coverage*

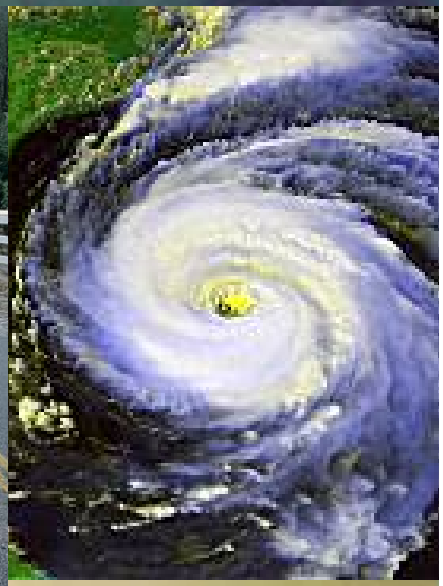


Teamwork

Awareness Campaigns



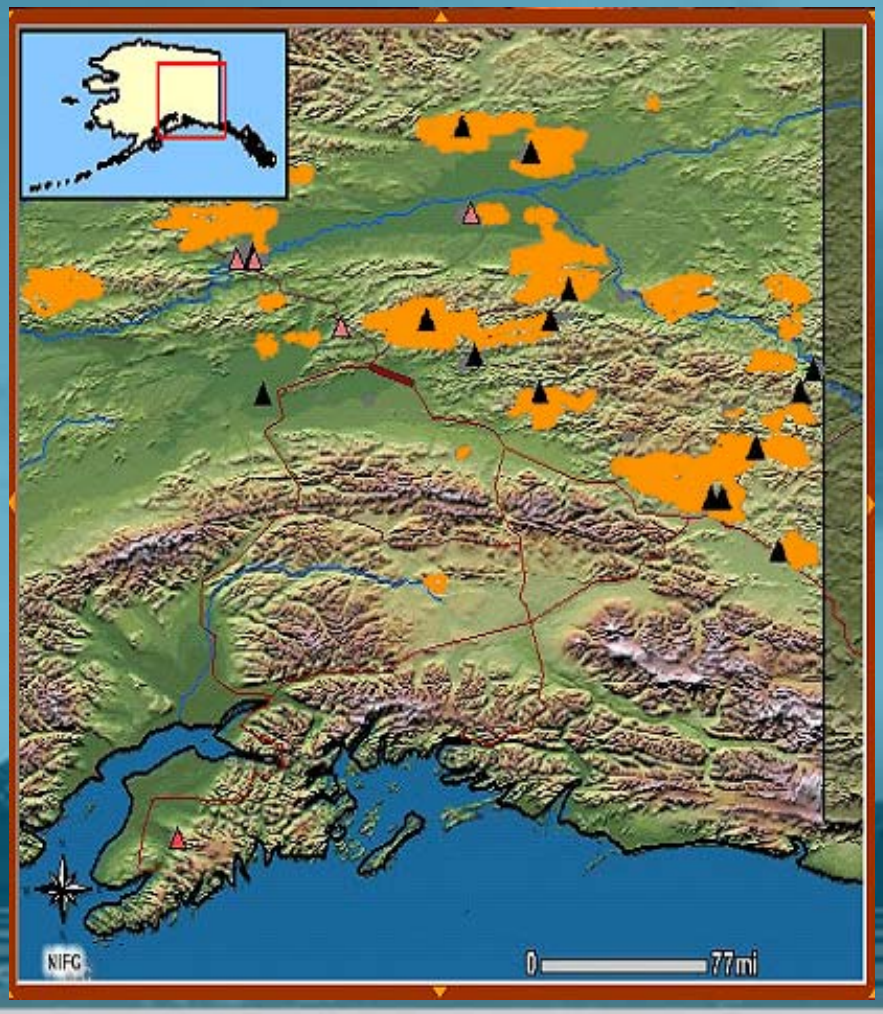




Hurricane Preparedness

2004 Highlights

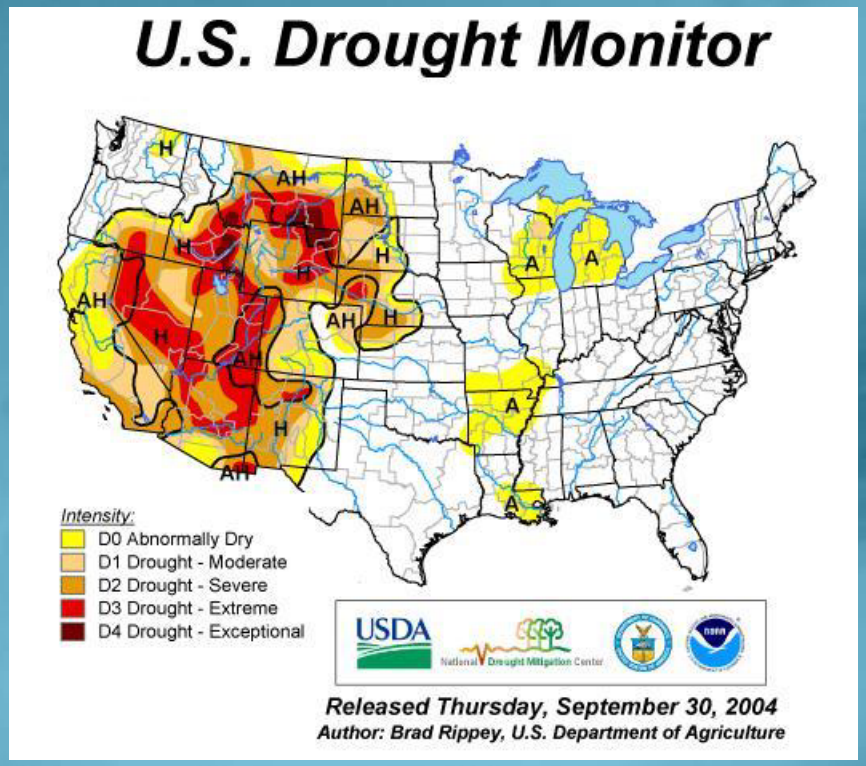
AK Wildfires and Incident Meteorologists



- 6.4 Million Acres Burned
- Record number of acres burned in Alaska
- 11 IMETs Dispatched
- All Hazard Meteorological Units used successfully

2004 Highlights

Drought



Severe drought in West

- In some areas, more than 5 years
- Many reservoirs seriously depleted
- 2004-2005 snow season critical
- NOAA-Western Governors Association

National Integrated Drought Information System

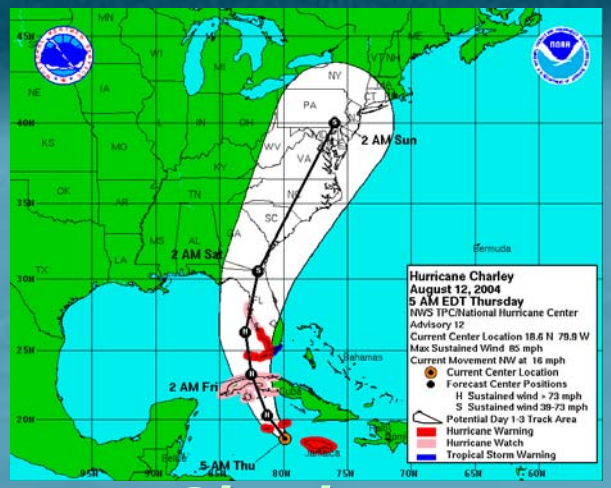
2004 Highlights

Hurricanes

- **12 Tropical Storms:**
  - ***8 became Hurricanes***
  - ***6 major Hurricanes***
- **First time four hurricanes have hit Florida in a single season.**
- **Last time one state was hit by four hurricanes in a single season was Texas back in 1886.**

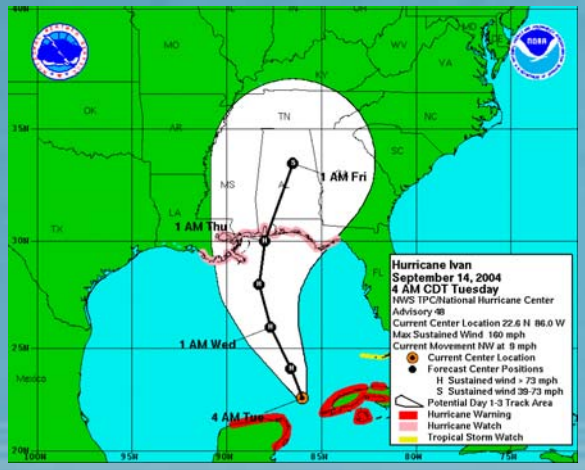
2004 Highlights

Landfalling Hurricanes



Charley

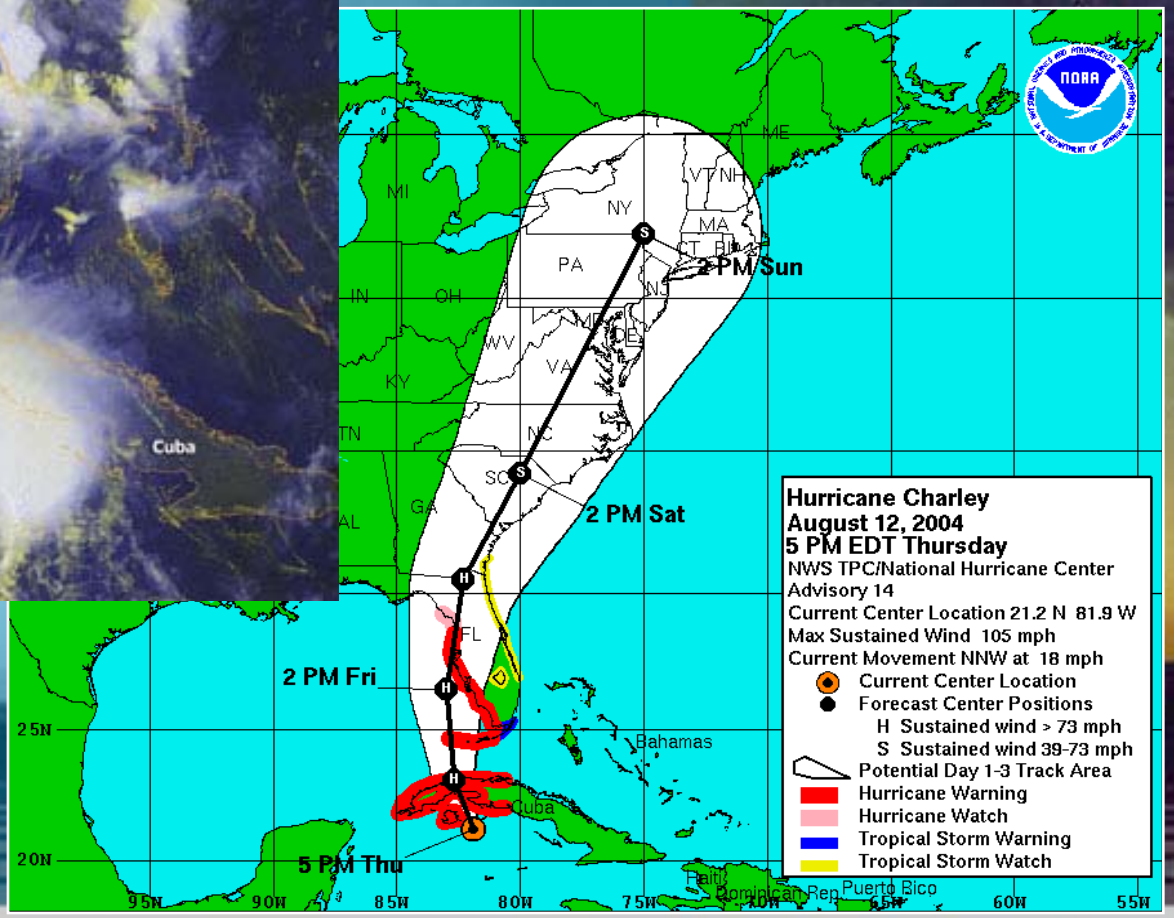
Frances



Ivan

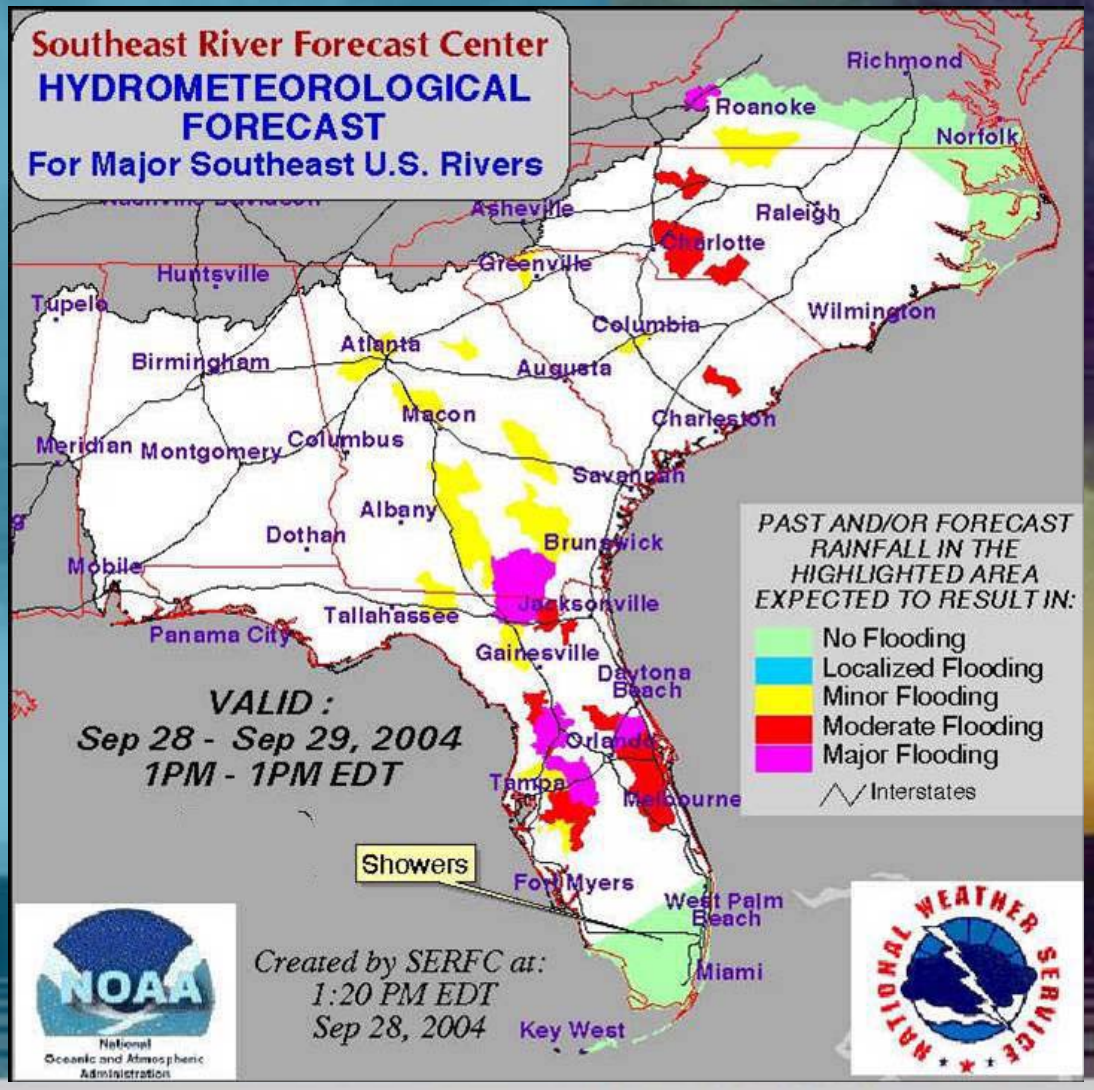
Jeanne

2004 Highlights



2004 Highlights

Inland Flooding from Hurricanes



New Initiatives

- Better Radar
- National Digital Forecast Database (NDFD)
- Air Quality
- Interagency Modeling Atmospheric and Analysis Center (IMAAC)
- All Hazards Emergency Message Collection System (HazCollect)
- Emergency Managers Weather Information Network (EMWIN)
- NOAA/USGS Debris Flow Partnership

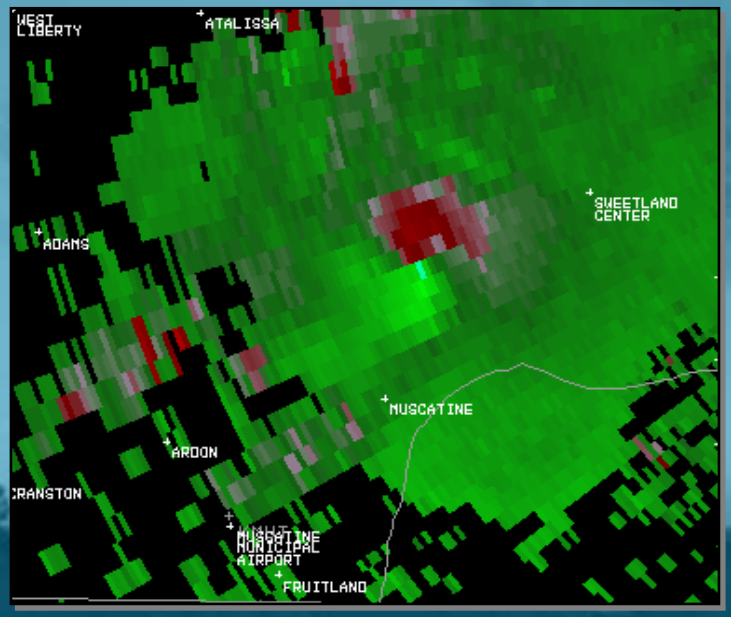
New Initiatives

Increased Data and Spatial Resolution

Improved tornado signature detection with better spatial resolution data.

Implemented In 2002

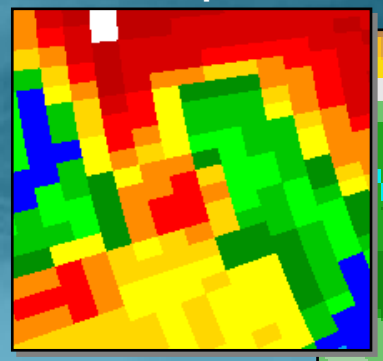
255 Data Levels vs Current 16



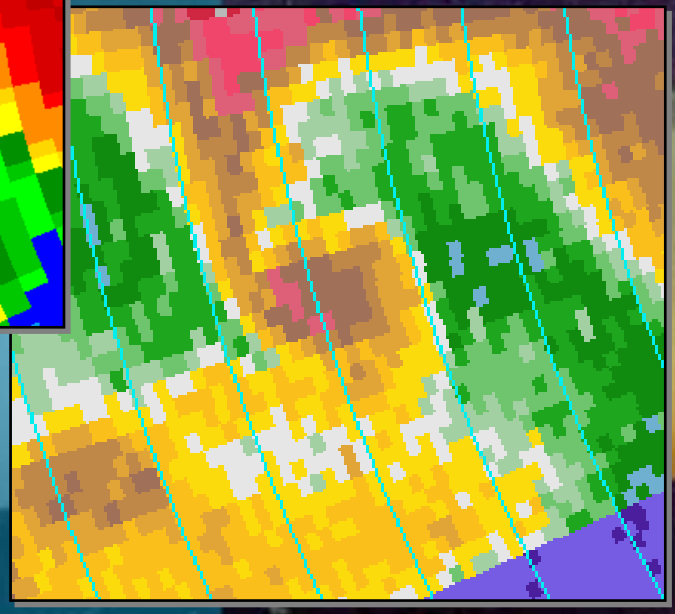
Velocity Rotation Signature Displayed With 255 Data Levels (8-bit Data)

Implementation Beginning in 2005

Super Resolution Data (1/4 Km x ½ Degree)



Current Resolution (1 km x 1 degree)

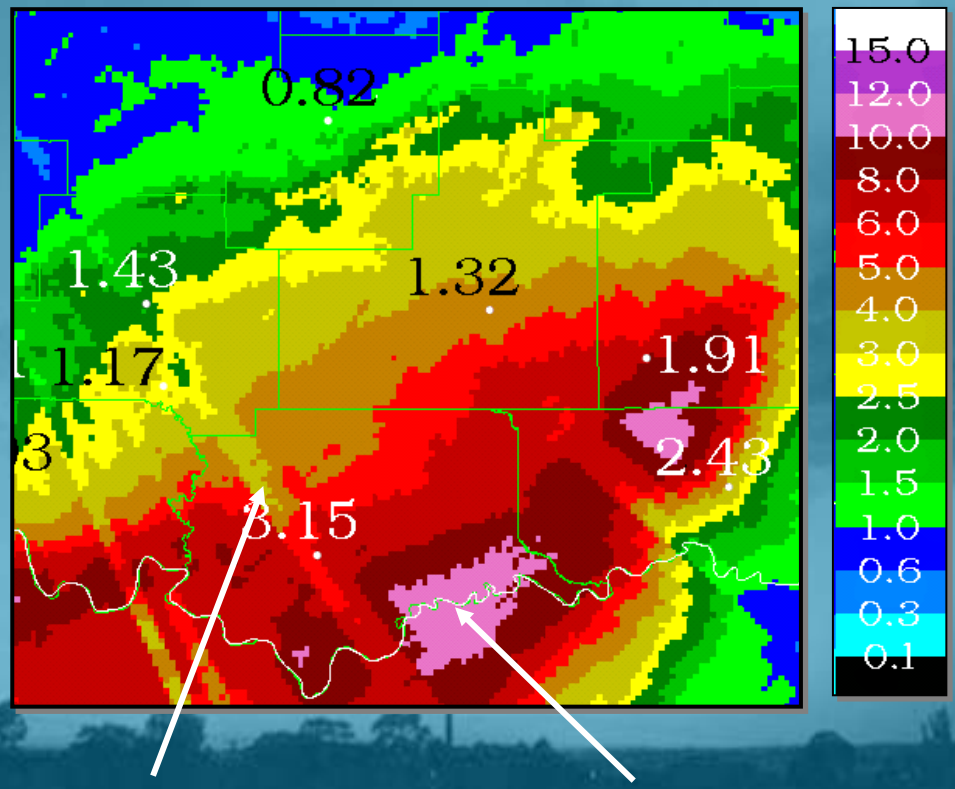


Hook Echo With Super-Resolution Data

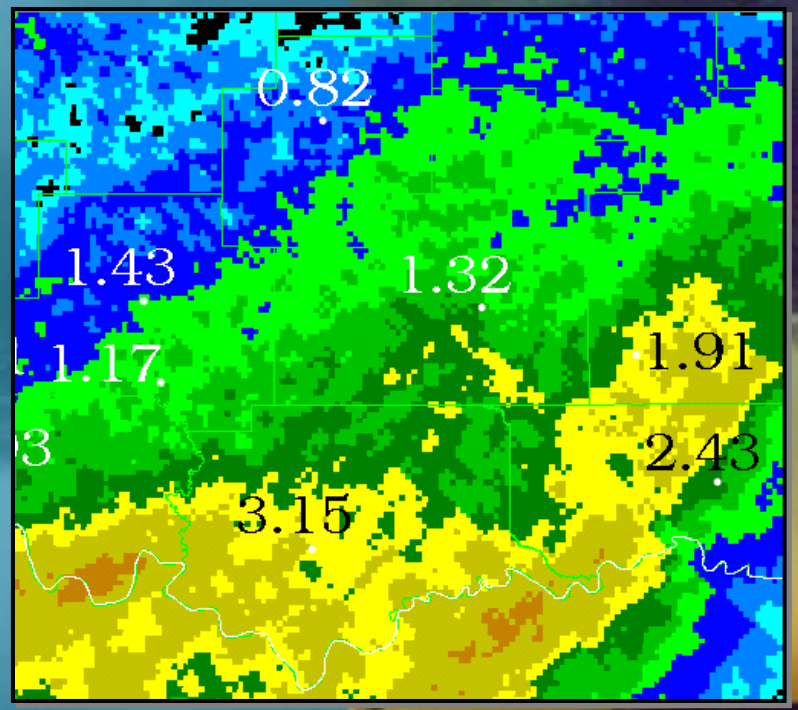
New Initiatives

Dual Polarization Rainfall Estimation Enhancements

Today's Reflectivity Based Estimation



Dual Polarization Based Rainfall Estimation



Underestimation in partial beam blockage

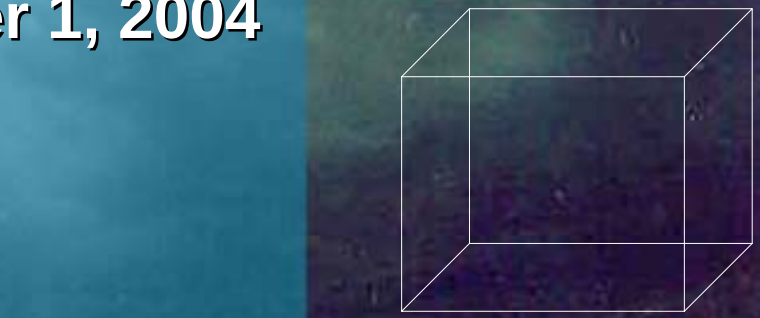
Large overestimation in melting level & hail

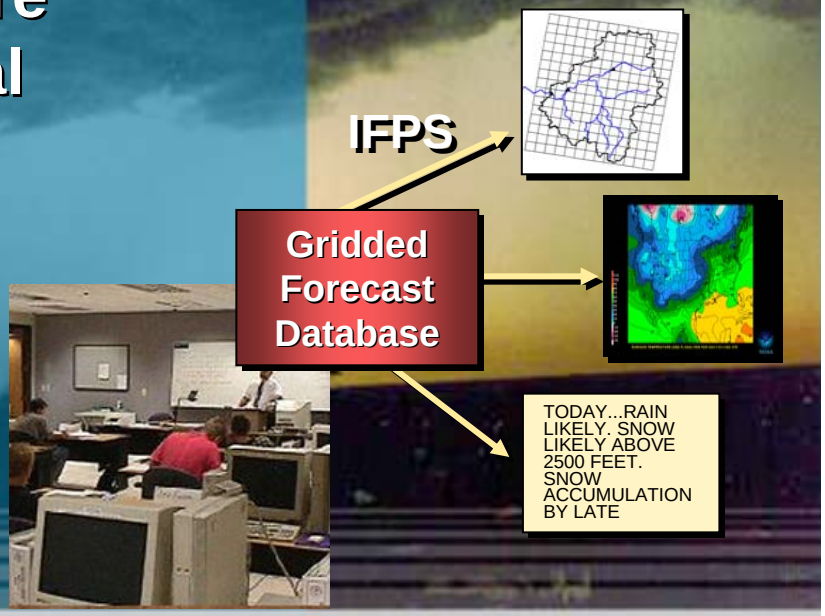
Planned for ~2008/2009

New Initiatives

National Digital Forecast Database

- **Operational status on December 1, 2004**
  - *Max Temperature*
  - *Min Temperature*
  - *PoP 12*
- **Improvements are needed before declaring these grids operational**
  - *Temperature*
  - *Dew Point*
  - *QPF*
  - *Snow amount*
  - *Sky cover*
  - *Wave heights*
  - *Wind direction and speed*





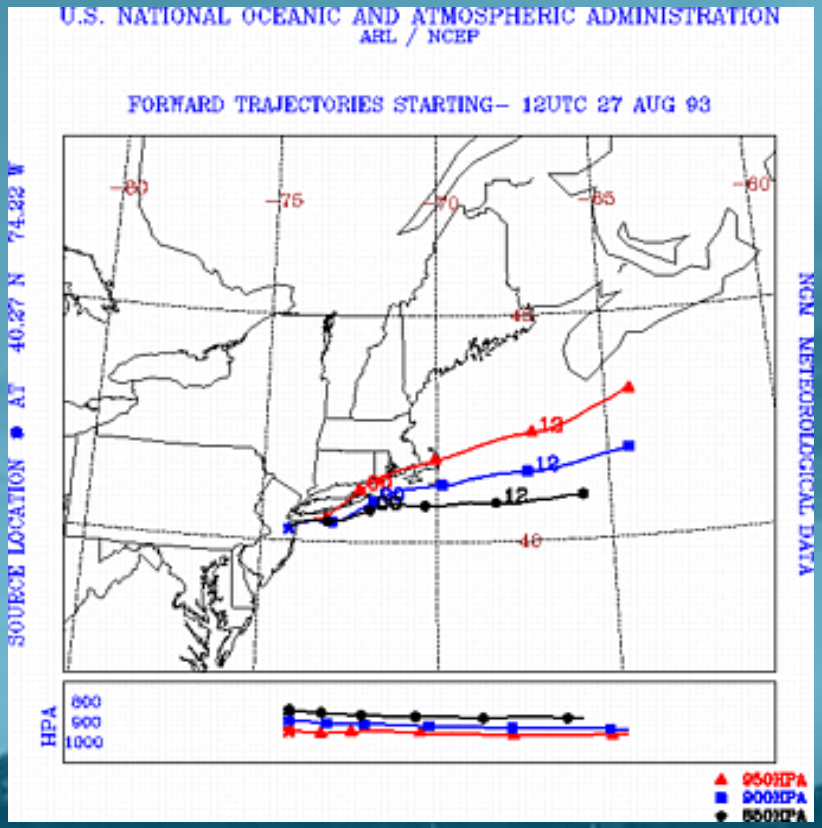
New Initiatives

Air Quality Forecasts

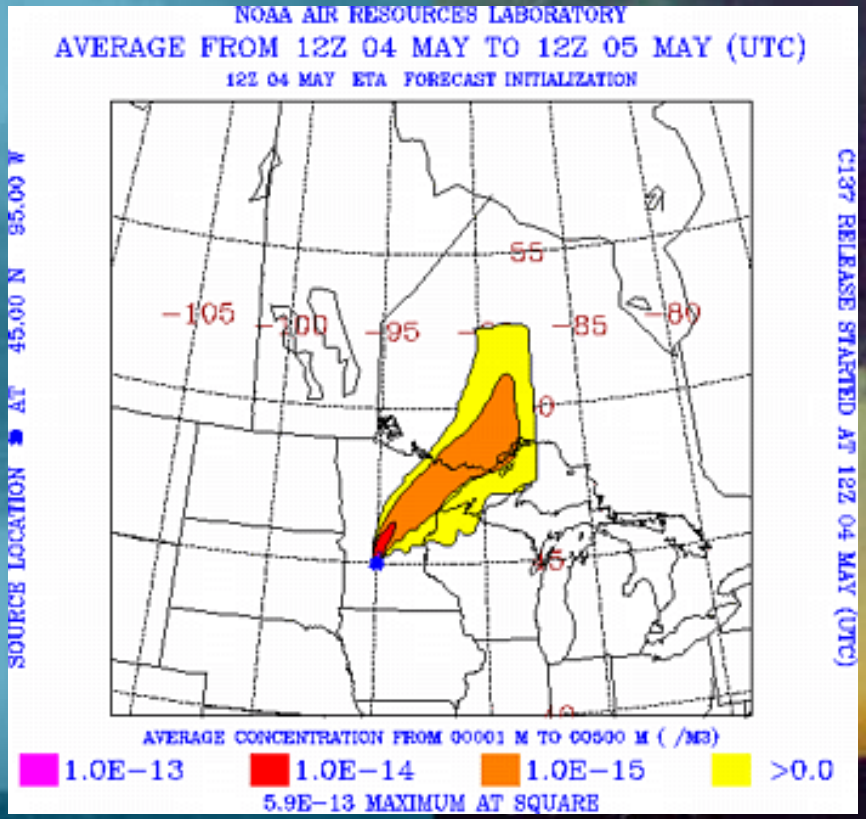
- **Lives and property at risk from poor AQ**
- **AQ Forecast guidance produced 2 times daily**
- **Phased Deployment**
  - ***Implemented September 2004 for Northeastern US (next-day, ozone)***
  - ***Deploy Nationwide by 2009***
  - ***Develop particulates forecasts capability in 10 year timeframe***

New Initiatives

Interagency Modeling and Atmospheric Analysis Center



12-hr Particle Forward Trajectories



24-hr Average Particle Concentration

New Initiatives

All Hazards Emergency Message Collection System (HazCollect)

- **Automates current manual method of relaying CEMs through NWS to NWR, EAS, and other national systems**

- **EMs will use one of the tools of the DMIS desktop client to write and send Civil Emergency Messages**

- **HazCollect field deployment scheduled for Winter 2005-2006**

- **IAEM-NWS HazCollect Working Group**
  - **EM feedback incorporated in operational requirement**
  - **Much work ahead on user interface design and system rollout**

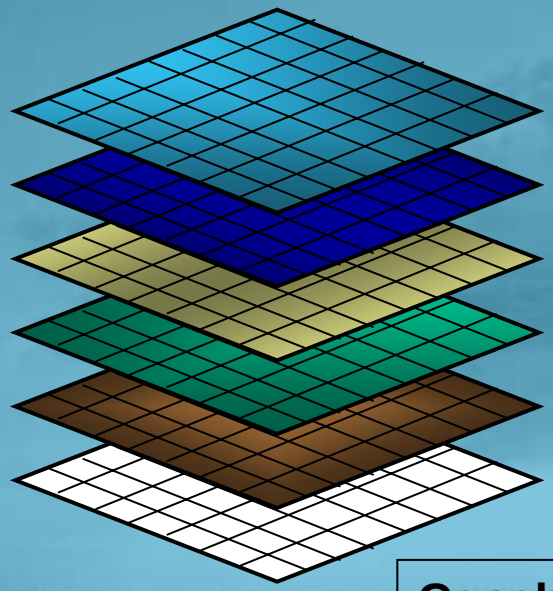
New Initiatives

Emergency Managers Weather Information Network Transition

New Initiatives

Debris Flow Watches and Warnings

NWS/USGS Partnership



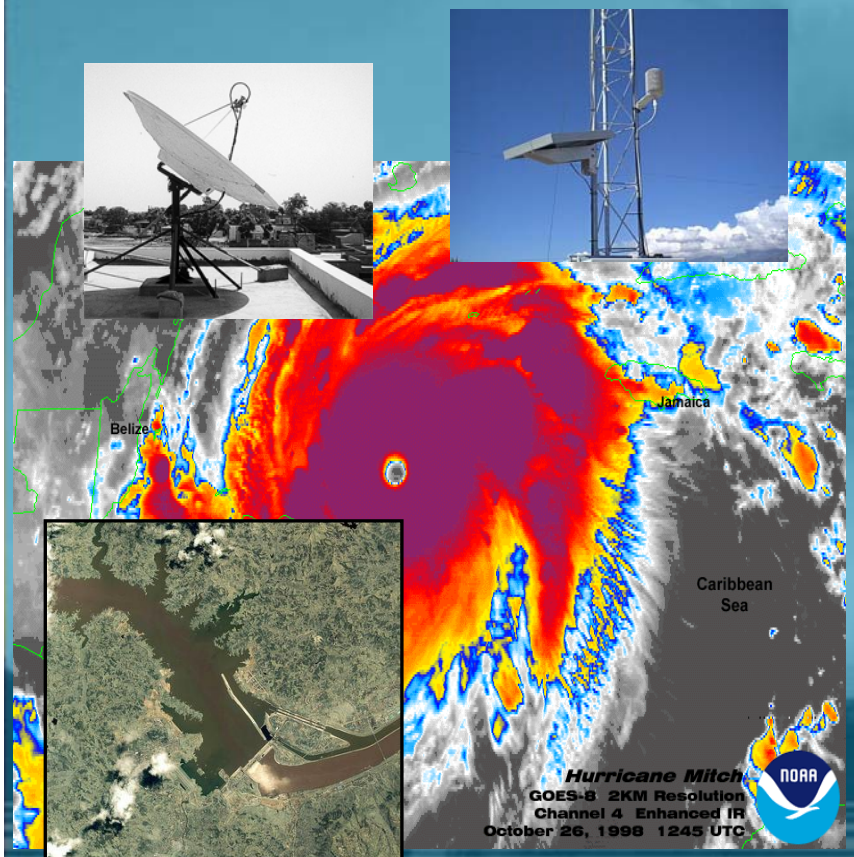
- Terrain
- Land use/cover
- Soil type
- Precipitation Analyses
- Precipitation Forecasts
- Mudslide Analyses

Capability:
NWS
USGS

International Collaboration

Bilateral Agreements

Technology Transfer and Capacity Building



Examples:

- Canada/Mexico Cooperation
- WMO Natural Hazards Committee
- AMS International Session
- Mitch Reconstruction
- Hurricane Workshops
- Regional Maintenance
- Communications Systems
- Regional Training Desks

http://www.nws.noaa.gov/iao

Summary