



# **National Oceanic and Atmospheric Administration Incident Coordination Center GIS**

Heather Gilbert

NOAA's Homeland Security Program Office

Robb Wright

NOAA's National Ocean Service Special Projects Office

ESRI's International User Conference 2006



## **NOAA's Priority Mission Essential Function's (PMEFs)**

- Provide timely observations, forecasts, watches and warnings of severe weather and hydrometeorological and electromagnetic events.
- Provide control and timely access to global environmental data from satellites and other sources to promote, protect and enhance the Nation's economy, security, environment, and quality of life.
- Ensure the Nation's food supply receives essential protein produced and processed by the fishing industry, provide law enforcement activities to protect and conserve the Nation's marine resources and support national security emergencies.
- Provide geodetic, hydrographic, oceanographic data and services to promote safe navigation of commerce and transportation.



# NOAA Contributes to these Emergency Support Functions

#1 Transportation	#8 Public Health and Medical Services
#2 Communications	#9 Urban Search & Rescue
#3 Public Works & Engineering	#10 Oil and Hazardous Material Response
#4 Firefighting	#11 Agriculture & Natural Resources
#5 Emergency Management	#12 Energy
#6 Mass Care, Housing and Human Services	#13 Public Safety and Security
#7 Resource Support	#14 Long Term Community Recovery
#15 External Affairs	

\*Explicit roles in ESF's 1,2,4,9,10,12,13,14, and 15

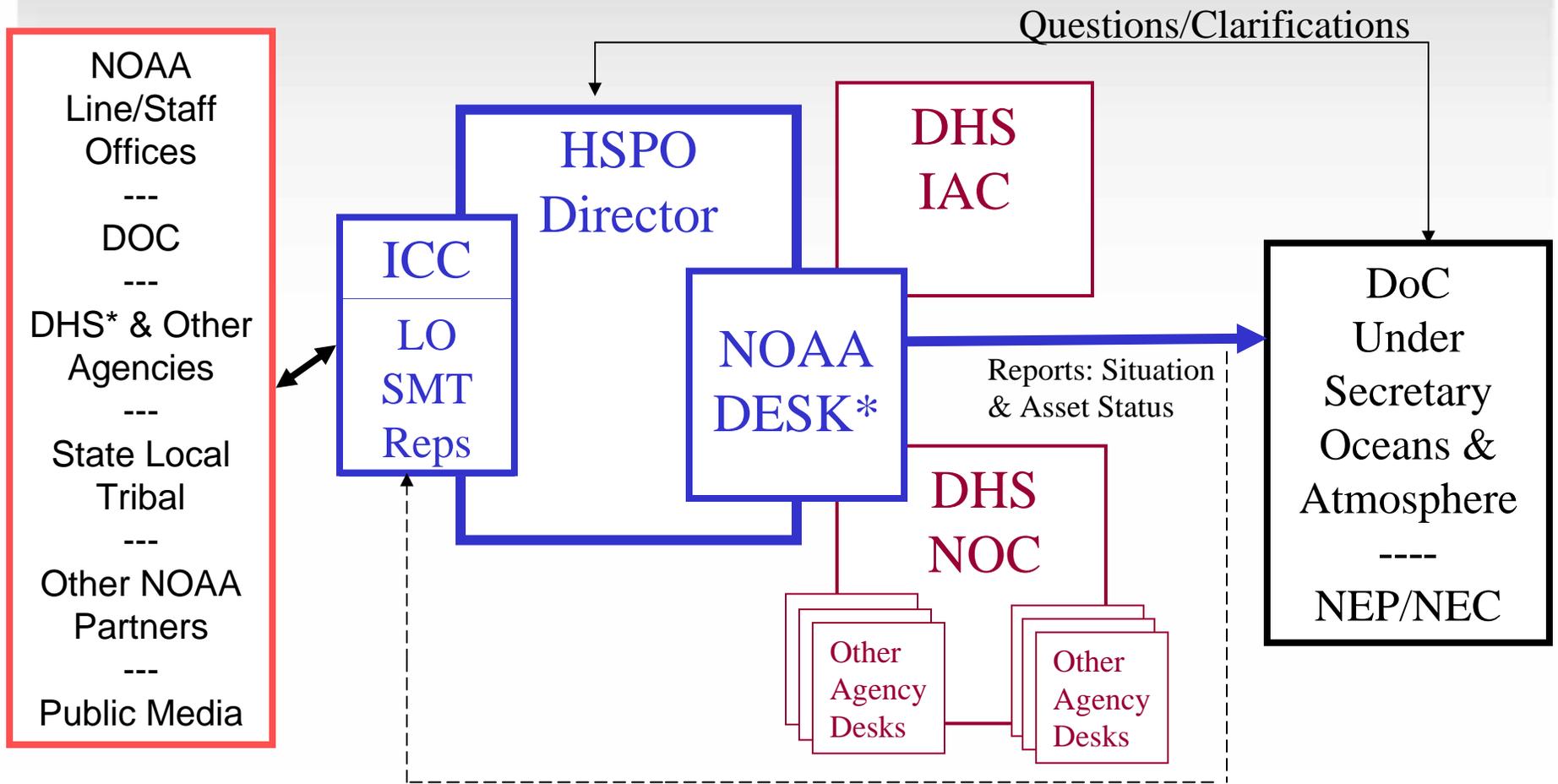


## NOAA ICC Mission

- To facilitate a comprehensive, integrated, and coordinated approach to incident management by:
  - ensuring coordinated delivery of NOAA essential functions, supporting activities resources and capabilities;
  - linking the NOAA Desk in the National Operations Center (NOC) (Homeland Security Operations Center (HSOC)) to the NOAA Line and Staff offices;
  - synthesizing information received from all staff, liaison personnel, customers to maintain NOAA-level situational awareness and common operating picture; and,
  - ensuring appropriate levels of awareness by NOAA executive management.

***Single point for information and coordination for NOAA***

# HSOC/ICC Information Flow



\*Includes NOAA support to NRP management structures.

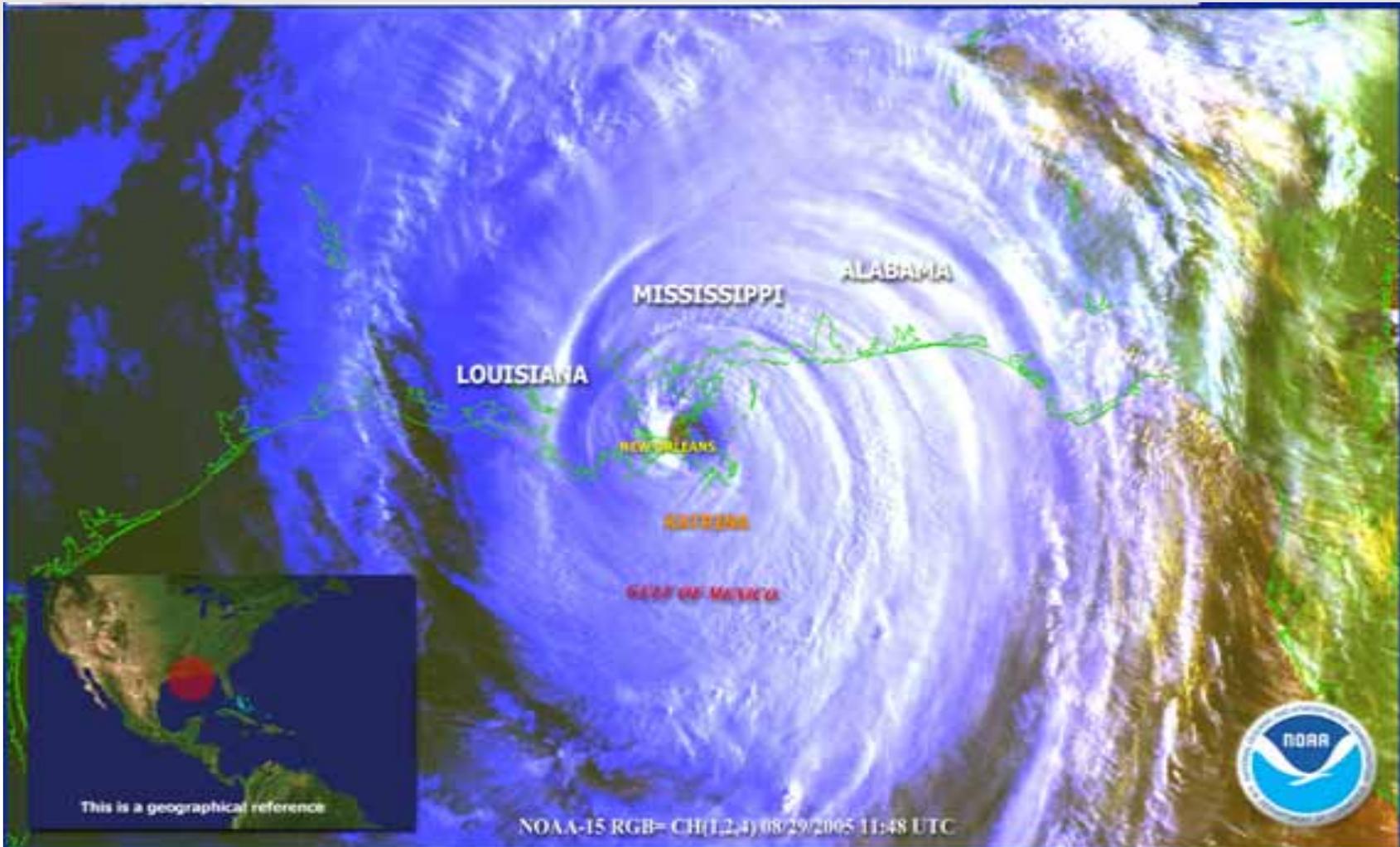
# NOAA

# HOMELAND SECURITY

NOAA

detection preparedness prevention protection response recovery

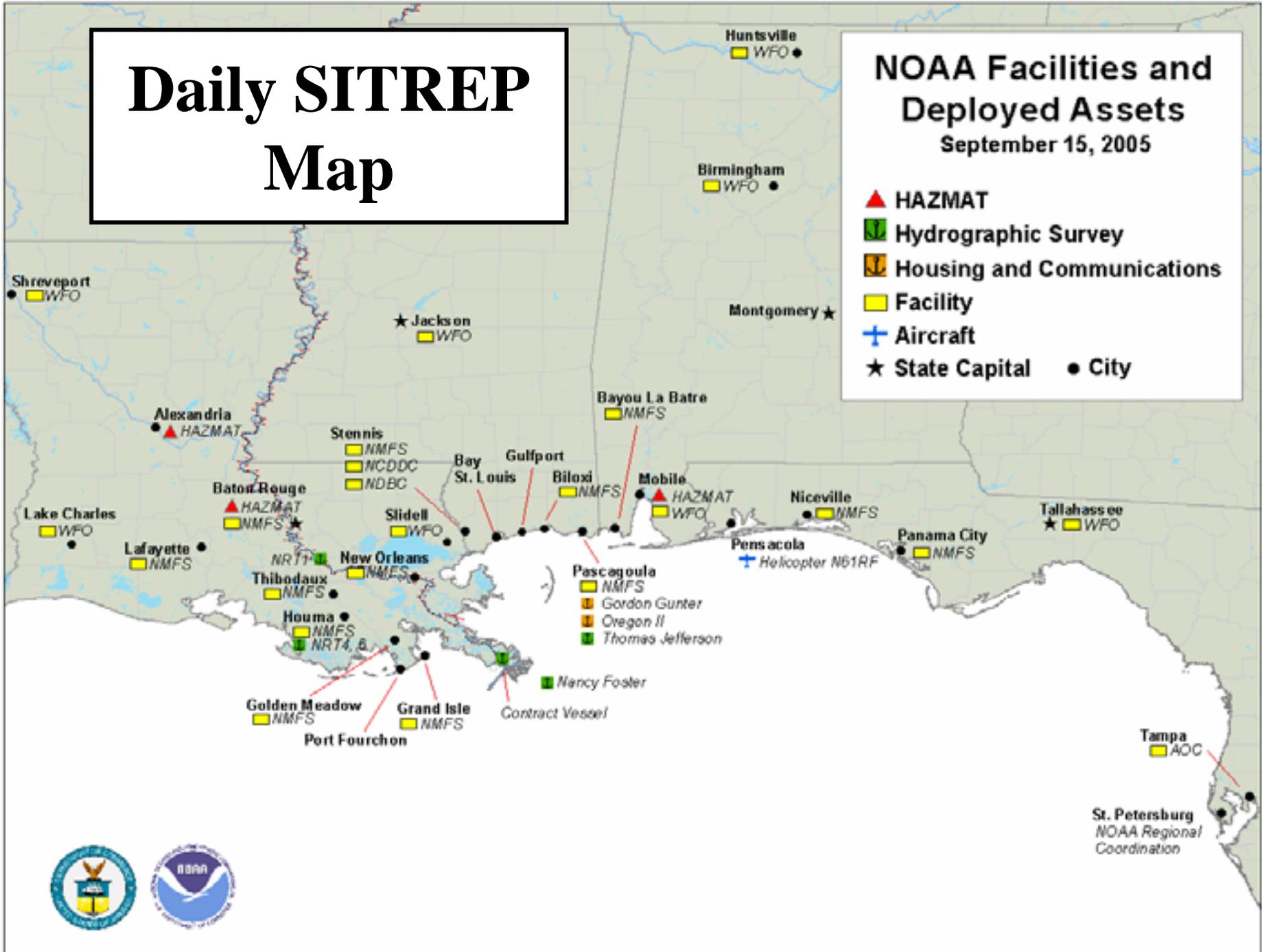
## ICC GIS



# Daily SITREP Map

**NOAA Facilities and  
Deployed Assets**  
September 15, 2005

- ▲ HAZMAT
- Hydrographic Survey
- ⚓ Housing and Communications
- Facility
- ✈ Aircraft
- ★ State Capital ● City



St. Petersburg  
NOAA Regional  
Coordination



# Development of ICC GIS Site

- Will be hosted behind inside ICC VPN-secured network
  - Facilities and staff information will be available through the GIS
  - Will not be publicly available
  - No current plans to make available to other Government agencies
- Expect system to be operational in August 2006
- Initial focus is setting up mapping site
  - Mapping site is based on ESRI's ArcIMS software
- Local GIS data will be accessible to ICC ArcGIS clients



# Layers Defined for Summer '06

## NOAA Facilities and Deployed Assets

- Facilities - staffed locations
- Facilities - building type
- Facilities - line office
- Facilities - ownership

## COOP Facilities

- SSC's
- IMETS (Incident Me)
- State Geodetic Adv
- NOAA Large Ships
- NOAA Aircraft
- NRT's
- HAZMAT locations
- NOAA Small Boats

## NOAA Observation Systems

- Tide Station
- PORTS
- ODAS Fixed
- C-MAN
- Climate Re
- GSOS
- ASOS
- NWR Transmitters
- NEXRAD Sites
- CORS Stations

## Environmental Layers

- NEXRAD composite
- USGS HUC-8 Watersheds
- NWS severe v
- Wind speed/di
- Satellite-derive

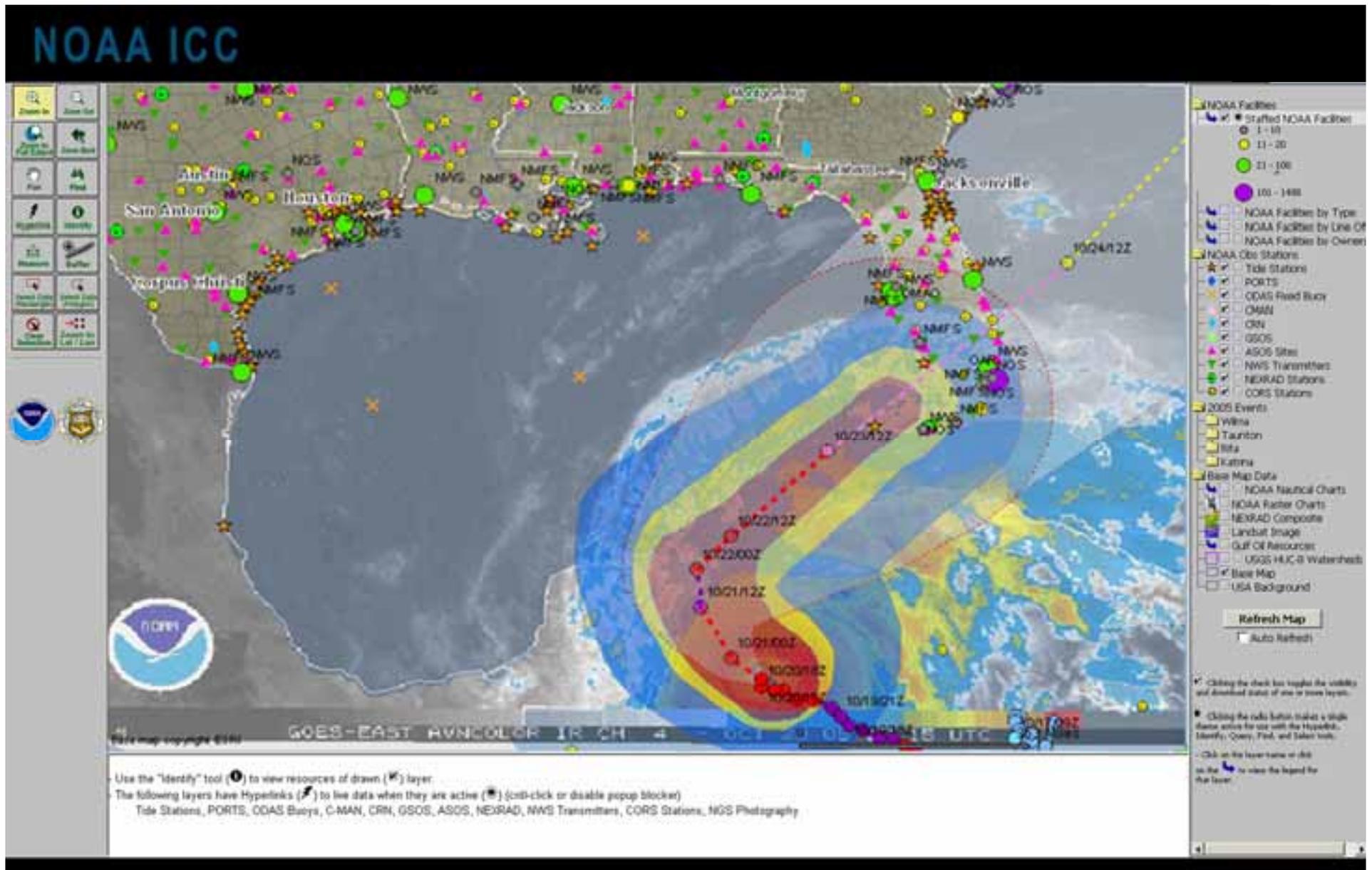
## Incident-specific layers

- NGS storm photography
- NGA/FEMA Damage Assessments

## Base Map Layers

- Hurricane tra
- Hurricane for
- Hurricane Wi
- Satellite imag
- Simple Base Map
- Detailed Base Map
- Gulf Platforms/Pipelines/Refineries
- Raster Nautical Chart Outlines
- Raster Nautical Chart Seamless Mosaic (Cleared through March '06)
- Landsat imagery
- Bathymetry
- ENCs from ENCDirect
- Maritime limits (State, Territorial, Contiguous Zone, and EEZ)
- Marine Managed Areas
- Airports
- Railroads
- Nuclear Power Plants

# ICC GIS Site: Hurricane Wilma



# Google Earth Output

The screenshot displays the Google Earth interface with several panels and a popup window. The main map shows a satellite view of the Florida peninsula with various colored markers representing NOAA assets. A popup window for 'RSW' is open, providing details about the Fort Myers facility.

**Google Earth Interface:**

- Top Bar:** File, Edit, View, Add, Tools, Help
- Navigation:** Fly To, Local Search, Directions
- Coordinates:** e.g. 37 25.818° N, 122 05.36° W
- Places Panel:** Lists various locations including GIE, GHV, HYO, JAX, KNAE, KNOZ, KNEJ, KNP, KMPA, KNOX, KNSB, KNSI, LEE, MAJ, MCO, MIA, MLB, MTH, OPF, ORL, PAFB1, PBI, PEM, PGD, PSE, PMP, PMS, and RSW.
- Layers Panel:** NOAA Deployed Assets, NGS Wima Photos, NOAA Facilities by Type, Staffed NOAA Facilities, NOAA Facilities by Ownership, NOAA Facilities by Line Office, Wima Points.

**NOAA Deployed Assets Legend:**

- Fisheries Research
- Coastal Research
- Safety Ship
- Albat
- HAZMAT
- Staf

**NOGS Wima Photos Legend:**

- EXPOSEDATE
- 25-OCT-2005
- 26-OCT-2005
- 27-OCT-2005

**NOAA Facilities by Type Legend:**

- Building
- Land
- Structure

**Staffed NOAA Facilities Legend:**

- Personnel
- 1 - 10
- 11 - 20
- 21 - 100
- 101 - 1400

**NOAA Facilities by Ownership Legend:**

- DOC Leased
- DOC Owned
- OSA Leased
- OSA Owned

**NOAA Facilities by Line Office Legend:**

- Primary\_Oc
- NEOSIS
- MFA
- MW'S
- MOS
- MWS
- DAR
- OMAO
- USBC
- Tide Stations
- AGOS Sites
- NEORAD Stations
- CORS Stations
- MRS Stations
- OS
- POSS

**RSW Popup Window:**

RSW

Id:	RSW
Agency:	Faa
Lat:	26.53
Long:	-81.77
State:	Fl
Name:	Fort Myers
Url:	<a href="http://weather.noaa.gov/weather/current/KRSW.html">http://weather.noaa.gov/weather/current/KRSW.html</a>

Directions: [To here](#) - [From here](#)

**Map Labels:** Miami, Hialeah

**Bottom Bar:** Image © 2006 TerraMetrics, Image © 2006 NASA, © 2006 Google, Streaming | 100%, Eye alt 341.51 mi



## Recent NOAA Data Distribution Changes

- Past year NOAA has moved toward:
  - Standard file naming
  - Standard GIS formats
- GOES imagery from NESDIS
  - [Static file name for current imagery \(tiff\)](#)
  - <ftp://gp16.ssd.nesdis.noaa.gov/pub/GIS/GOESeast/>
- Raster Nautical Charts from OCS
  - [Now available for free](#)
  - <http://chartmaker.ncd.noaa.gov/>



## Recent NOAA Data Distribution Changes

- NEXRAD composites from NWS
  - RIDGE system: static filenames for composites (gif)
  - <http://www.srh.weather.gov/ridge>
- Severe Weather Regions from NWS
  - Static shapefile names: 2-minute updates
  - <http://www.prh.noaa.gov/regsci/gis/shapefiles>
- National Digital Forecast Database (NDFD) from NWS
  - Comprehensive forecast dataset with standard naming scheme and batch/GUI GIS conversion routines
  - <http://www.weather.gov/ndfd>



# Training & Requirements

- ICC members will be trained on the use of the ICC GIS system
- A user manual will be developed for reference
- Data sources and contact information will be available for each of the layers in the site
- This hurricane season will be a proving ground for system and for defined layers



# Questions?

**Heather Gilbert**

NOAA's Homeland Security Program Office

[heather.gilbert@noaa.gov](mailto:heather.gilbert@noaa.gov)

301-713-3310

**Robb Wright**

NOS Special Project Office

[robb.wright@noaa.gov](mailto:robb.wright@noaa.gov)

301-713-3000