Unidata Policy Committee
NOAA/NWS Update

March 12, 2007

LeRoy Spayd
Chief, Operations and Requirements Division
Office of Climate, Water, and Weather Services
NOAA's National Weather Service

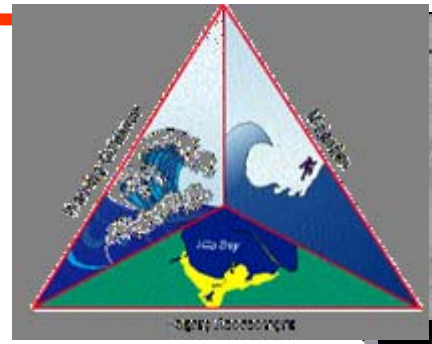
Outline

- NOAA accomplishments
- NOAA Regionalization
- NWS accomplishments
- Service Evolution
- Hurricane Futures
- Radar issues
- Budget issues

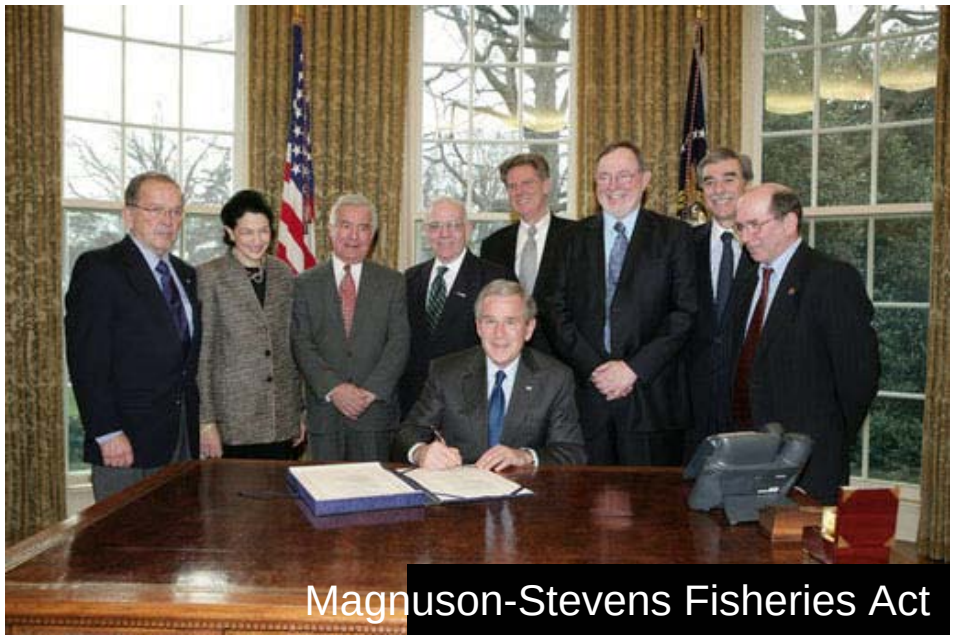
Update 2006

Major NOAA Accomplishments

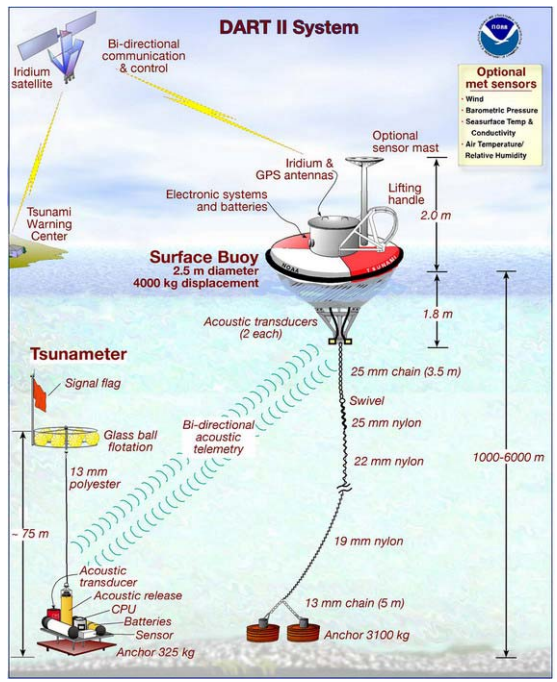
- U.S. Tsunami Warning Program
  - *Operational*
- Magnuson-Stevens Act
  - *Reauthorized*



and DART II Deployment



Magnuson-Stevens Fisheries Act



Update 2006

Major NOAA Accomplishments

- GOES-N
  - *Successfully launched!*
- MetOp-A
  - **Will provide global data for forecasts of severe weather, disaster mitigation**

Update 2006

Major NOAA Accomplishments

- Fleet Modernization
  - *FSV HENRY B. BIGELOW*
  - *FSV PISCES*
- Northwestern Hawaiian Islands Monument
  - *Created*

HENRY B. BIGELOW Launch

Annette Nevin Shelby inscribing PISCES keel plate

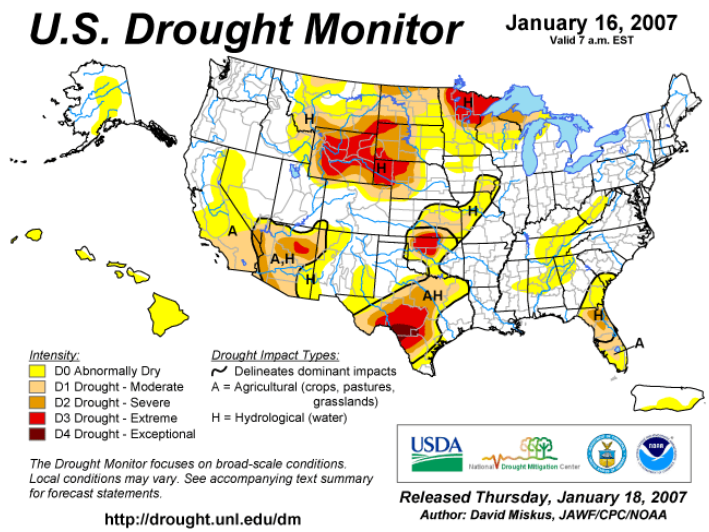
President Bush designating NWHI Monument

Admiral Lautenbacher at PISCES Keel Laying Ceremony

Update 2006

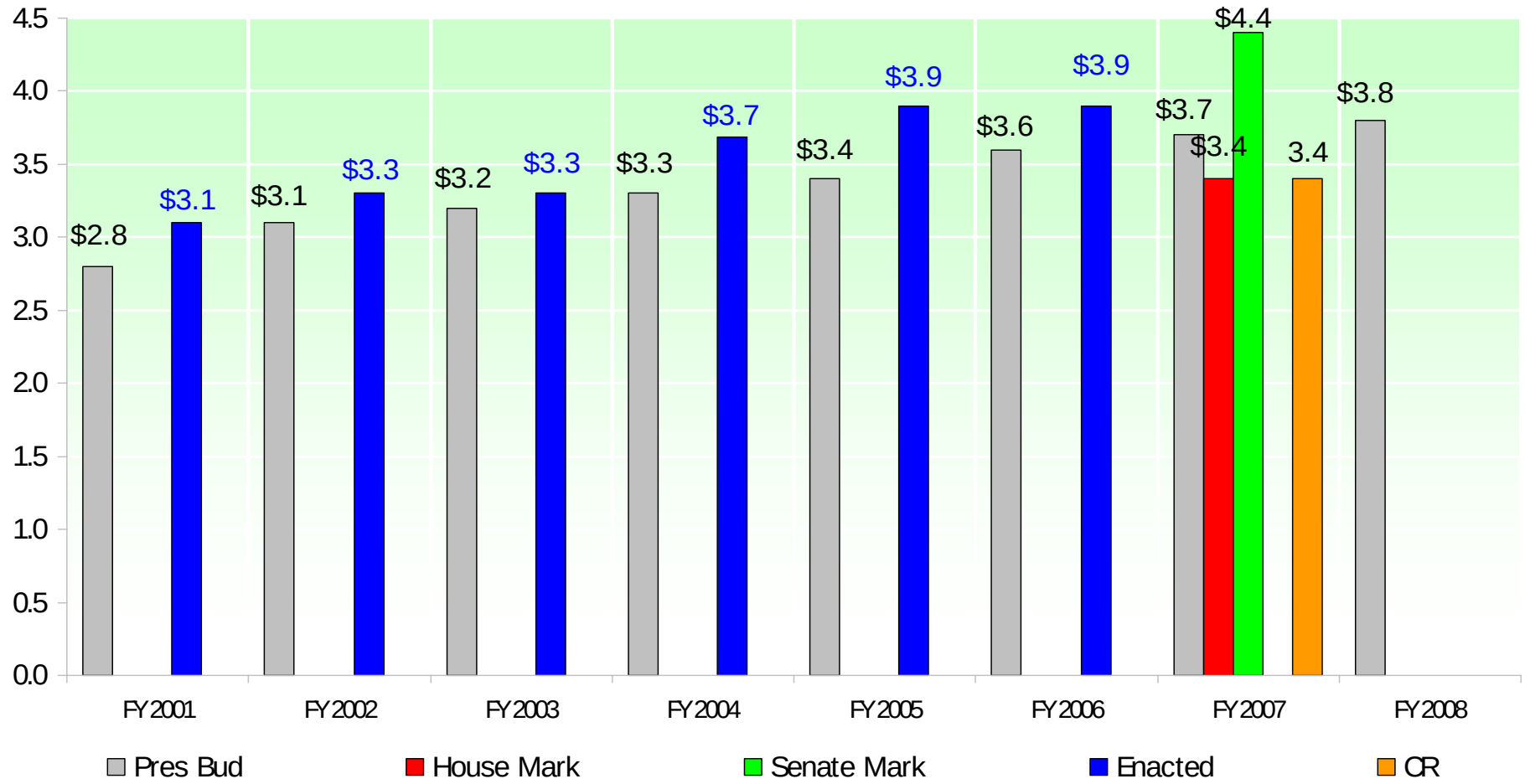
Major NOAA Accomplishments

- Weather Radios in all classrooms
  - *Collaboration with DHS*
- National Integrated Drought Information System Office
  - *Established*



NOAA Budget Trends

($ in billions)

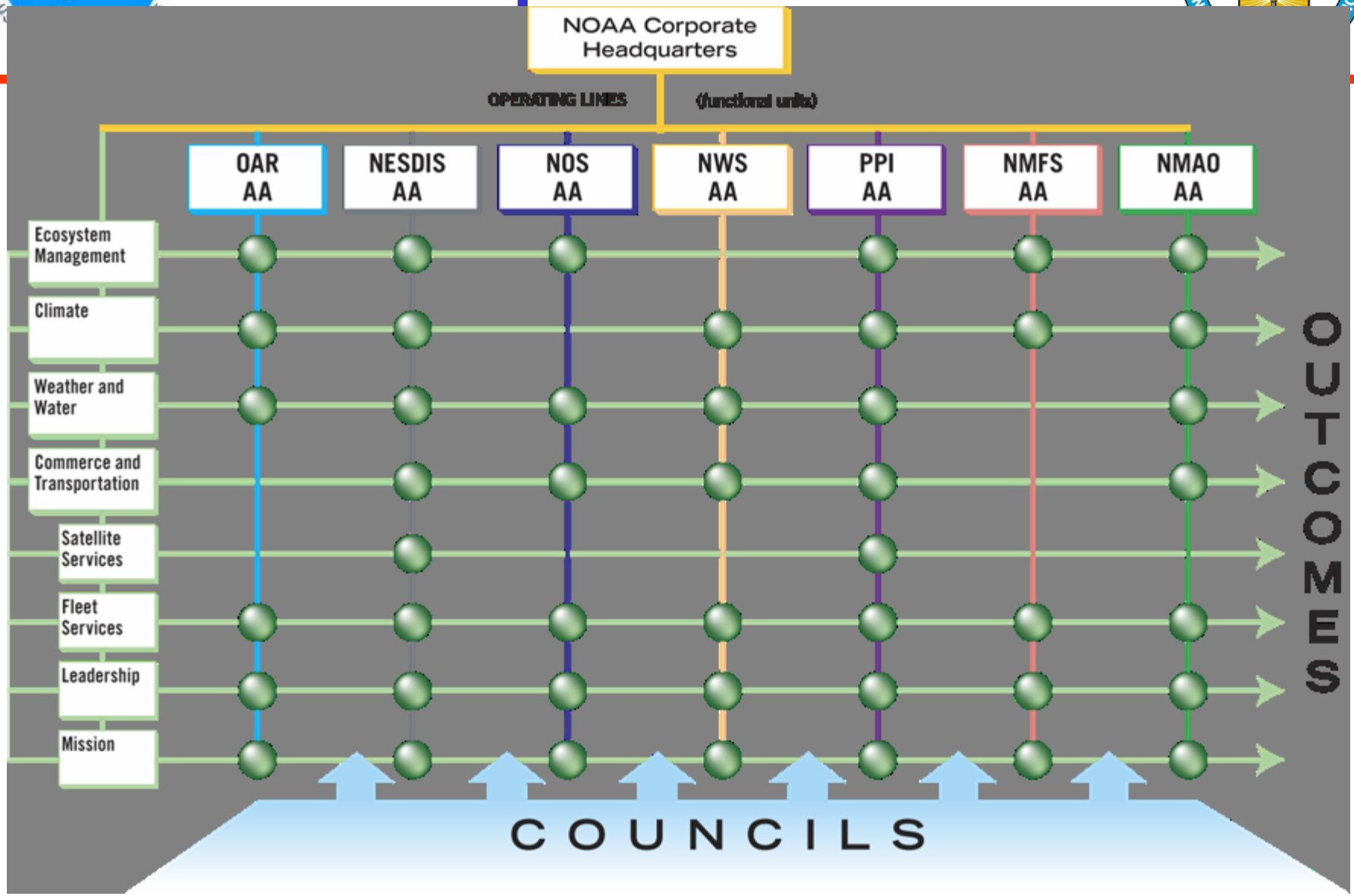


NOAA Budget by Line Office

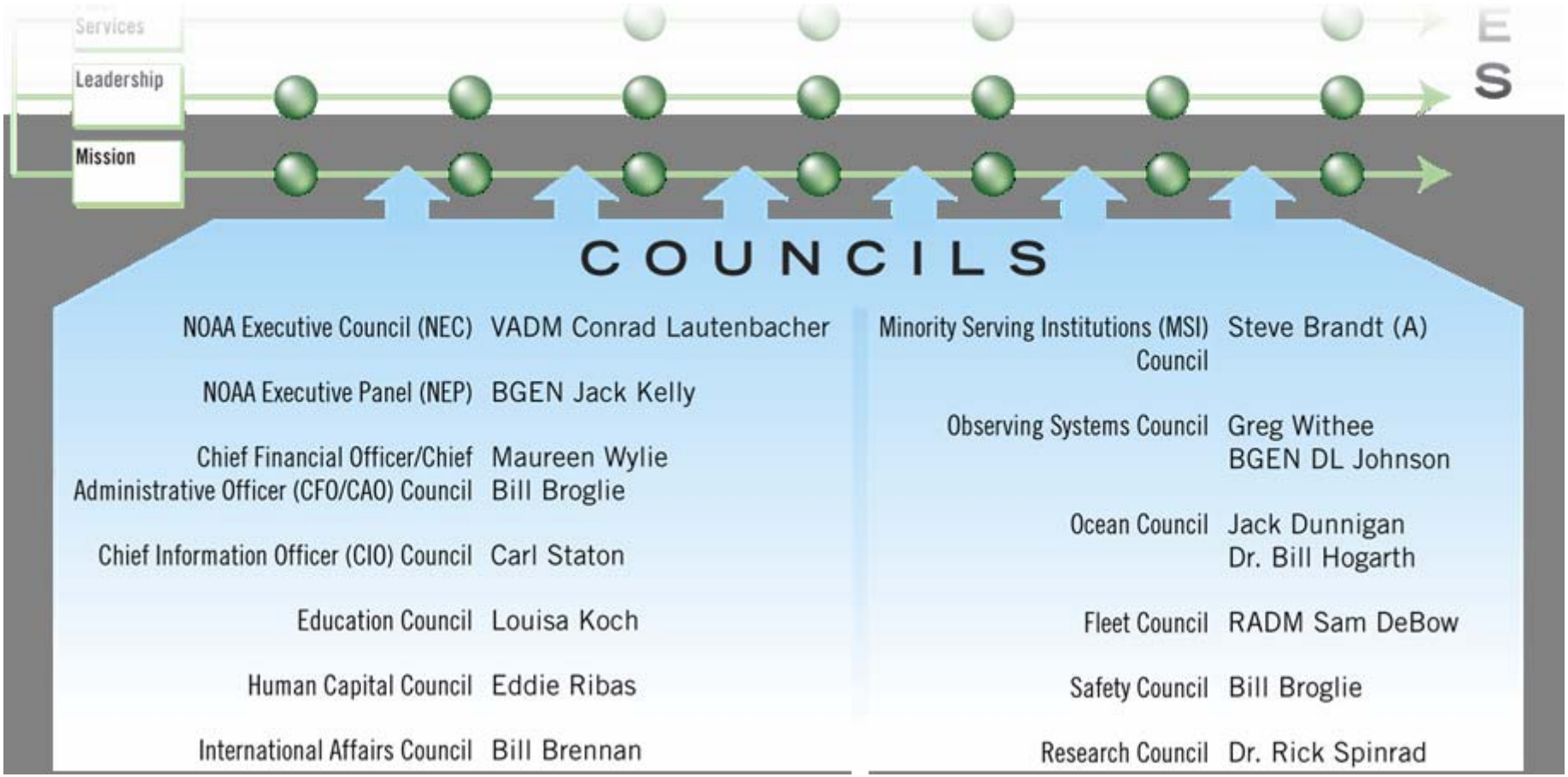
($ in Thousands)

Line Office	FY 2006 Enacted	FY 2007 Continuing Resolution	FY 2008 Base	FY 2008 Program Changes	FY 2008 Pres. Bud Request
NOS	$590.5	$319.1	$415.6	$52.9	$468.5
NMFS	$803.8	$590.6	$750.6	$33.3	$783.9
OAR	$379.6	$338.9	$351.6	$12.3	$363.9
NWS	$848.2	$885.0	$901.2	$2.3	$903.5
NESDIS	$952.2	$1,029.6	$1,036.5	($58.2)	$978.3
PS/OMAO	$491.0	$366.3	$184.0	$20.4	$442.3
Financing	($153.8)	($142.5)	($141.7)	—	($141.7)
Total	$3,911.5	$3,387.0	$3,735.7	$63.0	$3,798.7

Corporate NOAA

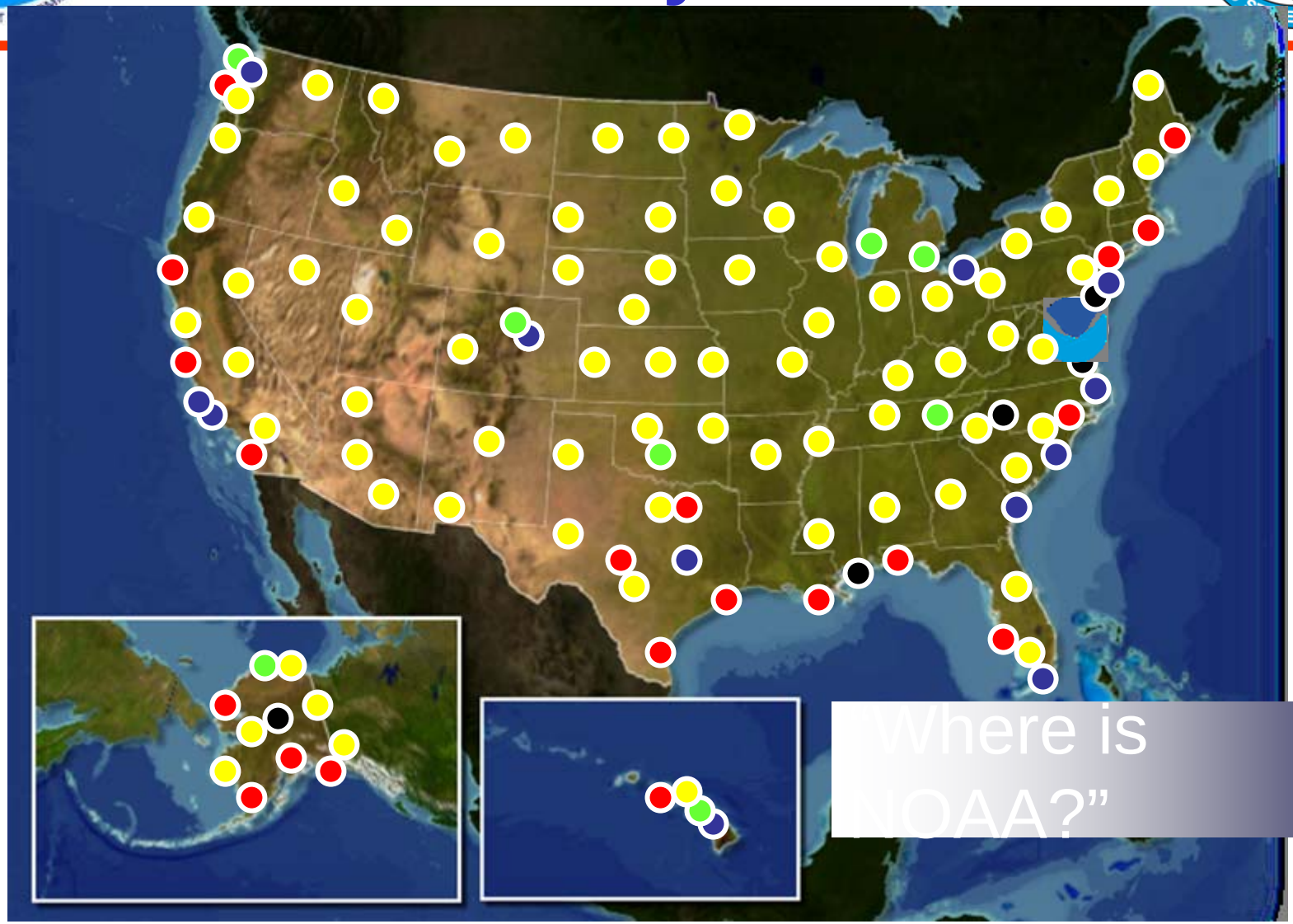


Corporate NOAA



Regional Collaboration

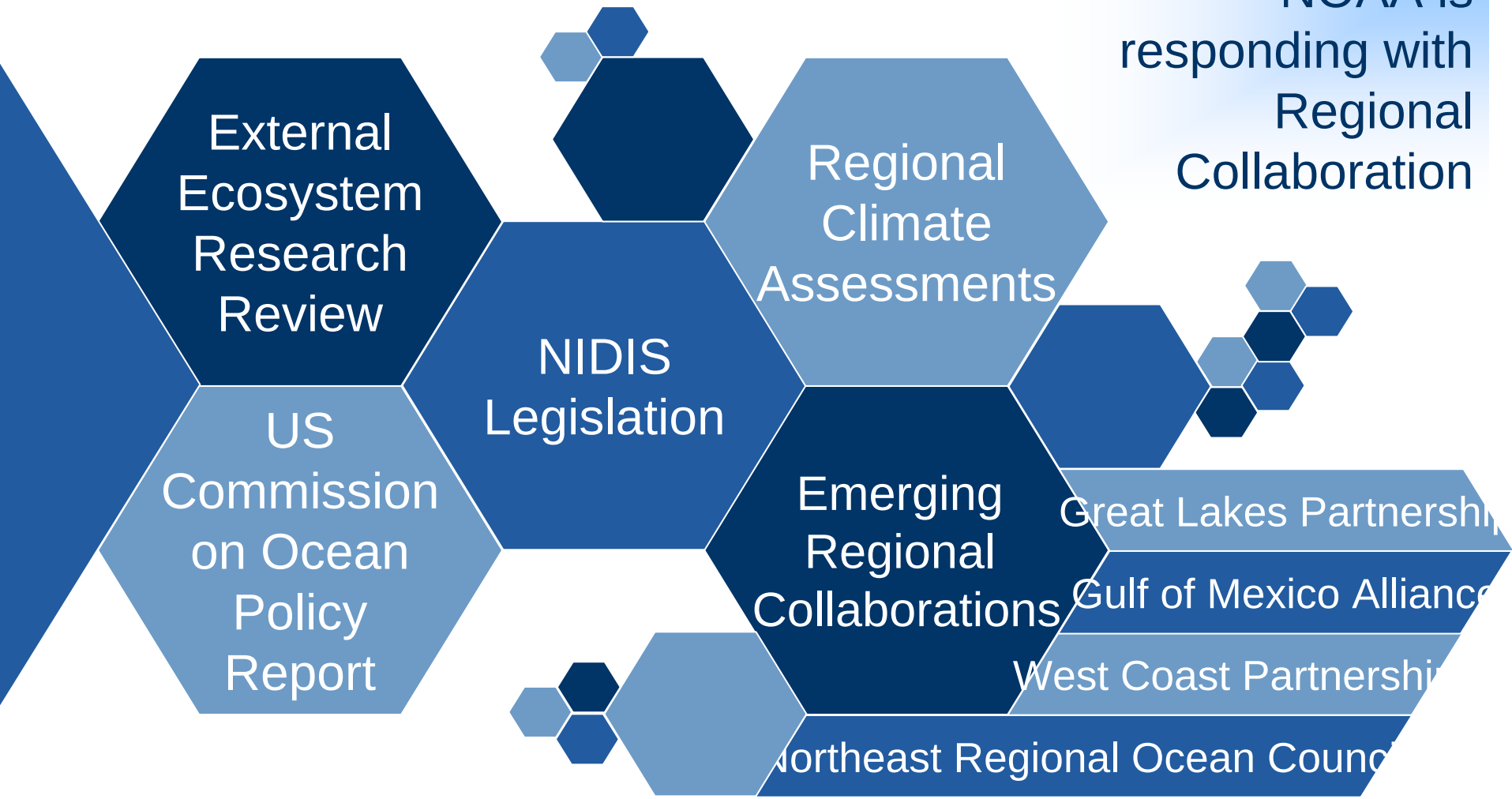
Why?



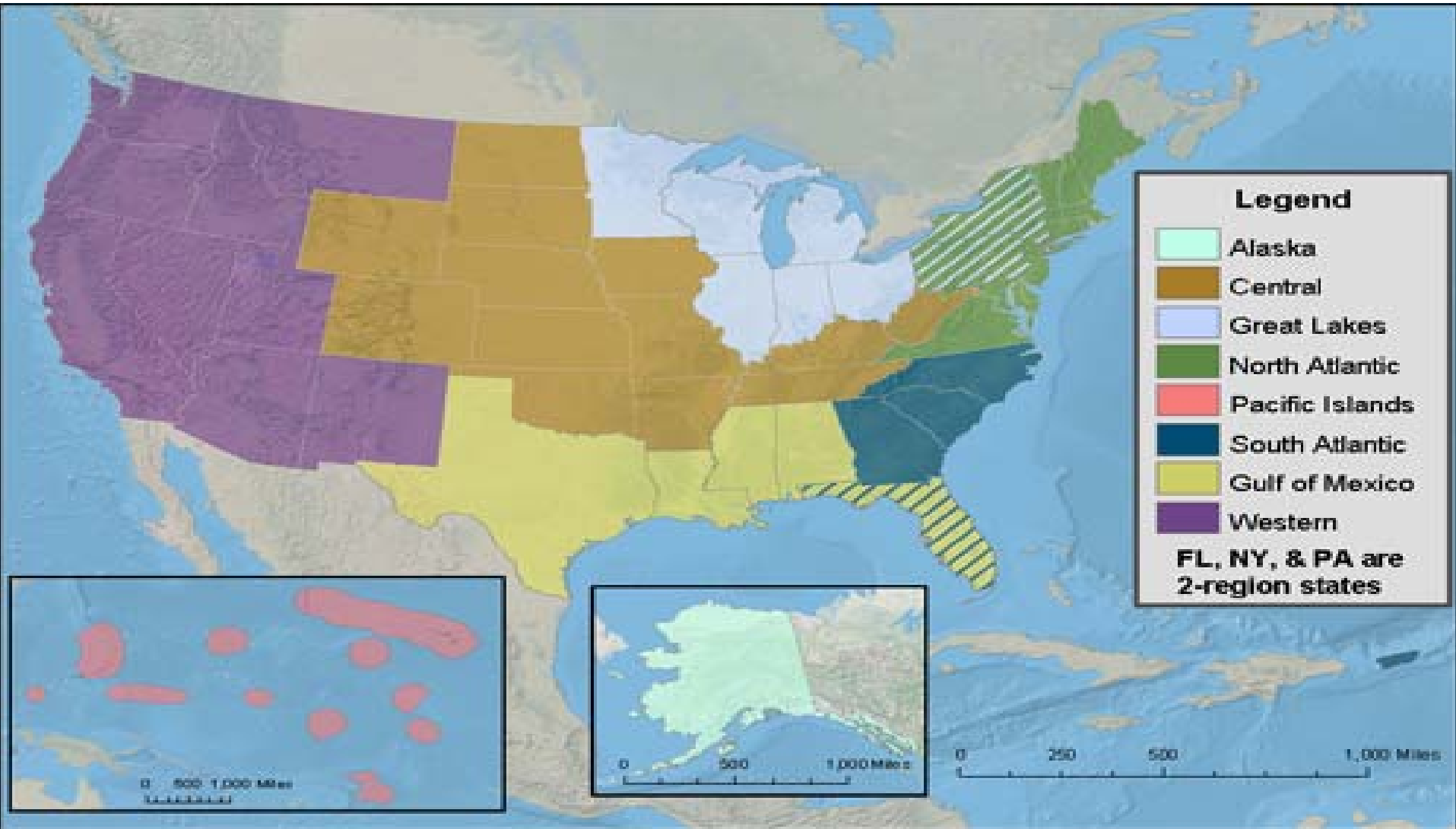
Regional Collaboration

Multiplying External Demands

NOAA is responding with Regional Collaboration

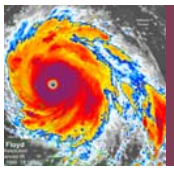


NOAA Regionalization

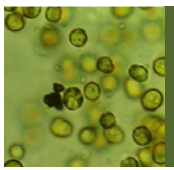


Regional Collaboration

Specific Areas of Focus



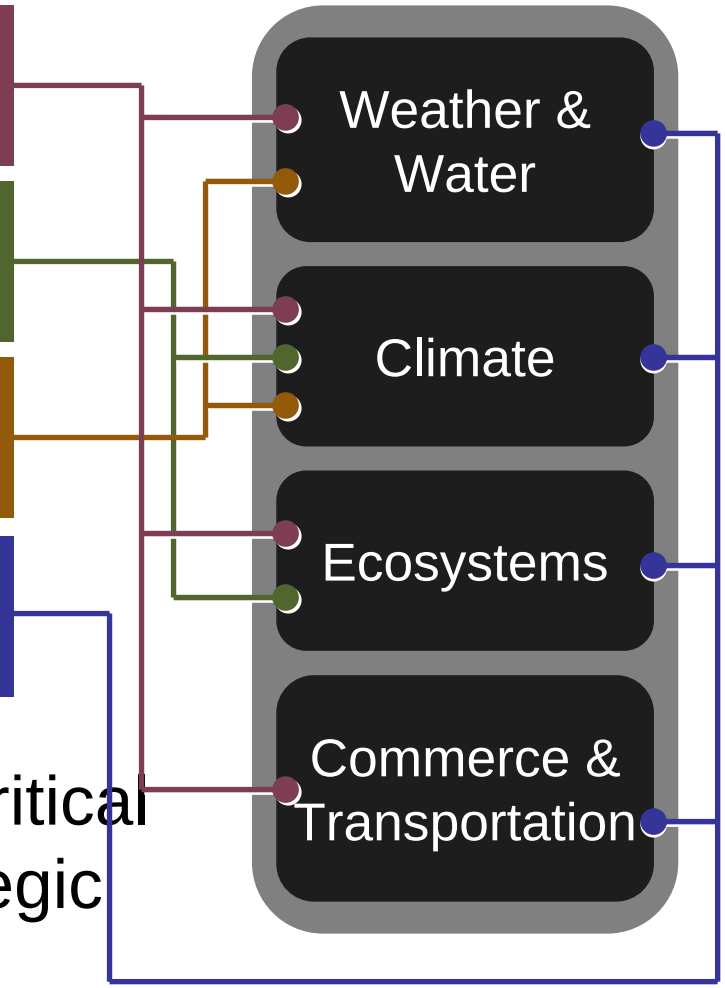
Hazard Resilient Coastal Communities



Integrated Ecosystem Assessments

Integrated Water Resource Services

Outreach & Communication



- Regional Collaboration's 3 programmatic focus areas and 1 critical support area enable NOAA's strategic Mission Goals.

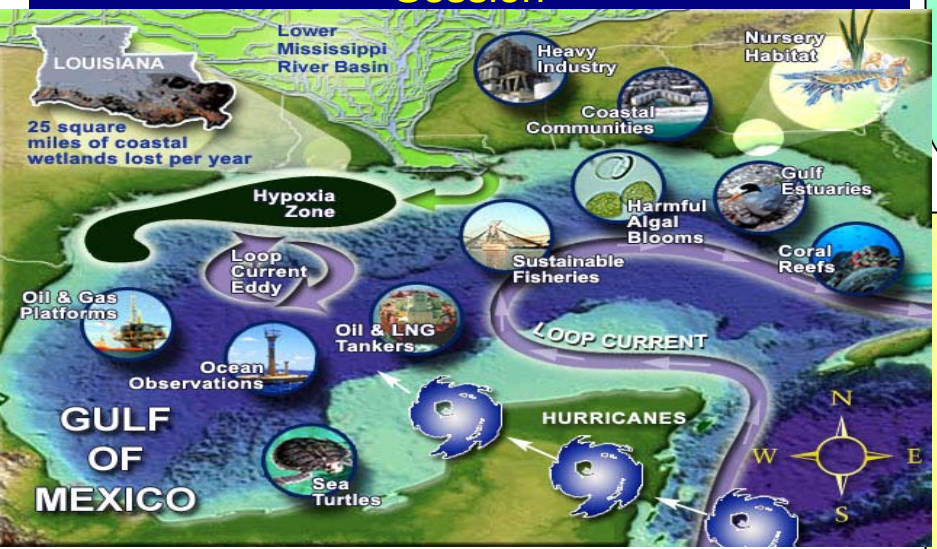
Challenge

Creating Hazard Resilient Coastal Communities

- To harness and leverage NOAA and community resources to create hazard resilient coastal communities.
  - *Residents of coastal counties expected to increase to 160M by 2008*
  - *56.3% of U.S. National GDP contributed by coastal watershed counties (National Ocean Economics Program)*
  - *Threats to coastal communities from extreme natural events including hurricane and coastal storms; coastal inundation and erosion; tsunamis; sea level rise*
  - *Economic losses from the 2005 hurricane season were $200 billion (costliest ever)*
  - *Insured U.S. weather-related losses are growing 10x faster than premiums and growing industry trend of policy cancellations increases coastal community vulnerability*
  - *Natural features (e.g., wetlands) can reduce storm surge impacts on coastal communities*

What is an Ecosystem Approach to Management (EAM)?

"Look at the whole picture, not just the parts."
Dave Goethel
New England Fishery Management Council
SIMOR Fisheries Constituent Listening Session



"An ecosystem approach to management is one that provides a comprehensive framework for marine and coastal resource decision making. In contrast to individual species or single issue management, EAM considers a wider range of relevant ecological, environmental, and human factors bearing on societal choices regarding resource use."……

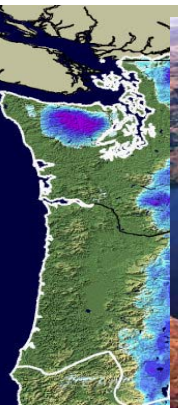
The #1 Myth Concerning EAM*:*

"Ecosystem approaches to ocean resource management are not well defined and we do not know how to implement them"

UN Law of the Sea Meeting, April 2006

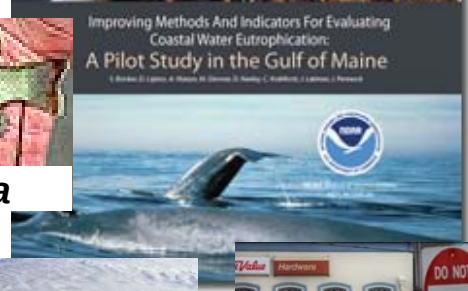
Challenge

Regional Water Resource Impacts



Power Generation,
Fisheries Management,
Water Supply,
Ecosystem Health

Pfisteria



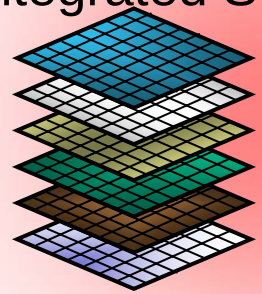
Water Quantity/Quality,
Salt Water Intrusion,
Tropical Storm Impacts

NOAA's Water Resource Services

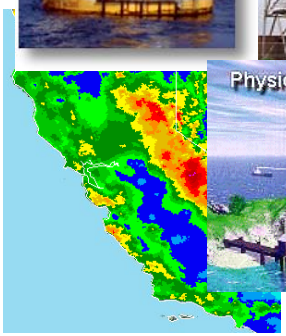
Valuable Information and Products for Managing Water Sensitive Risks

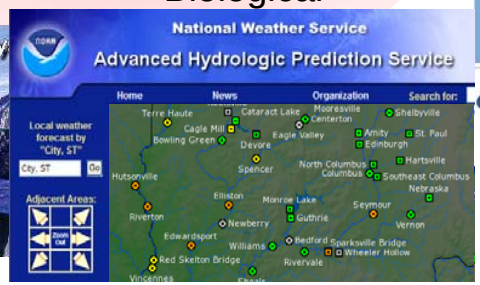
Global Earth Observation System

Community Modeling, Environmental Prediction, Integrated Service Delivery

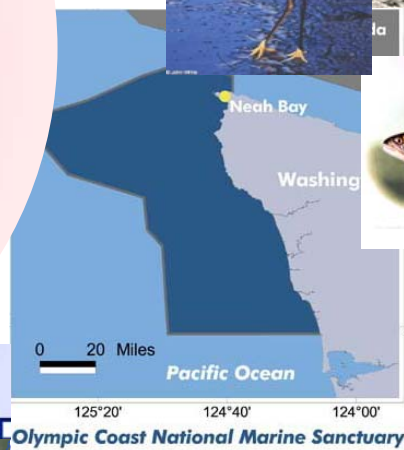


- Precipitation
- Water Levels
- Soil Moisture
- Water Quality
- Surface Storage
- Streamflow
- Biological





Ecosystem Assessments
Hazard Resilient Communities
Outreach and Communications



Water Predictions for Life Decisions

Regional and National Team Leads

Regional Team Leads

Alaska: *Laura Furgione* (NWS)

Pacific: *Bill Thomas* (NOS)

Western: *Vickie Nadolski* (NWS)

Central: *Lynn Maximuk* (NWS)

Gulf of Mexico: *Buck Sutter* (NMFS)

Great Lakes: *Stephen Brandt* (OAR)

North Atlantic: *Dean Gulezian* (NWS)

South Atlantic: *Jeff Payne* (NOS)

Priority Area Team Leads

Hazard Resilient Coastal Communities:

Margaret Davidson (NOS)

Integrated Ecosystems Assessments:

Steve Murawski (NMFS)

Integrated Water Resource Services:

Gary Carter (NWS)

Outreach and Communications:

Louisa Koch (Education)

For more information on Regional Collaboration

Visit our Website:

http://www.ppi.noaa.gov/regional_collaboration.htm

National Weather Service

A Typical Year Brings:

- 6 Hurricanes
- 1,000 Tornadoes
- 5,000 Floods
- 10,000 Violent Thunderstorms
- Drought Conditions
- 500 Deaths; 5,000 Injuries

$14.0 Billion in Losses

Katrina alone caused an estimated $100 billion in damage, and 1,300 fatalities

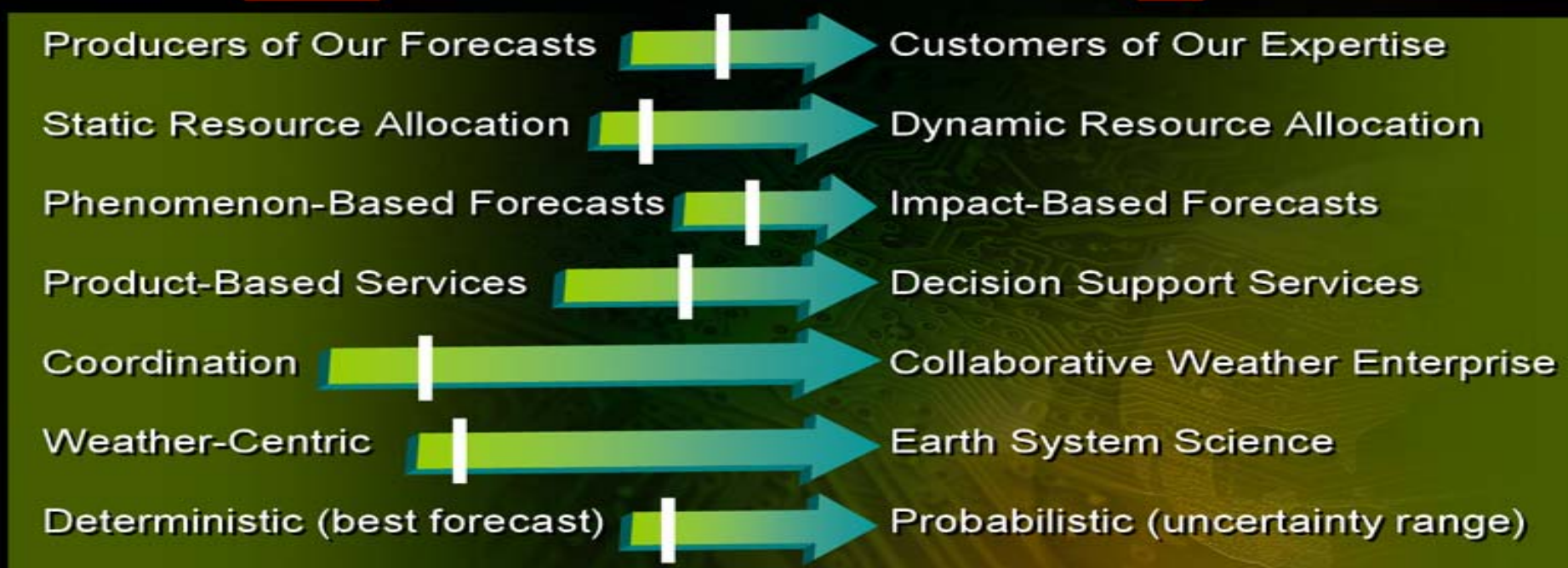
In an average year, NWS produces:

- 25 million forecasts
- 41,000 warnings
- 2,200 flood watches
- 500 trillion digital forecasts
- 9.4 million fire forecasts
- 784,200 airport forecasts

NWS 2015

Services Evolution

Key Operational Shifts

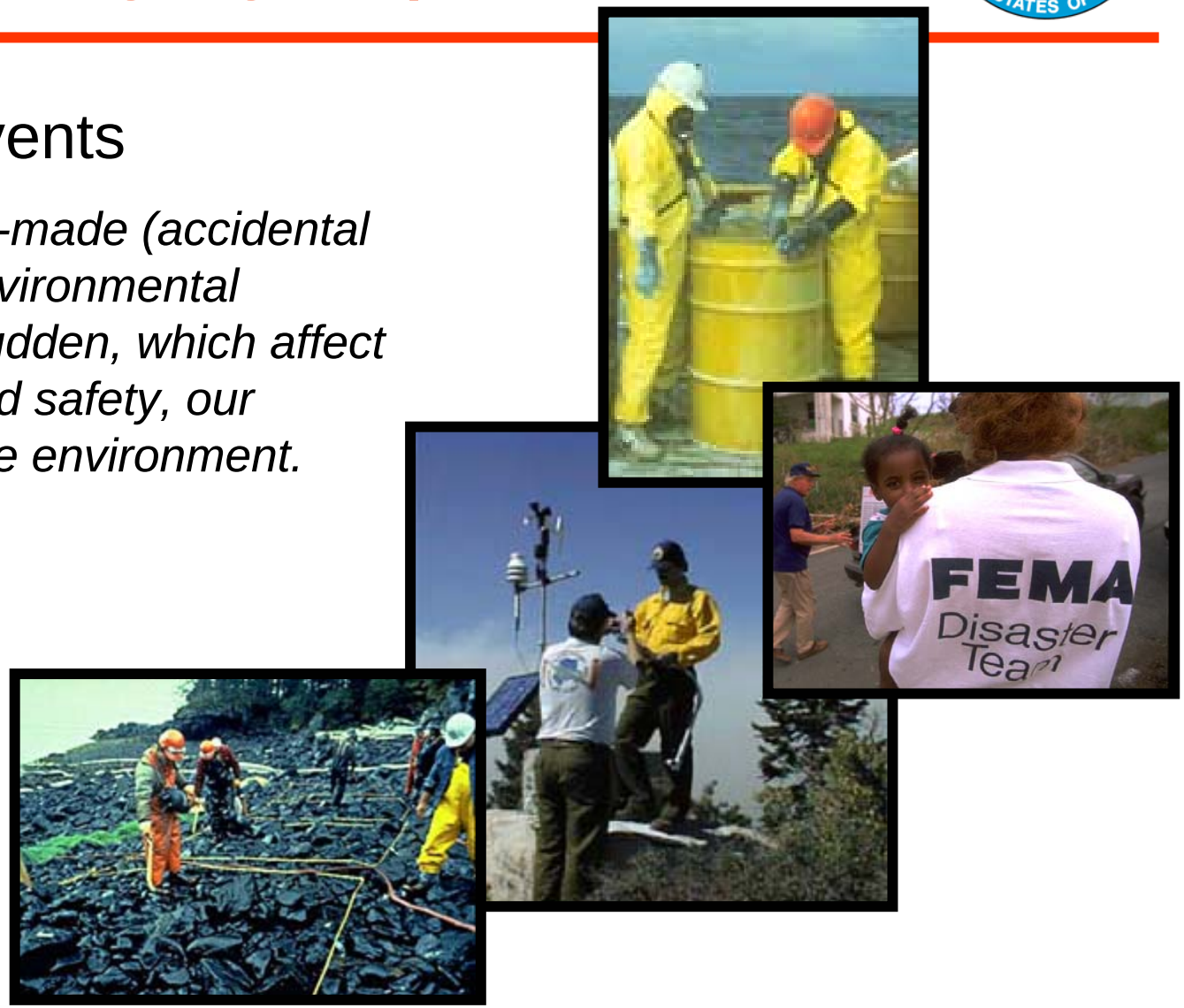


The Way Forward

Defining High-Impact Services

High-Impact Events

…natural or man-made (accidental or intentional) environmental hazards, often sudden, which affect human health and safety, our economy, and the environment.



The Way Forward

Integrated High-Impact Services

- Natural Hazards, e.g.,
  - *Tornadoes*
  - *Hurricanes*
  - *Floods*
  - *Droughts*
  - *Heat*
  - *Volcanic eruptions*
  - *Tsunamis*
- Accidents
  - *Chemical releases*
  - *Oil spills*
  - *Nuclear power plant emergencies*
- Terrorism
- Space Weather
- Public Health

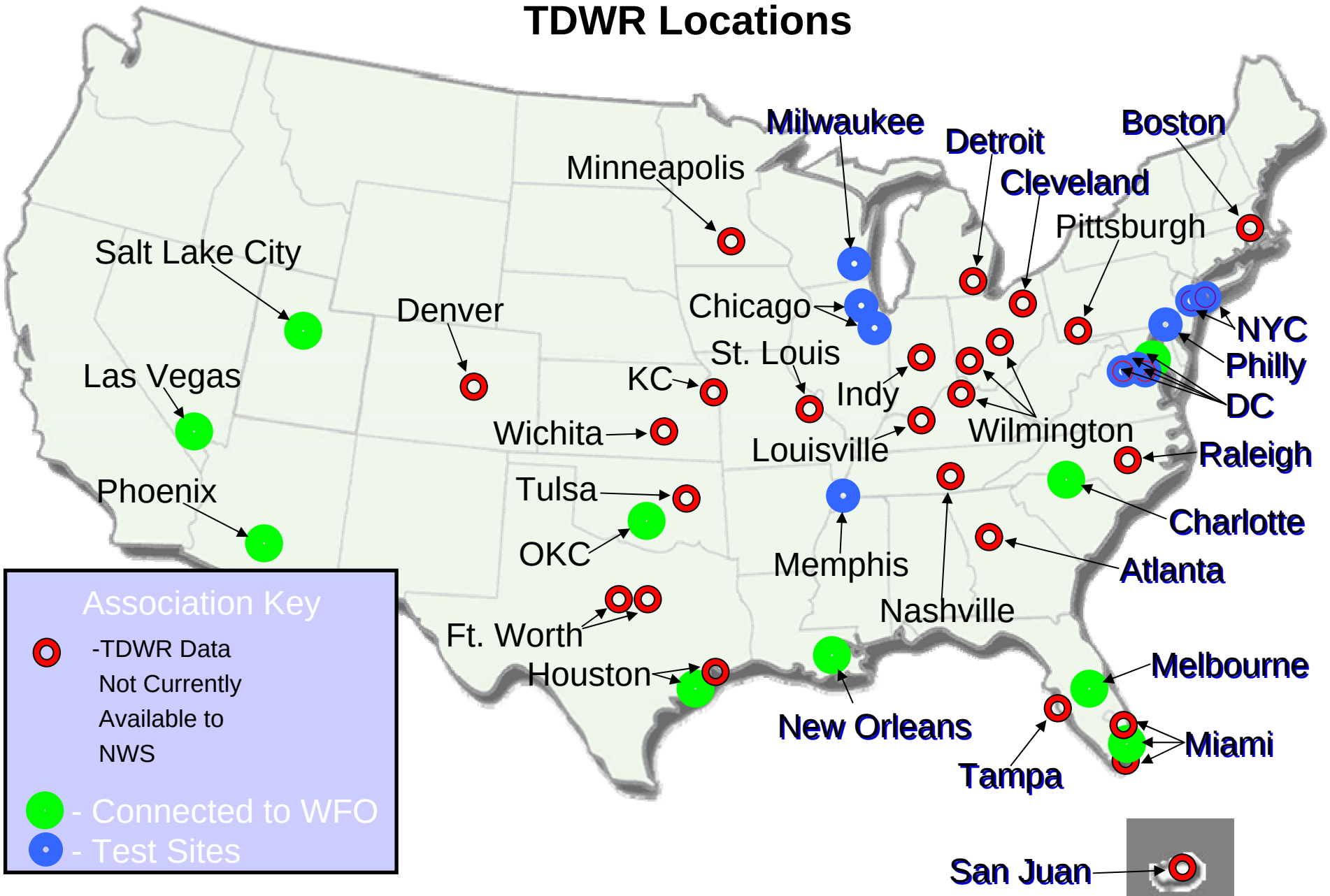
Hurricane Futures Index

- The Chicago Mercantile Exchange (CME), the largest futures exchange, launches today a hurricane index futures and options market.
- The CME-Carvill Hurricane Index will give participants the chance to place bets on future weather patterns and help the insurance industry and others spread the risks of large storms.
- The severe 2005 hurricane season caused an estimated $79 billion in insurable damage.
- Carvill, a reinsurance intermediary that tracks and calculates hurricane activity, will calculate the underlying indexes using publicly available data from NOAA's National Hurricane Center.
- Given the potential impact of NOAA hurricane forecasts on the market, it is critical that forecasts be made available to all interested parties at the same time. Our staff is preparing a plan to detail the steps that must be taken to ensure the confidentiality of forecasts until their official public release.

NWS Radar Issues

- Deployment of Super Resolution Radar data
- Starts January 2008 to 6 Beta sites – full deployment April 2008
- Data volume increasing by factor of 2.3
- Azimuth resolution from 1 degree to 0.5 degree
- Range resolution from 1 km to 0.5 km
- Data range from 230 km to 300 km
- Format change from MSG1 to MSG31
- See http://www.roc.noaa.gov/nws_level_2

NWS's Aviation Services



TDWR impact

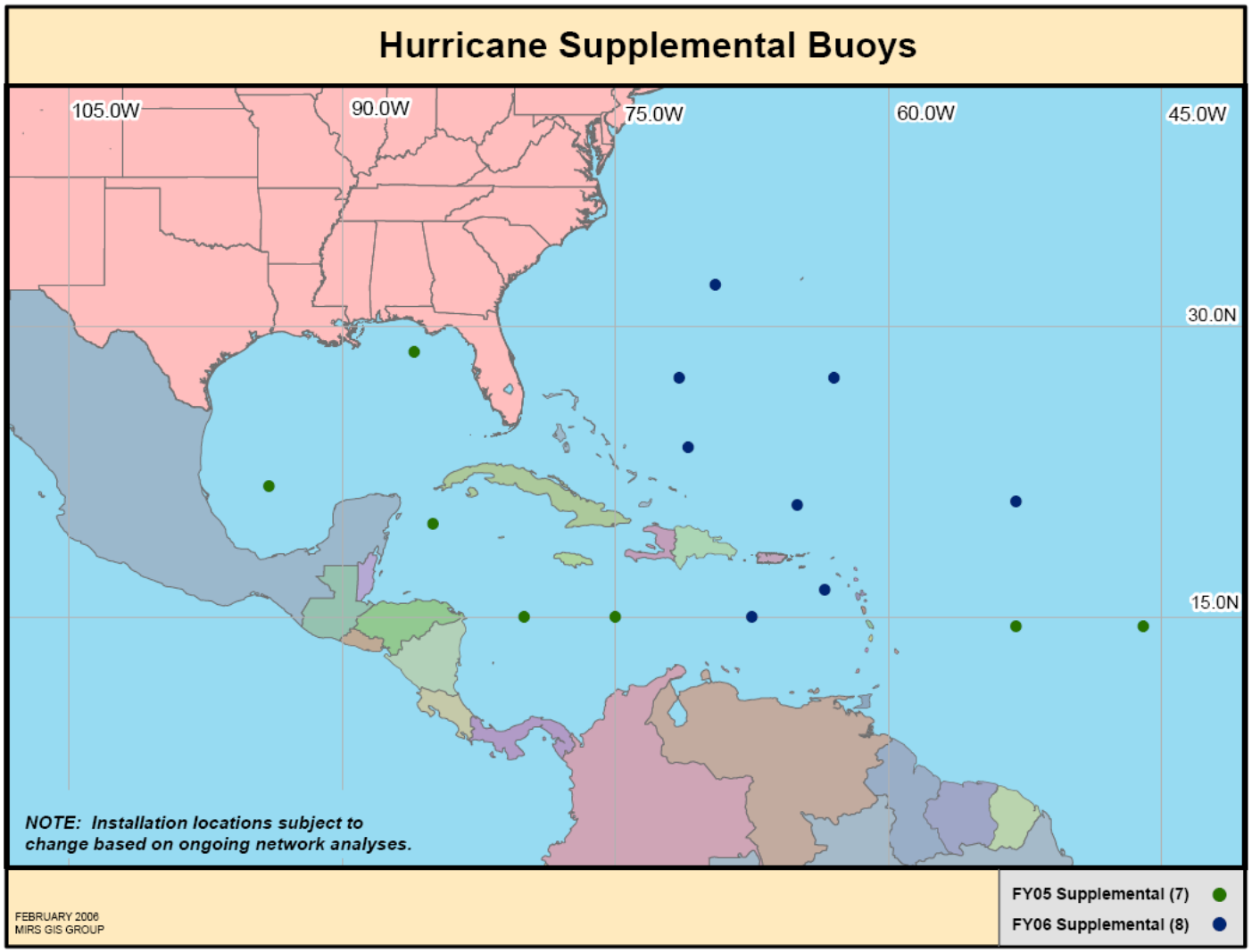
- 10 WFOs had access to TDWR data for FY 06
- Need $ 700k/yr for communications for remaining 40 WFOs – repeated funding requests to NOAA
- Positive impact to Tornado GPRA
- FY 03-05 vs FY 06
- POD: 0.69 vs 0.71
- FAR: 0.79 vs 0.77
- Lead time: 11 min vs 13 min

FY 2008 NWS Overview

- **Maintains current services by providing $21.6M above FY07 PB, a 2.5% Increase:**

  - **Adjustments To Base at $18.3M – NWS number 1 priorit of operating budget**
  - **Net Program Changes at $2.3M (including $13.6M in increases & $11.3M in decreases):**
    - Provides operations & maintenance funding for expanded capabilities
      - *Hurricane Supplemental projects: observations, modeling, system redundancy*
      - *Strengthen Tsunami Warning System*
      - *Modernized, redundant telecommunications hub*
    - Continues planned technology and facilities investments/ Administration commitments
    - Realigns funding to support administration priorities

Hurricane Supplemental Buoy O&M: +$3.0M



NOAA Profiler Network : +$3.5M

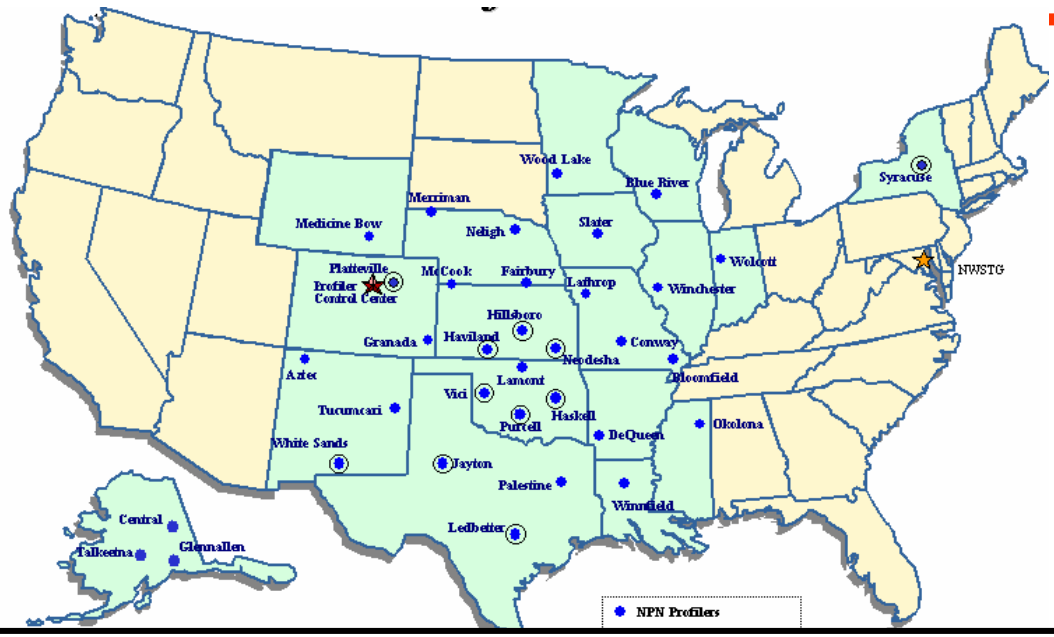
FY06 Enacted	FY07 PB	ATBs	Base	Program Change	FY08 Request
$2.9	$6.3		$6.3	$3.5	$9.8

- **Why**
- Supports FY06 decision to operate Nat'l Profiler Network (NPN) per COEA study
- By FY 2010 all unconverted Profilers will need to be shut down
- Improves NWS performance capability or tornado, winter storm, severe storm, and flash flood forecasts and warnings, and aviation and fire weather warnings

- **What**
- Sustains operations of NPN from research to operations by converting the operational frequency to not interfere with SARSAT capability on Galileo communications satellites and replacing obsolete components (required tech refresh)
- Provides $1.8M for PAC
- $1.7M for new systems O&M (ORF increase FY08 through FY09 only)
- Demonstrated improvements to numerical weather prediction and local severe weather warnings:
  - *20% improvement in short-term model forecast accuracy for winds*
  - *Sustains current tornado warning lead time, without conversion the we would loose 3 minutes (WFOs within NPN domain vs. outside)*

NOAA Profiler Network : +$3.5M

-

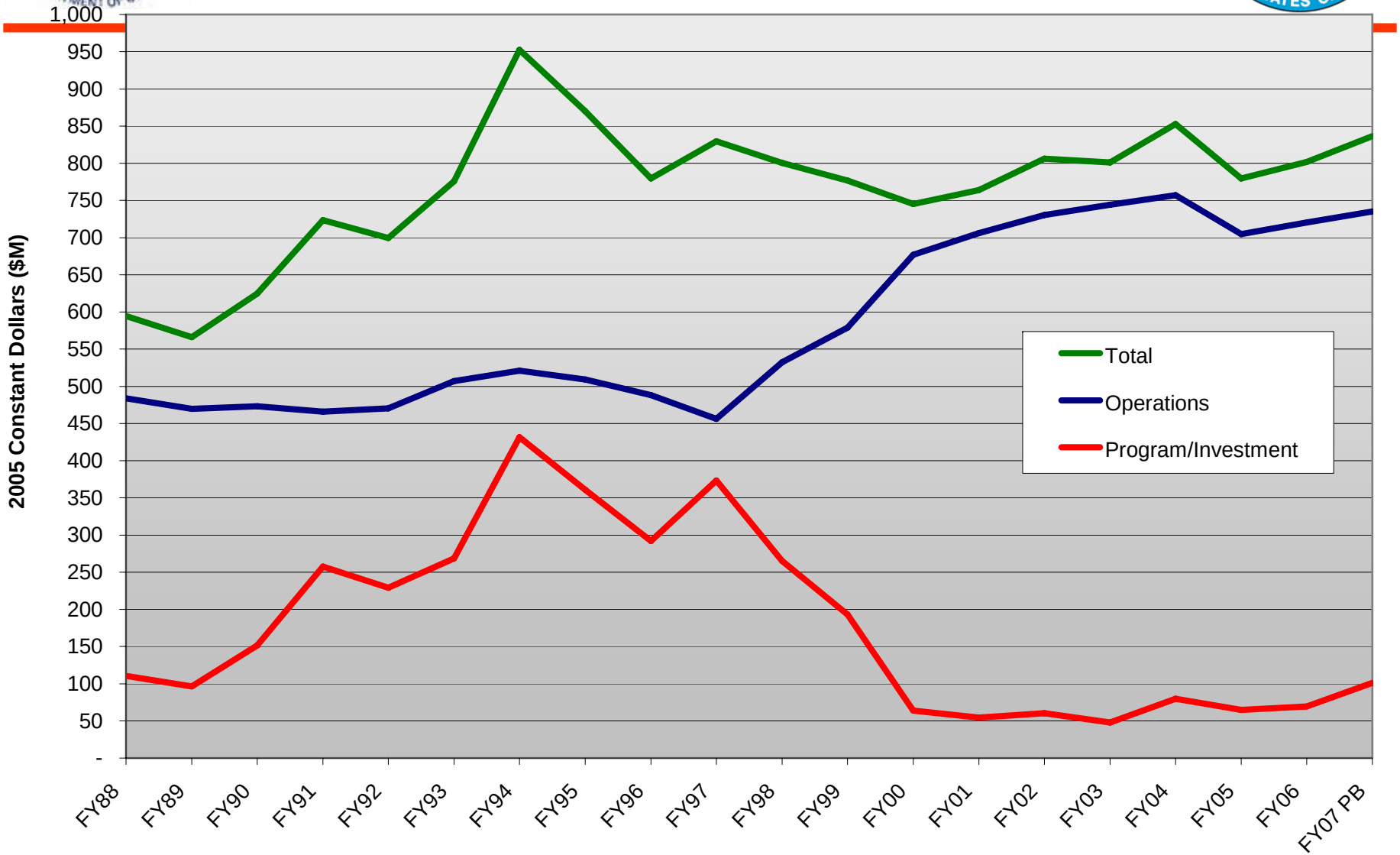


OUTYEAR FUNDING ESTIMATES ($M)								
NOAA Profiler Conversion	**FY07 & Prior**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**Cost to complete**	**Total**
Change from FY 2008 Base		3.5	8.1	1.6	1.6	(3.3)		
Total Request	**6.3**	**9.8**	**14.5**	**7.9**	**7.9**	**3.1**	**12.3**	**61.8**
Profilers Converted		*3*	*12*	*17*				***32***
Profilers Tech. Refreshed			*12*	*12*	*13*			***37***

NWS Budget Composition

FY88-06 Appropriations* & FY07 President's Budget

Investment to operations ratio reduced to pre-modernization levels:
– not positioned for the future

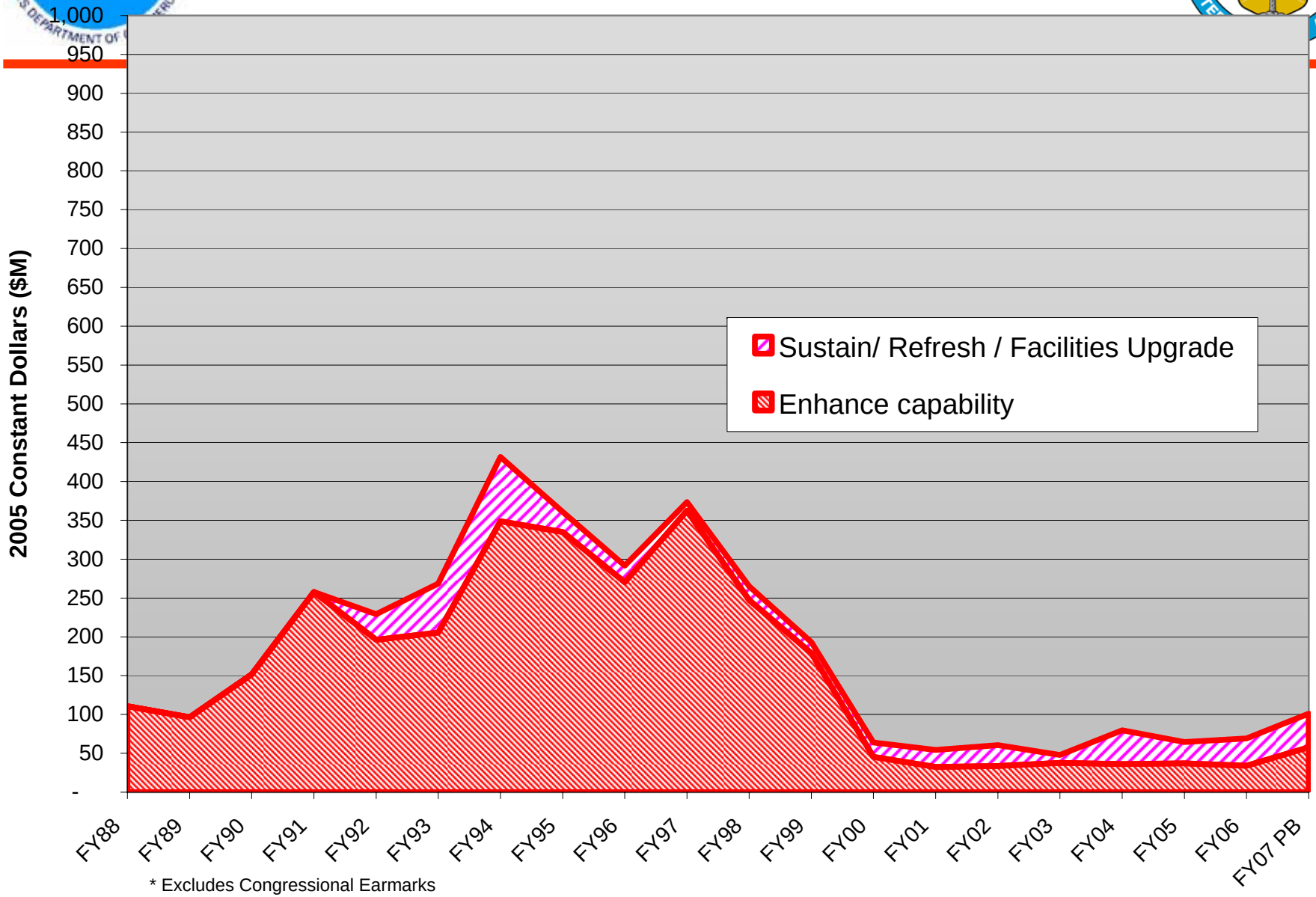


* Excludes Congressional Earmarks

NWS Investment Budget Composition

FY88-06 Appropriations* & FY07 President's Budget

Of the of current investment, only half is focused on enhanced capability

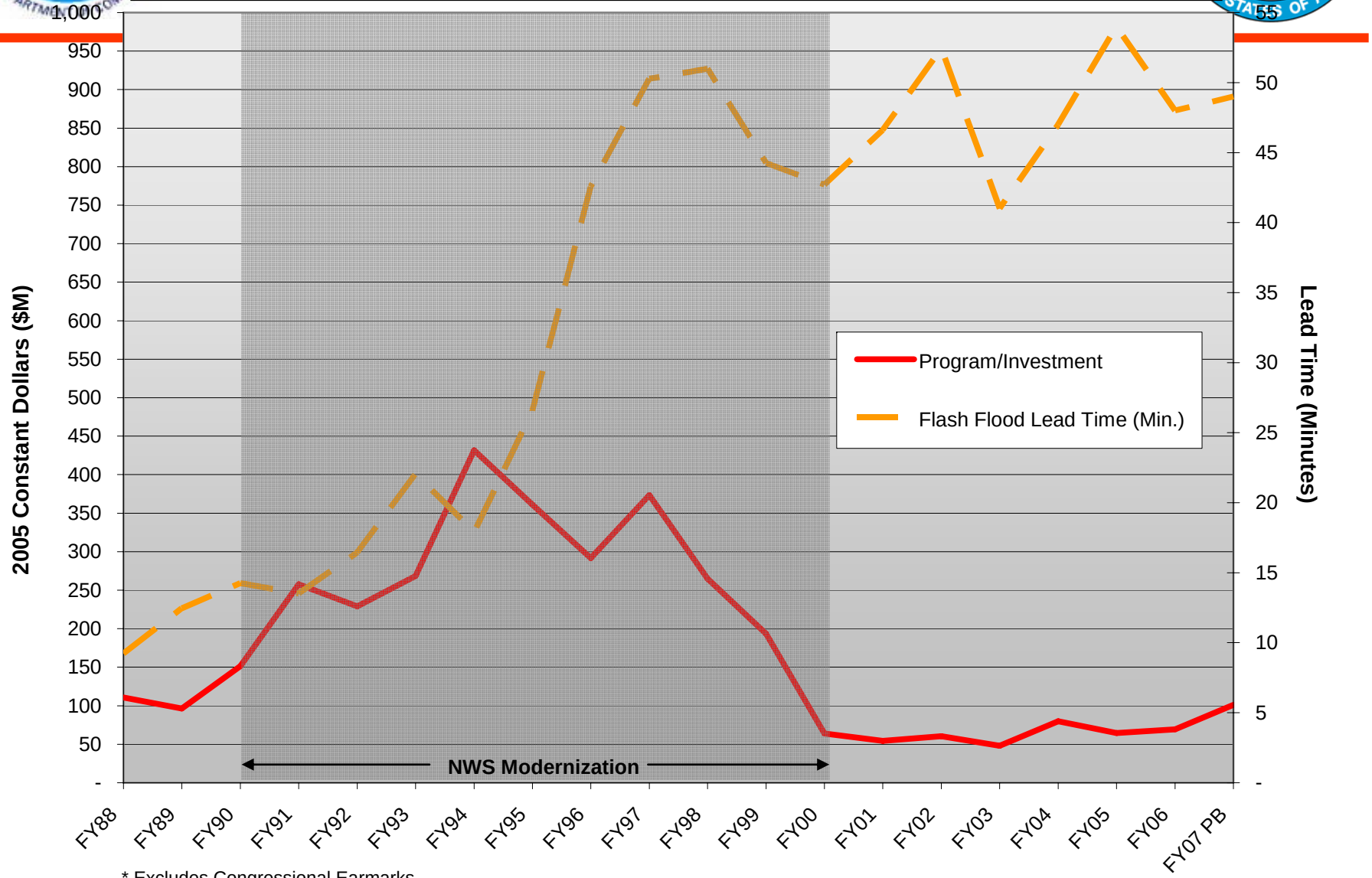


* Excludes Congressional Earmarks

NWS Budget Investment & Performance

FY88-06 Appropriations* & FY07 President's Budget

Investments made during the modernization paid dividends in major performance gains – performance has now reached plateau with reduced investment



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