

**Integrated Ocean Observing System (IOOS)  
NOAA's Approach to Building an Initial Operating  
Capability**

***Hydrographic Services Review Panel Briefing***

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# Outline

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- NOAA's Regional IOOS Program Activities
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# NOAA's IOOS Plan

## Organize for Success

- Establish NOAA IOOS Program Office
  - Lead and manage NOAA's IOOS efforts
- Support external collaboration
  - Identify and encourage similar data integration, test and evaluation approach by partners

## Integrate Data

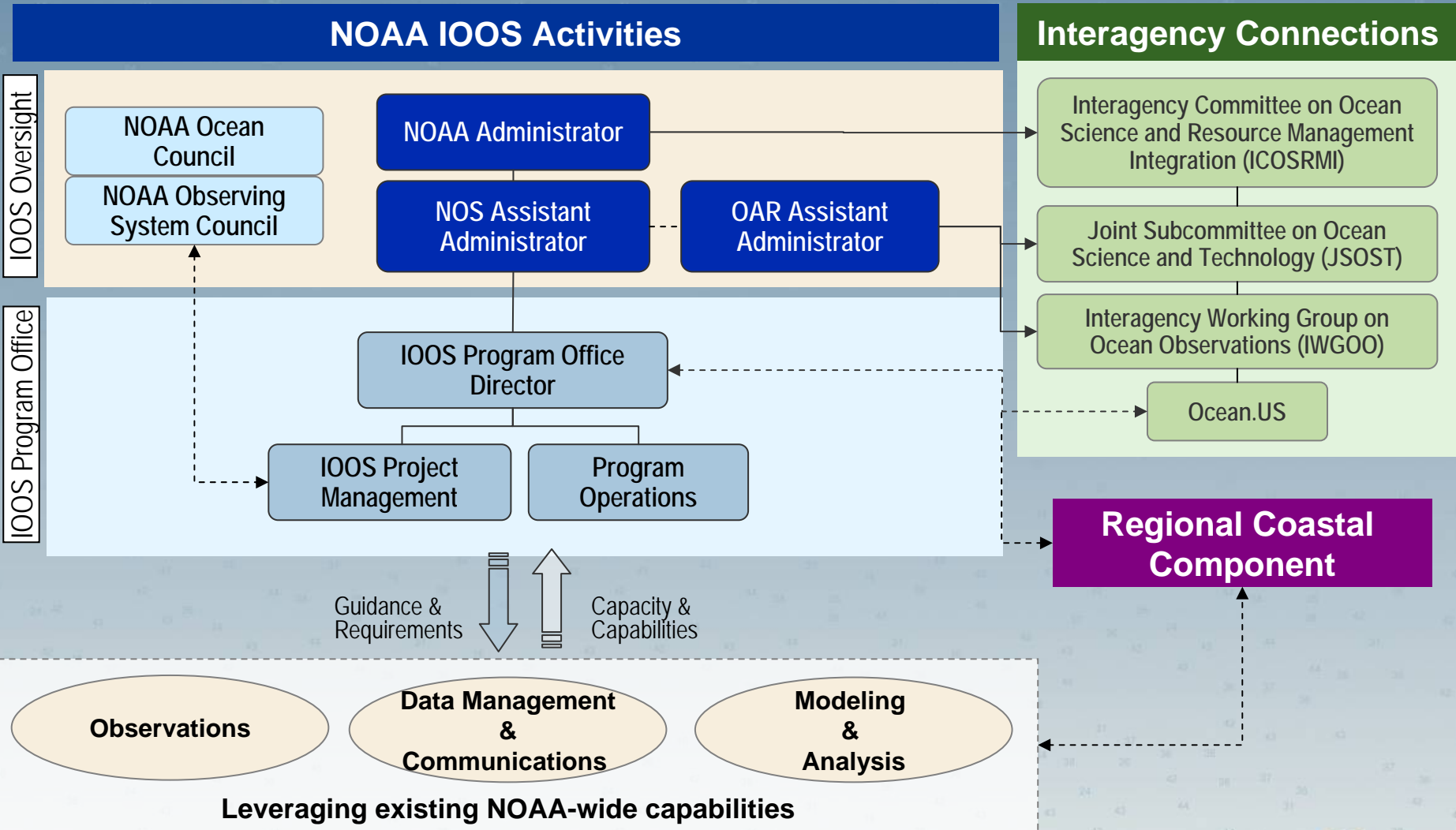
- Develop an Integrated Data Framework as the Initial Operating Capability
  - Integrate priority IOOS core variables and deliver to end users and models
  - Quantify product improvements



### NOAA IOOS Definition:

The U.S. Integrated Ocean Observing System (IOOS) is a coordinated network of people and technology that work together to generate and disseminate continuous data on our coastal waters, Great Lakes, and oceans. IOOS is our nation's ocean contribution to an international effort called the Global Earth Observation System of Systems (GEOSS), which is designed to continuously and comprehensively monitor Earth and transmit observations globally. IOOS supports both a coastal and global component of ocean observing.

# NOAA's IOOS Program Office: Purpose & Functions



# NOAA's IOOS Program Office: Process to Establish

## Steps and Timeline:

- IOOS Director (0-3mos)
  - On Feb. 5, Zdenka Willis, former Director of NOAA's Oceanographic Data Center, was reassigned as full time NOAA IOOS Director
  - Organize existing staff to manage day to day IOOS operations
  - Develop full staffing and budget plans
- IOOS Program Office (6-9mos)
  - NOAA/NOS is working with NOAA and DOC to seek necessary approvals to form the IOOS Program Office



# The IOOS Challenge: Data Integration

## Societal Challenges

Global climate not well understood

Coastal populations at risk

Ocean, coastal, and Great Lakes ecosystems at risk

## Information Needs

Characterize the state of the global climate system and its variability

Improved models (e.g., hurricane intensity, coastal inundation, and harmful algal bloom model)

Improved ecosystem assessments

Updated management approaches

Improved access to data, and scientific information

## IOOS Core Variables

**Temperature**

**Salinity**

**Sea Level**

**Surface currents**

**Ocean color**

Bathymetry

Surface waves

Ice distribution

Contaminants

Dissolved nutrients

Fish species

Fish abundance

Zooplankton species

Optical properties

Heat flux

Bottom character

Pathogens

Dissolved O<sub>2</sub>

Phytoplankton species

Zooplankton abundance

## Decision Tools

Hurricane Intensity Model

Coastal Inundation Model

Harmful Algal Bloom Model

Integrated Ecosystem Assessment

**Integration**

Long-term data series, coordinated in space and time

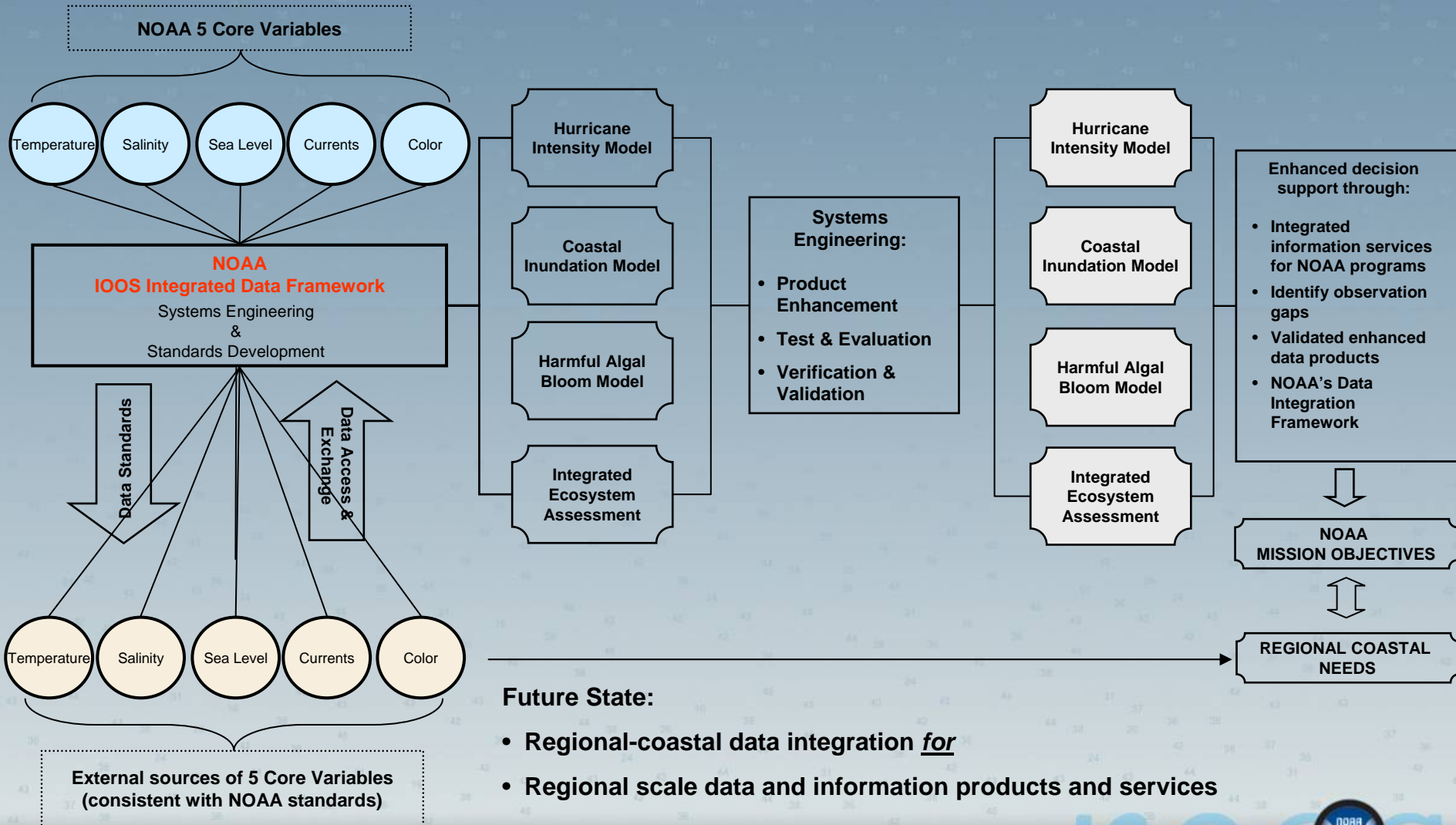
# NOAA's Initial Operating Capability: Integrated Data Framework

**Months 0-12**  
Integration of 5  
IOOS Core Variables

**Month 18**  
Integrated Variable Ingest for  
Select Data Products

**Month 24**  
Test &  
Evaluation

**Month 36**  
Benchmarked Product  
Improvements for Operational Use



# NOAA's FY07 Regional IOOS Activities: Development

- NOAA's FY08 Budget Request includes \$11.5M for Regional Component of IOOS
- NOAA intends to competitively fund projects under the FY07 Regional Integrated Ocean Observing System Development solicitation
  - Projects will support:
    - RCOOS development;
    - IOOS applications development; and
    - Data Management and Communication (local data network nodes)
  - Peer review of full proposals will occur in May
  - Target time for selection is mid June 2007





# NOAA's FY07 Regional IOOS Activities: Management

- Effective regional management frameworks are required to cohesively manage sub-regional elements
- Regional Associations are responsible for ensuring sub-regional elements are integrated into Regional Coastal Ocean Observing Systems
- NOAA intends to fund planning grants to enable Regional Associations to
  - Identify stakeholders and assess needs for coastal and ocean information;
  - Design and develop Regional Coastal Ocean Observing Systems; and
  - Initiate delivery of products and services at sub-regional to regional scales



# NOAA Funded Sub-Regional Coastal Ocean Observing System Elements



■ REGIONAL ASSOCIATION DELINEATION (Approximate – Not to Scale)  
● NOAA FUNDED SUB-REGIONAL SYSTEM ELEMENTS 2002-PRESENT



# Summary

- NOAA is advancing IOOS through improved organization, management, and focus
  - The process for establishing a NOAA IOOS Program Office is underway
  - The NOAA IOOS Program Office is building an Initial Operating Capability (IOC) for IOOS
  - The IOC will be tested, evaluated, and benchmarked for success
- NOAA continues to coordinate larger U.S. IOOS efforts with federal and international partners through participation in inter-agency forums
- NOAA continues to support development of the regional component of IOOS to enable a fully configured and scalable U.S. IOOS



# Questions & Comments

