

Shore Protection Project Performance Improvement Initiative (S3P2I)

**2005 Tri-Service Infrastructure Conference
August 1-5, 2005
St. Louis, MO**

Presented by: Susan Durden, IWR



Authority

Military Construction Appropriations and Emergency Supplemental Emergency Hurricane Supplemental Appropriations Act 2005 (PL 108-324, OCT. 13, 2004)

For an additional amount for “Construction, General” for emergency expenses for repair of storm damage for authorized shore protection projects and assessment of project performance of such projects, \$62,600,000, to remain available until expended...

S3P2I Funding-Level: \$11M

S3P2I Duration: FY05-FY07



Program Goals

Project Performance

- economic
- environmental
- physical response
- social

Outcome

- communicating to coastal management stakeholders
- leverage opportunities to improve future project performance



Approach

- **Support companion USACE efforts to clearly define the Federal role(s) in coastal management including shore protection**
- **Improved evaluation frameworks for assessing net effects of existing and future shore protection projects**
- **Improved predictive capability for project planning, design and decision support**



Companion Initiatives/Opportunities

PL 108-324/84-99: Restore flood control and hurricane shore protection projects to their pre-storm condition (SAD)

USACE – District, NSMS, CFDCP, RSM Demo, PILOT...

Other Federal:

e.g., USGS, FEMA, NOAA, DOT, NHC, ONR, ...

Non-Federal:

e.g., FL DEP, Local Partners, CSI, TNC...



Program Structure

Business Area Leader: Harry Kitch, CECW-CP

Program Manager: Bill Curtis, CEERD-HN-CE

Project Managers:

Performance Assessment Work Unit - Sharon Hagggett, CESAW-PM-C

Design and Formulation Work Unit - Stephen Couch, CENAN-PL-F

3-D Physics Based Model Development - Dr. Don Resio, CEERD-HV-B



Program Structure

PgRT/ Oversight Committee

Lillian Almodovar, IWR

Jan Rasgus, HQUSACE, Policy

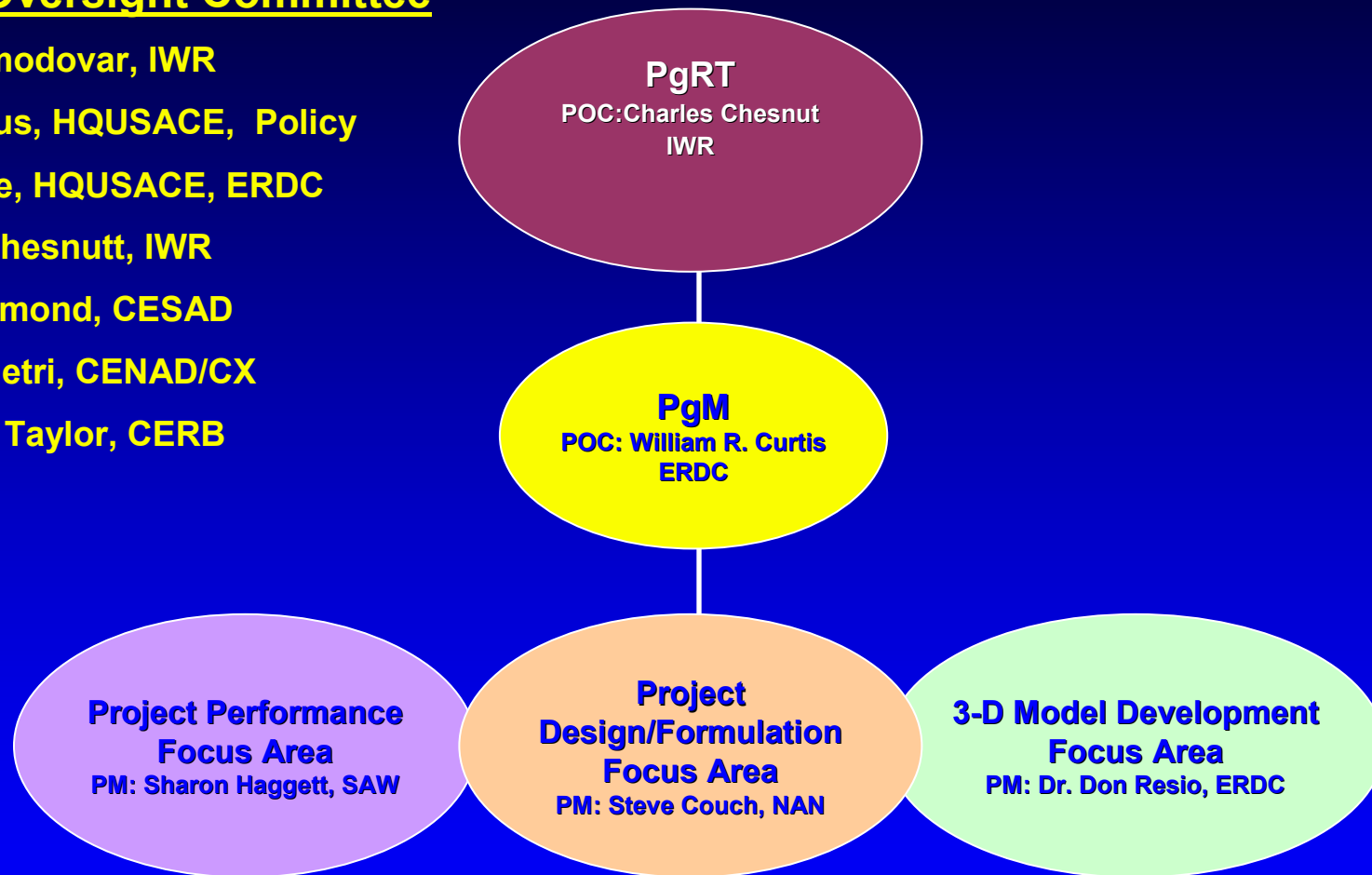
Joan Pope, HQUSACE, ERDC

Charles Chesnutt, IWR

Kaiser Edmond, CESAD

Joseph Vietri, CENAD/CX

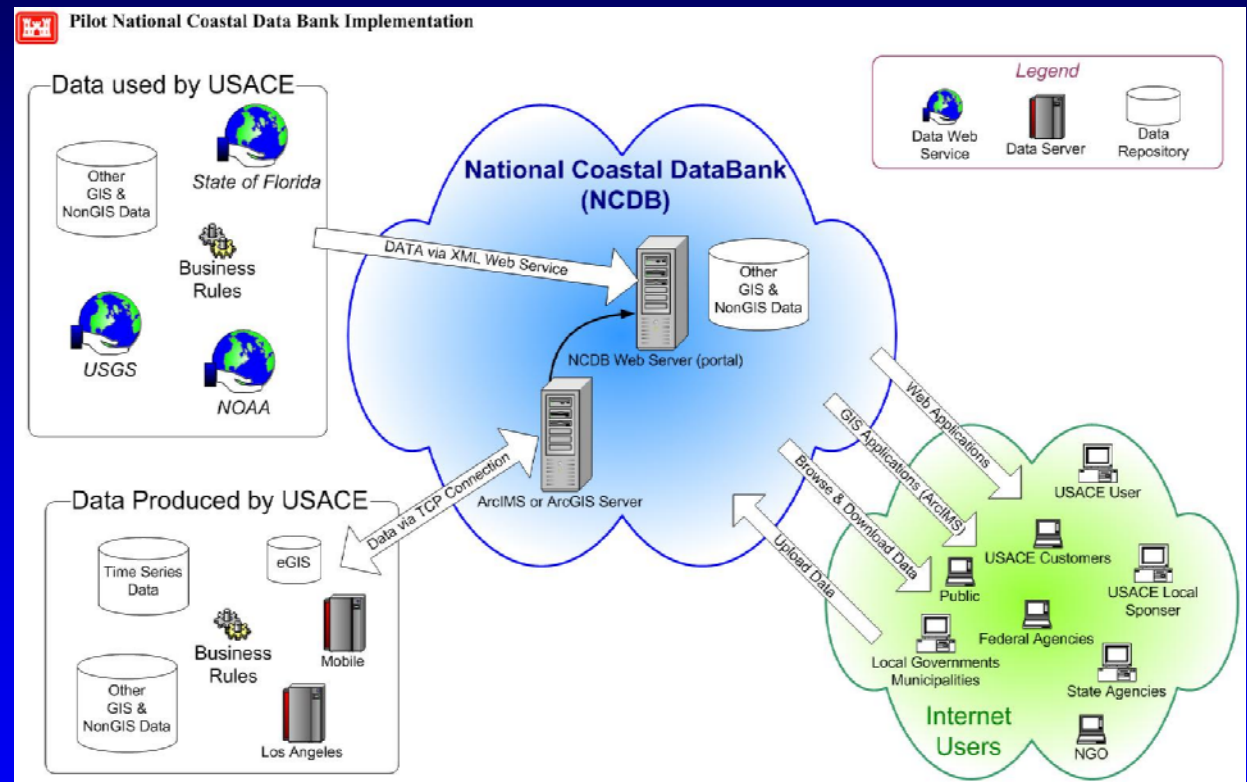
Dr. Bruce Taylor, CERB



Program-Wide Efforts: Data Mgmt

Approach:

- Develop Pilot
- Web portal and search engine for coastal data and information
- Web application service for various coastal data manipulations, calculations, and analysis tools
- Data repository for a portion of USACE's coastal data



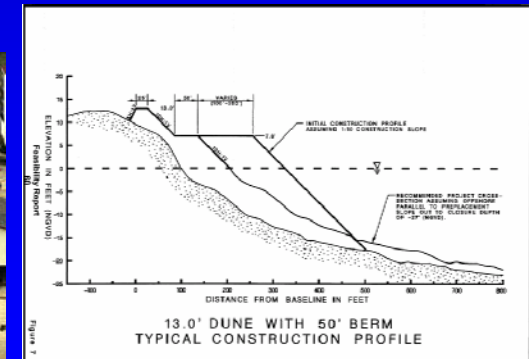
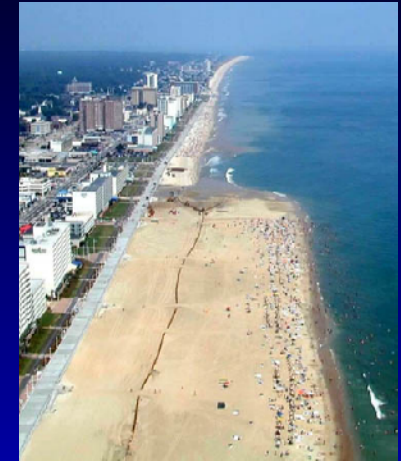
Program-Wide Efforts: Isabel Assessment

Objective(s):

- Complete evaluation of physical and economic performance of existing COE shore protection projects impacted by Isabel

- Virginia Beach, VA
- Sandbridge Beach, VA

- Complete evaluation of potential damages that could have been prevented along the NC coast had the Dare County beaches project been in place during Isabel (Nags Head, Kill Devil Hills, Kitty Hawk)



Program Wide Efforts Strategic Communications

- **Outreach and input from full range of stakeholders**
- **Inform and involve**
- **Translate science for public and decision makers**
- **Integrate and support work of sister Federal agencies**
- **Collaboration not just coordination**



Shore Protection Project Performance Improvement Initiative

Performance Assessment Focus Area

Business Area Leader: Harry Kitch, CECW-CP

PgM: Bill Curtis, CEERD-HN-CE

PM: Sharon Haggett, CESAW-PM-C



Performance Assessment Focus Area

Objective:

- Utilize information from the PIR effort undertaken by SAJ
- Enhanced time sensitive data collection and analysis
- Assess and identify the impact of the 2004 Atlantic tropical season on the physical performance of Federal shore protection projects with an emphasis on damages prevented and identifying other benefits such as recreation, social, environmental and regional benefits.



Performance Assessment Focus Area Structure

**Project Performance
Focus Area
PM: Sharon Haggett
CESAW-PM-C**

Focus Area Work Units

**Economic & Social Effects
PI: H. Shoudy
(Contractor)**

**Physical Performance
PI: M. Gravens
CEERDC-CHL-MS**

**Storm Characterization
PI: S. Corson
CEERCD-HF-FO**

**Environmental Consideration
PI: S. Ashby
CEERDC-EP-P**

**Watershed Analysis
PI: P. Grace
CESAM-OP-CO**



Performance Assessment Focus Area

Products:

- **Methods to identify data gaps**
- **Prioritize and gather missing data**
- **Assimilation of available data for utilization in modeling a storm event and characterizing the associated beach response**
- **Provide data for inclusion NCDB pilot study**
- **Quantified watershed performance**
- **Considerations to determine environmental benefits**
- **Technical report documenting (correlating) the empirical analysis of damage curves utilized in project formulation**
- **Journal/Conference papers detailing the various aspects of shore protection project responses**



Performance Assessment Focus Area

Program Performance:

- Evaluation of full range of shore protection benefits
- Relational database for development of future guidelines for shore protection project and emergency storm response scenarios
- Empirical data and formulation criteria will be assessed in order to confirm the validity of benefits
- Identify enhanced environmental opportunities as part of shore protection projects.
- Congress has long recognized the value of shore protection projects. Their programmatic hypothesis that there is a Federal interest in shore protection projects will be assessed by evaluating the effectiveness of shore protection projects against the impacts of the Hurricanes of 2004.



Performance Assessment Focus Area Structure Economic & Social Effects WU

**Economic & Social Effects
PI: H. Shoudy
(Contractor SME)**

I. Produce storm characteristics for without project , IV. Produce without project pre-storm shoreline position,
V. Produce without project post-storm shoreline position

II. Produce residential damage vs.
erosion/wave/inundation relationships

III. Collect commercial & public
building and infrastructure damages

VI. Identify potential benefit categories,
VII. Collect available economic benefit data,
VIII. Develop missing economic data elements and/or data additions to
inventory

IX. Produce benefit analysis procedures
X. Peer review of benefit analysis
procedures

Phase 1



Performance Assessment Focus Area Structure Economic & Social Effects WU (continued)

Economic & Social Effects
PI: H. Shoudy
(Contractor SME)

XI. Apply benefit procedures to benefit categories

XII. Estimate NED benefits

XIII. Estimate other social effects

XIV. Estimate environmental benefits

XV. Estimate RED

Phase 2



Performance Assessment

Focus Area Structure

Physical Performance WU

Physical Performance
PI: M. Gravens
CEERDC-CHL-MS

I. Documentation of project design parameters

II. Documentation of project construction details

III. Pre- and Post-storm volumetric changes and redistribution of sediment

IV. Analysis and comparison of Federal project performance

V. Comparison of project performance with respect to project maturity

VI. Synthesis of project performance as related to project design features



Performance Assessment

Focus Area Structure

Storm Characterization WU

Storm Characterization
PI: S. Corson
CEERCD-HF-FO

**I. Wind and wave
observations**

**III. Coastal numerical model
performance for storm
characterization**

**II. Water level and coastal
inundation**



Performance Assessment Focus Area Structure

Environmental Considerations WU

Environmental Consideration
PI: S. Ashby
CEERDC-EP-P

**I. Data compilation and
evaluation**

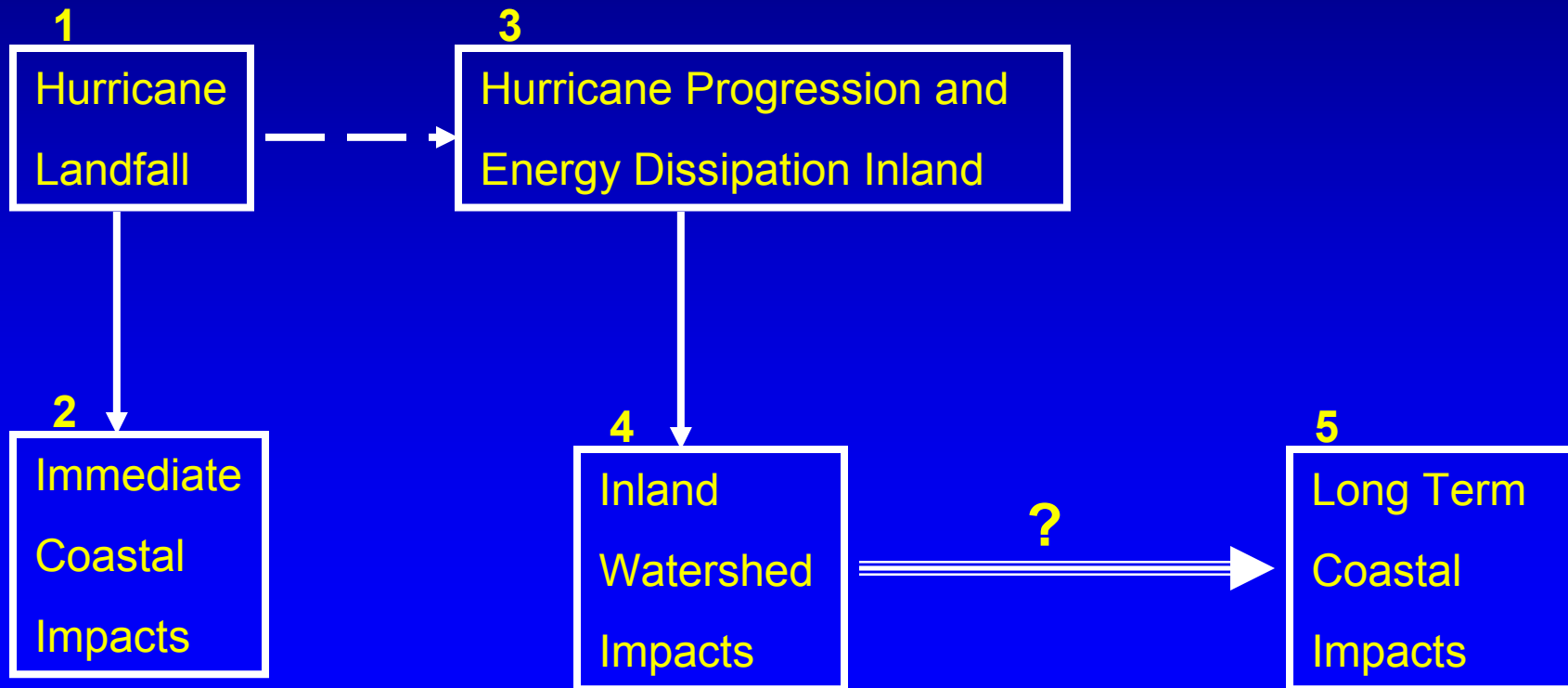
**III. Environmental
considerations in design
and formulation**

**II. Project performance
assessment**



Performance Assessment Focus Area Structure Watershed Analysis WU

Watershed Analysis
PI: P.Grace
CESAM-OP-CO



Performance Assessment Focus Area

Program Performance:

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Performance Assessment Focus Area

Questions?

