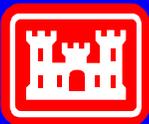


Coastal R&D



US Army Corps
of Engineers®

Engineer Research and Development Center

RAPID PORT ENHANCEMENT (RPE) PROGRAM

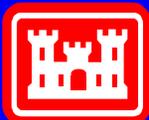


Theater Support Vessel

- Major improvement
- 5 times as many ports available

Some Ports Not Immediately Compatible

- Insufficient pier-side depth
- Insufficient port offload facilities
- Insufficient maneuver space



US Army Corps
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NAVIGATION

MISSION

Provide USACE with tools and technology to Improve the navigation system's functional performance, preserve and enhance environmental quality of our waterways, harbors, and ports reduce unit costs, and improve safety.

MARINE TRANSPORTATION SYSTEM (MTS)

- MTS employs 13M people, provides \$700B to the national economy, and moves military forces and materials.
- R&D is producing new technologies and advancing existing technologies to ensure a high performance navigation system and maximize opportunities for environmental improvement.



Navigation Business Line

General Investigations- R&D

- Navigation Systems Continuing Program
- Navigation Economics Technologies (NETS)

O&M-Funded R&D Program

- Dredging Operations and Environmental Research Program (DOER)
- Coastal Inlets Research Program (CIRP)

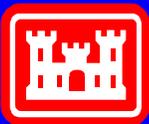
O&M Funded Non-R&D

- Monitoring Completed Navigation Projects (MNCP)
- Dredging Operations and Technical Support (DOTS)
- Inland Electronic Navigation Charting
- Regional Sediment Management Demonstration (RSM Demo)



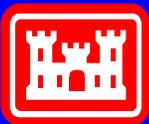
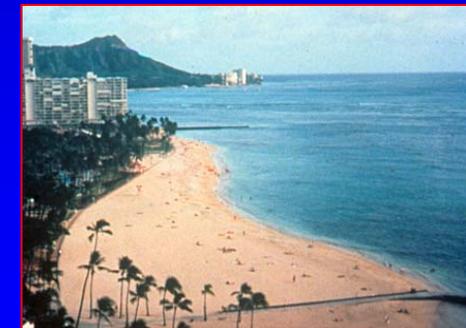
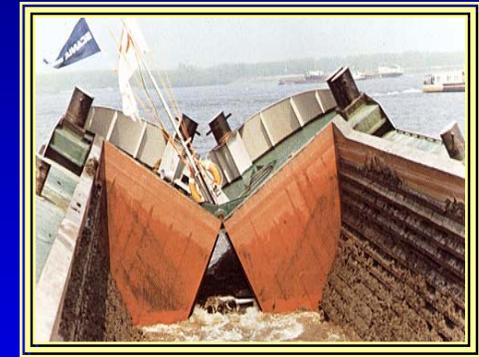
FOC's: NAVIGATION

- 1) Capability to make the existing system work better by: **INFRASTRUCTURE ENHANCEMENTS** to support projected 2020 traffic demands and ensure a high level of reliability.
- 2) Capability to provide new system components that offer: **INTEGRATED NAVIGATION SYSTEM DESIGN AND MANAGEMENT** for the NAV/MTS 2020 Vision -- a safe, efficient, effective, reliable, and environmentally sustainable system.



FOC's: NAVIGATION

- 3) Capability to perform: **REGIONAL SEDIMENT MANAGEMENT** to optimize function of the system, reduce costs, and increase benefits.
- 4) Capability to conduct: **DREDGING AND DREDGED MATERIAL MANAGEMENT** to minimize costs and maximize benefits.



FLOOD CONTROL

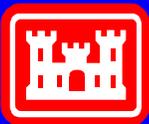
MISSION

Reduce, through an integrated program of structural and non-structural means, the adverse economic, social, and environmental consequences to the Nation resulting from flooding of riverine and coastal sources



FLOOD AND COASTAL STORM DAMAGE REDUCTION

- USACE operates 383 major lakes and reservoirs, maintains 8,500 miles of levees, and has over 100 coastal storm damage reduction and related projects
- USACE conducts extensive research on both coastal shore protection and inland flood damage reduction:
 - Channel restoration
 - Channel sedimentation
 - Bank protection methods
 - Ice impacts on flood control and navigation structures
 - Impacts of climate changes



F&CSDR Business Line

General Investigations- R&D

- F&CSDR R&D
- CFDCP
 - SWIMS
 - PILOT
 - WIS
 - CDIP
 - FRF
 - IOOS
 - SCBPS

CG Funded

Non-R&D

- Section 227
- Shore Protection Assessment
 - MORPHOS
 - NCDB



FOC's: FLOOD AND COASTAL STORM DAMAGE REDUCTION

- 1) **REDUCE LIFE CYCLE COSTS** of system and unit infrastructure.
- 2) Improved system monitoring, early-warning forecasting, operation, and response to **REDUCE LOSS OF LIFE AND DAMAGES** due to flooding and storms.
- 3) **WATERSHED/REGIONAL MANAGEMENT** to optimize function of system, reduce costs, and increase benefits for multipurpose use.



System-Wide Water Resources Program (SWWRP)

"We need to move to a watershed approach as it applies to water resources projects so that *each of our projects fits into the context of a regional plan.*" - LTG Robert Flowers

R&D Statement of Purpose: Support decisions that are scientifically, technically, and economically sound in formulating and executing sustainable system-level water resource projects.



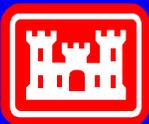
SWWRP

- **Regional Sediment Management**
 - Sediment Management Methods
 - Sediment Process and Assessment
 - River Basin Morphology, Modeling, & Management
 - Coastal Morphology, Modeling, & Management
- **Regional Water Management**
 - Critical Water Processes
 - River and Estuarine Simulation
 - Watershed Hydrology Simulation
 - Coastal Simulation
- **Ecosystem Assess/Forecasting**
 - Environmental Processes & Assessment
 - Ecological Modeling
 - Ecosystem Response Forecasting

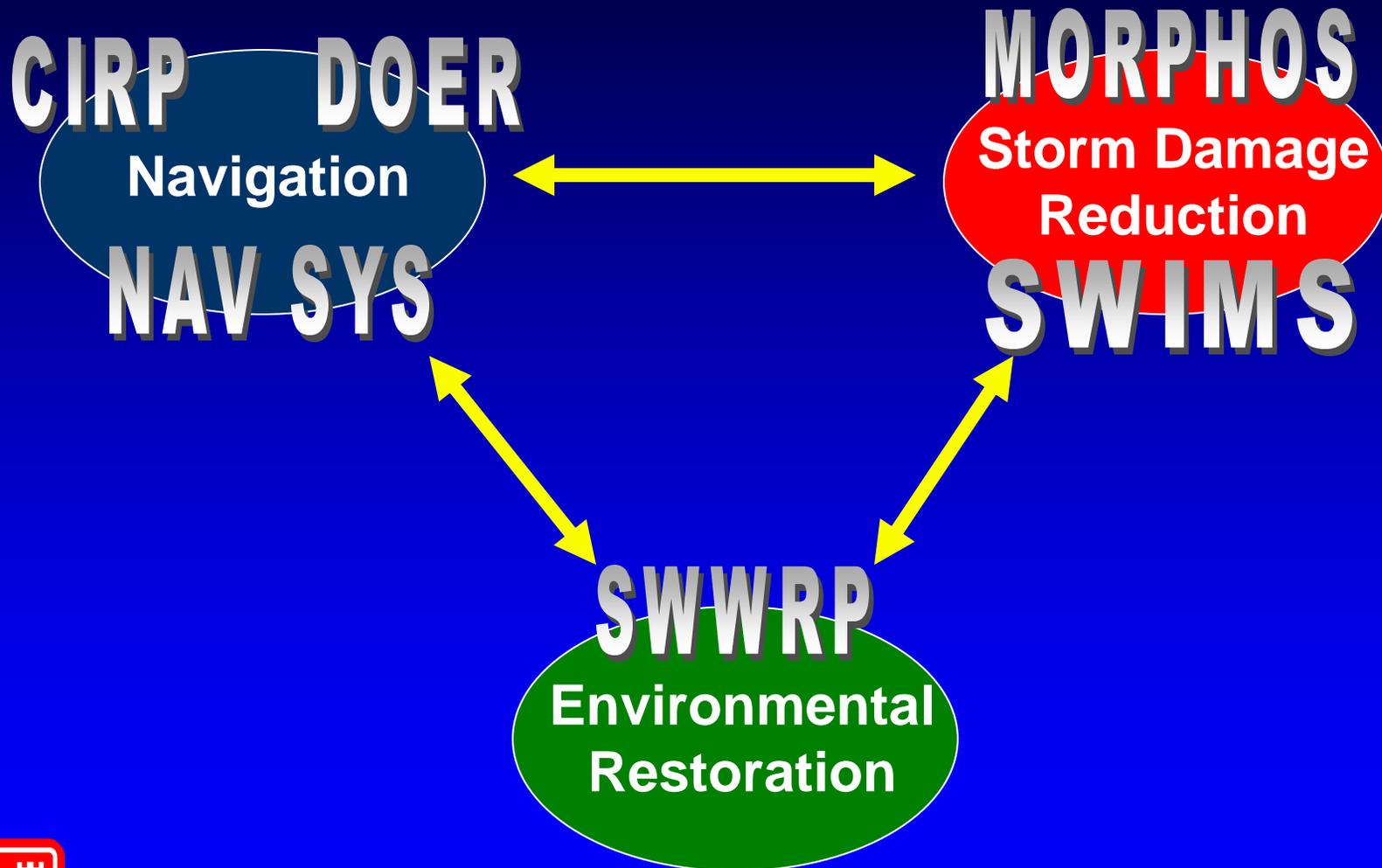


SWWRP

- **Unifying Technologies**
 - **Geospatial Applications Development**
 - **Regional measurement & monitoring**
 - **Model integration**
 - **Frameworks**
 - **Decision support**
 - **Knowledge management**
 - **Data management**



2012: Integration of Disciplines



Integrating the Field with R&D

- **GOALS**

- Obtain requirements for R&D
- Prioritize requirements
- Guide technology development
- Communicate results & infuse technology



Field - R&D Integration

- Receive input to R&D from:
 - Principle Investigators
 - Field Staff using Corps products
 - Formal Product Development Teams
 - Discipline-specific Review Groups
 - Interdisciplinary Steering Groups
 - HQ Proponency



Means of Integration	Obtain Req'nts	Priority	Guide R&D	Infuse Tech.
PI	X			X
Field-user recommendation	X			X
PDT members	X		X	X
Discipline-specific review group	X	X	X	X
Interdisciplinary Steering group	X	X	X	X
Proponency	X	X		



Communities Of Practice

- R&D Programs are interdisciplinary
- CoPs designed to maintain connection within disciplines
- Identify mechanisms to effectively communicate with CoPs for input to R&D



Erin Saunders

THANK YOU!

