

Applications of the Regional Sediment Management (RSM) Approach



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RSM - a “**Systems Approach**”

- System of sediment
- System of projects
- System of agencies, programs, etc (“institutional system”)

- **RSM Approach** is consistent “watershed,” “ecosystem” & other “system approaches”
 - Integrates understanding of:
 - system processes
 - Interconnectivity of objectives and actions –
 - within Corps
 - across agencies /stakeholders in a region

Shifting Paradigms

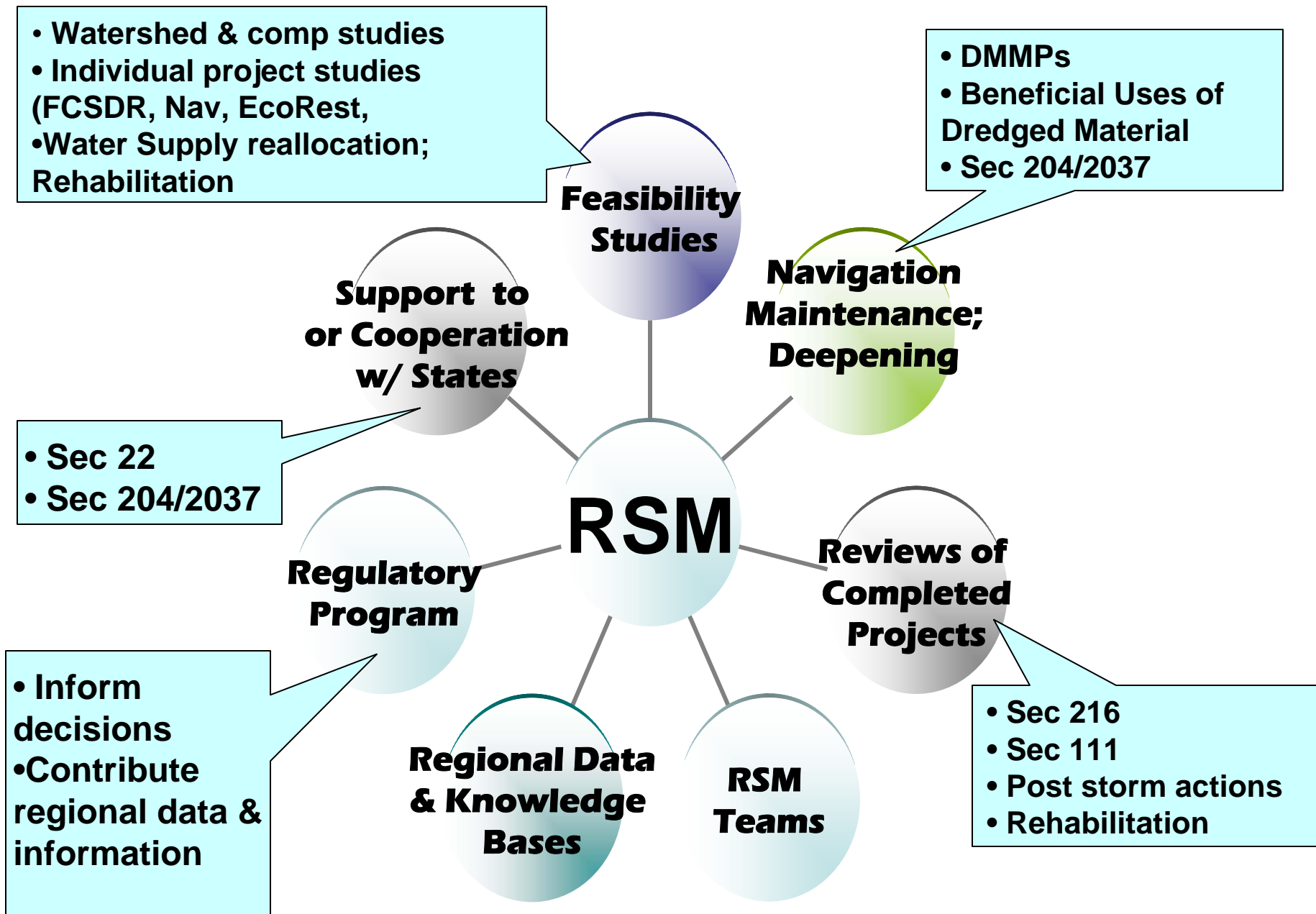
- Management approaches:
 - Sediment management in the context of watershed management.
 - Watershed management that incorporates “sediment resource” and dredged material management.
 - Sediment integral to “Ecosystem Based Management”
- Perceptions:
 - Sediment: “Pollutant” vs. “resource” as part of a “system”
 - Localized problem solving vs. more integrative regional strategies for problems and opportunities

Regional Sediment Management

- ***Sediment*** is integral to most Corps programs and activities

Too Much Sediment:	Too Little Sediment:	Sediment as a Resource:
<ul style="list-style-type: none">▪Obstruction of channels▪Rivers fill and flood▪Reefs get smothered▪Turbidity	<ul style="list-style-type: none">▪Beaches erode▪Riverbanks erode▪Wetlands are lost▪River profile degradation	<ul style="list-style-type: none">▪Construction material▪Sand for beaches▪Wetland nourishment▪Agriculture soil enrichment

- **Policy:** *integrate the RSM approach into CW programs, functions, activities involving or affecting sediment.*



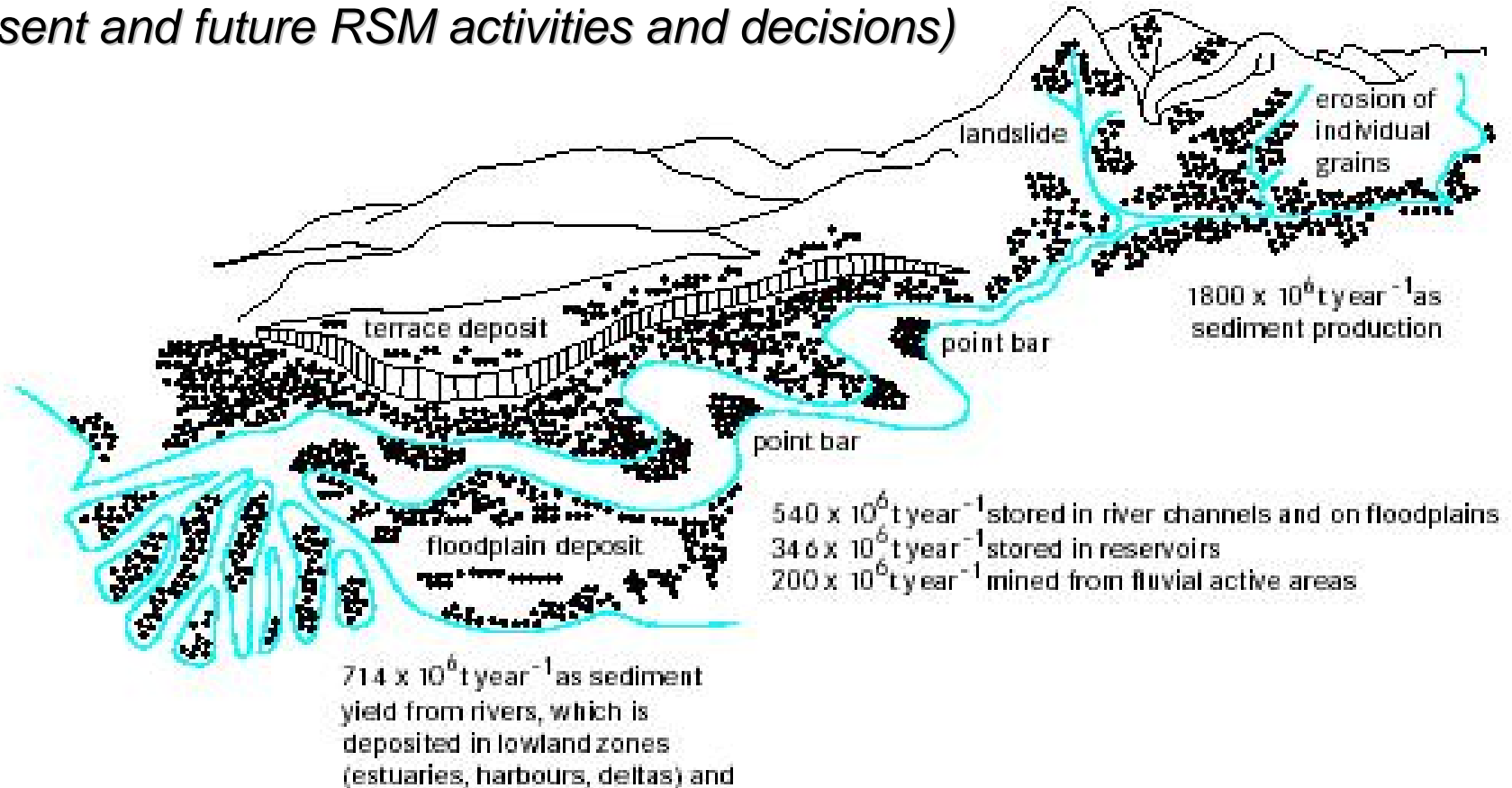
“Sediment Management” Activities

Actions that affect the transport, erosion, removal, & deposition of sediment in a region –

- Dredging and Placement
- Structures that divert or trap sediment
 - Incl sedimentation in reservoirs
- Erosion protection structures or methods for riverbanks, shorelines, sea beds, and channel bottoms
- Habitat stabilization and restoration
- Sand and gravel mining for construction or other purposes
- Other
 - ...**Many don't see their activities as part of a “sediment system”**

“Sediment Budgets” contribute to understanding the system –

(detailed accounting of sediment movement as a tool for evaluating present and future RSM activities and decisions)



Sediment system can provide a “neutral rallying point” for discussing future management approaches

Examples of RSM in Practice

Galveston Bay Programmatic Sediment Management Plan

- Identify *sediment pathways*
- Coordinate *roles, responsibilities and authorities* of agencies and stakeholders in region
- Identify *RSM opportunities and constraints* within system
- Develop a *management strategy for sediment resources*
- *Prioritize RSM projects, strategies, cooperative efforts*
- Use existing *CDF Material* for Ecosystem Restoration.
- *Private Dredging Beneficial Use Opportunities*
- *Life-Cycle Costs* for Dredged Material.
- *RSM Needs and Opportunities List.*
- Implement Information Sharing.
- *Dredged Material Marketing Program.*



Formation of Regional “Interagency Coordination Teams”

- E.g.
 - Laguna Madre
 - Houston and Galveston Ship Channels
 - **Beneficial Uses Group** (“BUG”) Subcommittee
 - headed by Port of Houston Authority (local sponsor)
 - Developed dredged material plan for the bay and offshore reaches.
 - » all the material dredged from the channel to a beneficial use or into confined upland sites.

Long Island Coastal Planning Project



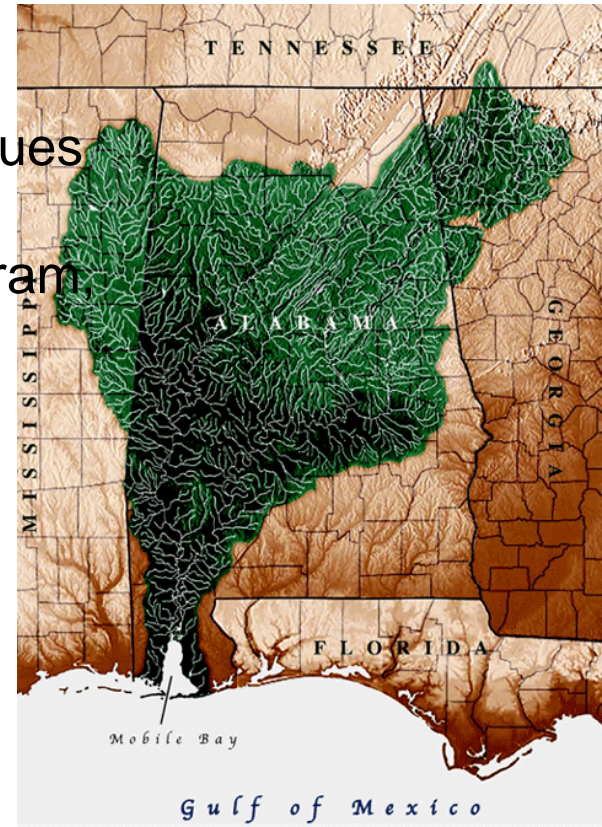
- Institutionalize RSM Approach
- More efficient navigation O&M
- Enhance habitat
- More effective uses of sediment from inlets, interior navigation channels and harbors, and other sources,
- Improve the collection and availability of sediment process data
- Facilitate cooperation among federal and non-federal interests

- Integrate “Long Island Sediment Needs Assessment”
 - All inlets, interior navigation channels and harbors on the south shore of Long Island
 - Federal (including the Dept of Interior and US Coast Guard)
 - non-Federal

- Contribute to a regional water resource strategy for Long Island
 - developed by communities and state agencies in cooperation with the Corps and other Fed agencies, and NGOs

Mobile Bay & Basin RSM Plan

- **Demonstrate managing sediments in watershed context**
- **Improve understanding of watershed sediment processes**
 - Leverage existing or proposed programs and authorities relevant to watershed and coastal issues identified by stakeholders
 - EPA Reg IV, Mobile Bay National Estuary Program, N. Gulf Institute at Mississippi State University, Other
- **Improve management decision-making processes**





Gulf Region Sediment Management Master Plan

- Sediment Resources:
 - Sediment Inventory (incl offshore)
 - Sediment Budgets (Transport Dynamics, and Pathways, Sources and Sinks)
- ID Dredging and beneficial use activities
- Ecological considerations related to RSM, BMPs
- Information Management, Analytical Tools, Assessability
- Policies, Authorities and Funding
- Inventory Sediment needs

Sediment Master Plan Products:

RSM Related Reports

- [Why a SMP is needed](#)
- [SMP Status Reports 2008 & 2006](#)
- [RSM Plans by sub-Region \(3 completed, others underway\)](#)
- [“Sand Compatibility and Opportunistic Use Program” \(SCOUP\) Report](#)

Computer Based Tools

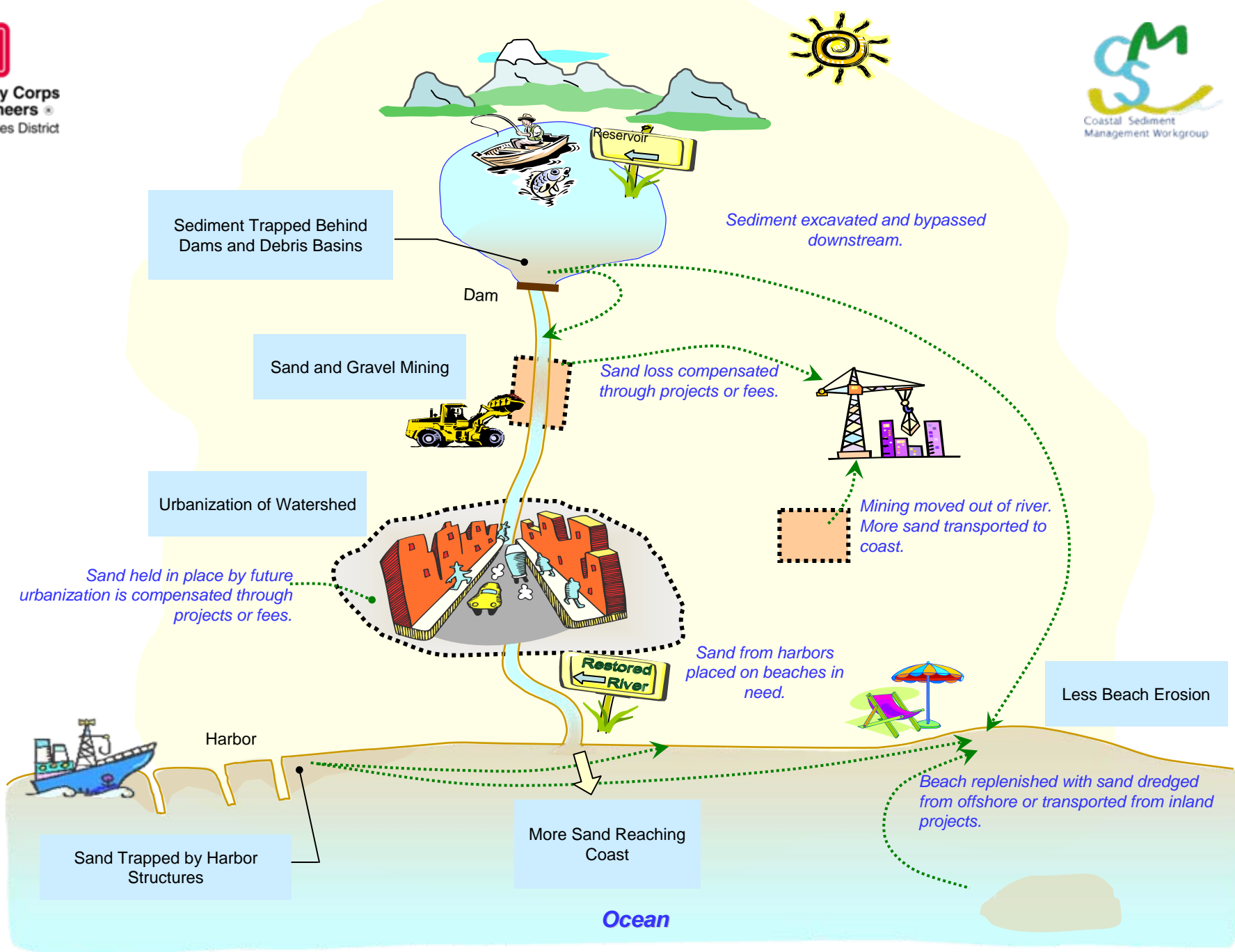
- [Spatial Data Website](#)
- [Coastal Sedmnts Benefit Analysis Tool](#)
- [Coastal Sediment References Searchable Database](#)

Information Documents

- [Sources, Dispersal and Fate of Fine Sediment Supplied to Coastal CA](#)
- [Beach Restoration Regulatory Guide](#)
- [Regional General Permit for Beach Nourishment](#)
- [Sand Budgets for California's Major Littoral Cells](#)
- [Economics of RSM Ventura/Santa Barbara Counties](#)
- [Cumulative Loss of Sediments to the California Coast from Dams](#)
- [SCOUP Pilot Mitigated Negative Declaration](#)
- [Coastal Sediment References](#)



**US Army Corps
of Engineers**
Los Angeles District



Regional Sediment (Sand) Management

CA Central Coast RSM Plan Recommendations :

- Study, Management, Policy, Projects
- Short –Mid-Long Term ➤ Priority H-M-L

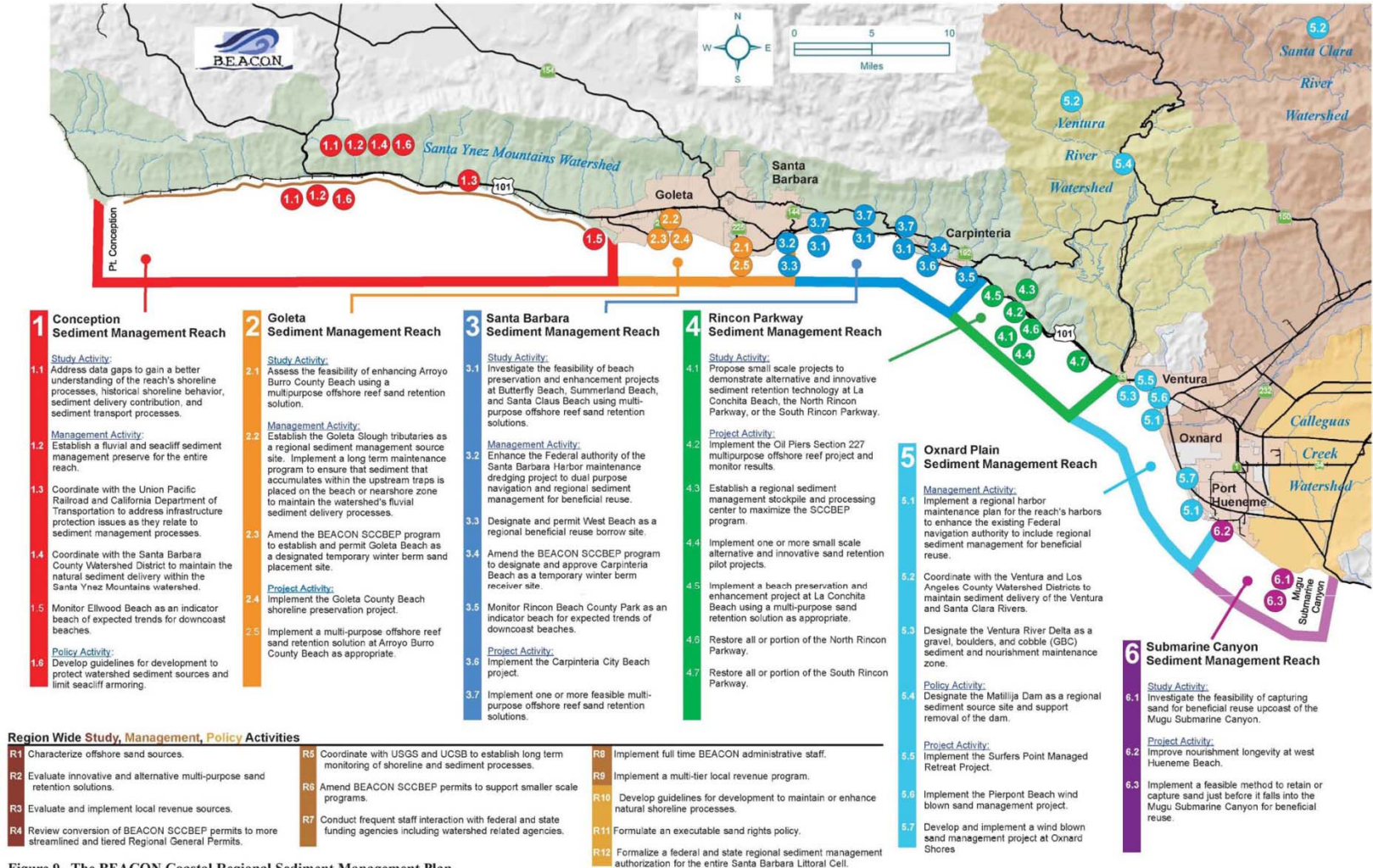


Figure 9. The BEACON Coastal Regional Sediment Management Plan

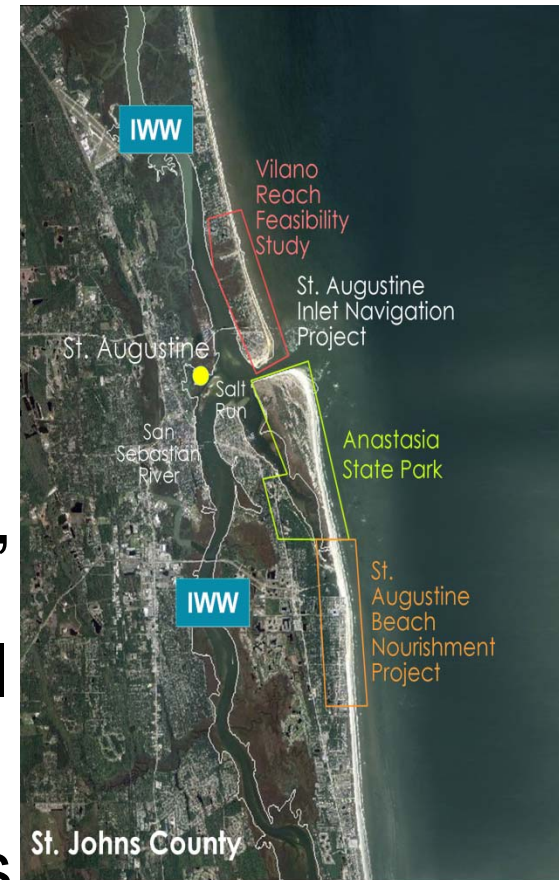
San Diego Coastal RSM Plan TOC

http://www.dbw.ca.gov/csmw/pdf/FinalRSM_SANDAG_4_1_09.pdf

- **INTRODUCTION**
 - Background and Goals
- **COASTAL PROCESSES.**
- **POTENTIAL COASTAL RECEIVER AREAS**
- **SEDIMENT SOURCES & QUANTITIES**
 - LOCATIONS – UPLAND, COASTAL (Lagoons, Harbors), OFFSHORE
- **SEDIMENT MANAGEMENT APPROACH FOR DIFFERENT TYPES OF SEDIMENT**
- **SOURCES**
 - UPLAND SEDIMENT, COASTAL, OFFSHORE
 - BYPASSING OF OFFSHORE SAND FROM MARINE CORPS BASE CAMP PENDLETON
- **SOLUTIONS**
- **ADDITIONAL CONSIDERATIONS OF ALTERNATIVES**
 - ECONOMIC FEASIBILITY
 - PROGRAM COSTS
 - PROGRAM BENEFITS
 - POSSIBLE FUNDING SOURCES
 - PERMITTING REQUIREMENTS
 - EXISTING PERMITS
- **GOVERNANCE STRUCTURE AND IMPLEMENTATION**
 - Legislation
 - Regulatory – city, county, general;
 - Incentives
 - Zoning Ordinances and Plans
 - *“Sandshed” planning Agencies*
 - *Environmental Review.*
 - IMPLEMENTATION CHALLENGES
- **MONITORING AND REPORTING**
- **DATA GAPS, NEXT STEPS**
- **REFERENCES**

Other RSM in Practice

- Dredging Schedule & Sediment Management coordination
- Restoration w/”emergency dredging”
- Stockpiling instead of losing material from system
- Use knowledge of system processes to inform alternative placement sites
- By-passing



5 projects in system

What is the Delaware Estuary and Watershed Sediment “Portfolio?”

- Who are the managers?
- What are the various Roles?
- ...and how might an RSM approach help integrate efforts to accomplish your vision?

