Sediment Placement Regulations of U.S. Coastal States and Territories: *Towards Regional Sediment Management Implementation*

2023 WEDA Eastern Chapter Meeting

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Mission

Support the shared work and vision of the coastal States and Territories for the protection, conservation, responsible use, and sustainable economic development of the nation's coastal resources

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Mission

ASBPA is dedicated to preserving, protecting and enhancing our coasts by merging science and public policy.

U.S. Army Corps of Engineers Institute for Water Resources

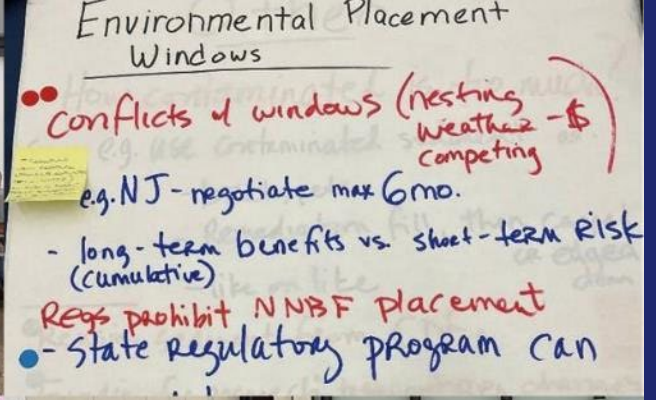
USACE initiated an assessment of relevant federal, state, and territorial policies and regulations related to Regional Sediment Management and BUDM.
The focus of this report is to:

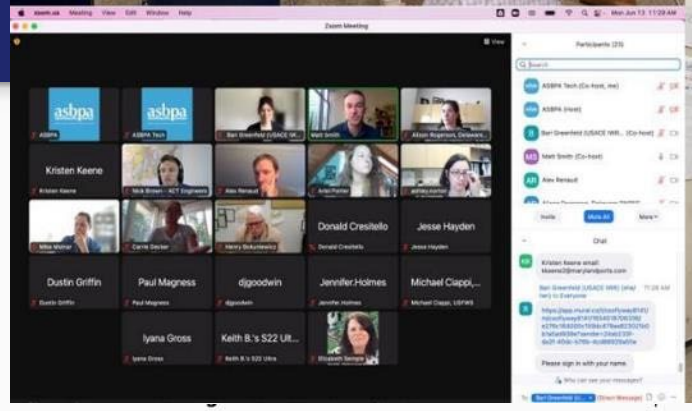
(1) enhance USACE understanding of state and territorial sediment management policies from the state and territorial perspective, and

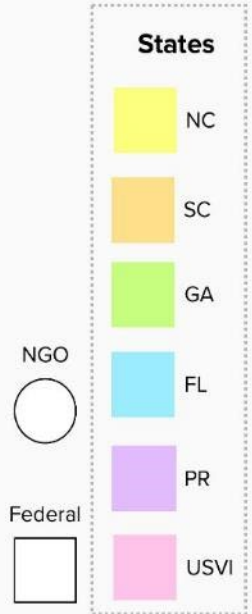
(2) elevate best practices for advancing RSM and BUDM.

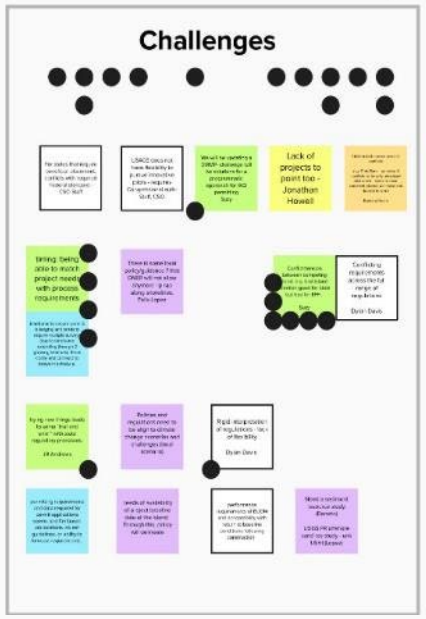
Co-Developed Recommendations

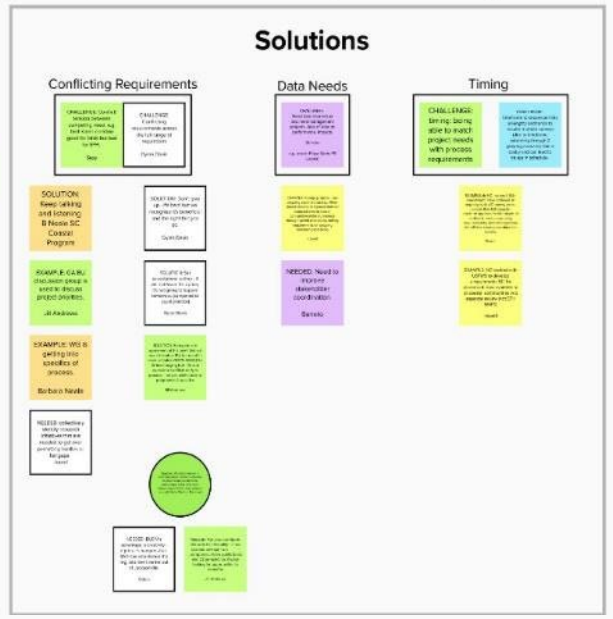
- 50 subject matter expert interviews
- 7 regional workshops
- 250+ state/federal coastal managers
- 25 presentations on BUDM successes











Regional Workshops

Region	Date	Location
Southeast/Caribbean	November 15, 2021	Virtual
New England	January 19, 2022	Virtual
Great Lakes	February 23, 2022	Virtual
Gulf of Mexico	April 25, 2022	Session at GoMCon Baton Rouge, LA
Mid-Atlantic	June 13, 2022	Monmouth University, Long Branch, NJ
Pacific Islands	August 9, 2022	Virtual
West Coast	September 13, 2022	Session at ASBPA Conference, Long Beach, CA

- **35 Coastal State and Territory Profiles**
- National and regional summaries
- Regulatory info for BUDM and sediment placement.
- **14 Case Studies**
- Successful approaches partners have taken to increase BUDM.
- **60 State and Federal Recommendations**:
  - Policy and regulation,
  - Interagency collaboration,
  - Funding,
  - Project development, and
  - Research needs.

Ohio
State Profile

Introduction

Ohio has prioritized increasing the beneficial reuse of dredged material, including through a 2020 statutory prohibition on open-Lake disposal. The Department of Natural Resources (ODNR) issues coastal permits and submerged land leases for shoreline placement projects, and the Ohio Environmental Protection Agency (Ohio EPA) reviews water quality certifications and regulates innovative upland placement.

ODNR maintains a harbor sediment authorization for Lake Erie dredge identifying sediment that does not require Ohio EPA solid waste permitting. In the shoreline stabilization context, nature-based solutions are encouraged, and if pursuing a NBS, using dredged material is encouraged.

ODNR's Coastal Program funds and coordinates multiple BUDM incentive programs, such as the Sandusky Bay Initiative. The Lake Erie Shore Erosion Management Plan (LESEMP) maps erosion rates and causes along the Ohio shoreline and provides site suitability analysis for erosion control methods, including sediment placement.

Permit Table

Permit	Authority	Description
ODNR Shore Structure Permit	O.R.C. § 1521.22	Applying to coastal construction and erosion control
ODNR Submerged Lands Lease	O.R.C. § 1506.11	Required for placement projects partially on state lands
Harbor Sediment Authorization	O.A.C. 3745-599-400 O.A.C. 3745-599-410	Lake Erie harbor dredged material covered by and managed in accordance with a harbor sediment authorization is neither a solid waste or other waste,
Coastal Erosion Area Permit		Required for coastal construction in within Coastal Erosion Areas
General BU Permit	O.A.C. 3745-599-200	Authorizes upland placement
Indiv. BU Permit	O.A.C. 3745-599-310	Authorizes upland placements
Ohio EPA Water Quality Certification	O.R.C. § 6111.03(O,P)	

Policies

- **BUDM Required:** Open water disposal of dredged material is prohibited. Dredge must be disposed of in a CDF or beneficially used. O.R.C. § 6111.32.
- **BUDM Encouraged:** ODNR requires (encourages USACE) dredged sand/gravel to be returned to shallow nearshore waters or beach-placed downdrift of the point of dredging. OCMP Policy 22
- **BUDM Encouraged:** Ohio may issue or renew a harbor sediment authorization for Lake Erie dredge that is not a hazardous waste and that is unlikely to create a nuisance or adversely affect public health, safety, or the environment. Lake Erie dredge that is covered by and managed in accordance with an effective harbor sediment authorization is neither a solid waste nor another waste for the purposes of its solid and hazardous waste regulations. O.A.C. 3745-599-400.
- **BUDM Encouraged:** The Lake Erie Shore Erosion Management Plan (LESEMP) maps erosion rates and causes along the Ohio shoreline and provides site suitability analysis for erosion control methods, including sediment placement.
- **BUDM Encouraged:** Sand- and gravel-sized sediments should be returned to the littoral system downdrift of the point of dredging. OCMP Policy 17.
- **NBS:** No statewide policy
- **Hydrodynamics Required:** ODNR considers impacts on the littoral zone, including sand transport, in issuing the Submerged Land Lease. O.A.C. § 1501-6-03(D)(2)(f).

Physical Sediment Conditions

- **Quantitative:**
  - Dredged sediment that is at least 80% sand is eligible for beach nouris
  - Dredged sediment that is at least 60% sand is eligible to be placed in t
  - O.R.C. § 6111.33; O.A.C. § 3745-32-05

Sand Source

- N/A

Water Quality

- Discharge of dredged material must not interfere with attainment/mainte 3745-32-05

Endangered Species & Critical Habitat

- **Minimize:** Projects in wetlands must minimize unavoidable impacts and, depending on the site's wetland category, may need to demonstrate social or economic development or public need. Compensatory mitigation may be required

Placement Guidelines & Restrictions

- Sand- and gravel-sized sediments should be returned to the littoral system downdrift of the point of dredging. OCMP Policy 17.

Resources

- **Coastal Permits and Lease Applications Booklet**
  https://ohiodnr.gov/static/documents/coastal/permits-leases/booklet-CoastalPermitsLease.pdf
- **Ohio Coastal Design Manual**
  https://ohiodnr.gov/business-and-industry/best-management-practices/coastal-erosion-and-shoreline-protection
- **Lake Erie Shore Erosion Management Plan**
  https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/coastal-management/coastalpropertyowners/LESEMP-documents
- **USACE "Dredging - What You Should Know" fact sheet**
  https://www.lrb.usace.army.mil/Portals/45/docs/regulatory/DistrictInfo/FactSheets/OhioDredgingFactSheet10May2013.pdf
- **Ohio Lake Erie Commission Website**
  https://lakeerie.ohio.gov/home

35 State Profiles

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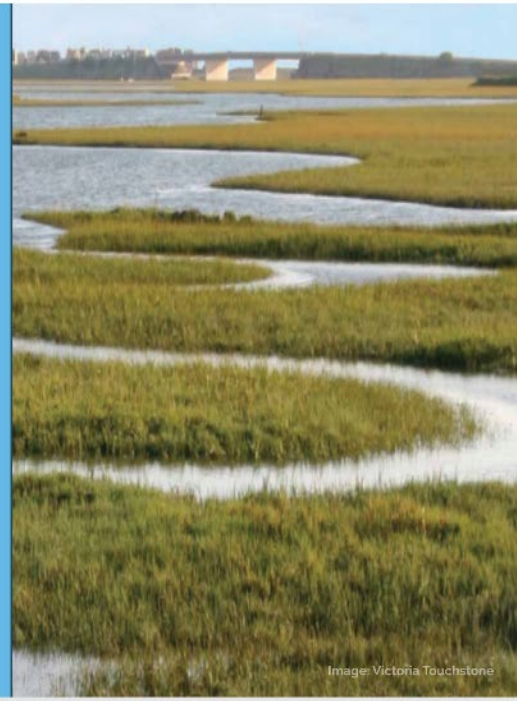
Sediment Placement Regulations of U.S. Coastal States and Territories

Seal Beach National Wildlife Refuge:

Permitting a Novel Adaptation Strategy in a Southern California Salt Marsh

The California State Coastal Conservancy, US Fish and Wildlife Service(USFWS), California Department of Fish and Wildlife, and other partners worked on a very successful pilot BUDM project. A layer (8-10 inches) of clean dredged sediments was added to 8 acres of a low elevation salt marsh within the Seal Beach National Wildlife Refuge in Orange County, CA. A rainbow sprayer and end-of-pipe baffle impingement placed approximately 22,000 CY of clean dredged material from the Main Channel West of Sunset/Huntington Harbour. This was one of the first known thin layer placement projects in the US west coast.

The goal of the pilot was to implement and evaluate the success of thin layer placement as a regional sea level rise and climate change adaptation strategy that can be used at regular intervals to ensure the long-term sustainability of Pacific coast marshes. Pre- and post-construction monitoring evaluated both the ecological response and the overall effectiveness of the project. Post-construction monitoring started immediately following dredged material placement and continued for 5 years.



Partners

USFWS, Orange County Parks, CA Dept. of Fish and Wildlife, California Coastal Conservancy, USACE, Naval Weapons Station Seal Beach, CA State Lands Commission, Southwest Wetlands Interpretive Association, University of California Los Angeles, USGS, California State University Long Beach, Chapman University

Key Information

- **Project type:** Habitat construction/restoration
- **Keywords:** Monitoring; thin-layer placement innovation; research
- **Location:** Seal Beach National Wildlife Refuge
- **Jurisdictions:** CA
- **Funding Source:** CA Dept. of Fish & Wildlife, CA Coastal Conservancy, USFWS, Orange County Parks, and USACE-ERDC.

- Matching Supply to Demand
- Interagency Collaboration & Permitting
- Funding
- Research
- Planning, Engineering & Design
- Construction & Operations
- Monitoring (Pre and post augmentation)

Lessons Learned Callout

Science was used to inform management planning. This included an experimental design with a robust monitoring program and a robust source sediment analysis that informed the project outcomes. Open communication with partners & permitting agencies. The success of the project was based on finding an advocate, obtaining seed funding, and securing major grant funding.

Monitoring included several criteria such as adjacent habitat & protected species monitoring, suspended sediment concentration, elevation, sediment accretion, plant recruitment, carbon sequestration, and others monitoring to paint a full picture of whether the project met its goals or not.

It took time to work through the many methods of determining elevation changes , amount of materials to build sediment barriers, e ect of barriers on tidal creek formation & tidal flushing.

The compaction of sediment, grain size, & loss of initial elevation due in part to subsidence was anotherchallenge that needed to be addressed.

Project Overview

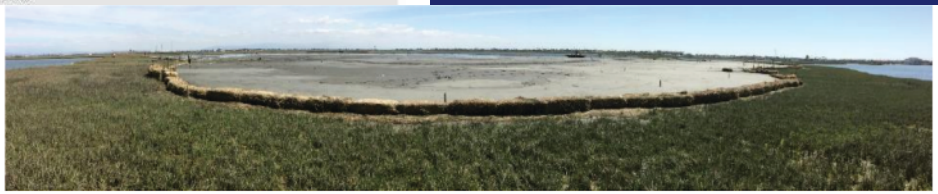
Tidal salt marshes dominate this 965-acre refuge calle (Refuge). The federally endangered light-footed Ridgv cated within the boundaries of the Naval Weapons Sta Fish and Wildlife Service as part of the National Wildli In 2007, partners came together to develop the USFW plan identified novel approaches to protect its endang comprehensive effort that required a review of all of th all of the Refuge stakeholders.

Once Refuge stakeholders helped select the strategy, conceptual design was put in place, it was time to brir and conferences. They found an advocate staff from a Conservancy (SCC). SCC provided seed funding for cc ($600,000). The total cost of project construction and ing was $3,305,554. The project team submitted grant applications, and identified the correct scientists to ad the project was finalized.

Timeline:

2012 - Comprehensive Conservation Plan completed v
2013 - Sea-level rise studies continue
2014 - Refuge & Orange County agree on sediment so
2014 - Coordination with permitting agencies
2015 - Grant funding (CDFW, CSCC, FWS); pre-augmer physical and biological conditions
2016 - Project construction
2016 - 2021 Post augmentation monitoring of physical and biolo
2021 - Final monitoring reports, lessons learned

14 Case Studies



A thin layer (8-10 inches) of clean dredged sediments was added to 8 acres of a low elevation salt marsh within the Seal Beach National Wildlife Refuge in Orange County, CA.

Image Credit: Evyan Borgnis Sloane, Victoria Touchstone

Funding Source

The cost of project construction and long term biological and physical monitoring is $3,305,554, which was obtained from the following agencies: Orange County Parks, CA Dept. of Fish & Wildlife, CA Coastal Conservancy, USFWS, Orange County Parks, and USACE-ERDC.

Additional Links

Seal Beach National Wildlife Refuge, Thin Layer Placement Project Sheet:
https://tlp.el.erdc.dren.mil/wp-content/uploads/2020/09/Project-Sheet_Seal-Beach-NWR_final.pdf

Seal Beach National Wildlife Refuge, Thin Layer Saltmarsh Sediment Augmentation Project:
https://dornsife.usc.edu/assets/sites/291/docs/CoSMoS/Seal_Beach_NWR_Salt_Marsh_Sediment_Augmentation_Project.pdf

Enhancing marsh elevation using sediment augmentation: A case study from southern California, USA (2021, Shore & Beach, 89(4), 21-32.):
https://asbpa.org/publications/shore-and-beach/shore-beach-in-2021-vol-89/enhancing-marsh-elevation-using-sediment-augmentation-a-case-study-from -southern-california-usa/

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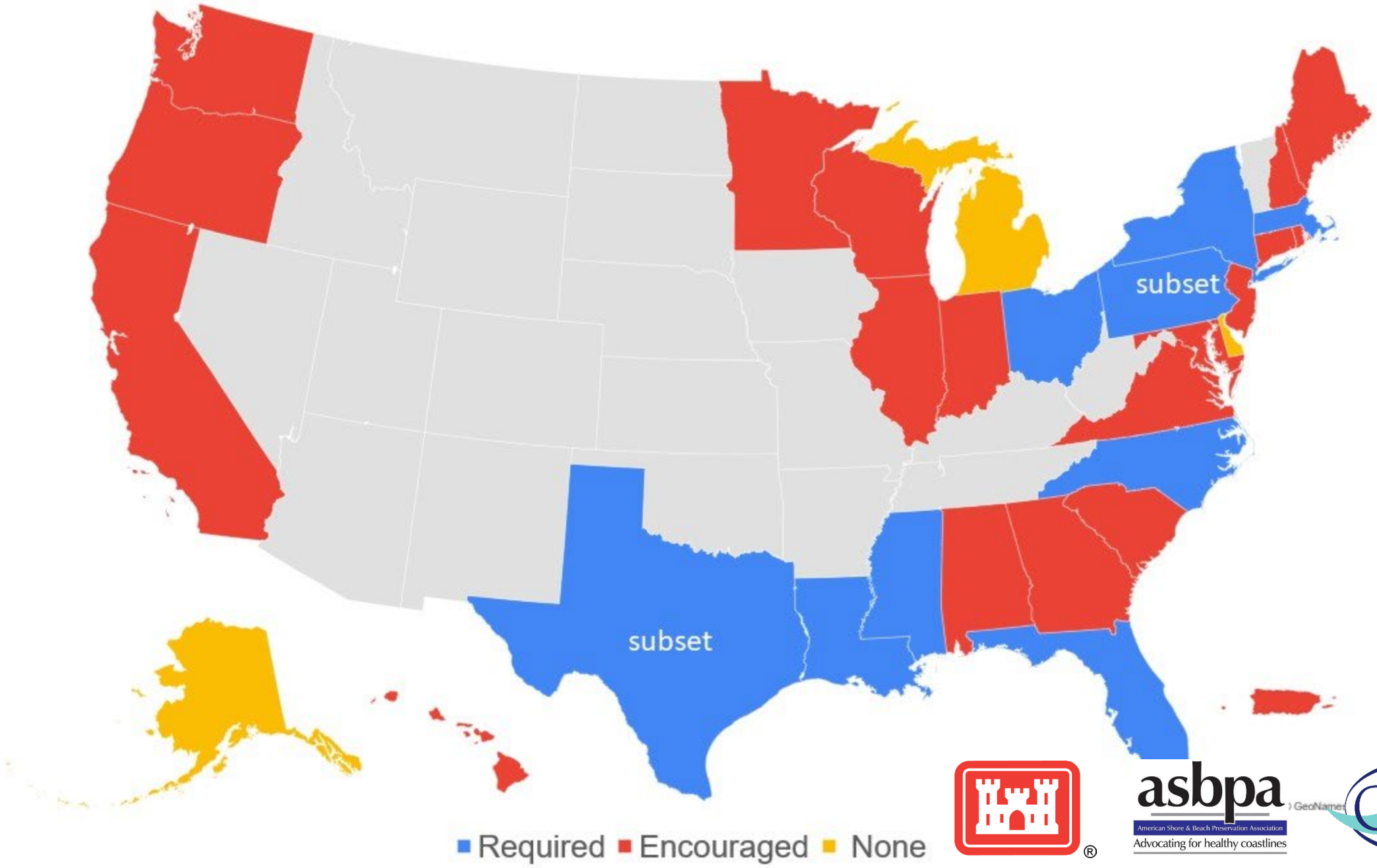
Coastal BUDM Policies



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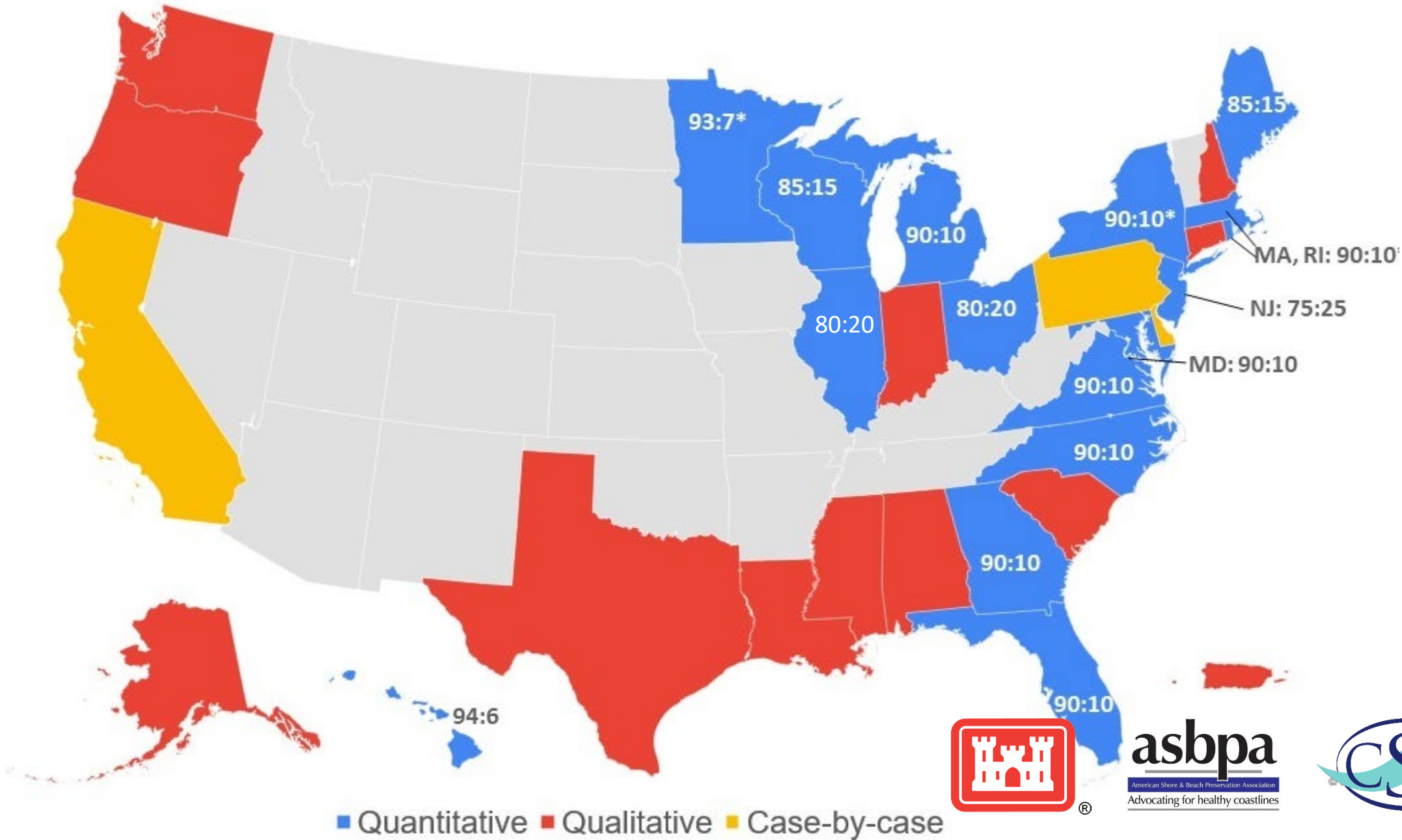
Coastal sediment regulations for BUDM placement

(and contaminants testing triggers*)



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Barriers & Opportunities

Matching Supply to Demand
- Sediment Suitability
- Proximity & Timing

Interagency Collaboration and Permitting
- Leadership & Staff Capacity
- Coordination, Project Identification & Planning
- Place, Culture, Justice, & Equity

Funding
- Non-Federal Cost Share & Budget Process
- Institutional Barriers & the Federal Standard

Construction, Operations, & Monitoring
- Equipment Availability
- Monitoring

Project Development and Review
- Setting Standards; Contaminant Testing
- Integration into the Littoral System
- Aligning Authorities & Dealing with Trade-Offs
- Innovative Design
- Public Perception & Stakeholder Engagement

Research
- Demonstrating Need
- Wetland Restoration Design Guidance
  Sediment Resource Inventories
- Sediment Suitability Regulations

National Trends

- Increased demand for economically-viable, finite sediment resources for coastal ecosystem projects, e.g., to help wetlands adapt to sea level rise
- Coastal stakeholders have expressed strong interest in coordination between navigation projects (sediment supply) and restoration projects (sediment demand)
- Federal and state regulations often cited as limitations:
  - Sediment placement regulations; Regulatory reviews, like mini-NEPAs; Reduced environmental work windows
- Challenges often blamed for increased costs and deferred maintenance
- Federal confined disposal areas are reaching capacity
- Congress and USACE have recognized these challenges:
  - WRDA 2016, Section 1122; WRDA 2020, Section 125(a)(2)(B)
  - USACE goal to increase BUDM to 70% by 2030

Recommendations: State

Policy and Regulatory

- Require exemption / analysis to support non-BU placement
  - **FL, LA, MA, MS, WA**: Sediment must be beneficially used unless exemption applies
  - **NY, NC**: Sediment must remain in the system
  - **MD, MN, NH, RI**: Hierarchy of preferred disposal methods
  - **TX**: Require cost-benefit analysis of BU placement alternatives
- State general permits and USACE PGPs (e.g., MI, LA)
- Waive testing requirements above certain grain sizes for BUDM projects (e.g., NJ, RI)
- Waive solid waste approvals (e.g., MN, NY) or fees (e.g., IN, MS)

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Recommendations: State

Interagency Collaboration

- Regular meetings, standing groups/committees (e.g., regional dredge teams)
- Align permitting requirements and processes – science and data
- RDMMPs, science-based sediment management plans

Funding

- Leverage multiple funding sources/purposes for a dredge-to-placement pipeline
- Coordinate with USACE on cost benefit data needs

Project Development and Review

- Clear topic-based (not authority-based) joint guidance
- One-stop-shop permitting, pre-application meetings
- Site-suitability modeling and programmatic reviews

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Recommendations: Federal

Policy and Regulatory

- 70% by 2030 goal
- WRDA 2020 Sec. 125 guidance
- PR&G ASPs

Interagency Collaboration

- Regional dredge teams
- Managing trade-offs across agencies
- National Shoreline Management Strat recs

Funding

- Federal standard CBA practices
- Consistency with state policies
- Cost share / match eligibility & flexibility

Project Development and Review

- RDMMPs
- Pilot projects

Recommendations: Research

- Quantify sediment needs for national coastal resilience (multi-year, multi-system)
- More cost-effective sediment screening methods
- Protocols for data collection interoperable across sediment types, equipment, project areas
- Predictive models for sediment characteristic changes
- National tools and geodatabases
- Sediment inventories: expand coverage, detail

Thank You!

www.coastalstates.org/budm

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