2015 Living Shorelines & Coastal Restoration

NJDEP Coastal and Land Use Planning
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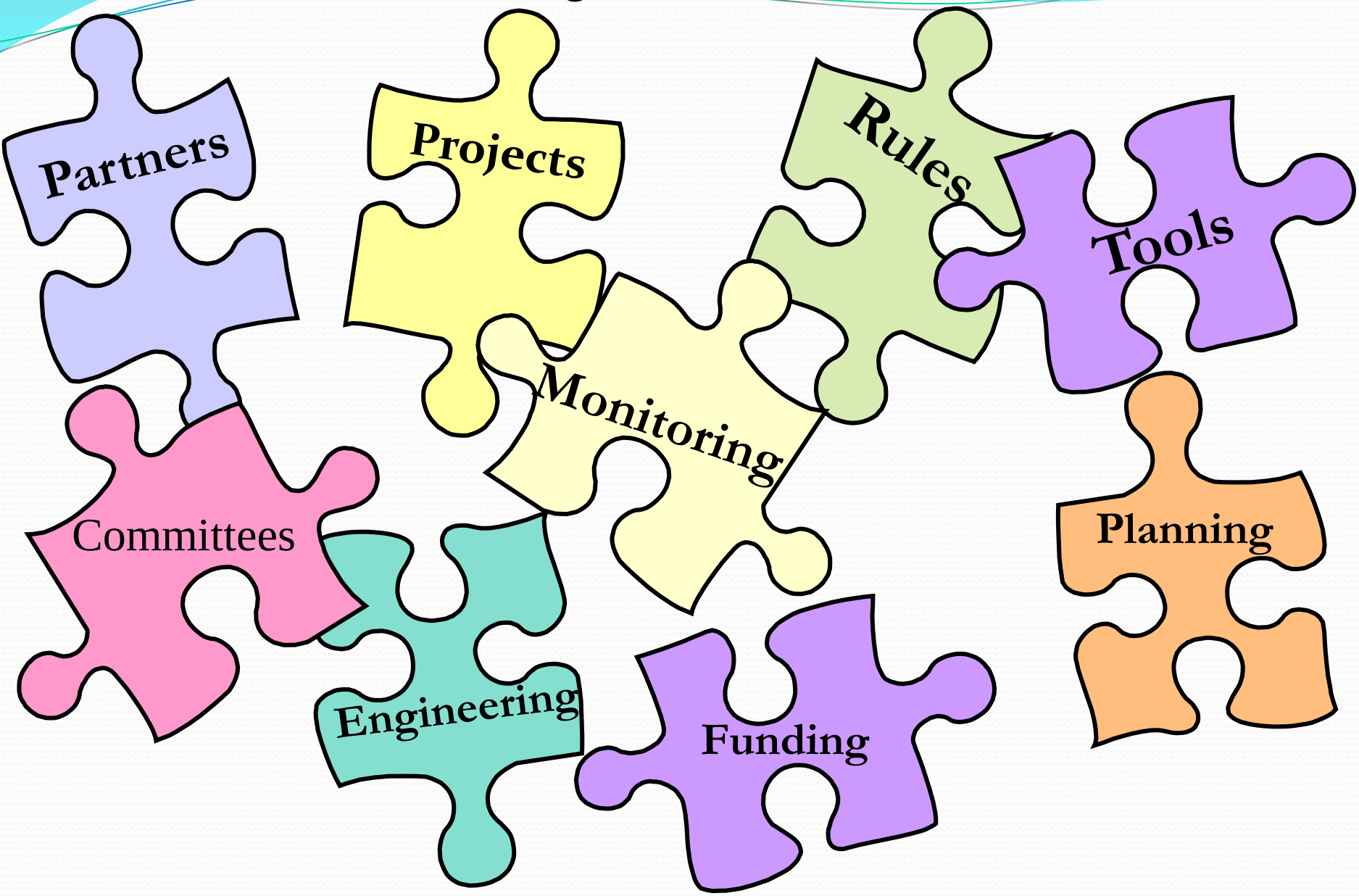
Wake-up Call
Just Ahead

Rules

Living Shorelines



Revised Coastal Rules

- June 17, 2013 – Emergency adoption of the Coastal Zone Management and Coastal Permit Program Rules.
- Revisions to Coastal Regulations encourage and promote habitat creation, restoration, enhancement and living shoreline activities

Rules were written to allow habitat and living shorelines without requiring them

Living Shoreline

means a shoreline management practice that addresses the loss of vegetated shorelines and habitat in the littoral zone by providing for the protection, restoration or enhancement of these habitats. This is accomplished through the strategic placement of plants, stone, sand, or other structural and organic materials.

There are three types of living shorelines:

1) Natural
   - vegetation, submerged aquatic vegetation, fill, and biodegradable organic materials
2) Hybrid
   - low-profile rock structures such as segmented sills, stone containment, and living breakwaters seeded with native shellfish
3) Structural
   - include, but are not limited to, revetments and jetties

DEP Living Shoreline Workgroup

- Workgroup is made up of representatives from all programs in DEP including Planning, Regulatory, Science, Engineering, Resource and Regulatory.
- Intended to be proactive and get involved early in the planning/design process to assist in the design, identify red flag issues and make the regulatory process go smother.

- Lessons learned will be rolled back into coastal policy and regulation

Community Resiliency Planning Activities

- NJDEP Coastal Management Program
- Coastal Community Vulnerability Assessment & Mapping Protocol
- Resilient Coastal Communities Initiative
- Municipal Public Access Planning & Vulnerability Assessment
- Building Ecological Solutions to Coastal Community Hazards
- Wetland Program Development: Development of a Living Shoreline Program for NJ

EPA Program Development Grant

- Development of a Living Shoreline Program for New Jersey
  - Revised Living Shoreline Strategic Direction
  - Analysis of other Living Shoreline programs/rules
  - Regional living shoreline pilots
  - A website will be created that informs all parties on all things living shorelines within New Jersey

Engineering Design Guidelines for Living Shorelines

- Developed by Stevens Institute of Technology for NJDEP
- Funded by NOAA, NJ Coastal Zone Management Program Grant

Mitigating Shoreline Erosion along the Hudson River Estuary's Sheltered Coasts — Alternative 1

Engineering Guidelines for Living Shorelines Projects

What is a Living Shoreline?

A living shoreline is a shoreline stabilization or habitat restoration approach which involves the use of both natural and man-made materials to achieve its objectives. While originally applied only to marsh sill projects, the term "living shoreline" has evolved to take on a broader meaning which encompasses a wide variety of projects that incorporate ecological principles into engineering design.

Why Develop Guidance?

This guidance was developed to provide engineering consultants, regulators, and private property owners with a consistent framework to ensure that living shorelines projects built within the State of New Jersey are designed, permitted, and constructed in a consistent manner using the best available information. The guidance is being developed at a critical time when living shorelines projects are becoming an increasingly popular alternative for stabilizing shorelines and restoring natural habitat. In July 2013, the State of New Jersey officially adopted Coastal General Permit 29 (N.J.A.C. 7:7-7.29) which was written to encourage the use of innovative living shorelines techniques and to remove some of the regulatory impediments to their adoption.

Approach

The approach taken in developing the engineering guidelines was to identify the set of factors which most frequently play a critical role in the success or failure of a living shorelines project, and then to outline a meth-

	Marsh Sill	Breakwater	Revetment	Living Reef	Reef Balls
System Parameters					
Erosion History	***Low-Med***	***Med-High***	***Med-High***	***Low-Med***	***Low-Med***
Sea Level Rise	Low-Mod	Low-High	***Low-High***	Low-Mod	Low-Mod
Tidal Range	***Low-Mod***	Low-High	Low-High	***Low-Mod***	Low-Mod
Hydrodynamic Parameters					
Wind Waves	***Low-Mod***	***High***	***Mod-High***	***Low-Mod***	***Low-Mod***
Wakes	***Low-Mod***	***High***	***Mod-High***	***Low-Mod***	***Low-Mod***
Currents	Low-Mod	Mod-High	Mod-High	Low-Mod	Low-Mod
Ice	***Low***	***Low-Mod***	***Low-High***	***Low***	Low-Mod
Storm Surge	Low-High	***Low-High***	***Low-High***	Low-High	Low-High
Terrestrial Parameters					
Upland Slope	Mild-Mod	Mild-Steep	***Mild-Steep***	Mild-Steep	Mild-Steep
Shoreline Slope	***Mild***	***Mild-Steep***	***Mild-Steep***	***Mod***	Mild-Steep
Nearshore Slope	***Mild***	***Mild-Mod***	Mid-Steep	***Mild-Mod***	***Mild-Mod***
Offshore Depth	Shallow-Mod	Mod-Deep	Shallow-Deep	Shallow-Mod	Shallow-Mod
Soil Bearing	Mod	***Mod-High***	***Mod-High***	Mod	***Mod-High***
Ecological Parameters					
Water Quality	Poor-Good	Poor-Good	Poor-Good	***Good***	***Poor-Good***
Soil Type	***Any***	Any	Any	Any	Any
Sunlight Exposure	***Mod-High***	Low-High	Low-High	Low-High	Low-High

Relevant Parameters

System Parameters
Erosion History
Sea Level Rise
Tidal Range

Hydrodynamic Parameters
Wind Waves
Wakes
Currents
Ice
Storm Surge

Terrestrial Parameters
Upland Slope
Shoreline Slope
Nearshore Slope
Offshore Depth
Soil Bearing Capacity

Ecological Criteria
Water Quality
Soil Type
Sunlight Exposure

Additional Considerations
End Effects
Existing Ground Conditions
Debris Impact
Project Monitoring

STEVENS INSTITUTE OF TECHNOLOGY
DAVIDSON LABORATORY

Funding Attention Deficit Syndrome F.A.D.S

Once the funding is gone,

the science is gone,

partners are gone…

Who's left…

CITIZEN SCIENTISTS


NEW BEGINNINGS
THE JOURNEY HAS JUST BEGUN