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Science, Service, Stewardship

Capital Grants
and Shoreline Armoring

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NOAA
RESTORATION
CENTER NORTHWEST

Grant-based Implementation

Grant programs are symbolic:

- Social acceptance of the need for action
- State and/or federal interest in action
- Funding and social motive may precede full knowledge or strategy
- Nearshore sediment work demands real adaptive management

Learning is hard

- Monitoring is only one tool – the goal is to build and use knowledge
- Principal barriers to 'learning' may be cultural (regardless of monitoring)
- The objective is to create a 'learning organization' (*sensu* Salafsky & Margoluis, 1999)
- Effective learning is not external to the grant program
- The outcome of learning is the adaptation of the program
- No incentive systems for grant programs to generate knowledge
- Grant program may have been developed on the assumption that the problem is known and tractable using capital projects

Grant-based Implementation

Grant programs can provide:

- capital
- implementation networks
- a universe of potential projects
- a policy audience
- implementation mechanisms
- hypothesis testing venue

All that is lacking is a technically rigorous strategy

Limited work on beach systems

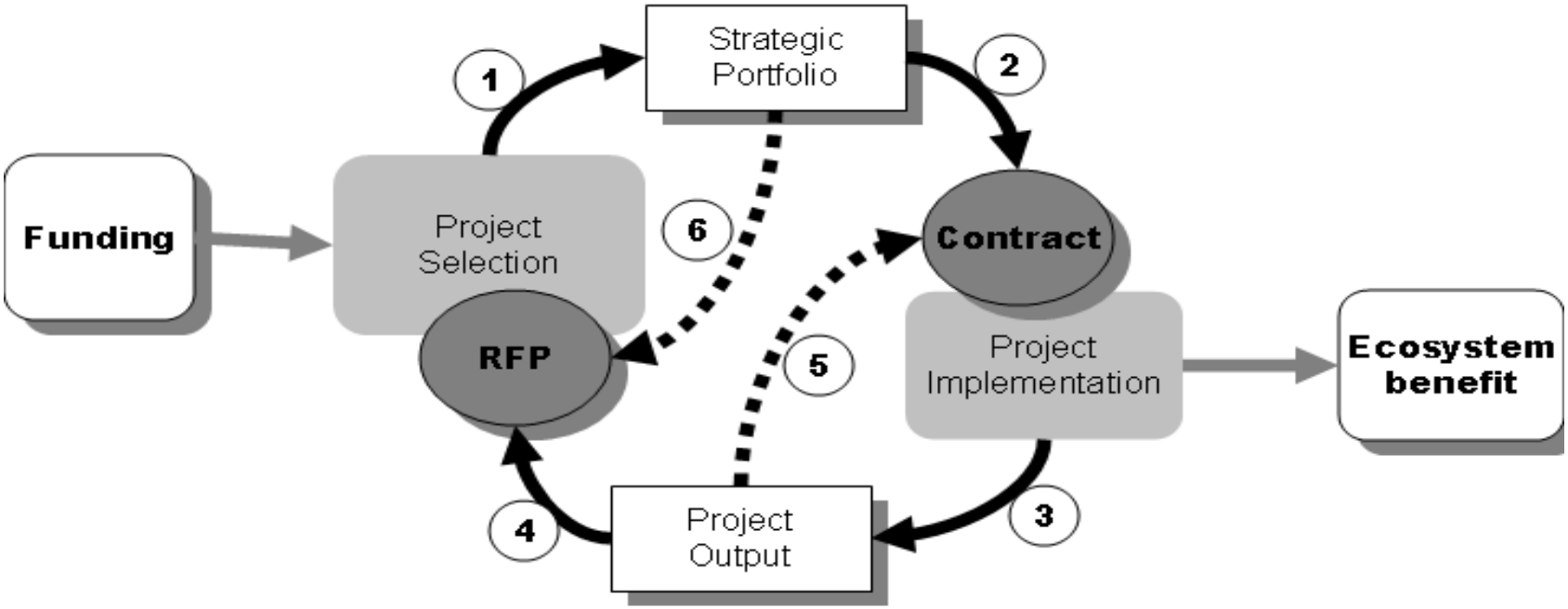
Limited grant proposals for armor removal – limited assessment

- Camp Seymour YMCA (2002)
- Stavis/Boyce Creek NRCA (primarily barrier estuary fill removal (2009)
- Weyer Point (limited down drift benefit) (2006)
- Seahurst Park (not an exemplary sediment management project (2007)

Protection of sediment sources is rapidly developing

- Normandy Park (2006)
- Lily Point (2007, 2009)
- Beaconsfield (with subsequent restoration) (2009)
- Point Heyer North Acquisitions (2009)

Core program activity



…how do we retrofit a grant system for early action on sediment management

Contracting for learning

1. Site identification (based on program goals and AM objectives)
2. Negotiation (communications strategy/incentives)
3. Protection (long term stewardship strategy)
4. Feasibility (consistent conceptual modeling)
5. Design (project evaluation strategy)
6. Implementation (treatment documentation)
7. Evaluation (adaptable program)

Programmatic tools

1. Project classification
2. Ranking criteria
3. Adaptive management objectives
4. Project development and documentation specs
5. Rapid assessment protocols (screening)
6. Project enhancements (investigation)
7. Publication and facilitation (web based and interpersonal)
8. Policy review

A Socio-economic narrative

- Shoreline property owners are systematically and carelessly damaging beach systems to protect private property value
- The proper ‘cost’ of armoring is obscured by insurance subsidies, rotating ownership, and failure to account for injury to the ‘common wealth’
- We are completely failing to regulate sediment supply and capital projects can supplement but not replace necessary regulation
- Slowly but surely our beach systems will lose critical biotic function and will not be resilient to climate change
- When beach ecosystems fail critical food webs collapse, food security is reduced, our cultural heritage is diminished, and we are left with a legacy of mounting infrastructure costs

An ecological setting

- We live among 800 independent beach systems that collectively provide a substantial portion of ecosystem goods and services
- Each of these systems can be characterized in terms of:
  - jurisdictional diversity
  - ownership structure
  - non-ecological economic value
  - erodability
  - fetch and wind period
  - depositional structures (often shared by two systems)
  - sediment source
- This character defines sensitivity to critical armoring effects and resistance to management

Defining a critical problem

#1 – Loss of sediment supply primarily through disconnection of specific high volume sediment sources

#2 – Loss of local habitat function though burial and truncation of beaches, exacerbated by fixed structures on retreating shorelines

Armoring is symptomatic of a ‘constellation’ of impacts stemming for population density and development of shorelines

We will be offered ‘easy’ projects in low energy environments that do not address this ‘critical problem’

A role for capital programs

- *Early actions must actively advance the social narrative*
- Defining and maximizing potential benefit from two target project classes:
  1. Protection and restoration of sediment supply
     - contribution of action within cell
     - likelihood of whole system protection
  2. Restoration of localized habitat
     - cost per linear foot
     - biogeography (island, corridor, refuge)
     - sites subject to shoreline retreat
- Develop a triage strategy based on characterization of classes of shorelines

Critical spin-off benefits

- Build broad-scale ‘plain talk’ education – advance the narrative
- Use capital projects to incentivize regulatory responsibility
- Identify and advance AM objectives – (focus on advancing narrative)
- Develop and build durable ‘centers of expertise’

Accessing private property

Meaningful action will require access to private property

Communications

- Identification of existing jurisdictional and private networks
- Development of local outreach and communication strategies

Incentives

- Public benefit rating system
- Tax break for home relocation
- Long term sediment stewardship