



LOUISIANA BARRIER ISLAND SYSTEM MANAGEMENT

P. Soupy Dalyander¹, Mike Miner¹, Wes LeBlanc², Syed Khalil²,
Justin Merrifield², Greg Grandy², Alyssa Dausman¹



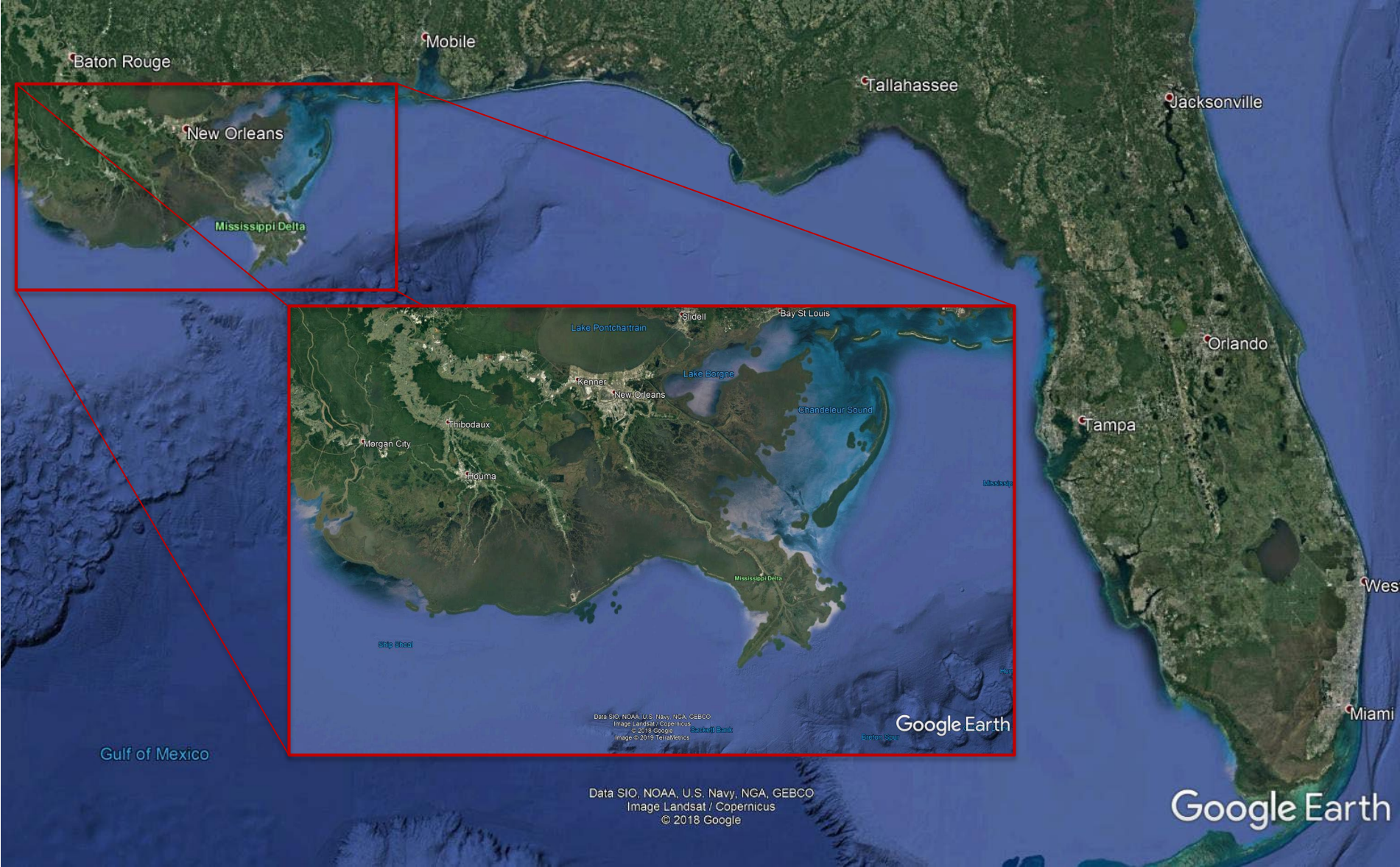
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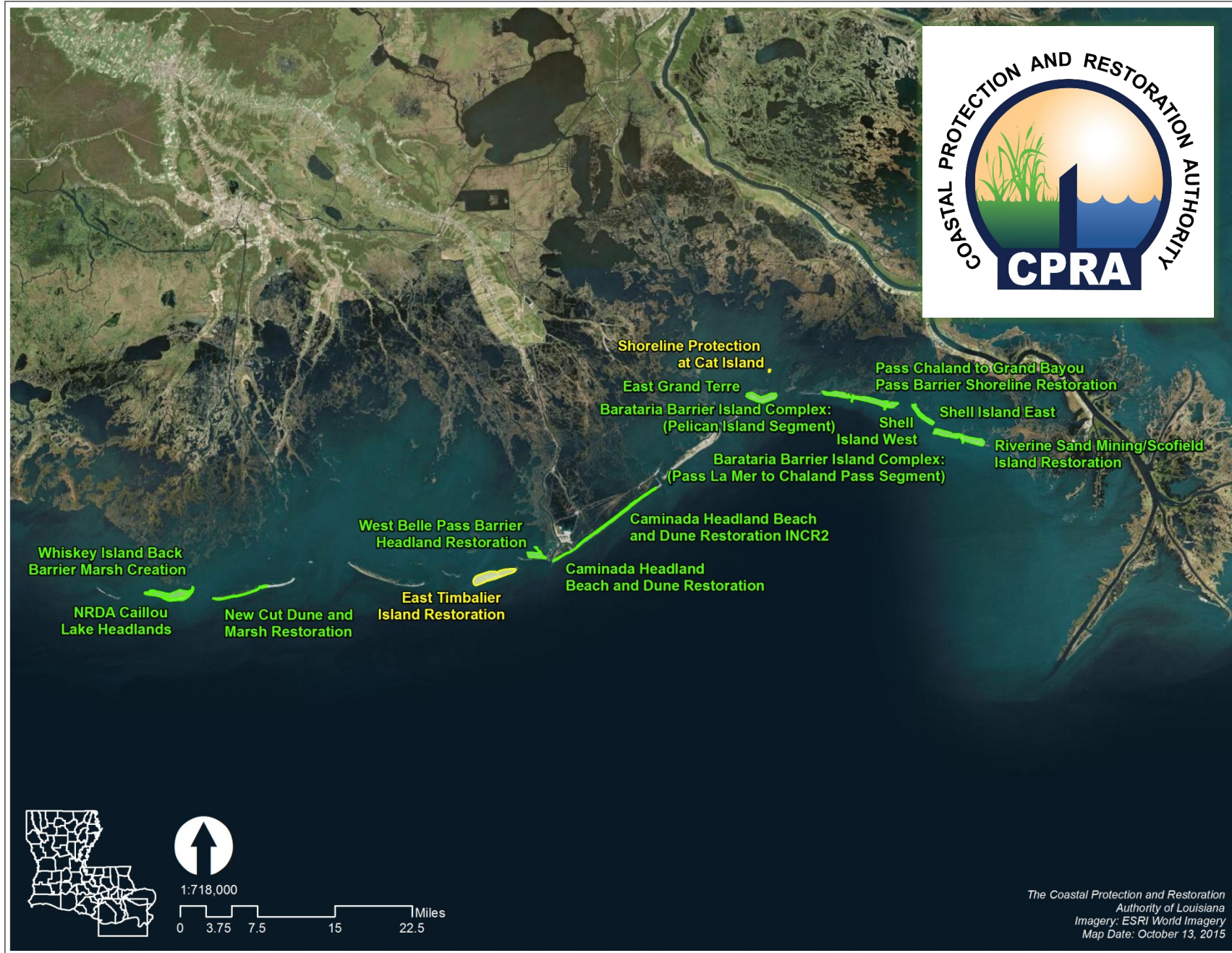


¹The Water Institute of the Gulf

²Louisiana Coastal Protection and Restoration Authority

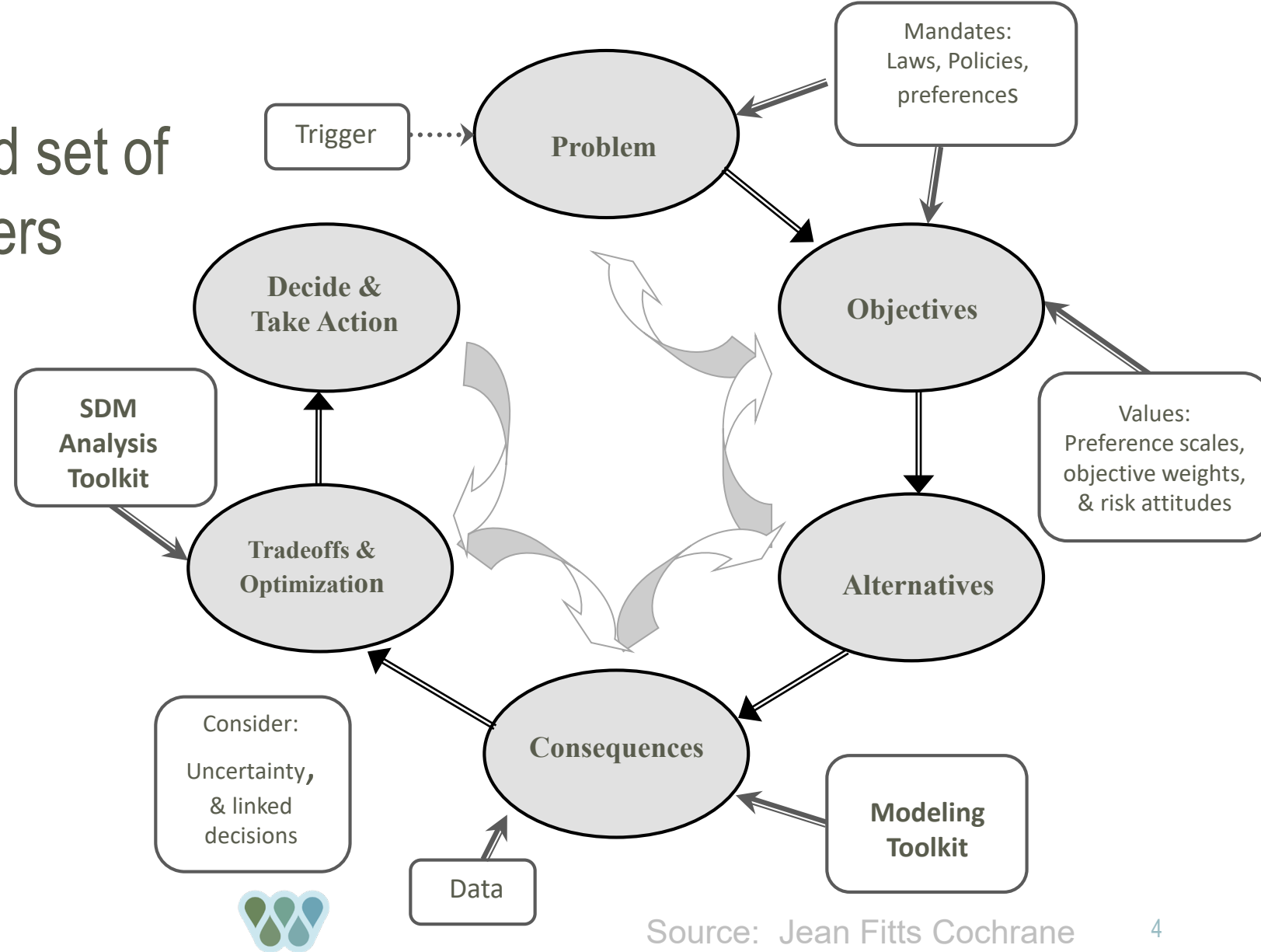
LOUISIANA BARRIER ISLAND RESTORATION





STRUCTURED DECISION-MAKING (SDM) APPROACH

- SDM is the use of a broad set of tools to aid decision makers
- Key benefits:
 - Objectives-orientated approach
 - Structure to directly incorporate data and science-based tools in decision-making



OBJECTIVES FRAMING

Ecological Objectives

Objectives may be project-specific, or individual projects may contribute to state-level objectives of habitat creation

Intertidal habitat

Beach habitat

Marsh habitat

Shallow water habitat

Estuarine water quality
(e.g. salinity)

Habitat Objectives

Coastal Protection and Economic Objectives

Objectives will vary depending on island location, presence or absence of cultural resources or infrastructure, etc.

Wave attenuation

Interior wetland protection

Infrastructure protection

Cultural resource protection

Minimize project cost

Minimize costs while still satisfying other objectives

Local and regional objectives of individual restoration projects must also be achieved

Available sand
NS, OS, River

Choice of sand source influences initial project cost and island integrity over time

Barrier Island Program Costs

Individual projects contribute to overall barrier island program costs

Regulatory Processes

Regulatory constraints dictate restoration cost, feasibility, and timeline

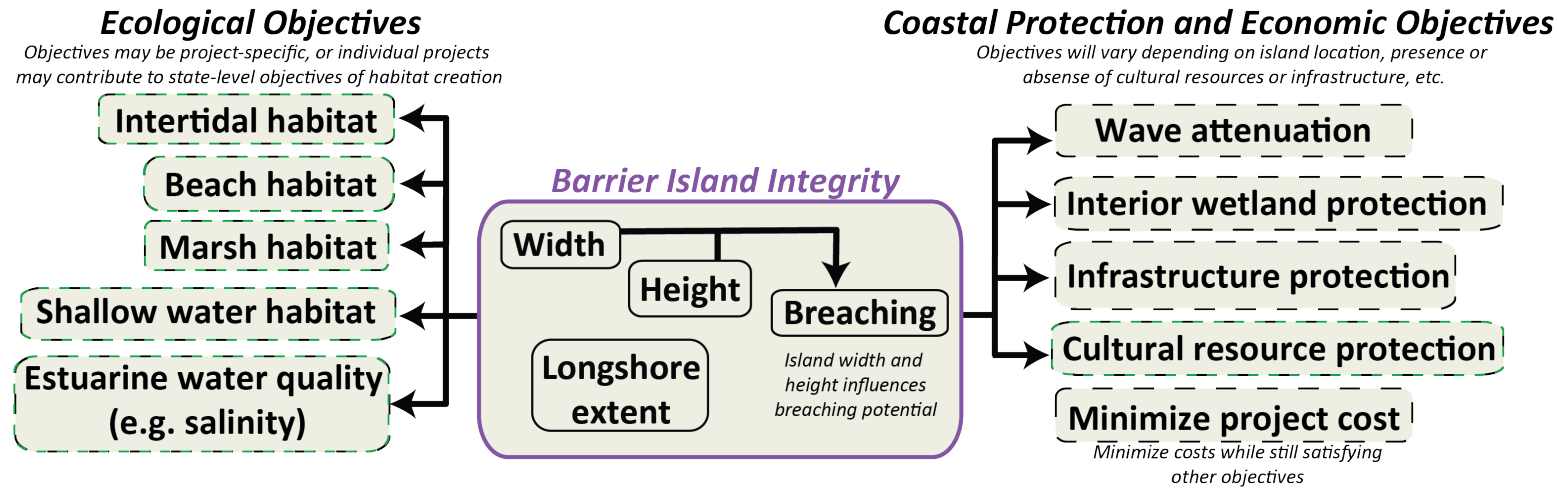
Engineering Best-Practice

Monitoring of performance informs best-practice for use in future projects

Management program objectives:



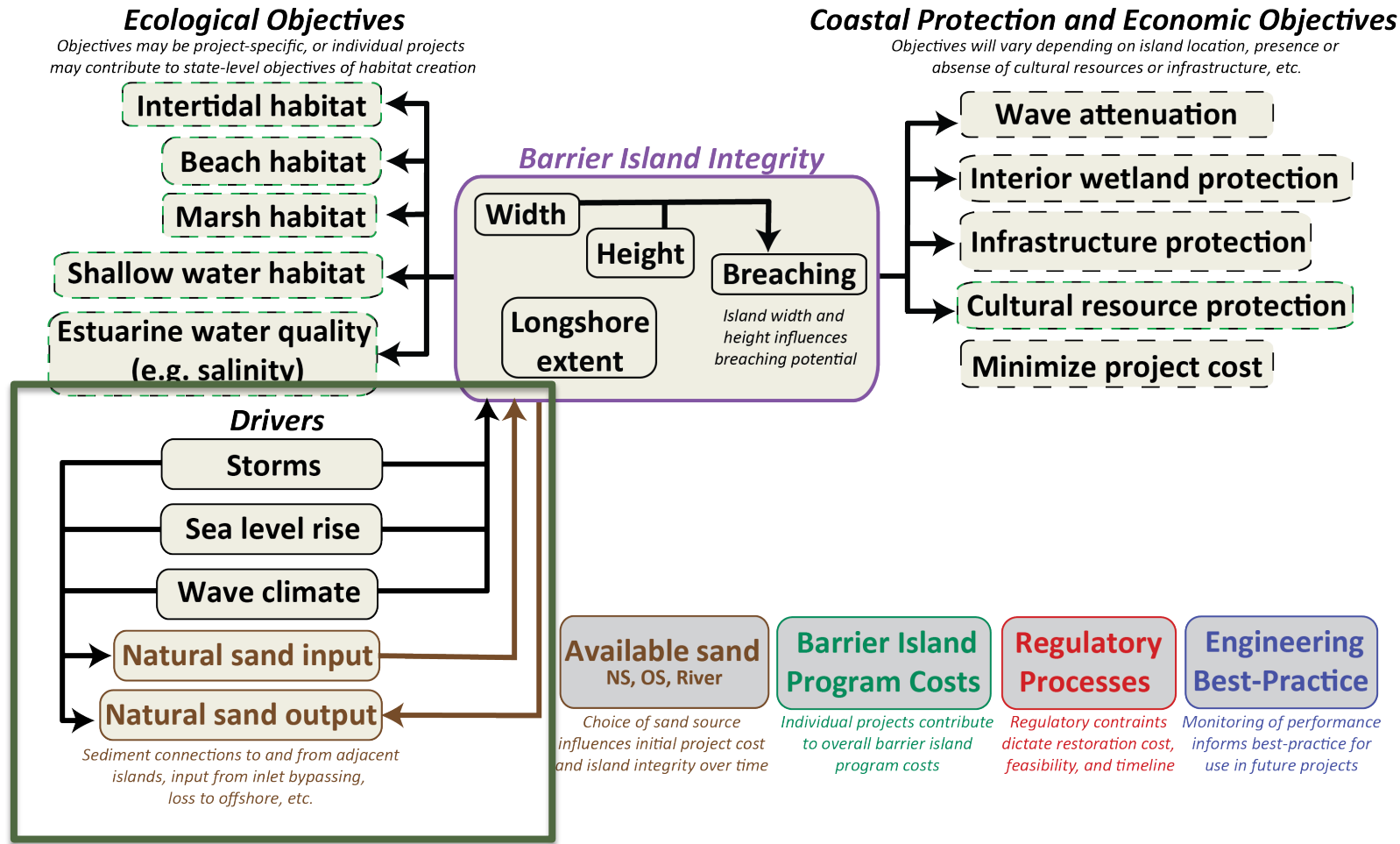
BARRIER ISLAND FRAMEWORK



Objectives are met through program management of barrier island integrity



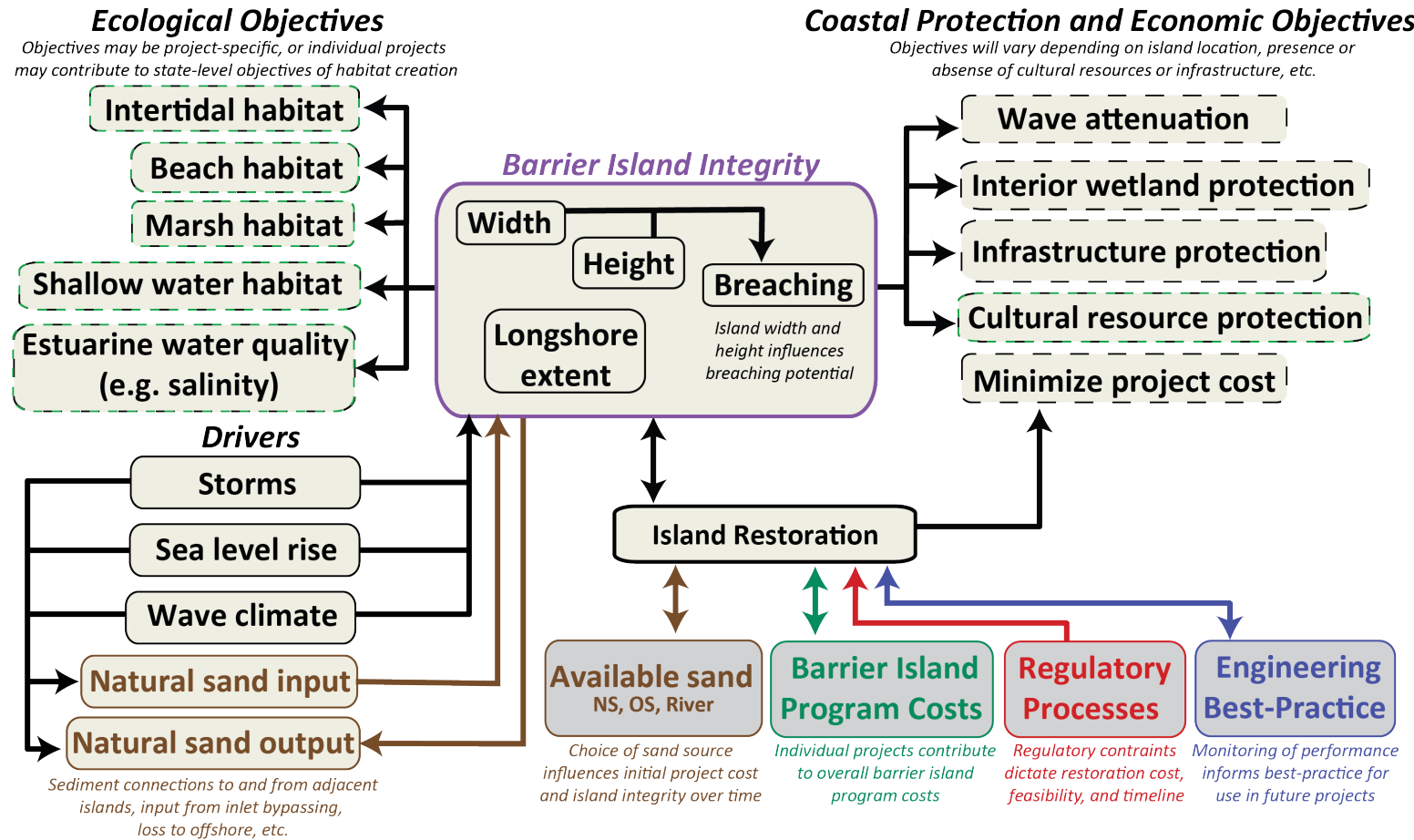
BARRIER ISLAND FRAMEWORK



Challenges: uncertainty in external drivers, connectivity across islands/projects, etc.



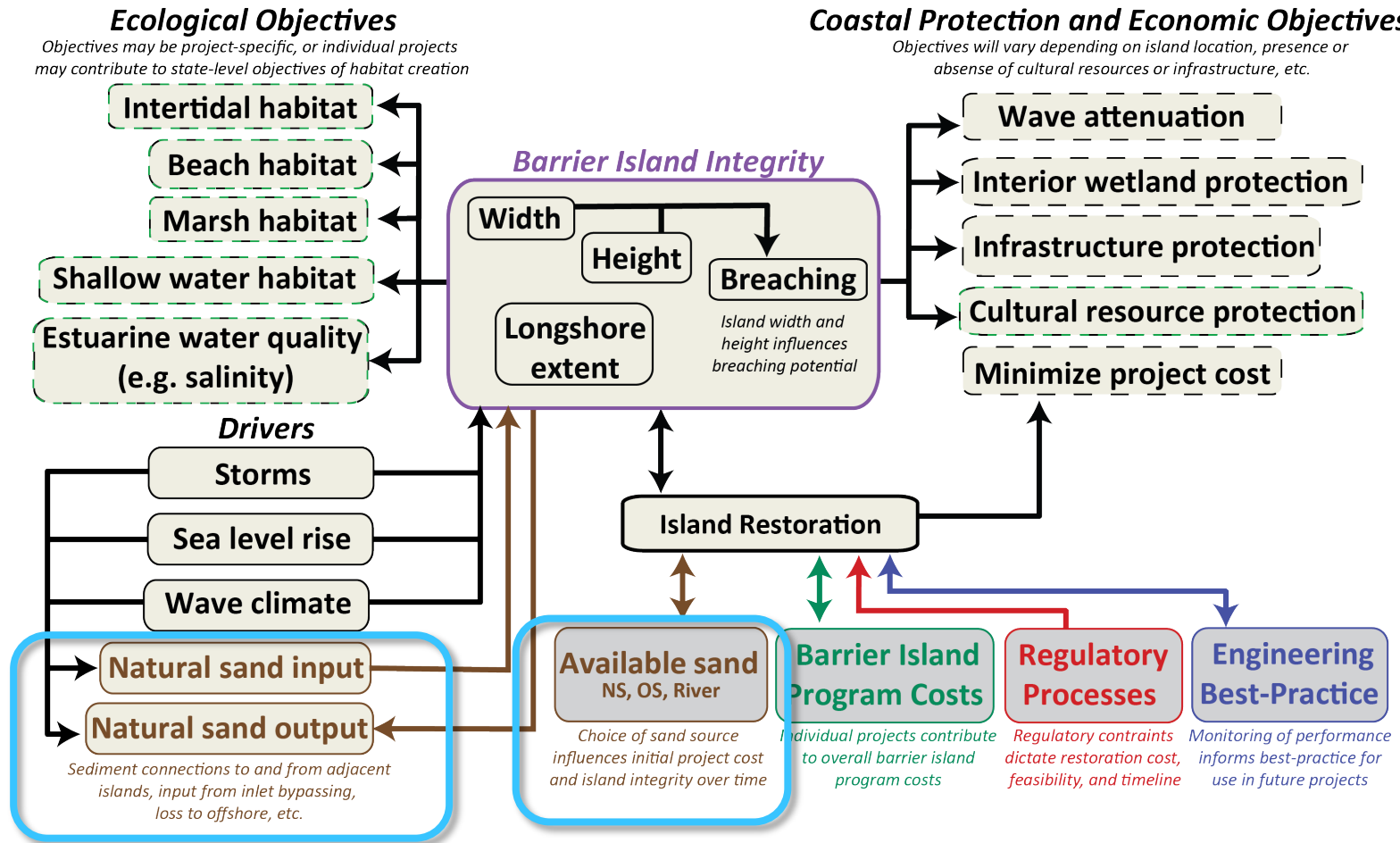
BARRIER ISLAND FRAMEWORK



End product: framework that estimates island maintenance needs based on management objectives and existing or targeted new data/models



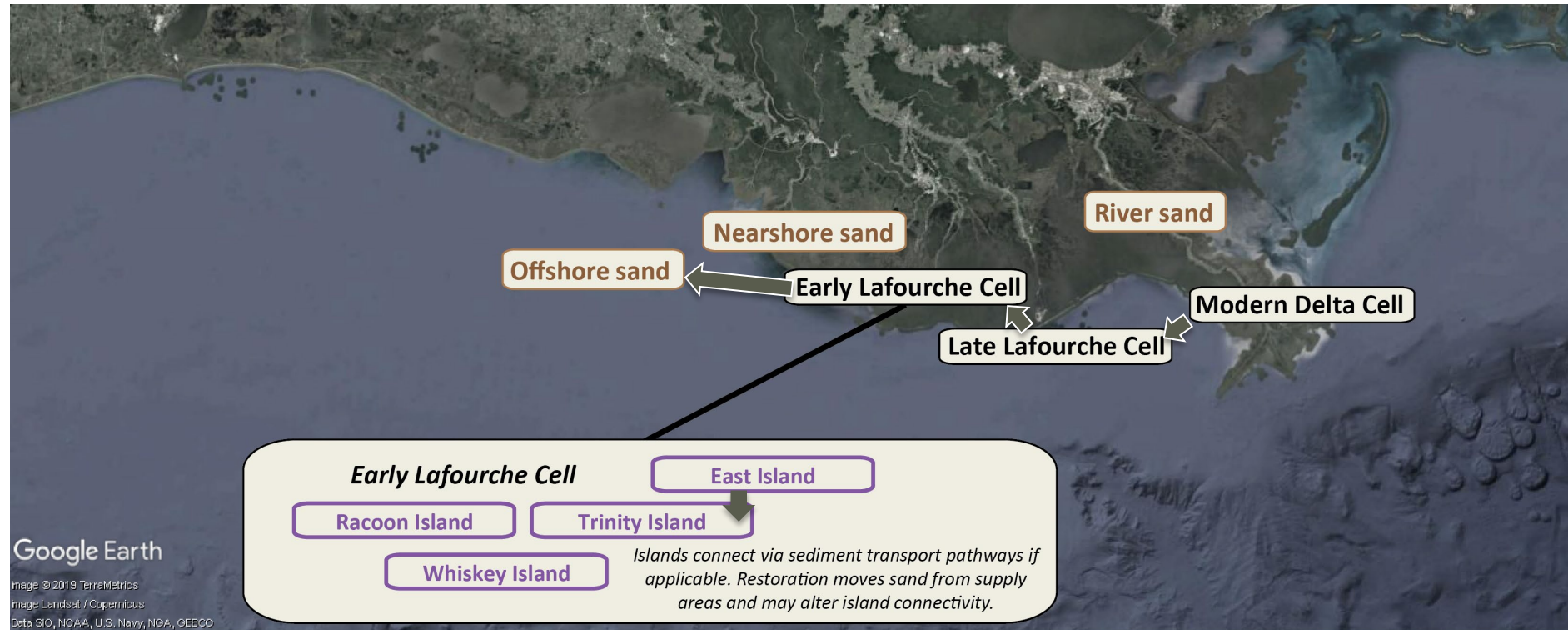
BARRIER ISLAND FRAMEWORK



Last component: putting barrier island structures into regional sediment management framework



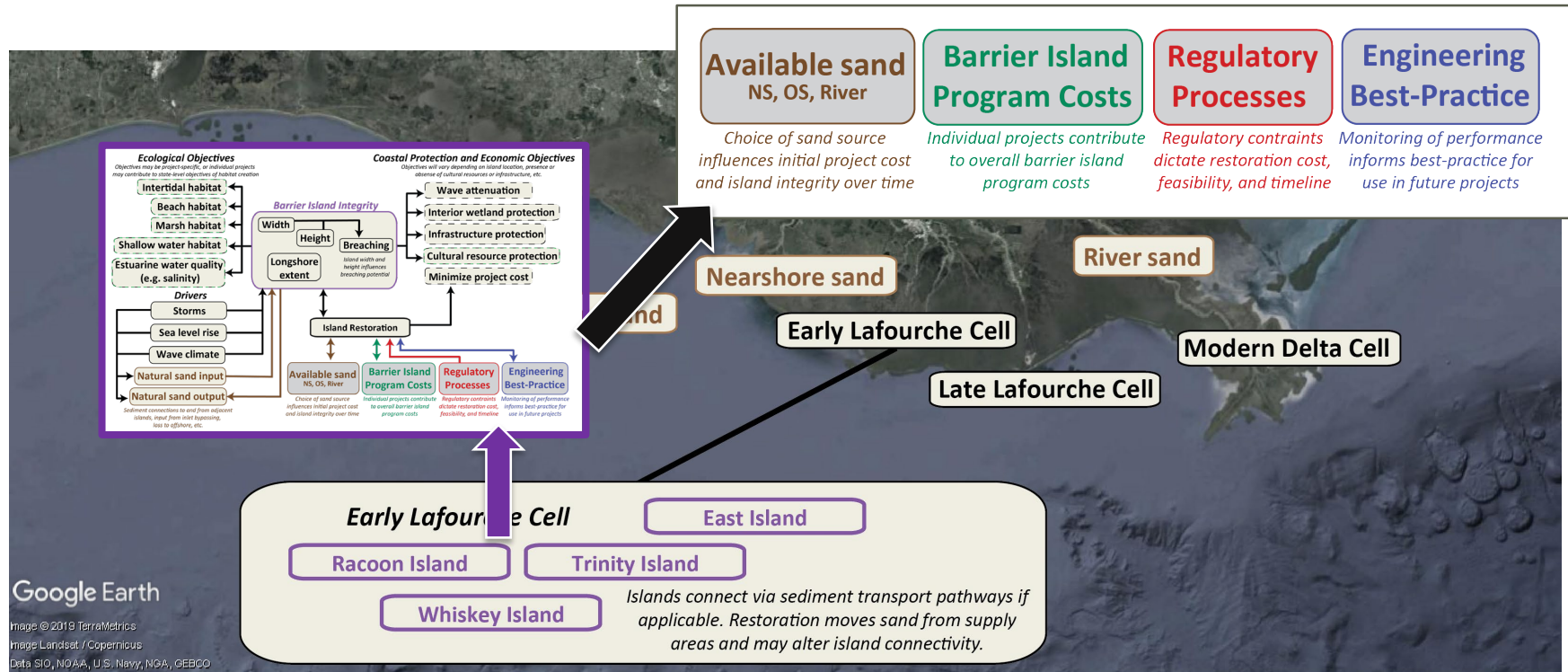
REGIONAL SEDIMENT MANAGEMENT



- Sand can move between island cells and to/from potential sand source locations
- Island sand volumes decrease/increase through natural processes and/or nourishment



BISM MANAGEMENT FRAMEWORK



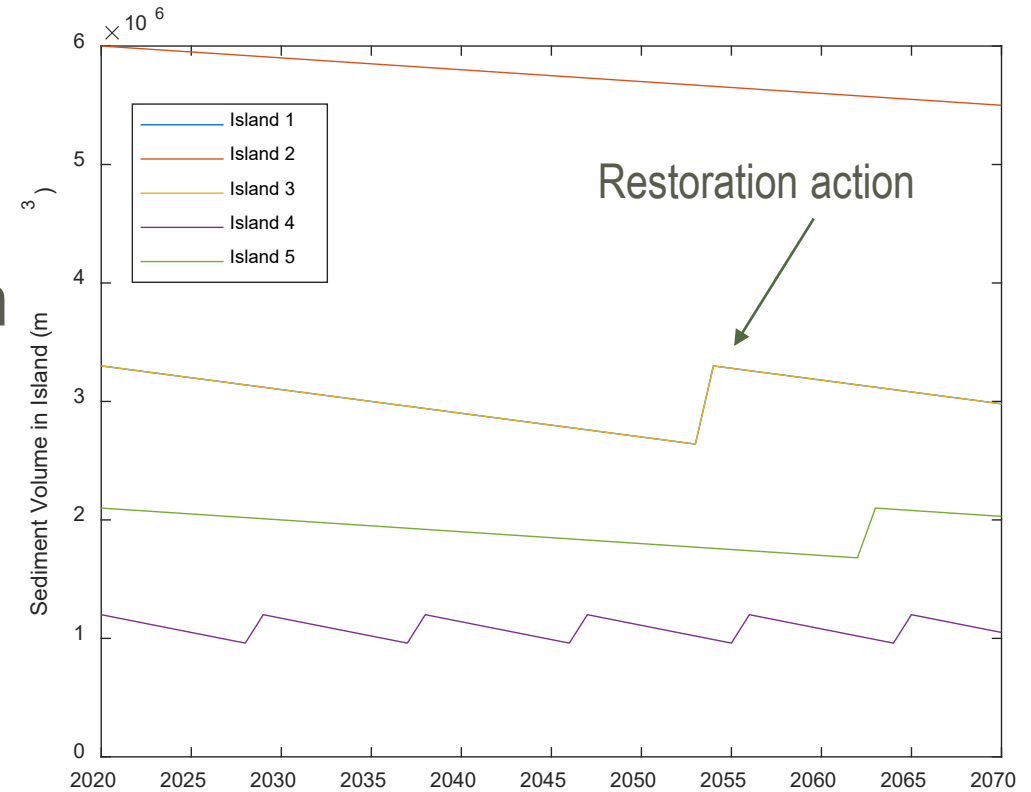
- Integrity of each barrier island tracked with BI management structure
- Projects can be prioritized based on cost and benefits
- Integrity of individual islands can be updated and the entire framework rapidly reassessed (e.g., evaluation of how to manage storm damage)

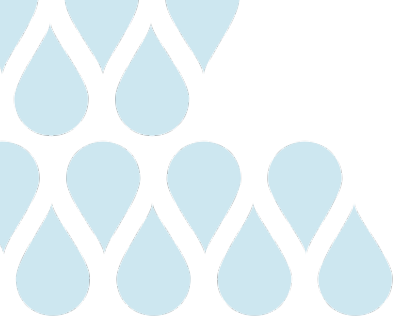


QUANTIFYING REGIONAL SEDIMENT MANAGEMENT APPROACH

- Pilot models to:
 - Track sediment volume in the system and regionally optimize borrow site selection
 - Optimize location and time period of sediment placement, including the downstream benefits

Volume Provided	Borrow Site 1	Borrow Site 2	Borrow Site 3	Total Volume
Island 1	10000008	0	0	10000008
Island 2	0	2000000	7999999	10000000
Island 3	0	9999999	0	9999999
Island 4	0	10000000	0	10000000
Island 5	7999999	0	0	7999999
Total From Site	18000007	22000000	7999999	48000008





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THANK YOU

Soupy Dalyander
sdalyander@thewaterinstitute.org



@THEH2OINSTITUTE

1110 RIVER ROAD S., SUITE 200, BATON ROUGE, LA. 70802
225-448-2813

WWW.THEWATERINSTITUTE.ORG

