SAGE - A Systems Approach to Geomorphic Engineering: Building a Community of Practice

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We love our coasts

- 23 of the 25 most densely populated counties
- 19 out of 20 major cities
- 45% of our GDP
- 51 million jobs
Increasing vulnerability

Coastal lifelines, such as water supply and energy infrastructure and evacuation routes, are increasingly vulnerable to higher sea levels and storm surges.
Increasing vulnerability

Coastal populations and critical infrastructure are experiencing the effects of a changing climate, including severe storms and sea-level rise.
Reducing risk
Reducing risk

Natural coastal systems can provide protective services:

• Wave attenuation
• Flood storage capacity
• Erosion control
Building resilience

Employing multiple lines of defense,
Enjoying multiple benefits
Building resilience

- Understand shoreline changes in the broad, regional context of natural systems
- Integrate green and gray solutions for coastal protection
- Engage sectors and stakeholders, and build partnerships

Enter a *Systems Approach to Geomorphic Engineering*
Who is SAGE?

A Community of Practice

Among others...

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SAGE Goals

Create and maintain healthy coastal economies, communities, and ecosystems.

Reduce risks from changes in coastal storm intensity, sea level, and precipitation patterns.

Utilize the full range of “green” nature-based and “gray” structural techniques for coastal protection.
The SAGE Community of Practice

Promotes a systems approach to coastal protection that integrates green and gray solutions

Provides a forum for sharing information and lessons learned and leveraging resources

Is identifying research and policy needs

Is working across partners to develop the science, tools, and demonstrations to inform best practices
Private Investors
Financing

Academia
Scientific research

States
Planning and implementation

NGOs

Federal Agencies
Facilitating

Engineers
Technical design

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What is SAGE doing now

Compile, assess, and strengthen body of research on natural and hybrid approaches

Identify public and private financing mechanisms.

Compile project data

Create communication tools

Build partnerships in pilot regions
Under what circumstances can the natural environment provide coastal protection?

What affects an ecosystem’s ability to provide protection?

Can we value the suite of ecosystems services for cost-benefit analyses?

What are the maintenance costs?
Is SAGE in your region?

San Francisco Bay
New York City
Northeast Florida
Puget Sound
Barnegat Bay
Why join SAGE

Build new partnerships

Access to multi-disciplinary knowledge base

Leverage ideas and resources

Generate interest and investment in natural approaches to risk reduction that benefit communities, ecosystems and economies
Questions?

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