

# South Carolina Floodwater Commission

GOVERNOR HENRY MCMASTER

TOM MULLIKIN, CHAIRMAN

TASK FORCES

## ARTIFICIAL REEF SYSTEMS

### Recommended Co-Chair

- Alvin A. Taylor
- Dr. William Ambrose
- Barbara Jo Blain-Bellamy
- Brendon Barber
- Rep. Heather Crawford
- Rep. Jeff Bradley
- Glenn Hamm

Evidence shows coral reefs play a critical role in wave attenuation. Coral reefs provide protection from storms and rising sea level and other critical support for coastal protection. The effects are comparable to artificial breakwaters that are engineered specifically to dissipate wave energy. Artificial reefs' hydrodynamic features act to reduce incoming waves and alter current patterns and shoreline adjustments behind the artificial reefs. The utilization of artificial reefs can be used to enhance shoreline protection structures. The reef structure buffers shorelines against waves, storms, and floods, helping to prevent loss of life, property damage, and erosion. The Task Force will consider innovative approaches such as the Coastal Oyster Recycling and Restoration Initiative (CORRI) that is rebuilding depleted oyster reefs with recycled shells. By filtering the water they live in, oysters improve coastal water quality. Reefs provide structure and food increasing all kinds of aquatic life including many valued fishery species. The beds also control erosion by acting as natural breakwaters along the shoreline. Natural oyster reefs have been lost over the years due among other reasons to over-harvesting.

## LIVING SHORELINE

### Recommended Co-Chair

- Elizabeth Von Kolnitz
- Dr. Paul Gayes
- Dr. Erfan Goharian
- Dr. Nicole Elko
- Dr. Robert Young

Living shorelines use native vegetation to stabilize the shoreline. Living shorelines provide a natural alternative to shoreline stabilization methods like bulkheads, and provide numerous benefits including pollution remediation, a habitat for fish, and a buffering of the shoreline from waves and storms.

## INFRASTRUCTURE & SHORELINE ARMORING

### Recommended Co-Chair

- Christy Hall
- Dr. Rich Viso
- Bryan Stirling
- Kim Stenson
- Jay Faison
- Sen. Stephen Goldfinch
- Rep. William Cogswell
- Alan Williams
- Sel Hemmingway

This task force will focus on the identification of culverts, ditches, and other existing water drainage and flow infrastructure in need of maintenance and/or enhancement and prioritize and make recommendations to bring the infrastructure to full functioning capacity. This task force will further consider shoreline armoring and stabilization by utilizing site specific methodologies that balance the needs of manmade protection and that of natural systems.

## SMART RIVER & DAM SECURITY

### Recommended Co-Chair

- Dr. Leonard Pietrafesa
- David Wilson
- MG Robert E. Livingston
- Dr. Hanif Chaudhry
- Dr. Inthuorn Sasanakul
- Duke Brantley
- Sen. Kent Williams
- Rep. Richie Yow
- Jeffrey Allen
- Marguerite McClam

An important step in better managing our natural resources is to effectively combine datasets and multiple model inputs and outputs, such as data collected through LIDAR and other studies, for an enhanced understanding of our complex river systems and dams. Existing data sets could be utilized to develop a multi-layered geographic information system (GIS) to improve the understanding of river ecosystems and make better-informed management decisions. The work would focus on aligning data and various model inputs and outputs into one geospatially referenced database, then developing visualization products to display the information.

## GRID SECURITY

### Recommended Co-Chair

- Sen. Thomas C. Alexander
- Keller Kissam
- Babs Warner
- James Clark
- J.R. Sanderson

A key element of resiliency and recovery during a flooding event is the safety, security, and continued operation of the electric grid. It is imperative to provide sanitary essentials, continued recovery, and continuity of normal activities. An important aspect to consider is "connectivity." The various system control centers for transmission; dispatch operations for distribution; and the control rooms for each power generating plant must be secure and equipped with back-up power sources in order to continually provide operation and monitoring of the various electrical systems.

## LANDSCAPE BEAUTIFICATION & PROTECTION

### Recommended Co-Chair

- Hugh Weathers
- Duane Parrish
- Sen. Tom Davis
- Rep. Leonard Stavrinakis
- William Bruno

Urbanization, clearing trees, draining wetlands, and paving the ground exacerbates flooding. This task force will examine ways to reduce urban flooding through the use of green space areas and through the use of permeable surfaces wherever possible in landscapes. Driveways, sidewalks, patios, parking lots, and pathways can be made from porous materials that are firm, but that still permit water to drain. Porous concrete, and porous asphalt are some of the materials that could be utilized to increase permeability. Along the coast, the careful planning and planting of native coastal plants can help protect property from storm damage and flooding.

## NATIONAL SECURITY

### Recommended Co-Chair

- LTG Michael X. Garrett
- Bryan Hilferty
- BG James Glynn
- MG Robert E. Livingston

The shifting hazard of increased flooding amplify risks for people, valuable assets, essential infrastructure, and important economic industries such as energy production and shipping. This task force will be charged with identifying potential risks associated with flooding events and making recommendations to prepare for and minimize those risks. Extreme weather events could make critical facilities unusable or necessitate costly or manpower intensive workarounds that would be unacceptable to military operations.

## STAKEHOLDER ENGAGEMENT

### Recommended Co-Chair

- John Tecklenburg
- Brenda Bethune
- John McCann
- David Wielicki
- D. Thomas Johnson
- Mark Lazarus
- Victor Rawl
- Paul Sommerville
- Ray Farmer

Attention to stakeholders is important throughout the process to ensure understanding, appreciation, information sharing, legitimacy and commitment to produce collaborative efforts which result in unique solutions. Stakeholders are defined as the people who have a stake or a vested interest in the program and/or policy, being evaluated and therefore also have a stake in the evaluation. Stakeholders who are involved in an evaluation process contribute to important decisions regarding evaluation, planning, implementation, and use and eliminate or minimize resistance to proposed plans of action.

## FEDERAL FUNDING

### Recommended Co-Chair

- U.S. Congressman Tom Rice
- U.S. Congressman Joe Cunningham
- Sen. Chip Campsen
- Deborah Stirling

Members of this task force will be charged with identifying sources of and securing Federal Funding to supplement any or all of the Commission on Flooding's task force initiatives. Potential funding sources include DOE, DOI, DHS, NOAA, NSF, FEMA and US Military sources.

## ECONOMIC DEVELOPMENT

### Recommended Co-Chair

- Peter Brews
- Kelli S. James
- Bryan Derreberry
- Joe Ellers

A challenge exists to research and develop plans for economic opportunities associated with an increase in water from our river systems and along our coast line. Expansion of our lake system including canals and swamps in areas such as Marion County through river diversions could open opportunities for lake and/or canal watersports while providing for potential electricity generation. Canal systems along the coast and in the low country could have the potential to utilize underused and low-lying areas for tourist/ economic development.