



NATURAL RESOURCES ELEMENT

Element Goal

Maintain Seabrook Island's environmental integrity and natural beauty through the continuation of sustainable actions that ensure that natural systems and built structures protect habitats, create a healthy environment, and promote energy efficiency.

5.1: OVERVIEW

Seabrook Island is a coastal barrier island located in the South Carolina Lowcountry between Johns Island and the Atlantic Ocean. The island is surrounded by saltwater bodies and marshes: to the north is Bohicket Creek and its marshes, to the south is the Atlantic Ocean, to the east is Kiawah River and its marshes, and to the west is the North Edisto River. The Island has a rich variety of maritime habitats and scenic natural resources that include miles of beach, a broad salt marsh with tidal creeks, freshwater wetlands, and extensive maritime forest and shrub thickets.

Human impact has played a large role in the quantity and quality of natural resources on Seabrook Island. Even prior to Spanish exploration in the 1500's and English settlement in the 1600's, native American Indians cleared lands in the Lowcountry to grow maize and other crops. While the Spanish were in search of gold and moved on, the English had a stronger appreciation for working the land agriculturally. English Lord Proprietors of Carolina received their charter from King Charles II of England in 1663, and accepted a collective land grant from the king that encompassed over 850,000 square miles extending from Virginia to Spanish Florida. In the Lowcountry, Native Americans welcomed the English settlement that followed, even showing them how to live off the land. While rice and indigo were the common crops in surrounding areas, Seabrook Island was transformed into a sea-

island cotton plantation. Cotton production on the island remained lucrative until the Civil War, however after the war cotton production declined. Seabrook Island then gradually reforested into the ecosystem found on the island today; a maritime forest of pines, live oaks, hickories, magnolias, sweetgums and palmettos, surrounded by saltwater wetlands, dune fields and sandy beaches.

Today, while most of the geographic Seabrook Island is in the incorporated Town of Seabrook Island, a large majority is also within the Seabrook Island Development (SID). The SID is a planned unit development that is a gated and privately managed community with a private club, a church/environmental camp operated by the Episcopal Diocese of South Carolina, and a Seabrook Island Property Owners Association (SIPOA). The SIPOA provides many of the community services and facilities typically provided by local government. The area of the Town not within the SID includes several parcels "outside the gates", and flanking the only land-based access to the SID, Seabrook Island Road. Through decades of environmentally conscious leadership, Seabrook Island has successfully maintained a spectacular range of wildlife and a thriving ecosystem, while providing its residents and visitors with a wonderful array of both human-inspired and nature-based amenities and activities.

5.2: BACKGROUND AND INVENTORY OF EXISTING CONDITIONS

With regard to development, the vast majority of Seabrook Island is substantially "built out". The island has retained much of its rich natural resources thanks to an environmentally conscious regulatory structure provided through Town and SIPOA guiding documents.

Town of Seabrook Island Guiding Documents. As required by the South Carolina Local Government Comprehensive Planning Enabling Act, the Town Code, Development Standard Ordinance (DSO), and Town Zoning Map shall implement, and remain



consistent with this Town of Seabrook Island Comprehensive Plan. The DSO is the primary document guiding development within the Town, and does so “in accordance with existing and future needs, and in order to protect, promote and improve the public health, safety, morals, convenience, order, appearance, prosperity and general welfare; *to preserve the environmental character of the Town of Seabrook Island*; and to facilitate the timely and adequate provision of water, sewage disposal and other utility services, parks and other public requirements”.

Seabrook Island Property Owners Association Guiding Documents. Most recently modified in February 2017, the Protective Covenants for Seabrook Island Development state that each property owner in the SID “becomes a member of SIPOA with voting rights as set forth in the Bylaws of SIPOA and obligations as set forth in these Protective Covenants and their derivative rules and regulations”. The covenants further declare that “the purpose and business of SIPOA is to preserve the property values and the quality of life in the SID through *development and implementation of programs to protect the environment, to facilitate acquisition and maintenance of green space*, and to provide for the health, safety, security and welfare of property owners”. Additional SIPOA responsibilities that contribute to the preservation of Seabrook Island’s natural resources include a continual update and enforcement of the SIPOA Rules and Regulations Handbook, a security force of commissioned code enforcement officers, multiple all-volunteer special interest groups, and ten standing committees, including an architectural review committee, environmental committee and planning committee.

Other Documents Promoting Environmental Sustainability. There are additional documents and studies related, at least in part, to environmental protection. These documents and studies are sanctioned by the Town, SIPOA, or both, and either serve as regulatory documents in and of themselves, or contribute to the principles and content of the Town and/or SIPOA’s regulatory

structure. Below is a list of the Primary and Secondary Seabrook Island Natural Resource Preservation Documents. These documents directly or indirectly promote the preservation of Seabrook Island’s natural resources.

Primary Documents:

- The Comprehensive Beach Management Plan (Town);
- The Comprehensive Emergency Management Plan (Town);

Secondary Documents:

- The SIPOA Architectural Review Committee’s Policies and Procedures for Residential Development (SIPOA);
- The Lake Management Plan (SIPOA);
- The Deer Management Program (SIPOA);
- Stormwater System Rehabilitation Plan (SIPOA);
- Backyard Buffers for the South Carolina Lowcountry (SIPOA);
- The Sustainable Community Baseline Report & Site Assessment (SIPOA): and
- Protective Covenants, Rules and Regulations (SIPOA and Condo, Villa and neighborhood Regimes).

Seabrook Island Green Space Conservancy. In 2000, this Section 501(c) (3) charitable organization began as a response to the SIPOA Board of Directors concern over the permanent loss of green space and wildlife habitat resulting from the “build out” of Seabrook Island. The Conservancy’s objective is to identify, for potential acquisition, high visibility properties that preserve substantial green space and wild life habitat. These properties, acquired through charitable donations, bargain sales, or traditional purchase procedures, are transferred, by deed, to SIPOA for permanent preservation and maintenance as green space. The properties are also rezoned to Agriculture – Conservation, and are inspected annually by the Conservancy and the SIPOA

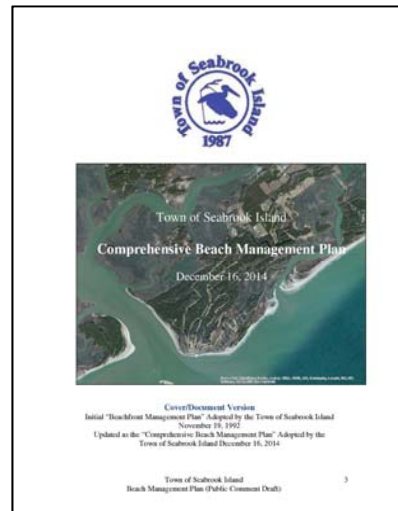


Environmental Committee to insure compliance with the green space provisions in the transferring the property to SIPOA. According to the Conservancy's website, a total of 24 acres, or 1 percent of Seabrook Island, has become property that will remain green space in perpetuity through the actions of the Conservancy and donors.

Beach and Dune Preservation

Oceanfront beach and dunes serve several important functions. These include storm protection for upland areas, habitat for a variety of plant and animal species, nesting habitat for sea turtles and recreation for Town residents, property owners and visitors. The management and preservation of Seabrook Island's beaches and dunes is a continual process, and a recent comprehensive update to the 20-plus year old beach management plan has given the Town, SIPOA, the Seabrook Island Club, and the St. Christopher Camp and Conference Center a better understanding of the issues and needs, and a clear and purposeful set of goals and implementation strategies.

Seabrook Island Town Council adopted the 2014 Update of their Comprehensive Beach Management Plan (referred to hereafter as the "BMP") on December 16, 2014. The BMP is a complete revision of the Town's original Beach Management Plan finalized in 1992. The BMP is consistent with the South Carolina State Beachfront Management Act and was updated in accordance with the guidelines provided by the South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resources Management. The BMP was a joint



effort from the Town of Seabrook Island leadership and staff, the Seabrook Island Property Owners Association, the Seabrook Island Club and St. Christopher Camp and Conference Center. The BMP cites Dr. Tim Kana, founder and president of Coastal Science and Engineering, as the primary author. The BMP represents a comprehensive analysis of the island's beach management, including a full review of all Seabrook Island Coastal Erosion Studies and Annual Beach Monitoring Surveys, many of which were conducted over decades of research by the primary author cited above. This Natural Resources Element acknowledges by reference, the findings, needs, goals and implementation strategies contained within the above referenced 2014 Update of the Town of Seabrook Island Beach Management Plan.

While it is not within the context of this Natural Resources Element to fully describe the BMP, a brief overview of its structure and recommendations is warranted. The BMP is a technical document that comprehensively describes all aspects of beach management regarding Seabrook Island in seven detailed sections:

- Section 1 Introduction - describes the purpose and history of the plan, an overview of the municipality and history of beach management practices, and a summary of the current beach management issues impacting Seabrook Island's coastline;
- Section 2 Inventory of Existing Conditions - provides an inventory of existing conditions, including general characteristics of the beach and beachfront structures, and a description of the current state of the shoreline as a natural resource with ecological habitats;
- Section 3 Beachfront Drainage Plan - describes the surface drainage patterns of land along the island's beachfront;
- Section 4 Beach Management and Authorities - includes a thorough description of beach management, and a thorough summary of the multiple authorities that regulate and



enforce beach development, shoreline protection, and other regulations regarding the island's beach management;

- Section 5 Erosion Control Management – cites numerous previous coastal erosion studies to support a discussion on shoreline change analysis, then provides an inventory of beach alterations, including previous beach renourishments and various “soft engineering” solutions conducted over the past 30 years, and ends with a discussion of future erosion control alternatives;
- Section 6 Needs, Goals and Implementation Strategies – includes a strategy for preserving and enhancing public beach access and description of the three components of the Town's “retreat strategy” (the creation of a stable or accreting beachfront that is compatible with the State's retreat policy):
 - 1) The relocation of Captain Sams Inlet to support the continued migration of sand down the coast from Kiawah Island;
 - 2) Maintaining a “shelf” down to and around the corner of the Edisto River inlet to continue renourishment of the Edisto River shoreline of Seabrook Island, and
 - 3) Supplementing the first two components by sand scraping from sections of excess accretion along the north shore of the island and moving that sand to the south beach area.
- Section 7 Appendix – includes much of the technical data referenced in the previous sections of the BMP.

It should be noted that in May 2015, Seabrook Island, with the cooperation of federal, state, and local authorities and utilizing SIPOA funds, relocated Cap'n Sams Creek using scientific island

inlet relocation methodology. The environmentally-friendly significance of allowing the inlet to migrate naturally over a designated inlet conservation zone, as opposed to stabilizing the inlet itself or heavily armoring the shoreline, led to the American Shore and Beach Preservation Association (ASBPA) awarding the 2016 Best Restored Beach Award to Seabrook Island.

Maritime Forest Preservation

Inland from the beaches and dunes described in the previous section, the interior of Seabrook Island is dominated by a maritime forest ecosystem. As described in the introductory section of this chapter, soon after the Civil War, the sea-island crops that had dominated much of the Seabrook Island landscape since colonial times were abandoned, allowing land on the island to naturally and gradually reforest. Many years later, the forward thinking conservation efforts of early SID leaders has resulted in many of the beautiful characteristics of the maritime forest ecosystem to still remain today.

As noted in the BMP, barrier islands such as Seabrook Island are comprised of habitats that are characterized to varying degrees by instability. The habitat providing the greatest stability is a maritime forest, which is a natural vegetation unique to many parts of the coastal Lowcountry, and more formally identified as the Atlantic Maritime Forest. Within this forest, the tree canopy is dominated by southern live oak (*Quercus virginiana*), laurel oak (*Q. laurifolia*), southern magnolia (*Magnolia grandiflora*), and loblolly pine (*Pinus taeda*). Conspicuous understory plants include sabal palmetto (*Sabal palmetto*), southern red cedar (*Juniperus silicicola*), and yaupon holly (*Ilex vomitoria*) among others. The maritime forest forms the relatively stable core of Seabrook Island that has endured over long periods of time, as opposed to the maritime shrub thickets, saltwater wetlands, dune fields, and sand beaches that become progressively less stable over time.



The Seabrook Island environment as a whole, and the maritime forest in particular, play an important role in the design of a new home, and this is emphasized throughout the Seabrook Island Architectural Review Committee's Policies and Procedures manual. The manual's opening paragraph under the section entitled Design Guidelines for New Single-Family Residences illustrates this emphasis well;

"The sea island environment of Seabrook creates opportunities to design residences which incorporate the natural characteristics of the property, its surrounding environment, and the island into the design. Those residential designs which respond to the nature and character of the individual property become a positive contribution to the island by maintaining the maritime forest and landscape, while at the same time allowing for the residence to take full advantage of its views and surrounding environment. Residential designs which respect and complement the natural surroundings are the most successful designs."

Wildlife on Seabrook Island

As noted in the Sustainable Community Baseline report and Site Assessment, approximately 33 percent of Seabrook Island is devoted to legally protected green space (22 acres including beach trust), recreational green spaces (horse pasture, golf courses, trails), wetlands, dry beach/dunes, maritime forest (200 acres in Camp St. Christopher) or undeveloped lots (150 acres). This provides an excellent habitat for a diverse mix of flora and fauna.

While the maritime forest, maritime shrub thicket, and even the dune fields provide the ideal habitat for many land animals including deer, fox, squirrel, bobcat and coyote, the island's tidal creeks and marshes serve as nurseries and food sources for a myriad of salt water species, from microscopic to huge herons, pelicans, raptors and dolphins.

A webpage created by SIPOA and dedicated to Seabrook Island Wildlife can be accessed from either the Town's website or the Discover Seabrook website maintained by the SIC and SIPOA. The webpage provides information on the many mammals, birds, fish, reptiles and insects that call Seabrook Island or its surrounding waters home. The webpage also provides direct links to documents of interest, such as the SIPOA Deer Management Program, special informational pages, such as information on dolphin strand feeding, and additional links to SIPOA special interest groups such as the Seabrook Island Birders Group and the Seabrook Island Turtle Patrol. Much of the following information describing the abundant Seabrook Island wildlife has been extracted from this webpage.

Mammals on Seabrook Island. Mammals are abundant on Seabrook Island, and thanks to preservation efforts they are able to thrive in their native habitat while safely coexisting in close proximity to humans.



Bottlenose Dolphin at Seabrook Island

Photo Source: www.discoverseabrook.com



Wrens (cont.)	Sp	Su	F	W
House Wren	f	f	f	f
Winter Wren	r	u	r	
Sedge Wren	f	f	f	f
Marsh Wren	f	f	f	f

Wood Warblers (cont.)	Sp	Su	F	W
Common Yellowthroat	f	u	f	f
Hooded Warbler	r	f	f	
Yellow-breasted Chat	r	u	f	

Wood Warblers (cont.)	Sp	Su	F	W
Eastern Towhee	f	f	f	f
Chipping Sparrow	f	c	c	
Field Sparrow	f	f	f	
Savannah Sparrow	f	f	c	
Nelson's Sparrow	f	f	f	
Saltmarsh Sparrow	u	u	u	
Seaside Sparrow	f	f	f	
Song Sparrow	f	f	c	
Swamp Sparrow	f	f	c	
White-throated Sparrow	c	c	c	
Dark-eyed Junco	u	u	u	

Wood Warblers	Sp	Su	F	W
Orange-crowned Warbler	u	u	f	
Northern Parula	c	c	c	
Yellow Warbler	r	u	c	
Magnolia Warbler	r	u		
Cape May Warbler	r	u		
Black-throated Blue	r	f		
Yellow-rumped Warbler	c	c	c	
Yellow-throated Warbler	c	f	u	
Pine Warbler	c	c	c	
Prairie Warbler	u	f	f	
Palm Warbler	c	c	f	
Black & White Warbler	f	f	u	
American Redstart	u	u	c	
Prothonotary Warbler	u	u	c	
Ovenbird	u	f	r	
N. Waterthrush	r	u	f	

Wood Warblers (cont.)	Sp	Su	F	W
Summer Tanager	f	f	f	
Northern Cardinal	c	c	c	
Blue-breasted Grosbeak	u	u	u	
Blue Grosbeak	f	f	f	
Indigo Bunting	f	u	f	
Painted Bunting	f	c	f	

Blackbirds & Orioles	Sp	Su	F	W
Bobolink	u	u	u	
Red-winged Blackbird	c	c	c	
Eastern Meadowlark	f	f	f	
Common Grackle	c	c	c	
Boat-tailed Grackle	c	c	c	
Brown-headed Cowbird	c	c	c	
Orchard Oriole	c	c	c	
Baltimore Oriole	f	u	f	

Finches	Sp	Su	F	W
Purple Finch				r
House Finch	c	c	f	f
American Goldfinch	u	u	u	

Birding Hotspots on Seabrook Island

- North Beach:** One of the best beach birding areas in South Carolina. It should not be missed. Diverse and numerous shorebirds and seabirds.
- Palmetto Lake:** A ¼-mile paved, flat, walking path around the lake. See songbirds warblers, birds of prey, herons and egrets.
- Equestrian Center:** Large pastures and woods - good for birds of prey & sparrows.
- Jenkins Point:** Large marsh habitat with many salt and fresh-water ponds. Spring egret and heron rookery. Winter ducks.
- St. Christopher Camp & Conference Center:** A privately owned camp with a good diversity of habitats and birds. For access, call 843-768-0429.
- Pelican Beach:** On N. Edisto River with beach, maritime forest, views of salt marsh.

Seabrook Island Birders

Seasonal Abundance shown as:
 c: common: seen in suitable habitat
 f: fairly common: not certain to be seen
 u: uncommon: seen a few times/season
 r: rare: seen at intervals of 2 to 5 years

Comments or Corrections? Please visit:
SeabrookIslandBirders.org

Names: _____
 Date: _____ Time: _____
 Species: _____ Weather: _____

Checklist of the Seabrook Island Birds

Source: www.seabrookislandbirders.org

Larger mammals found on Seabrook Island or the adjacent waters include;

- Bobcats (*Lynx rufus*);
- Coyotes (*Canis latrans*);
- Gray fox (*Urocyon cinereoargenteus*);
- White-tailed deer (*Odocoileus virginianus*); and
- Bottlenose dolphins (*Tursiops truncatus*).

The smaller mammals found on Seabrook Island include;

- Raccoon (*Procyon lotor*);
- Virginia Opossum (*Didelphis virginiana*);
- North American river otter (*Lontra canadensis*);

- Marsh rice rat (*Oryzomys palustris*), and
- Southern flying squirrel (*Glaucomys volans*).

Birds on (or above) Seabrook Island. The Seabrook Island Birders are a very active SIPOA Special Interest Group always open to new volunteers and enthusiasts. The group maintains a very informational webpage that includes brochures, a gallery, calendar, list of activities, contact information, and a drop down menu entitled “All About Birds” that includes external links, bird checklists, Apps for birders, and more. The Check List of the Seabrook Island Birds, available for download from the group’s webpage, lists literally hundreds of birds and the location of birding hotspots on Seabrook Island.

Fish on Seabrook Island. Fish found on Seabrook Island or off its coast include freshwater fish stocked in Palmetto Lake as well as the saltwater fish found in the adjacent ocean and rivers surrounding the island. Largemouth bass, bluegill, sterile grass carp and channel catfish are stocked at Palmetto Lake, adjacent to the Seabrook Island Club Lakehouse. Saltwater fish include Atlantic Croaker, Red Drum, Blackdrum, Southern Flounder, Spotted Seatrout, and Sheephead. Fishing charters and offshore fishing are available at the Bohicket Marina and Market.

Seabrook Island Reptiles, Amphibians and Snakes. There are numerous reptiles, amphibians and snakes calling Seabrook Island home. These include frogs and toads, salamanders and skinks, turtles and tarpins, the American Alligator, and numerous venomous and non-venomous snakes.

A very active and dedicated SIPOA Special Interest Group is the Seabrook Island Turtle Patrol. The turtle patrol’s mission, as stated on their website, is “to protect and preserve the sea turtles that visit Seabrook Island beaches through identification and protection of nests, inventory of nests, data collection and education of island residents and visitors”.



Wildlife Protection. Protection of the abundant wildlife on Seabrook Island comes in many forms. The first two sections of this chapter detail beach management and maritime forest management, and under both management efforts the unique habitats preserved provides food, shelter and safety for much of the wildlife listed in this section. Continuation and enhancement of these management efforts is the primary wildlife protection tool available to the Town of Seabrook Island.

In addition, many volunteers are actively involved in wildlife protection. While some serve preservation-related SIPOA Committees, such as the Architectural Review Committee, the Environmental Committee and the Planning Committee, others remain active in wildlife protection-related SIPOA Special Interest Groups such as the Seabrook Island Birders Club, the Seabrook Island Natural History Group, and the Seabrook Island Turtle Patrol.

The Town's DSO, and several documents created under SIPOA, also explicitly or inherently protect wildlife. For example, the rezoning review criteria in Section 20.40.10 of the Town's DSO requires consideration of the effect of the proposed rezoning "on environmentally sensitive land or natural features, wildlife habitat, vegetation, and water and air quality". Similarly, Item VI.A. of the SIPOA Rules and Regulations require all members to follow specific procedures to ensure protection of vegetation, stating that "the grassy dunes, maritime forests and wetlands of Seabrook Island provide food, cover and nesting for wildlife". Finally, several other SIPOA documents are specifically written with wildlife protection in mind, including a Deer Management Plan and informational brochures providing tips for helping Loggerhead Turtles.

Community Resilience

Resilience can be defined as the ability of a community to respond, adapt and thrive under changing conditions, including, but not limited to, recurrent burdens and sudden disasters. As evidenced

in recent years, the Charleston area is no stranger to the recurrent burden of flooding and threat of hurricane. In addition, the Charleston area lies within one of the most seismically active areas in the Eastern United States. As a coastal community, Seabrook Island's housing stock and infrastructure is especially vulnerable to threats associated with hurricanes, storm surges, and periodic flooding.

The issue of resilience is being addressed by communities throughout the United States and around the world, including the City of Charleston, Charleston County and local organizations such as the Charleston Resilience Network. As detailed in the Community Facilities Element of this Comprehensive Plan, the Town, SIPOA, and other Seabrook Island entities and residents have addressed emergency preparedness and disaster response through a Comprehensive Emergency Plan, Disaster Recovery



Seabrook Island Baby Loggerhead Turtle

Photo Source: www.siturtlepatrol.com



Council, a volunteer Community Emergency Response Team, the preparation of an Emergency Preparedness Homepage on the Town's website, and more.

The Town should utilize the current collection of data, findings, strategies, and plans available through these sources to develop a community resilience plan that identifies the potential impacts and appropriate mitigation efforts necessary to improve the Seabrook Island community's resilience to hazards or changing conditions. This should not be a "static" plan, but rather a plan that is periodically updated to address changing conditions, and include the most recent data, findings and strategies available.

5.3: NATURAL RESOURCES ELEMENT GOAL

Element Goal

Maintain Seabrook Island's environmental integrity and natural beauty through the continuation of sustainable actions that ensure that natural systems and built structures protect habitats, create a healthy environment, and promote energy efficiency.

Natural Resources Element Needs

- As the Town is developed, an increasing amount of the Island's natural habitat is taken away;
- Development also removes the connectivity between natural habitats, putting stress on the Island's wildlife to find alternate routes to move around the Island; and
- Continued monitoring and research of the island's ecosystems, and the wildlife species they support, in order to best prepare and revise current and future preservation studies, regulations, policies and procedures; and
- Research and monitoring data should be taken into account when planning new developments or other projects; and
- Encourage property owners and island entities to eliminate existing invasive plant species and discourage future use of these plants; and
- As one of the Island's key natural resources, the beach and dunes must be maintained and protected.



5.4: NATURAL RESOURCES ELEMENT STRATEGIES AND TIMEFRAMES

The Town should undertake the following strategic actions in support of the Vision and Goals of this Plan. These implementation strategies will be reviewed a minimum of every five years and updated every ten years from the date of adoption of this Plan.

1. Pursue the goals, and support and promote the implementation of strategies contained in Section 6 of the Town of Seabrook Island Comprehensive Beach Management Plan.
2. Complete the Island's development in a way that maintains the Island's environmental integrity and natural beauty and is consistent with the Vision of the Town.
3. Develop and maintain an environmentally sustainable system of parks and open spaces which provide access to the beach and river; preserves, protects and enhances natural resources; and meets the diverse recreational needs of the Town's population.
4. Maintain the existing quality of the natural resources on Seabrook Island, as well as the waters and marine environment surrounding the Island.
5. Maintain, expand and support public education, outreach programs, and natural resource preservation volunteer groups.
6. Support the strategies and recommendations included in the Primary and Secondary Seabrook Island Natural Resource Preservation Documents listed in Section 5.2 of this Natural Resources Element.

7. Develop a Community Resilience Plan that is periodically updated and identifies the potential impacts and appropriate mitigation efforts necessary to improve the Seabrook Island community's resilience to hazards or changing conditions.