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resiliencynext

Goal: To preserve and enhance Kiawah's natural and built environments in the face of changing environmental conditions.

Resiliency

Considers the impacts of flooding, high water, and natural hazards on individuals, communities, institutions, businesses, economic development, public infrastructure and facilities, and public health, safety, and welfare.

Big Ideas

Implementing Nature-Based Solutions for Shoreline Protection

Creating a Chief Resilience Officer Position

Objectives

R1 - Determine a long-term public safety strategy that best protects and serves Kiawah's diverse entities, functions, and needs.

R2 - Continuously monitor the adequacy of emergency preparedness plans and communicate them to all Island populations.

R3 - Improve emergency operations coordination among all key stakeholders.

R4 - Conduct comprehensive Town risk assessment.

Overview

Kiawah Island faces unique challenges as a coastal community, including sea-level rise, increased flooding, and shoreline erosion

This section outlines confirmed actions and ongoing efforts addressing these challenges, including marsh management, stormwater systems, beach sustainability, public safety coordination, emergency operations, and evacuation planning. It details how environmental assets provide critical protection against weather events, describes the Town's emergency preparedness systems, and outlines strategies for enhancing coordination between key stakeholders to ensure comprehensive resilience for current and future generations

Resiliency

Kiawah Island is uniquely positioned as a coastal community facing significant environmental challenges, including climate change, sea-level rise, increased flooding, and shoreline erosion. The Town of Kiawah is dedicated to proactively addressing these challenges through thoughtful exploration and consideration of various resilience and sustainability strategies. This section outlines confirmed actions and ongoing efforts, including marsh management, stormwater management ordinances, water quality initiatives, community engagement, and potential future strategies informed by successful practices from other coastal communities.

Environmental and Coastal Resilience

The Town adopted a Comprehensive Marsh Management Plan, which provides a structured approach to monitoring, protecting, engaging, and restoring the island's marsh ecosystems. As part of this plan, the Town conducts regular monitoring and management activities to assess marsh health and address concerns like bank erosion and vegetation changes.

Additionally, the Town may explore implementing nature-based solutions, such as living shoreline techniques utilized successfully in communities like Folly Beach and Boyd, which involve oyster castles, bagged shell reefs, and manufactured wire reefs. These examples illustrate methods to naturally stabilize shorelines, foster sediment accretion, and enhance

marsh regeneration and marine habitats.

Advanced Stormwater Management and Water Quality Protection

The Town has adopted a robust stormwater management ordinance aligned with Charleston County standards. This ordinance emphasizes reducing impervious surfaces, using pervious paving materials, vegetative buffers, and other green infrastructure methods inspired by Low Impact Development (LID) practices.

The Town currently employs a real-time flood monitoring system, which provides vital data for informed decision-making and improved flood preparedness. The Town also actively tests local water sources for contaminants, such as PFAS, to ensure public health and ecosystem integrity, further demonstrating the Town's commitment to proactive water quality management.

Marsh Management and Conservation

Marsh conservation and shoreline stability are priorities within the Town's Comprehensive Marsh Management Plan. The Town is actively managing its marsh ecosystems through regular monitoring programs and targeted restoration efforts, with goals to preserve marsh functions, such as sediment accretion and filtration of runoff. Additionally, the Town may consider strategies such as wattle fences and wood breakwaters—techniques successfully utilized in regional projects like Boyd and Folly Beach—as potential approaches to further enhance sediment retention and native vegetation growth.

Beach Sustainability and Shoreline Restoration

The Town prioritizes the preservation and sustainability of its beaches, which are essential for ecological health, recreation, and tourism. Recognizing successful regional practices, such as those implemented on Sullivan's Island and Folly Beach, the Town should consider developing a comprehensive coastal resilience strategy that includes beach nourishment, dune restoration, and erosion control measures. Specific infrastructure projects, like vegetated dunes and controlled access pathways, will be implemented to minimize erosion, protect habitats, and improve the shoreline's overall health. These projects will be complemented by ongoing monitoring and adaptive management strategies to ensure the continued effectiveness of beach resilience measures.

Community Engagement and Education

Community engagement remains a critical aspect of resiliency planning on Kiawah Island. The Town may establish outreach programs such as ambassador initiatives seen in other coastal resilience projects, such as the Boyd Living Shoreline. These initiatives have empowered residents to engage in resilience planning, increase environmental literacy, and support community stewardship efforts. Educational signage, community workshops, and structured outreach programs will further strengthen local understanding and involvement in resiliency initiatives.

Kiawah Go Green

The Town actively supports environmental sustainability through various "Go Green" initiatives, focusing on reducing environmental impacts and promoting sustainable practices. Current key efforts include installing additional electric vehicle (EV) charging stations at Town Hall and encouraging broader EV adoption across the island. Further exploration into renewable energy sources, pursuing partnerships to advance green energy use, and pursuing green tourism certification as a Green Tourist Destination will remain central to Kiawah's sustainability goals.

Resiliency Committee and Long-term Implementation

The Town established the Resiliency Committee to advise the Town Council on resilience and sustainability issues and guide the implementation of recommended strategies from the Comprehensive Marsh Management Plan, Sea Level Rise Report and other relevant plans.

The committee's role includes monitoring resilience initiatives, promoting community education and awareness, identifying funding opportunities, and ensuring comprehensive coordination across different organizational entities.

Through these structured efforts, Kiawah Island will continuously adapt, effectively manage resilience initiatives, and sustain the island's environmental health and community well-being for current and future generations.

Emergency Operations

The Town uses an Emergency Preparedness Plan and updates it annually. The purpose of this plan is to keep residents and organizations on Kiawah Island informed of conditions that may present a threat to life and/or property and to ensure that all information, recommendations, and/or orders coming from national, state, or local authorities are passed on to all residents and organizations.

To handle recovery from a natural disaster, the Town has a debris removal contract that allows debris to be removed after a hurricane or weather event. This contract also provides for damage assessments, debris reduction, barge transportation, temporary housing, satellite phone service and meals in a post-disaster scenario.

The Town has a telephone notification system called CodeRED. It is used to communicate to

residents in emergency situations or critical community alerts such as evacuation notices, boil water notices, tornado warnings, and flash flood notices. This allows the Town to communicate status updates, request resources, and distribute public information notices to the county, fire, law enforcement, medical personnel, and news media from a remote location should an evacuation occur.

A previous objective, under Community Facilities, would establish an Island-wide communications channel. This channel could centralize all communications, including the emergency and community alerts described above.



Hurricane Ian clean-up, Source: KICA

Public Safety Committee

The Town's Public Safety Committee, established by the Town Council charter, oversees and coordinates all aspects of public safety on the island. This committee fulfills the Town's state-mandated responsibilities regarding its citizens' health, safety, and welfare, as outlined in Title 5 of the South Carolina Code of Laws.

As the central coordinating body for public safety initiatives, the committee collaborates with key partners, including the St. Johns Fire District, Charleston County Emergency Medical Services, KICA security, KIGR Security, Town Code Enforcement, Barrier Island Ocean Rescue (Beach Patrol) and the Charleston County Sheriff's Office. These partnerships ensure comprehensive safety coverage across the island.

The Public Safety Committee should consider developing a unified Public Safety and Resilience Strategy in collaboration with island stakeholders and partners. This comprehensive strategy would assess the Town's exposure to potential risks, evaluate utility resilience under various scenarios, and determine the adequacy of existing first responder capabilities. The strategy would establish clear organizational roles during emergencies and implement regular testing protocols for emergency response systems.

As coastal communities face increasing challenges from rising sea levels and severe weather events, the committee will continue enhancing emergency preparedness and response capabilities. By studying best practices from similar coastal communities and maintaining proactive safety planning, the Town can build a more resilient community that effectively serves its residents, property owners, and visitors.

Flooding

Kiawah Island's natural resources and ecology provide essential protection against weather events. The Flood Mitigation and Sea Level Rise Adaptation for Kiawah Island identifies flooding risks and outlines mitigation strategies. The Flood Mitigation and Sea Level Rise Adaptation Subcommittee emphasizes the importance of maintaining a robust stormwater management system, noting that Kiawah's interconnected ponds can manage rainfall from a 100-year flood but may face challenges with increasing flood frequency. Continuous evaluation and maintenance of this system, along with ensuring critical roadways remain passable for emergency services, are essential for long-term resilience. A recent Nor'easter in December 2023 underscored these vulnerabilities by causing severe flooding, affecting critical infrastructure and roads.



resiliency objectives and strategies

GOAL:

Protecting all Kiawah residents and stakeholders from risks to public safety.

Objective R1

Determine a long-term public safety strategy that best protects and serves Kiawah's diverse entities, functions, and needs.

Strategy R1.1

Study and understand a suite of options for long-term public safety options.

Objective R2

Continuously monitor the adequacy of emergency preparedness plans and communicate them to all Island populations.

Strategy R2.1

Establish a *Public Safety and Resiliency Strategy* for Kiawah Island.

Strategy R2.2

Evaluate the need for a dedicated role responsible for creating a *Public Safety and Resiliency Strategy*.

- This role would be referred to as the Chief Resiliency Officer.

Strategy R2.3

Organize and support resiliency efforts through other dedicated personnel.

Strategy R2.4

Coordinate with KIA on issues relating to the *Public Safety and Resiliency Strategy*.

- Provide residents, property owners, and visitors with a safe and secure environment.
- Determine a long-term public safety strategy that best serves Kiawah Island's diverse needs.

Objective R3

Improve emergency operations coordination among all key stakeholders.

Strategy R3.1

Form an Emergency Management Committee.

- Include representatives from the Town, KICA, KIGR, and other key stakeholders.
- This committee would oversee the development, implementation, and regular updates of the Comprehensive Emergency Management Plan (CEMP).

Strategy R4

Conduct comprehensive Town risk assessment.

- Identify hazards specific to Kiawah Island (e.g., hurricanes, flooding).
- Assess infrastructure and utility vulnerabilities and their potential impacts on the community.

