

SC RIA Grant- Infrastructure Planning Grant Town of Pawleys Island Submittal

Attachment 1: Application Narrative

- A. Need:** The Town of Pawleys Island is seeking funding in the amount of \$150,000 to assist with an infrastructure planning project to help the Town plan for solutions to diverse flooding threats as well as prioritize capital improvement decisions. If awarded, the Town of Pawleys will provide a local funding match in the amount of \$50,000.

The Town of Pawleys Island is located on a barrier island less than four miles long. Pawleys Island is separated from the mainland by a salt marsh tidal creek system and is accessible by two causeways located just north of Georgetown, SC. As a coastal barrier island community, the Town of Pawleys Island is susceptible to the threat of flooding on a regular basis. While localized flooding from rainfall events can present challenges, of greater concern is the increased frequency and severity of King Tide flooding on the island. Entire sections of roadways, including Myrtle Avenue between 1st and 3rd Streets, Pritchard Street, Springs Avenue between Pritchard and Hazard Streets, and Myrtle Avenue between the North and South causeways, are estimated to be impassible approximately 40-50 high tide time periods during a year. Pawleys Island is a destination beach with an estimated 750,000 visitors during the 100 days of peak season, and the issue of flooding creates significant economic and public safety concerns.

One of the major challenges the Town faces is its reliance on external agencies including Georgetown County and SC-DOT for resource support to address stormwater infrastructure maintenance and improvements. The Town does not have a direct funding source such as a stormwater utility fee to tackle this issue. The development of a Drainage Improvement Plan (DIP) will help leverage funding by identifying critical maintenance activities, provide selection criteria for prioritization of projects, and research funding structure opportunities and policy implementation.

To study the problem in greater detail, the Town developed a comprehensive Sea Level Rise (SLR) Adaptation plan in 2022. As part of the Plan development, a survey was implemented to solicit resident input for information on localized flooding conditions. The Town received community support for the project and approximately 300 residents and property owners provided first-hand accounts of flooding across the Island. Of these responses, 45% indicated that flooding on roads is caused by water coming up through storm drains and 65% of respondents stated that flooding on roads is due to water overtopping creekbanks. The range of flooding across the Island varies; as documented in the SLR Adaptation Plan, the most frequent flooding locations on the Island occur in areas where outflow drains are adjacent to low-lying creek banks. An outdated drainage system and minor creek bank erosion are major contributing factors to flooding as documented through the efforts of staff and community members. Flood threats are diverse, associated with storm events and King Tides, and have had realized impacts to private property and public safety. An infrastructure plan will provide a framework that more acutely identifies vulnerable areas as well as strategies to manage flood waters and reduce risks.

To build resiliency on the Island, the Town has implemented proactive ordinances that include a 40% maximum impervious lot coverage and a requirement that new driveways may not be paved. The Town

requires a 3' freeboard building elevation to help protect structures from flood hazards. The Town has begun implementing select stormwater drainage improvements on the Island, most notably the backflow preventer pilot project installed in 2021 at two outfall locations near the Town Hall complex. The pilot project provided a demonstrated success for a system retrofit option that may be applied in other areas across the Island.

B. Project Description:

Funding acquired through the SC RIA Infrastructure Planning Grant will be utilized to create a comprehensive Drainage Improvement Plan (DIP) for the town's stormwater management infrastructure. This DIP will enable the Town to address flooding and drainage issues in a long-term, systematic fashion including a ten-year list of priority projects identified by location and with a current cost estimate. The DIP will consider both and the combination of traditional gray infrastructure and green infrastructure projects in a diversified and site-specific approach to water management on the Island. Sections of the DIP will include the cataloging of current drainage infrastructure, assessment of functionality, hydrologic and hydraulic modeling, further identification of flood-prone areas and long-term operation, maintenance guidance, and proposed solutions including green infrastructure, future funding mechanisms, and policy change.

The Drainage Improvement Plan will include the following components with corresponding plan development cost estimates:

- 1D Modelling to create action plan and determine drainage patterns on the island along with tidal flood at 90th percentile King Tide conditions. Cost estimate is \$80,000.
- Detailed assessment of the condition of the existing drainage system to include long-term operation and maintenance guidance. Cost estimate is \$40,000.
- Project recommendations with cost estimates at the 9 highest priority locations as outlined in the Sea Level Rise Adaptation Plan. Cost estimate is \$40,000.
- Analysis of Nature-Based Green Infrastructure strategies including the ability to address creekbank overtopping, the identification of specific candidate project sites, state and local regulatory policy considerations, and the role and importance of private property owner collaboration. Future funding mechanisms and structures will also be analyzed for both grey and green infrastructure solutions. Cost estimate is \$40,000.

C. Feasibility

The proposed Drainage Improvement Plan can feasibly increase the functionality of existing infrastructure as well as identify space for improvements. The storm drain system on Pawleys Island consists of 87 drains and 50 outfalls. The stormwater system drains to Pawleys Creek, a tidal salt marsh system that separates the island from the mainland. The DIP will assess functionality of current drainage infrastructure and provide maintenance guidance and retrofit recommendations. The Pawleys Island SLR Adaptation Plan notes that when 15 storm drains were surveyed, the average elevation was only 0.2' above the King Tide flood level. The low elevation of storm drains is a contributing factor to flooding on the Island in which solutions can be researched and applied.

A demonstrated success of system improvement feasibility is the backflow preventer pilot project conducted by the Town of Pawleys Island in 2021. Two backflow preventers or tidal flap gates, were installed near Town Hall at the intersection of the North Causeway and Myrtle Ave. Since the installment, this intersection has seen little to no flooding during King Tide events while other areas of the Island continue to experience flooding issues. The Drainage Improvement Plan will identify if backflow preventer valves can be effective and economically viable in other areas on the island and, if feasible, prioritize site selection and implementation.

D. Benefits/Impact

There are a myriad of benefits and positive impacts that are associated with the development of a Drainage Improvement Plan on Pawleys Island. Climate change and sea level rise are expected to exacerbate the effects of tidal flooding, making King Tides and compound flooding more frequent and intense in the future, thereby increasing the risk to human safety and property damage on Pawleys Island. As noted in the Pawleys Island SLR Adaptation Plan, the Town is planning for 2' of increased water level by 2050. In current conditions, island roadways are prone to flooding when the predicted tide is higher than 6.5'. Many visitors are unaware of coastal flooding; assuring the Island is better equipped to handle rising tides will help to keep visitors out of harm's way. A researched approach, including the potential combination of nature-based solutions and traditional stormwater infrastructure, will reduce the threat that flooding poses to public safety and help to ensure that emergency response is not compromised by flooded or inaccessible roadways.

Additionally, the proposed project will help to sustain the tourism-based economy of Pawleys Island. As previously mentioned, the island is a destination beach that depends heavily on the seasonal tourism industry. Approximately 75% of properties on the Island are short-term rentals catering to visitors from all over South Carolina and the United States. The revenue generated from the Accommodations Tax on the Island is the main source of funding for all public services. Pawleys Island is home to the largest public beach in Georgetown County. Implementation of this project will provide further coastal protection to residents as well as visitors from the region and beyond. Frequent flooding can cause damage to roadways, vacation rentals, and personal property. A general loss or decrease in available rentals and safe roadways will make Pawleys Island a less desirable place to visit, and could harm the local economy. The Drainage Improvement Plan will strategically identify areas for water management improvements and flood mitigation. In doing this, the Pawleys Island experience is preserved and the tourism-based economy continues.

The Drainage Improvement Plan will help to ensure that money is spent effectively and efficiently in a systematic approach that includes a ten-year list of priority projects identified by location and with a current cost estimate. The Plan will prioritize stormwater infrastructure projects to identify the projects that would have the largest and most immediate impact. Prioritization will be based on models that can estimate the amount of relief a specific project could provide in combatting nuisance and compound flooding. Prioritizing projects that provide the most relief from the threat of flooding will guide the Town's capital improvement decision-making and reduce the risk of spending funds on projects that are less effective. Not only does this preserve limited Town funds, but also increases the confidence of the community that their local government is working to combat flooding on the island.

Based on the 2020 and 2022 combined 303 (d) List of impaired waters in South Carolina, Pawleys Island Creek is listed as impaired for recreational use in 2022 due to an impaired status associated with *Enterococcus*. Stormwater management improvements on Pawleys Island, as well as on the mainland, in combination with other best management practices such as picking up after pets, can help to reduce the presence of harmful bacteria in local water bodies, thus protecting human health and the vitality of the local economy. Green infrastructure and other stormwater practices that will be studied as part of the development of the DIP, can help to manage water on site, filter pollutants, and protect downstream water quality.

Attachment 2: Detailed Cost Estimate

The Drainage Improvement Plan will include the following components with corresponding plan development cost estimates:

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Attachment 3: Service Area Maps

Accompanying this grant application are the following supporting documents:

- Town of Pawleys Island Sea Level Rise Adaptation Plan (2022) This study identifies areas within the Town that are most flood prone and identifies 9 high priority locations across the island. The plan outlines numerous adaptation actions including traditional gray infrastructure improvements along with green protection solutions to provide a holistic approach to addressing areas of problematic flooding.
- Town of Pawleys Island Description of the Storm Drainage System (2008) This document includes a map and general description of each of the 87 storm drains and 50 outfalls across the island.
- GIS Maps displaying LIDAR data, flood severity data based on a 2021 property owner survey, and proposed drainage improvement projects that the Town is currently evaluating.

The goal of the proposed Drainage Improvement Plan will be to target infrastructure improvements in the high priority areas of Pawleys Island that were identified in the Sea Level Rise Adaptation Plan. The Drainage Improvement Plan will target infrastructure solutions at the drainage outfalls located in the 9 high priority areas identified in the study. The Drainage Improvement Plan would also evaluate nature-based to address creekbank overtopping and other flood prone areas where there is no existing drainage system in place.

Attachment 4: Utility Viability Tool

See attached the summary report generated from the Utility Viability Assessment Tool. Please note that the Town of Pawleys Island is seeking a stormwater improvement grant, while the Utility Viability Assessment Tool seems more geared towards water and sewer utility projects. The Town's water and sewer service provider is Georgetown County Water and Sewer District.

Attachment 5: Funding and Other Commitments

A letter of funding commitment letter signed by Daniel Newquist- Town Administrator is attached to this application.