



# Town of *Kiawah Island*

## Mayor

Craig E. Weaver

## Council Members

Maryanne Connelly

Daniel Prickett

Klaus Said

Chris Widuch

## Town Administrator

Stephanie Monroe Tillerson

## TOWN COUNCIL MEETING Municipal Center Council Chambers December 1, 2020; 2:00 pm

### AGENDA

- I. Call to Order:
- II. Approval of Minutes:
  - A. Minutes of the Town Council Workshop of November 3, 2020 [Tab 1]
- III. Mayor's Update:
- IV. Citizens' Comments (Agenda Items Only):
- V. Presentation:
  - A. Sea Level Resiliency/Adaptive Management Report [Tab 2]
- VI. Old Business:
  - A. To Consider Approval of **Ordinance 2020-12** - An Ordinance to Amend the Fiscal Year 2020-2021 Budget for The Town of Kiawah Island, South Carolina (7/1/20 Through 6/30/21) - **Second and Final Reading** [Tab 3]
  - B. To Consider Approval of **Ordinance 2020-13** - An Ordinance to Set the Salaries for the Mayor and Council Members of The Town of Kiawah Island - **Second and Final Reading** [Tab 4]
  - C. A Discussion of the Draft Language for a Tourism Committee
- VII. New Business:
  - A. To Consider Approval of **Ordinance 2020-14** - An Ordinance to Amend Article 14, General Regulations, Chapter 1, Flood Damage Prevention, Division 1 - General Standards, Division 2 – Administration and Enforcement, and Division 3 - Provisions for Flood Hazard Reduction - **First Reading** [Tab 5]
  - B. To Consider Approval of **Resolution 2020-06** - A Resolution Authorizing the Mayor of the Town of Kiawah Island to Execute an Easement Agreement by Which Haulover Creek Development Company, LLC, is Deeding a Landscape, Recreation and Utility Easement to the Town of Kiawah Island [Tab 6]
  - C. To Consider Approval of **Resolution 2020-07** - A Resolution Authorizing the Redemption of the General Obligation Bond Issued by the Town of Kiawah Island on October 12, 2016 [Tab 7]
  - D. To Consider Approval of **Resolution 2020-08** - A Resolution to Allow Emergency Repair Noise [Tab 8]
  - E. To Consider Approval of the Funding Requests from the Kiawah Island Conservancy for Phase II of the Groundwater Table and Marsh Vulnerability Studies [Tab 9]
  - F. To Consider Approval of the Town Attorney Contract for Joseph Wilson [Tab 10]
  - G. To Consider Approval of the 2021 Meeting Dates [Tab 11]
- VIII. Town Administrator's Report:
- IX. Council Member:
  - a. Committee Updates
  - b. General Comments
- X. Citizens' Comments:
- XI. Adjournment:



Tab | **1**

**TOWN COUNCIL**

**Agenda Item**

# WORK IN PROGRESS

The materials for this tab are nearly complete and will be sent to you electronically and added to the December Town Council Agenda and Materials

Thank you very much!!



Tab | 2

**TOWN COUNCIL**

**Agenda Item**

# **Adaptive Management Plan for Kiawah Island**

## **Phase I- Threshold Identification**

### **November 2020**



**Report Prepared by the Adaptive Management Task Force**

Lucas Hernandez, Chair  
James Chitwood  
Jack Kotz  
Diana Mezzanotte  
Cathy Pumphrey  
David Pumphrey  
John Taylor



Tab | 3

**TOWN COUNCIL**

**Agenda Item**

**Changes from the FY2021 Budget Amendment First Reading presented at TC on 11/3/20:**

1. Add salaries for the Mayor, Council members and the Judge for the 6 months 1/1/2021 to 6/30/2021. An increase of \$14K.
2. Adjust increase in the Town's contributions from 50% to 100% to optional deferred compensation plans to reflect six-month period from 01/01/2021 to 6/30/2021. A decrease of \$10K.
3. Add repayment of the outstanding balance on GO Bond issued for the Town Hall construction. An increase of \$1,668,000.

## Town of Kiawah Island

# ORDINANCE 2020-12

### AN ORDINANCE TO AMEND THE FISCAL YEAR 2020-2021 BUDGET FOR THE TOWN OF KIAWAH ISLAND, SOUTH CAROLINA (7/1/20 THROUGH 6/30/21)

**WHEREAS**, the Town of Kiawah Island adopted Ordinance 2020-05 on June 9, 2020, in accordance with Section 5-7-260 of the South Carolina Code of Laws, 1976, as amended; and

**WHEREAS**, Ordinance 2020-05 established the 2020-2021 Fiscal Year Budget (FY 20-21 Budget) so as to guide and direct the Town's receipt and expenditure of revenues during this time period; and

**WHEREAS**, certain adjustments in expenditures now necessitate amendments to the FY 20-21 Budget; and

**WHEREAS**, the Town of Kiawah Island held a public hearing on the 3<sup>rd</sup> day of November 2020 as required by state law.

**NOW, THEREFORE, BE IT ORDERED AND ORDAINED BY THE COUNCIL OF THE TOWN OF KIAWAH ISLAND, SOUTH CAROLINA, AND IT IS ORDAINED BY THE AUTHORITY OF SAID COUNCIL.**

#### **Section 1.     Purpose.**

This Ordinance is adopted to amend the Town of Kiawah Island's FY 20-21 Budget with respect to the General Fund, County Accommodation Tax Fund, Local Accommodation Tax Fund, and Capital Fund was established in Ordinance 2020-05.

#### **Section 2.     Amendment of the Fiscal Year 2020-2021 Budget for the Town of Kiawah Island, South Carolina.**

By passage of this Ordinance, the Town of Kiawah Island amends its FY 20-21 Budget with respect to General Fund expenditures, County Accommodation Tax , Local Accommodation Tax Fund, and Capital Fund as established in Ordinance 2020-05 in the manner set forth in "Exhibit A Pages 1-2," incorporated fully herein by reference, said amendments are subject to all terms and restrictions set forth in the Kiawah Island Municipal Code.

#### **Section 3.     Severability.**

If any part of this Ordinance is held to be unconstitutional, it shall be construed to have been the legislative intent to pass said Ordinance without such unconstitutional provision, and the remainder of said Ordinance shall be deemed to be valid as if such part had not been included. If said Ordinance, or any provision thereof, is held to be inapplicable to any person, group of



persons, property, kind of property, circumstances, or set of circumstances, such holding shall not affect the applicability thereof to any other persons, property, or circumstances.

**Section 4.     Effective Date and Duration.**

This Ordinance shall be effective upon its enactment by the Town Council for the Town of Kiawah Island.

**PASSED, APPROVED, AND ADOPTED BY THE COUNCIL FOR THE TOWN OF KIAWAH ISLAND ON THIS 1<sup>st</sup> DAY OF DECEMBER 2020.**

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Craig Weaver, Mayor

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Petra Reynolds, Town Clerk

First Reading: November 3, 2020

Public Hearing: November 3, 2020

Second Reading: December 1, 2020

**Town of Kiawah Island**

Proposed Budget Amendment to FY2021

All Funds Consolidated

Cash Basis

**Exhibit "A"**

	<b>Approved Budget FY2021</b>	<b>Proposed Amendment</b>	<b>Change</b>
<b>Revenues:</b>			
Building Permits	664,493	\$ 664,493	\$ -
Building Permits/Special Projects	-	-	-
Business Licenses	2,267,184	2,267,184	-
Franchise Fees	856,184	856,184	-
Local Option tax	472,073	602,567	130,494
State ATAX	1,356,025	1,688,275	332,250
Local ATAX	734,510	858,938	124,428
County ATAX	-	-	-
Hospitality Tax	411,357	457,985	46,628
Solid Waste Fees	600,000	600,000	-
Interest	312,500	140,000	(172,500)
Other	160,000	160,000	-
<b>Total Revenue</b>	<b>7,834,325</b>	<b>8,295,626</b>	<b>461,301</b>
<b>Expenses:</b>			
Salaries	1,273,140	1,287,140	(14,000)
Overtime	3,500	3,500	-
Benefits	380,376	390,376	(10,000)
Payroll Tax	125,543	125,543	-
<b>Employee Subtotal</b>	<b>1,782,559</b>	<b>1,806,559</b>	<b>(24,000)</b>
Public Safety/Payroll and Related Cost/ Off Duty Deputies	439,014	439,014	-
Public Safety/CCSO Contract	345,880	345,880	-
STR Code Enforcement	288,580	288,580	-
Utilities & Supplies	265,343	265,343	-
Advertising	4,500	4,500	-
Communications	51,820	51,820	-
Waste Management	1,034,080	1,034,080	-
Insurance	140,556	140,556	-
Professional Services	111,000	111,000	-
Consultants	61,500	161,500	(100,000)
Maintenance	453,160	469,145	(15,985)
Travel & Training	53,300	53,300	-
Rentals	41,000	41,000	-
Tourism & Recreations	1,507,172	1,523,572	(16,400)
Contributions	150,000	150,000	-
Other	246,945	246,945	-
Capital Outlay:			
Infrastructure and Landscaping	500,000	500,000	-
Vehicles	-	-	-
Other	-	66,544	(66,544)
Debt Service	357,916	2,025,916	(1,668,000)
<b>Total Expenses</b>	<b>7,834,325</b>	<b>9,725,254</b>	<b>(1,890,929)</b>
<b><u>Net Changes in Fund Balance</u></b>	<b><u>\$ 0</u></b>	<b><u>\$ (1,429,628)</u></b>	<b><u>\$ (1,429,628)</u></b>

TOWN OF KIAWAH ISLAND  
BUDGET AMENDMENT PROPOSAL FOR YEAR ENDED 6/30/21  
ALL FUNDS

Exhibit "A"

	2020-2021 Budget									
	General Fund Budget	State Accom Tax Fund Budget	County Accom Tax Fund Budget	Local Accom Tax Fund Budget	Beverage Tax Fund Budget	Hospitality Tax Fund Budget	Victims Assist Fund Budget	Arts and Cultural Events	Capital Fund Budget	Total Funds Budget
<b>Revenues &amp; Other Sources :</b>										
Accommodations Tax	\$ 110,920	\$ 1,577,355	\$ -	\$ 858,938	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,547,213
Hospitality Tax	-	-	-	-	-	457,985	-	-	-	457,985
Aid to subdivisions	35,000	-	-	-	-	-	-	-	-	35,000
Zoning Permits	10,000	-	-	-	-	-	-	-	-	10,000
Business License Revenue	2,267,184	-	-	-	-	-	-	-	-	2,267,184
Building Permits	664,493	-	-	-	-	-	-	-	-	664,493
Building Permits/Special Projects	-	-	-	-	-	-	-	-	-	-
Local Option Sales Tax	602,567	-	-	-	-	-	-	-	-	602,567
Franchise Fee - Electric	416,184	-	-	-	-	-	-	-	-	416,184
Franchise Fee -Beach	300,000	-	-	-	-	-	-	-	-	300,000
Franchise Fee - Other	140,000	-	-	-	-	-	-	-	-	140,000
Fines & Forfeitures	25,000	-	-	-	-	-	10,000	-	-	35,000
Interest Revenue	50,000	10,000	10,000	30,000	-	25,000	-	-	15,000	140,000
Solid Waste Collections	600,000	-	-	-	-	-	-	-	-	600,000
Beverage Tax / Permits	-	-	-	-	45,000	-	-	-	-	45,000
Miscellaneous Revenue	35,000	-	-	-	-	-	-	-	-	35,000
Transfers In	-	-	-	-	-	-	-	243,795	2,534,263	2,778,058
<b>Total Revenues &amp; Other Sources</b>	<b>5,256,348</b>	<b>1,587,355</b>	<b>10,000</b>	<b>888,938</b>	<b>45,000</b>	<b>482,985</b>	<b>10,000</b>	<b>243,795</b>	<b>2,549,263</b>	<b>11,073,684</b>
<b>Expenditures &amp; Uses :</b>										
Salary and Benefits/Regular Employees	1,585,778	-	-	138,386	-	-	-	82,395	-	1,806,559
Salary and Benefits/Deputies	57,014	191,000	-	191,000	-	-	-	-	-	439,014
Public Safety/CCSO Contract	47,837	-	-	298,043	-	-	-	-	-	345,880
STR Code Enforcement	288,580	-	-	-	-	-	-	-	-	288,580
Utilities & Supplies	211,305	-	40,000	2,500	-	91,750	-	3,000	-	348,555
Advertising	4,500	-	-	-	-	-	-	-	-	4,500
Communication	51,820	-	-	-	-	-	-	-	-	51,820
Waste Management	949,200	-	30,000	54,880	-	-	-	-	-	1,034,080
Printing	38,750	-	-	-	-	-	-	-	-	38,750
Professional Services	111,000	-	-	-	-	-	-	-	-	111,000
Consulting	161,500	-	-	-	-	-	-	-	-	161,500
Maintenance	284,495	-	26,900	6,750	-	151,000	-	-	-	469,145
Insurance	140,556	-	-	-	-	-	-	-	-	140,556
Travel & Training	53,300	-	-	-	-	-	-	-	-	53,300
Rentals	41,000	-	-	-	-	-	-	-	-	41,000
Tourism Related Cost	-	920,307	440,865	7,000	-	-	-	155,400	-	1,523,572
Contributions	150,000	-	-	-	-	-	-	-	-	150,000
Capital Outlay	59,000	-	-	208,333	-	216,000	-	-	-	483,333
Other	175,195	-	-	-	-	-	10,000	3,000	-	188,195
Contingency	20,000	-	-	-	-	-	-	-	-	20,000
Debt Service	-	-	-	-	-	-	-	-	2,025,916	2,025,916
Transfers Out	2,071,256	-	-	482,139	50,000	174,663	-	-	-	2,778,058
<b>Total Expenditures &amp; Uses</b>	<b>6,502,086</b>	<b>1,111,307</b>	<b>537,765</b>	<b>1,389,031</b>	<b>50,000</b>	<b>633,413</b>	<b>10,000</b>	<b>243,795</b>	<b>2,025,916</b>	<b>12,503,313</b>
<b>Change in Fund Balance</b>	<b>(1,245,737)</b>	<b>476,048</b>	<b>(527,765)</b>	<b>(500,093)</b>	<b>(5,000)</b>	<b>(150,428)</b>	<b>-</b>	<b>(0)</b>	<b>523,347</b>	<b>(1,429,629)</b>
Fund Balance Beginning of Year	11,737,538	213,708	1,302,358	1,133,807	23,974	1,185,538	21,150	-	4,907,385	20,525,458
<b>Fund Balance End of Year</b>	<b>\$ 10,491,801</b>	<b>\$ 689,756</b>	<b>\$ 774,593</b>	<b>\$ 633,714</b>	<b>\$ 18,974</b>	<b>\$ 1,035,110</b>	<b>\$ 21,150</b>	<b>\$ (0)</b>	<b>\$ 5,430,732</b>	<b>\$ 19,095,829</b>



Tab | 4

**TOWN COUNCIL**

**Agenda Item**

THE TOWN OF KIAWAH ISLAND

**ORDINANCE 2020-13**

**AN ORDINANCE TO SET THE SALARIES FOR THE MAYOR AND COUNCIL MEMBERS  
OF THE TOWN OF KIAWAH ISLAND**

**WHEREAS**, South Carolina Code § 5-7-170 and the Town of Kiawah Island Municipal Code Section 2-206(a) require that the salaries of the Mayor and Council Members of the Town of Kiawah Island shall be determined by Council and fixed by ordinance; and

**WHEREAS**, South Carolina Code § 5-7-170 and the Town of Kiawah Island Municipal Code Section 2-206(a) require that any increase in salary shall not become effective until the commencement date of the terms of two or more members of council elected at the next general election following the adoption of the ordinance setting the salaries, at which time it will become effective for the mayor and for all members of council whether or not they were elected in such election; and

**WHEREAS**, the Town Council for the Town of Kiawah Island has decided it is appropriate to set the salaries for the mayor and council members following the next election;

**NOW, THEREFORE, BE IT ORDERED AND ORDAINED BY THE COUNCIL OF THE TOWN OF KIAWAH ISLAND, SOUTH CAROLINA, AND IT IS ORDAINED BY THE AUTHORITY OF SAID COUNCIL.**

**Section 1**                      **Ordinance (Not Codified)**

The salaries of the Mayor and Council Members of the Town of Kiawah Island shall be set by this ordinance as follows:

**Mayor**                              \$8,000 per year

**Council Members**              \$4,000 per year

**Section 2**                      **Severability**

If any part of this Ordinance is held to be unconstitutional, it shall be construed to have been the legislative intent to pass said Ordinance without such unconstitutional provision, and the remainder of said Ordinance shall be deemed to be valid as if such portion had not been included. If said Ordinance, or any provisions thereof, is held to be inapplicable to any person, group of persons, property, kind property, circumstances or set of circumstances, such holding shall not affect the circumstances or set of circumstances, such holding shall not affect the applicability thereof to any other persons, property or circumstances

**Section 3**                      **Effective Date and Duration**

This ordinance shall become effective on the commencement date of the terms of two or more members of council elected at the next general election following the adoption of this ordinance and shall be effective for the mayor and all members of council at that time.

**PASSED, APPROVED, AND ADOPTED BY THE COUNCIL FOR THE TOWN OF KIAWAH ISLAND ON  
THIS 1<sup>ST</sup> DAY OF DECEMBER 2020.**

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**Craig Weaver, Mayor**

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**Petra S. Reynolds, Town Clerk**

1<sup>st</sup> Reading: November 3, 2020

2<sup>nd</sup> Reading: December 1, 2020



Tab | 5

**TOWN COUNCIL**

**Agenda Item**

TOWN OF KIAWAH ISLAND

## Ordinance 2020-14

**AN ORDINANCE TO AMEND ARTICLE 14, GENERAL REGULATIONS, CHAPTER 1, FLOOD DAMAGE PREVENTION, DIVISION 1 - GENERAL STANDARDS, DIVISION 2 – ADMINISTRATION AND ENFORCEMENT, AND DIVISION 3 - PROVISIONS FOR FLOOD HAZARD REDUCTION.**

**WHEREAS**, the Town of Kiawah Island Municipal Code currently contains Article 14, General Regulations, Chapter 1, Flood Damage Prevention; and

**WHEREAS**, the Town Council believes that it is appropriate to amend Division 1, General Standards, Section 14-114, Basis For Establishing The Areas Of Special Flood Hazard to add an exception to the recently adopted flood insurance rate map, dated January 29, 2021, to address concerns raised by the new flood insurance rate map; and

**WHEREAS**, the Town Council wishes to amend Chapter 1 – Flood Damage Prevention to adopt this exception and correct typographical errors.

**NOW, THEREFORE, BE IT, AND IT HEREBY IS, RESOLVED BY THE TOWN COUNCIL FOR THE TOWN OF KIAWAH ISLAND, SOUTH CAROLINA, AS FOLLOWS:**

### **SECTION 1**                      **Purpose**

The purpose of this Ordinance is to amend Article 14, General Regulations, Chapter 1, Flood Damage Prevention, Division 1, Sections 14-114, and 14-115, Division 2, Section 14-131(b)(5), (6), (8), (9), and (11), Division 3, Section 14-170, Section 14-175, Section 14-175(2), Section 14-177 and Section 14-178(4).

### **SECTION 2**                      **Ordinance**

**Article 14 - General Regulations, Division 1 - General Standards, Section 14-114 - Basis for Establishing the Areas of Special Flood Hazard, shall be amended with addition of the Exception as follows:**

The areas of special flood hazard identified by the federal emergency management agency in its flood insurance rate map (FIRM), dated January 29, 2021, with accompanying maps and other supporting data that are adopted by reference and declared to be a part of this chapter.

**Exception: All new construction plans and construction of single-family dwellings, multi-family dwellings, and commercial buildings shall adhere to the more restrictive of the base flood elevations established in the FIRM dated November 17, 2004 or the FIRM date January 29, 2021.**



**Article 14 - General Regulations, Division 1 - General Standards, Section 14-115 – Definitions shall be amended with addition of the new definition for North American Vertical Datum of 1988 (NAVD 88):**

**National American Vertical Datum of 1988 is a vertical datum established in 1991 by the minimum constraint adjustment of the Canadian-Mexican-United States leveling observations.**

**Article 14, General Regulations, Division 2, Administration and Enforcement, shall correct typographical errors as follows:**

Section 14-131(b)(5) - Verifying and recording the actual elevation, in relation to mean sea level, of the lowest floor, of all new or substantially improved structures, in accordance with section ~~14-32(b)(2)~~ **14-132(b)(2);**

Section 14-131(b)(6) - Verifying and recording the actual elevation, in relation to mean sea level, to which the new or substantially improved structures have been floodproofed, in accordance with section ~~14-32(b)(2)~~ **14-132(b)(2);**

Section 14-131(b)(8) - In coastal high hazard areas, the building official shall review plans for adequacy of breakaway walls in accordance with section ~~14-73(7)~~ **14-173(h);**

Section 14-131(b)(9) - When floodproofing is utilized for a particular structure, the official shall obtain certification from a registered professional engineer or architect, in accordance with section ~~14-32(d)(2)~~ **14-132(b)(2);**

Section 14-131(b)(11) - When base flood elevation data or floodway data have not been provided in accordance with section ~~14-14~~ **14-114**, the official shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer the provisions of chapter 3, division 2 of this chapter; and

**Article 14 - General Regulations, Division 3 - Provisions for Flood Hazard Reduction shall correct typographical errors as follows:**

Section 14-170(a)(2) - Pool pumps and associated pool equipment shall be exempt from meeting the requirements of subsection ~~14-70(c)~~ **14-170(c);**

Section 14-175 - Located within the areas of special flood hazard established in section ~~14-14~~ **14-114**, where small streams exist but where no base flood data have been provided or where no floodways have been provided, the following provisions apply:

Section 14-175(2) - New construction or substantial improvements of structures shall be elevated or floodproofed to elevations established in accordance with section ~~14-31(b)(11)~~ **14-166(a) and or section 14-166(b).**

Section 14-177 - Located within the areas of special flood hazard, as established in section ~~14-14~~ **14-114**, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate; therefore, the following provisions apply:

**Article 14 - General Regulations, Division 3 - Provisions for Flood Hazard Reduction, Section 14-178 – Elevated Buildings shall be amended as follows:**

Section 14-178(4) – Exception: Non-structural partitioning is acceptable provided these areas are engineered to diminish the effects of hydrostatic forces by the use of hydrostatic flood vents. This exception shall not apply to properties designated on a FEMA FIRM map as "V" zone **and or any property designated as an area of Limit of Moderate Wave Action (LIMWA), and or a Coastal A zone.** Properties designated as V-zones shall be permitted to have a maximum of 300 square feet of an enclosure with an engineered designed breakaway wall system to be utilized for storage, any other enclosures are prohibited. Exception: Elevator shafts are excluded from this requirement.

**SECTION 3**                    **Severability**

If any part of this Ordinance is held unconstitutional, it shall be construed to have been the legislative intent to pass said Ordinance without such unconstitutional provision, and the remainder of said Ordinance shall be deemed to be valid as if such portion had not been included. If said Ordinance, or any provisions thereof, is held to be inapplicable to any person, group of persons, property, kind of property, circumstances or set of circumstances, such holding shall not affect the applicability thereof to any other persons, property or circumstances.

**SECTION 4**                    **Effective Date and Duration**

This Ordinance shall be effective upon its enactment by Town Council for the Town of Kiawah Island.

**PASSED, APPROVED, AND ADOPTED BY COUNCIL FOR THE TOWN OF KIAWAH ISLAND ON THIS \_\_\_\_ DAY OF \_\_\_\_\_ 2021.**

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
Petra S. Reynolds, Town Clerk

First Reading Approval:

Second Reading Approval:



Tab | 6

**TOWN COUNCIL**

**Agenda Item**

## THE TOWN OF KIAWAH ISLAND

# RESOLUTION 2020-06

**A RESOLUTION AUTHORIZING THE MAYOR OF THE TOWN OF KIAWAH ISLAND TO EXECUTE AN EASEMENT AGREEMENT BY WHICH HAULOVER CREEK DEVELOPMENT COMPANY, LLC, IS DEEDING A LANDSCAPE, RECREATION AND UTILITY EASEMENT TO THE TOWN OF KIAWAH ISLAND**

**WHEREAS**, the Town of Kiawah Island and Haulover Creek Development Company, LLC, (“Haulover Creek”) have previously entered a Memorandum of Understanding which, among other things, included an agreement that Haulover Creek would donate a right of way to the Town to replace area lost by the Town due to the construction of turn lanes onto Haulover Creek’s property known as the “Andell Tract;” and

**WHEREAS**, the Town and Haulover Creek have negotiated and agreed upon an Easement Agreement, attached, memorializing the donation of an easement to satisfy Haulover Creek’s obligations under the Memorandum of Understanding;

**NOW, THEREFORE, BE IT ORDERED AND RESOLVED BY THE COUNCIL OF THE TOWN OF KIAWAH ISLAND, SOUTH CAROLINA, AND IT IS RESOLVED BY THE AUTHORITY OF SAID COUNCIL.**

### **Section 1**                      **Resolution**

The Mayor of the Town of Kiawah Island is hereby authorized to enter and execute an Easement Agreement, attached hereto, with Haulover Creek whereby Haulover Creek grants the Town a landscape, recreation and utility easement over, through and across the Andell Tract.

In addition, the Mayor is authorized to enter and execute any additional documentation required to effectuate the Easement Agreement.

### **Section 2**                      **Effective Date and Duration**

This resolution shall become effective on the date of passage of the resolution.

**PASSED, APPROVED, AND ADOPTED BY THE COUNCIL FOR THE TOWN OF KIAWAH ISLAND ON THIS 1<sup>ST</sup> DAY OF DECEMBER 2020.**

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Craig Weaver, Mayor

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Petra S. Reynolds, Town Clerk

STATE OF SOUTH CAROLINA     )  
   )     EASEMENT AGREEMENT  
COUNTY OF CHARLESTON     )

This Easement Agreement made this 1st day of December, 2020, by and between The Town of Kiawah Island (“Town”) and Haulover Creek Development Company, LLC, a Virginia limited liability company (“Haulover”), collectively referred to herein as the “Parties.”

WITNESSETH

WHEREAS, Haulover is the record owner of that certain parcel of land commonly referred to as the Andell Tract, a portion of which is more specifically shown and depicted as “TMS # 205-00-00-005 N/F HAULOVER CREEK DEVELOPMENT” on that certain plat prepared by Joseph L. McIntyre, P.L.S., S.C. Reg. # 15513, entitled “PLAT OF A PROPOSED VARIABLE WIDTH LANDSCAPE, RECREATION AND UTILITY EASEMENT PREPARED FOR THE TOWN OF KIAWAH ISLAND LOCATED IN THE TOWN OF KIAWAH ISLAND CHARLESTON COUNTY, SOUTH CAROLINA, “dated September 9, 2020, and recorded in Plat Book L20 at Page 0406, ROD Office for Charleston County (the “Plat”), attached hereto as Exhibit A, incorporated herein by reference; and

WHEREAS, the Town, with the approval of Haulover, has constructed turn lanes on Kiawah Island Parkway leading to the Andell Tract; and

WHEREAS, Haulover, in return for the Town’s loss of a fifteen foot right of way due to the construction of the turn lanes, has agreed and desires to grant Town a landscape, recreation and utility easement over, through and across the Andell Tract as shown and designated as “PROPOSED VARIABLE WIDTH LANDSCAPE, RECREATION (BIKE AND PEDESTRIAN) & UTILITY EASEMENT 7507 SF 0.172 ACRE” on the Plat (the “Easement”); and

WHEREAS, the Town shall be obligated for the maintenance, repair, and upkeep of the Easement; and

NOW THEREFORE, in consideration of the premises and the further sum of Ten and No/100 Dollars (\$10.00), the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree as follows:

1. The recitals set forth above are true and correct and incorporated herein by reference.
2. Haulover hereby grants to Town, and its respective assigns and/or successors in title, a permanent, perpetual, and appurtenant easement over, through and across the Andell Tract for purposes of landscaping, recreation, and utilities, as specifically shown and designated as “PROPOSED VARIABLE WIDTH LANDSCAPE, RECREATION (BIKE AND

PEDESTRIAN) & UTILITY EASEMENT 7507 SF 0.172 ACRE” on the Plat attached hereto as Exhibit “A..”

3. The Town shall be responsible for the maintenance, repair, and upkeep of the Easement.
4. This agreement shall be binding on the parties and their heirs, successors, administrators, and assigns.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have set their hands and seals as of the date first above written.

WITNESSES:

TOWN OF KIAWAH ISLAND:

\_\_\_\_\_  
Witness #1

By: \_\_\_\_\_(Seal)  
Craig Weaver, Mayor

\_\_\_\_\_  
Witness #2 (can be notary)

STATE OF SOUTH CAROLINA            )  
  )  
COUNTY OF CHARLESTON            )

ACKNOWLEDGMENT

The foregoing instrument was acknowledged before me this 1st day of December, 2020,  
by **Craig Weaver, Mayor for the Town of Kiawah Island.**

SWORN to and subscribed before me  
this 1st day of December, 2020

\_\_\_\_\_(L.S.)  
Notary Public for the State of South Carolina  
My Commission Expires: 01-29-2023

Witness #1

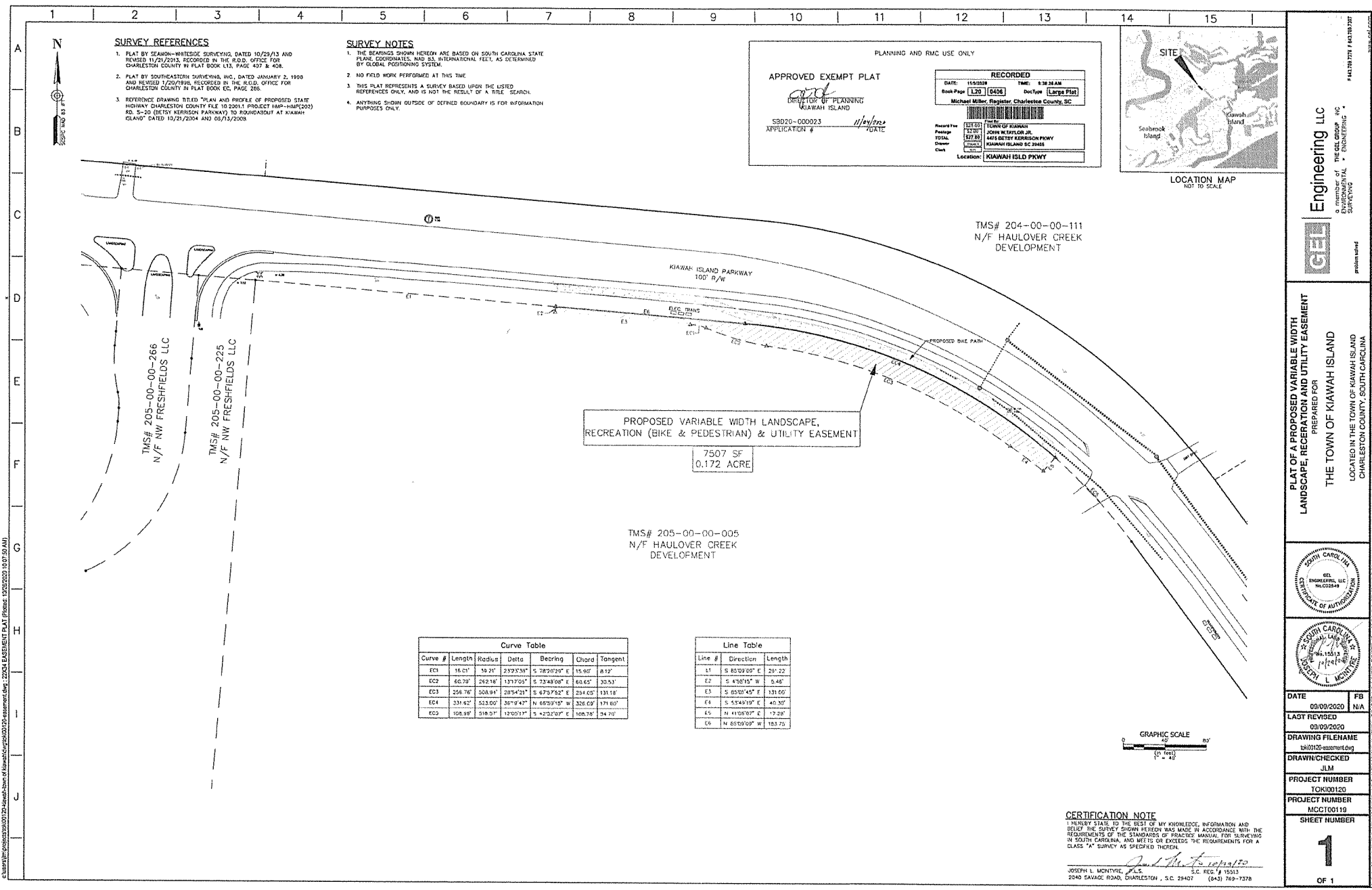
By: \_\_\_\_\_ (Seal)  
James A. Jones, Manager

)
)
)

## Page 4 of 5



# **Exhibit A**



**SURVEY REFERENCES**

1. PLAT BY SEANON-WHITEHEAD SURVEYING, DATED 10/29/13 AND REVISED 11/21/2013, RECORDED IN THE R.D.D. OFFICE FOR CHARLESTON COUNTY IN PLAT BOOK L13, PAGE 407 & 408.
2. PLAT BY SOUTHEASTERN SURVEYING, INC., DATED JANUARY 2, 1990 AND REVISED 1/20/1998, RECORDED IN THE R.D.D. OFFICE FOR CHARLESTON COUNTY IN PLAT BOOK EC, PAGE 285.
3. REFERENCE DRAWING TITLED "PLAN AND PROFILE OF PROPOSED STATE HIGHWAY CHARLESTON COUNTY FILE 10 2001.1 PROJECT (H&P-H&P2003) RD. 5-20 (BETSY KERRISON PARKWAY) TO ROUNDABOUT AT KIWAH ISLAND" DATED 10/21/2004 AND 05/13/2008.

**SURVEY NOTES**

1. THE BEARINGS SHOWN HEREON ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATES, NAD 83, INTERNATIONAL FEET, AS DETERMINED BY GLOBAL POSITIONING SYSTEM.
2. NO FIELD WORK PERFORMED AT THIS TIME.
3. THIS PLAT REPRESENTS A SURVEY BASED UPON THE LISTED REFERENCES ONLY, AND IS NOT THE RESULT OF A TITLE SEARCH.
4. ANYTHING SHOWN OUTSIDE OF DEFINED BOUNDARY IS FOR INFORMATION PURPOSES ONLY.

**APPROVED EXEMPT PLAT**

DIRECTOR OF PLANNING  
KIWAH ISLAND  
SBD20-000023  
APPLICATION #  
11/24/2023  
DATE

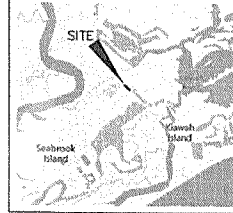
PLANNING AND RMC USE ONLY

**RECORDED**

DATE: 11/20/2023 TIME: 5:38:34 AM  
Book Page: L20 | 0406 DocType: [Large Plat]  
Michael Miller, Register, Charleston County, SC

Record Fee: \$25.00  
TOTAL: \$27.00  
Driver: [blank]  
Clerk: [blank]

Location: KIWAH ISLAND PKWY



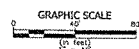
LOCATION MAP  
NOT TO SCALE

PROPOSED VARIABLE WIDTH LANDSCAPE,  
RECREATION (BIKE & PEDESTRIAN) & UTILITY EASEMENT

7507 SF  
0.172 ACRE

Curve Table						
Curve #	Length	Radius	Delta	Bearing	Chord	Tangent
EC1	16.21'	33.21'	217.91°	S 78°50'29" E	15.90'	8.12'
EC2	46.73'	262.16'	137.70°	S 73°48'08" E	68.65'	35.53'
EC3	258.76'	508.94'	285°24'21"	S 67°57'52" E	294.05'	131.18'
EC4	331.42'	513.00'	307°19'47"	N 68°59'18" W	326.09'	171.80'
EC5	108.98'	318.57'	12°05'13"	S 42°32'10" E	108.78'	54.70'

Line Table		
Line #	Direction	Length
L1	S 82°09'00" E	29.22'
L2	S 4°56'15" W	5.44'
L3	S 85°01'45" E	331.69'
L4	S 15°40'19" E	40.50'
L5	N 11°08'50" E	12.28'
L6	N 85°09'08" W	183.75'



**CERTIFICATION NOTE**

I HEREBY STATE TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

JOSEPH L. MONTYME, S.C. REG. # 15513  
2040 SAVAGE ROAD, CHARLESTON, S.C. 29407 (843) 769-7378

**Engineering LLC**  
a member of THE GEL GROUP, INC.  
SURVEYING & ENGINEERING  
# 843.769.7378 / 843.769.7377

**PLAT OF A PROPOSED VARIABLE WIDTH LANDSCAPE, RECREATION AND UTILITY EASEMENT PREPARED FOR THE TOWN OF KIWAH ISLAND**  
LOCATED IN THE TOWN OF KIWAH ISLAND CHARLESTON COUNTY, SOUTH CAROLINA

DATE: 09/09/2020 FB: N/A  
LAST REVISED: 09/09/2020  
DRAWING FILENAME: bh00102-exempt.plt  
DRAWN/CHECKED: JLM  
PROJECT NUMBER: 10000150  
PROJECT NUMBER: MCC000119  
SHEET NUMBER: 1  
OF 1



Tab | 7

**TOWN COUNCIL**

**Agenda Item**

THE TOWN OF KIAWAH ISLAND

**RESOLUTION 2020-07**

**A RESOLUTION AUTHORIZING THE REDEMPTION OF THE GENERAL OBLIGATION BOND ISSUED BY  
THE TOWN OF KIAWAH ISLAND ON OCTOBER 12, 2016**

**WHEREAS**, on October 12, 2016, the Town of Kiawah Island (the “Town”) issued a general obligation bond, designated as “Town of Kiawah Island, South Carolina General Obligation Bond, Series 2016,” (hereinafter the “Bond”) in the the principal amount of \$3,000,000 which was sold to and is currently held by The Bank of South Carolina in order to defray the cost of constructing a new Town Hall for the Town; and

**WHEREAS**, the Town has made semiannual payments of interest and annual payments of principal on the Bond since its issuance, and the current outstanding principal balance of the Bond is \$1,668,000; and

**WHEREAS**, the Bond is subject to redemption at the option of the Town at a redemption price of the outstanding par amount of the Bond plus accrued interest to the redemption date; and

**WHEREAS**, the Town has determined that it is financially able to pay the outstanding balance in full on the Bond early, and further that paying the full balance owed on the Bond is in the Town’s best interests;

**NOW, THEREFORE, BE IT ORDERED AND RESOLVED BY THE COUNCIL OF THE TOWN OF KIAWAH ISLAND, SOUTH CAROLINA, AND IT IS RESOLVED BY THE AUTHORITY OF SAID COUNCIL.**

**Section 1**                      **Resolution**

The Town Council of the Town hereby authorizes the redemption of the Bond and payment of all amounts due and owing thereunder, including the outstanding principal amount of \$1,668,000 and the interest accrued thereon to the redemption date.

In addition, each of the Mayor of the Town and the Administrator of the Town is hereby authorized to deliver the required redemption notice to The Bank of South Carolina and to enter and execute any agreements or other documents to effectuate the redemption of the Bond.

**Section 2**                      **Effective Date and Duration**

This resolution shall become effective on the date of passage of the resolution.

**PASSED, APPROVED, AND ADOPTED BY THE COUNCIL FOR THE TOWN OF KIAWAH ISLAND ON  
THIS 1<sup>ST</sup> DAY OF DECEMBER 2020.**

\_\_\_\_\_  
**Craig Weaver, Mayor**

\_\_\_\_\_  
**Petra S. Reynolds, Town Clerk**



Tab | 8

**TOWN COUNCIL**

**Agenda Item**

# WORK IN PROGRESS

The materials for this tab are nearly complete and will be sent to you electronically and added to the December Town Council Agenda and Materials

Thank you very much!!



Tab | 9

**TOWN COUNCIL**

**Agenda Item**



## **Projects Proposal to the Town of Kiawah Island**

**FY 2020-2021**

**September 2020**

**Revised November 20, 2020**

---

**Kiawah Conservancy Environmental Science Committee**  
(Approved September 3, 2020)

**Kiawah Conservancy Executive Committee**  
(Reviewed)

**Town of Kiawah Island Environmental Committee**  
(Reviewed)

**Town of Kiawah Island Town Council**  
(Pending Review)



## **Groundwater Table Study Phase II**

### ***Narrative***

The integrity of terrestrial barrier island ecosystems is dependent on the thickness of the vadose zone (depth to water table) and groundwater salinity levels (Masterson et al. 2014; Town of Kiawah Island, 2018). Shallow groundwater on a barrier island is characterized by a thin layer of freshwater (aka “freshwater lens”) which lies below the vadose zone and can be stratified with freshwater at the top and progressively more saline water further below. Typically, freshwater is more abundant toward the middle of the island, which creates the convex shape typical of a lens (Masterson et al., 2014). Both depth and salinity of subsurface groundwater conditions are mostly influenced by elevation, soil hydrology, and geographic location (S.C. Geological Survey, personal communication, 2020).

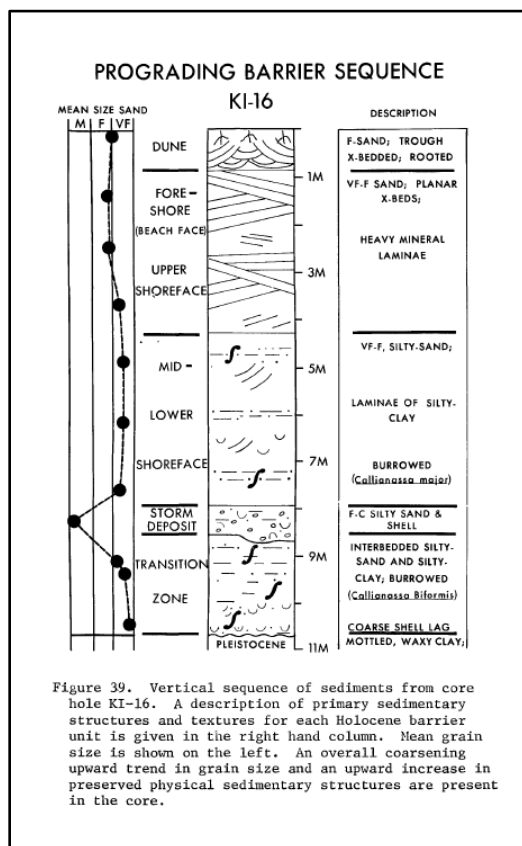
Saltwater inundation during storms, king-tide events, and gradual sea level rise will cause saltwater to slowly infiltrate and threaten the quality of groundwater by increasing salinity. Although precipitation slowly reduces salinity levels, additional pulse events and long-term pressures that introduce saltwater can increase salinity and make it difficult for ecosystems to adapt and respond. Geologists with SCDNR have suggested that live oaks respond negatively to groundwater salinity conditions around 2 parts per thousand (ppt). In comparison, water in tidal salt marshes range between 30-35ppt and soil surface conditions in the high marsh are between 0.3-3ppt (Sandifer, 1980).

Freshwater can also accumulate on the soil surface for long periods of time due to saturated soils and poor drainage, resulting in anoxic conditions within the soil. Changes in soil hydrology caused by human influences (e.g., removal of forest vegetation, backfilling, impervious surfaces, construction of flood control devices) can increase the potential for standing water and additional flooding issues. Both the increase in salinity and reduction in soil drainage capabilities could potentially lead to the die-off of forest and shrub thicket vegetation, sometimes manifesting as the transition of maritime forests into ghost forests (Kirwan and Gedan, 2019). This will greatly impact wildlife that is dependent on native vegetation found on the island. Continually studying the groundwater and mapping Kiawah’s freshwater lens will provide crucial information about the current and potential conditions of saltwater intrusion and provide better insight into the perceived impacts to the plant community.

Information about the groundwater will also provide further insight into the influence of Kiawah’s extensive pond system on the freshwater lens. Understanding the groundwater dynamics and potential impacts on native vegetation can give decision-makers objective authority for policies regarding the drainage of island ponds. The groundwater table also has the potential to fluctuate based on tidal influences and climatic conditions between seasons. Monitoring these fluctuations over time could help identify seasons and weather conditions during which the groundwater table is closest to the surface, making the island more susceptible to flooding. This would also help provide information about siting for green-infrastructure projects (e.g., rain gardens and bioretention areas), implementation of Low Impact Development (LID) practices, and habitat restoration projects that will help to improve the island’s resilience to flooding while also enhancing areas with a diminishing freshwater lens.

## Groundwater Study Phase I Summary

The Kiawah Conservancy, in collaboration with the Town of Kiawah Island and College of Charleston, initiated a study in the 2019-2020 fiscal year to investigate subsurface groundwater conditions on Kiawah Island. The project was focused on obtaining baseline information on groundwater depth and salinity which would inform on methods for long-term monitoring of conditions. Since the beginning of the project, 18 monitoring wells have been installed across Kiawah Island to gain access to subsurface groundwater conditions on Kiawah Island in different site conditions. Characteristics of the soil profile were observed during the installation process. This included noting the color of the soil using a Munsell soil color book at different depths and when we encountered natural groundwater. This was used to compare information gathered during Moslow's geological characterization of Kiawah Island from 1980 (see figure 39).



Preliminary data suggests that the groundwater level remains shallow in the winter to early spring and becomes deeper as weather warms and forest vegetation production increases. Groundwater typically maintains levels around mean high water (2.5' in low depressional sites, 5.5' on high relic dune ridge sites). Data collection began in April 2020 with the use of a Solinst 107 TLC probe to record measurements of temperature, level, and conductivity during physical visits to the well sites. Measurements were taken twice a week to observe changes in groundwater depth over time.

Continuous datalogger probes (Solinst 3001 Edge) were procured in June and deployed in all installed wells in July to begin recording data. These allow for remote data collection without the presence of researchers/scientists at the well sites. Each of the dataloggers were programmed to collect data at 30-minute intervals when deployed. The majority of the dataloggers are collecting level and temperature remotely, while a handful (=5) are designated to collect temperature, level, and conductivity. A Solinst Barologger is used to compensate level data from the dataloggers (taken as pressure readings) with barometric pressure above ground. An active

barologger is centrally located at the Kiawah Conservancy office at 80 Kestrel Court to allow for valid compensation of barometric pressure for any probe within a 10-mile radius. Continuous monitoring of depth will provide information on the seasonally available groundwater for island vegetation by investigating influences from various biological and climatic elements. The combined use of dataloggers (Solinst 3001) and a tape measure probe (Solinst 107 TLC) allows for analysis of groundwater conditions at specific sites across temporal and spatial (vertical) scales.

## ***Phase II Methodology***

The next phase of the groundwater project will focus on three objectives: 1) continuing baseline data collection and further establishment of a collaborative, long-term groundwater monitoring effort, 2) understanding the relationship between pond levels and groundwater elevation, and 3) chemical analysis of groundwater.

1. *Baseline Data Collection.* There will be a focus on continuing to reach the primary objective of the groundwater project: the collection of seasonal data related to groundwater table height and salinity to establish baseline data. Wells installed and equipment procured during Phase I will be used in the second phase of the project. Baseline collection will include the continued site visits to all wells to capture static data with the Solinst 107 TLC tape measure probe and collect information from dataloggers. Data collection will continue into the fall and winter months to gather baseline information on seasonal fluctuations of the groundwater. With groundwater levels decreasing in elevation in the late spring and summer months, it is anticipated that the groundwater elevation will gradually rise in the fall and winter months. This will likely include contributions from tropical storms, extreme rainfall events, and king tides commonly experienced in the fall.

Gathering this data will help develop a general understanding of the groundwater elevation fluctuations throughout the year. This will help in resilience planning by outlining opportune times to implement green-infrastructure projects and similar mitigation efforts. Additional materials and equipment will be requested in order to facilitate data collection efforts; this includes Solinst direct read cables, Solinst LevelSender telemetry systems for select wells, and conductivity calibration solutions.

2. *Surface Water and Groundwater Relationships.* The Conservancy will consult with KICA and the College of Charleston to study the relationship between surface waters and groundwater table elevation. This will involve using data captured from the Kiawah River Tide Station to study impacts from tidal fluctuations and the deployment of temporary stations in ponds to study pond levels. Surface water levels will be compared to elevation data from monitoring wells adjacent to wetlands and ponds. Tentative data gathering efforts include deploying dataloggers in constructed stations with staff gauges located nearby to manually record surface water elevations. Methodological approaches to study the relationship between groundwater and pond levels will also be deployed. Tentative methods for capturing this data include direct observation from probing the soil and installation of shallow drive-point wells, as well as other approaches. Incorporation of climatic conditions (i.e., rainfall, humidity, temperature) would also help with the development of a water budget by determining the general flow of water resources through the local hydrological cycle
3. *Chemical Analysis.* Additional analysis of chemical composition of groundwater will provide additional insight into the influence of groundwater conditions on the ecosystem. Cations and anions from salts affect the electrical conductivity in water. The barrier island ecosystem naturally contains sodium and chlorine introduced from sea water. Other salts used in residential and commercial landscape applications on Kiawah Island can also be present and contribute to higher electrical conductivity readings. Several wells also contained groundwater with a brown tint, likely due to organic chemicals from nearby

vegetation. Understanding the general chemical composition of groundwater will provide insight into what contributes to conditions and develop methods to reduce negative impacts to maritime forest vegetation. Specific outcomes for this include determining a generalized range of salt tolerances of localized vegetation based. This data will also help with the calibration of monitoring equipment that capture conductivity.

Each of these endeavors will utilize wells installed and equipment procured during the Phase I period. Due to the lifespan of the well materials, the installed wells will continue to be used beyond the initial phases of the project for long-term monitoring efforts. Future well maintenance will consist of flushing wells with water bailers to encourage the inclusion of native groundwater and remove unnecessary contaminants that negatively influence data collection efforts. The project will also explore how to integrate data on climatic conditions with these groundwater data to begin developing a water budget.

In addition to continuing established monitoring efforts, the Conservancy will also consult with the College of Charleston to explore additional methods to understand groundwater position and soil subsurface stratigraphy.

### ***Education and Outreach***

In November 2019, the Kiawah Conservancy submitted a proposal to the National Fish and Wildlife Foundation (NFWF) to receive funds through the Emergency Coastal Resilience Fund 2019. This proposal was developed in collaboration with key personnel at the Kiawah Island Community Association, College of Charleston, and S.C. Sea Grant Consortium. NFWF announced in March 2020 that the project proposal was approved to receive \$125,924 in funding. The proposed project is directed towards an informed scenario planning process to discuss green-infrastructure and habitat restoration projects on Kiawah Island.

Much of these discussions are related to improving the resilience of Kiawah Island to natural hazards through the planning and implementation of nature-based solutions. Groundwater monitoring data from both phases will be used to inform stakeholders throughout the ECRF project timeline. During the scenario planning process, stakeholder organizations will be informed of the island's current ecological status as it relates to current monitoring efforts. This includes interview meetings, small group discussions, planning sessions, and a comprehensive event at the conclusion. Through these efforts, a consensus on specific types of appropriate nature-based solutions will be developed and used afterwards for implementation.

Additionally, the Conservancy will focus on educating the public on the importance of groundwater resources through digital education and outreach initiatives. This includes written articles and educational videos that help to illustrate data gathering efforts and the process while highlighting the importance of the study.

### ***Outcomes***

Mixed-method data gathering from well monitoring within Phase II will help determine the seasonal fluctuations in the groundwater across various conditions on Kiawah Island. This will also help create an empirically-based map of current groundwater conditions on Kiawah Island. The

map would manifest as a digital elevation model (DEM) which would be generated based on the Charleston County DEM developed by SCDNR in 2017. Depending on the variation within the data gathered, static maps will be created to reflect the seasonal fluctuations of the groundwater table between various “wet” and “dry” seasons. The maps will be shown to stakeholders for input during the ECRF project for resilience planning purposes. Ultimately, the products will aid in expediting planning processes for green-infrastructure and habitat restoration projects, provide more informed recommendations for native landscaping practices, inform on local policies related to environmental controls, and bolster collaboration between organizations on Kiawah. Chemical analysis and additional research will provide a baseline understanding of the range of salt tolerances of specific local vegetation.

### **Reasoning**

- Vegetation on barrier islands relies on the freshwater lens found in the groundwater to remain healthy.
- Saltwater inundation during storms and king-tide events causes saltwater to slowly move inland and threaten the quality of groundwater by increasing salinity
- Saltwater inundation and intrusion into the groundwater are a threat to vegetation on the island and will affect wildlife that depend on native vegetation
- Understanding the current conditions of the freshwater lens and perceived future impacts will help prioritize management efforts to benefit the community, as well as island wildlife and vegetation

### **Objectives**

- Monitor groundwater to provide crucial information about the current conditions of saltwater intrusion and the effects of coastal inundation on the freshwater lens
- Understand the dynamics of the groundwater table and freshwater lens as it relates to ponds, weather conditions, and the encroachment of saltwater
- Identify additional areas that are vulnerable to flooding due to groundwater influences
- Promote the use of rain gardens with native plants and other Low Impact Development practices to protect the island’s fresh groundwater reserves

### **Requirements and approximate costs associated or needed to accomplish this project**

- Use of Kiawah Conservancy, KICA, and other properties across the island, with pre-selection of suitable sites
- ARB approval of monitoring stations
- Work with partners to share funding and supply needed expertise and equipment
- Contribute data resources for stakeholder engagement outlined in the Conservancy’s approved proposal to the Emergency Coastal Resilience Fund 2019 grant through NFWF/NOAA
- Funds necessary for carrying out Phase II of the project (\$32,000)
  - \$15,000 for installation and data collection

- \$2,000 for repairs and replacements of damaged loaned equipment from the College of Charleston
- \$15,000 for monitoring equipment (e.g., direct read cables for dataloggers, staff gauges, housings for pond monitoring stations) and sampling materials (e.g., sample collection jars, lab equipment)

## Outcomes

- Better understand groundwater dynamics on barrier islands
- Have insight into the perceived impacts on the native plant community and island habitat, as well as its environmental tolerances
- Identify vulnerable areas to prioritize preservation and restoration efforts, low-impact development practices, and green-infrastructure projects.
- Enhance current modeling related to localized flooding in the community
- Provide decision-makers information necessary for determining the best practices for pond drainage to preserve the island's freshwater reserves
- Respond to the "Groundwater and Salt Intrusion" section in Town's Amended Comprehensive Plan (page V-6)
- Assist the Town in pursuing goals listed in the amended comprehensive plan by providing information about protecting natural resources and promoting community resilience:
  - Land Use goal 5
  - Natural Resources goals 2b and 4
  - Priority Investment goal 4d
  - Natural Resources goal 6a - Town funding will serve as match funds for a proposed project under the Emergency Coastal Resilience Fund 2019 that has been approved by NFWF, which has received support from federal and state partners.

## **Marsh Vulnerability Phase II**

### ***Overview***

Sea-level rise and stormwater have the potential to greatly impact the health of salt marshes and present negative impacts on coastal communities. If salt marshes cannot accrete sediment quickly enough, or if the marshes' migration landward is blocked by physical barriers, rising water elevations will cause marsh vegetation to deteriorate and convert to mud flats. These changes would lead to cascading impacts to wildlife within the ecosystem and increase shoreline erosion by reducing the wave buffering effect which occurs in healthy marshes. Increased flow of stormwater into the marshlands from pond outflows also impacts the system. Drainage from impervious surfaces introduces pollutants (e.g., polycyclic aromatic hydrocarbons (PAHs), heavy metals) that impact marshland wildlife and vegetation downstream. Stormwater drainage runoff also increases the volumetric flow within tidal creeks that potentially contribute to erosion. Other coastal infrastructure used as erosion control devices (i.e., bulkheads and seawalls) can impede the migration of marshland onto higher ground and exacerbate erosion on adjacent areas of higher ground.

### ***Phase I Approach and Methodology***

Beginning in January 2020, the Kiawah Conservancy and the College of Charleston, through Dr. Norm Levine at the Santee Cooper GIS Laboratory and Lowcountry Hazards Center, embarked on a project to map the historical progression of marshland vegetation, current geological features, and anthropogenic infrastructure (e.g., drainage outfalls, bulkheads, docks, bridges). SCDHEC-OCRM completed a study recently (AMBUR) which modeled shoreline changes in the marsh and beachfront for the entire coast of South Carolina. However, the information from this study is coarse and lacks the regional specificity needed to identify vulnerable areas within Kiawah's marshlands. The phase I study built off of the AMBUR dataset by capturing shoreline changes in finer detail while also filling in data gaps with additional datasets.

The project primarily used ESRI ArcGIS Pro software to create a digitized map of these natural and built structures. Shoreline data was obtained by manually digitizing marsh shorelines within the mapping software from imagery at different time periods. The data layers which will be used to digitize shorelines include orthorectified imagery and Light Detection and Ranging (LiDAR) derived products. The primary source of these imagery products was the National Agriculture Imagery Program [NAIP], which are yearly orthorectified imagery gathered by USDA during the agricultural growing season. The resulting digitized shorelines will then be combined and analyzed for temporal-spatial changes to the marsh shorelines over time. In regard to selection of imagery, the imagery/raster data consists of multiple bands of electromagnetic spectral wavelengths which can be manipulated to identify characteristics within the marsh. Most datasets include 3-4 bands, while some can have up to 8 bands. Primarily, focus will be placed on data layers with near-infrared and green bands, which can be used in future studies to assess vegetative productivity and delineate plant community composition within the marsh.

Digital Elevation Models (DEMs) provided by NOAA (2017) were collected and used for improving understanding of shorelines and relative elevation. The DEM serves to provide quality assurance/quality control for the project by cross-referencing relative elevation with the digitized shorelines. This will also identify future impacts to the marsh due to sea level rise and coastal

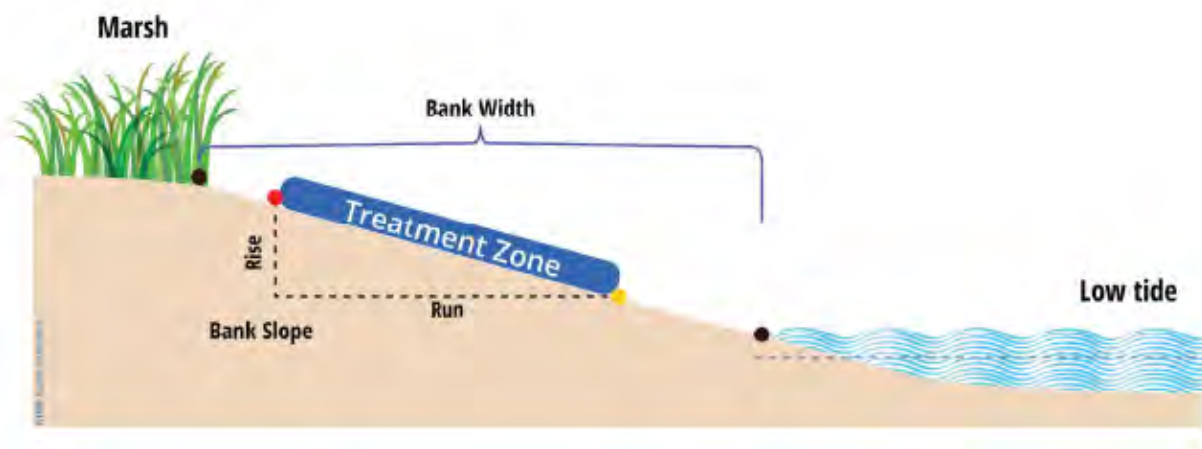
inundation. From this project, a guidance document will be created for residents which identifies best management practices for marsh protection. The Conservancy will also be able to identify areas within the marsh which are vulnerable to changing environmental conditions and in future need of restoration projects.

The primary goals of this study were to identify areas where we are experiencing losses of marsh vegetation and to understand the current status of marshland habitat. The resulting products from this will be used to better understand the impacts to the marsh over time and identify vulnerable areas to prioritize habitat restoration projects. The end goal of the project was to provide data to include into the Town of Kiawah Island's Marsh Management Plan. The document will help in future planning processes to take actionable steps to bolster Kiawah's resilience to natural hazards, (i.e., sea-level rise and flooding) and reverse the unintended consequences of human actions. As a result of the projects, information can also be used to model, or better understand, future impacts caused by sea-level rise, flooding, and introduction of freshwater from pond outflows.

### ***Phase II Methodology and Approach***

Building onto the work currently being conducted in the first phase of the project, the second phase will provide necessary information for the planning of habitat restoration projects for future implementation. This would include gathering data relevant to recommendations provided by SCDNR to SCDHEC-OCRM in the living shorelines regulatory report released in Mid-November of 2019. Data from this study will include high boat traffic areas, wave attenuation factors of marsh vegetation, delineations of vegetated communities in the marsh, and quantify slopes of creek/riverbanks (see Figure 4.2, SCDNR, 2019). Prioritization will be placed on areas identified during the analysis of marsh shoreline changes gathered from Phase I.

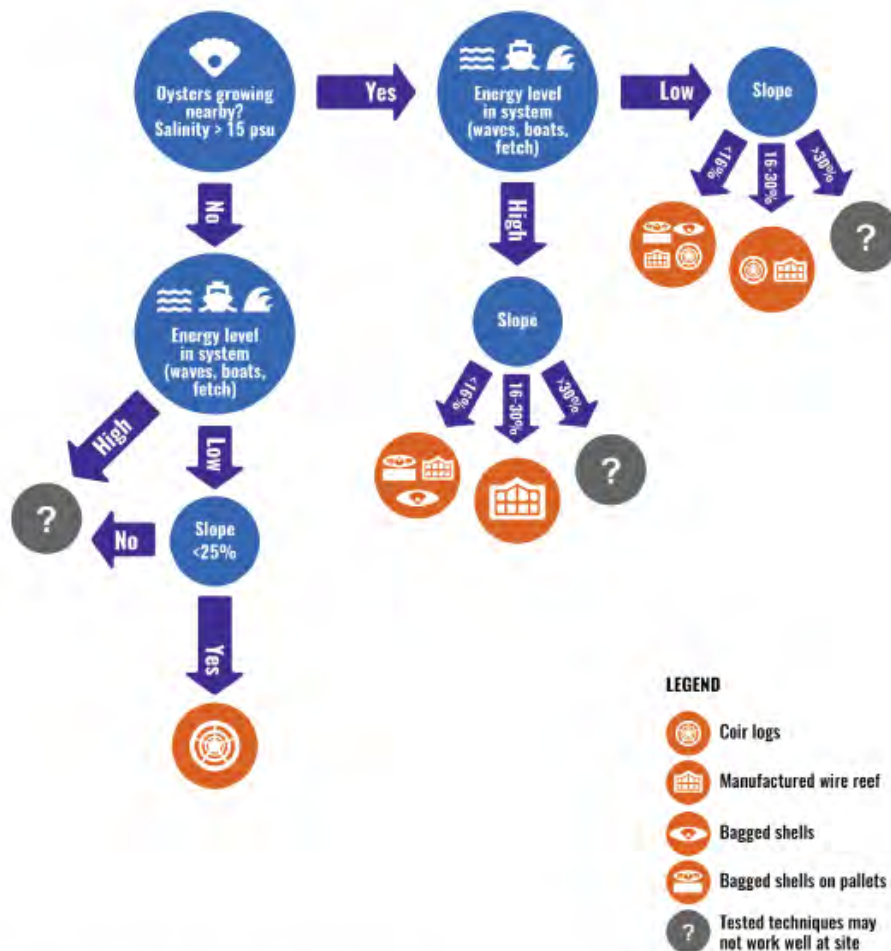
Vegetative communities will be defined using the analysis of imagery in tandem with the 2017 digital elevation model of Charleston County, utilizing two methods recommended by Farris et al. (2019). Analysis of marsh vegetation can also help quantify wave attenuation factors, which provide insight into the buffering ability of marsh vegetation to storm surges and wave action from



**Figure 4.2.** The rise over run method for calculating bank slope and determining bank width.



boats. Wave attenuation from this study will be used to compare to NOAA's Sea Level Affecting Marshes Model (SLAMM) to better understand impacts. Using the digital elevation model from 2017, the slope of the marsh will be calculated. This will help inform of the best marsh and oyster restoration designs for each area as determined by research from the SCDNR (see figure 5.1).



**Figure 5.1.** Flow chart of the conditions for which the study found successful living shoreline treatments over the course of the 1-2 years of monitoring of new sites and a single monitoring event for existing sites. The reader is referred to Section 4.0 to understand the different terms and how to measure them. Blue circles represent attributes and orange circles represent materials. In addition, bagged oyster shell should be placed on pallets if sink depth is greater than 3.94 in (10 cm; soft or very soft substrate).

Subsequent analysis can be conducted by incorporating additional data sources, such as Landsat data which can measure turbidity of open waters and identify areas where harmful algal blooms commonly occur (captured from isolating color band information reflected by different kinds of chlorophyll). Select data from the Coastal Resilience Evaluation and Siting Tool (CREST), compiled by the National Fish and Wildlife Foundation (NFWF) with human and wildlife components, will be used in conjunction with the collected and publicly available data for this project.

*October Update:* Researchers at the College of Charleston proposed an additional mapping product to be incorporated into the Conservancy's proposed Phase II Marsh Vulnerability Study. This product will be created using a method called unvegetated-vegetated marsh ratio (UVVR) developed by scientists at the U.S. Geological Survey with additional support by National Aeronautics and Space Administration. SCDHEC-OCRM, S.C. Department of Natural Resources, and S.C. Chapter of The Nature Conservancy are interested in conducting the marsh vulnerability analysis for the entirety of the tidal saltmarshes along the coast of South Carolina. The College of Charleston has been tasked with laying the groundwork for this analysis and have identified Kiawah Island as the pilot site for this analysis.

### ***Education and Outreach***

In November 2019, the Kiawah Conservancy submitted a proposal to the National Fish and Wildlife Foundation (NFWF) to receive funds through the Emergency Coastal Resilience Fund 2019. This proposal was developed in collaboration with key personnel at the Kiawah Island Community Association, College of Charleston, and S.C. Sea Grant Consortium. NFWF announced in March 2020 that the project proposal was approved to receive \$125,924 in funding. The proposed project is directed towards an informed scenario planning process to discuss green-infrastructure and habitat restoration projects on Kiawah Island. Much of these discussions are related to improving the resilience of Kiawah Island to natural hazards through the planning and implementation of nature-based solutions.

Marsh vulnerability mapping data from both phases will be used to inform stakeholders throughout the ECRF project timeline. Data will also be used to develop marsh and oyster habitat restoration design plans to submit to SCDHEC-OCRM and U.S. Army Corps of Engineers for implementation. Much of the recommendations will come from SCDNR's living shorelines regulatory report released in November of last year. During the scenario planning process, stakeholder organizations will be informed of the island's current ecological status as it relates to current monitoring efforts. This includes interview meetings, small group discussions, scenario planning sessions, and a comprehensive event at the conclusion. Through these efforts, a consensus on specific types of appropriate nature-based solutions will be developed and used afterwards for implementation.

Additional education and outreach activities will also be directed to the general public promoting the project and related environmental factors. The majority of this will be focused on digital web content

### ***Outcomes***

The first phase of the project was focused on gathering baseline data for the Town of Kiawah Island's Marsh Management Plan. Phase II would compound on the Phase I analysis by taking progressive steps to gather data to inform on appropriate designs to implement during active campaigns to restore marsh and intertidal habitats. Through funding from the NFWF (ECRF 2019), information will also be shared with stakeholder organizations on Kiawah Island to review and provide feedback on future marsh restoration designs and processes.

Upon ECRF project completion, enough information will be gathered to confidently apply for outside funding to implement marsh restoration projects. This includes applying for grants through federal government entities (e.g., NOAA) and congressionally appropriated organizations (e.g., NFWF). The initial goal upon project completion is to submit subsequent applications to NFWF's Coastal Resilience Fund (ECRF/NCRF) opportunities with targeted funding ranges between \$1-2 million.

Through support of the Unvegetated-Vegetated Marsh Ratio analysis, the Conservancy and the Town have the opportunity to support environmental research with statewide implications. Furthermore, we would obtain state-of-the-art analysis of our marshes, become the first community in the State to receive these research products, and open up opportunities for further collaboration with State and Federal governmental partners.

### **Reasoning**

- Rising intertidal elevations can affect the ability of marshland vegetation to adapt to different conditions in the marsh, limiting their survival in harsh conditions and facilitating subsequent impacts to other wildlife within the ecosystem.
- Rising water elevations may cause the marsh to migrate inland if the topography of the area is amenable - (i.e., Erosion of the land abutting the marsh causing property loss).
- Outflows into the marsh and erosion control infrastructure in marshlands can facilitate erosion and make areas more vulnerable to sea-level rise, storm inundation, and coastal flooding.

### **Objectives**

- Use mapping software to analyze aerial LiDAR imagery to study the migration of soil and vegetation within the marsh.
- Obtain information to better understand and model future impacts caused by sea-level rise, flooding, and human influence on the marshland.
- Identify areas of vulnerability within the marsh to prioritize wetland vegetation and oyster reef restoration efforts to enhance the island's resilience to environmental changes and natural hazards.
- Promote protection of the marshland ecosystem
  - Speaking engagements (i.e., Conservation Matters) with researchers
  - Articles in Naturally Kiawah magazine
  - Produced print for marketing and education

### **Requirements and approximate costs associated or needed to accomplish this project**

- Geospatial Information System Specialist stationed at the College of Charleston Lowcountry Hazards Center with occasional travel to Kiawah Island (\$17,000)
- Coastal Resilience Evaluation and Siting Tool [CREST] (NFWF) which can be downloaded and utilized with ArcGIS mapping software.
- Work with organizational partners to share funding, as well as provide supplemental expertise and equipment.

## Outcomes

- Information can be incorporated into the future iterations of the Town of Kiawah Island's Marsh Management Plan.
- Information to help the Conservancy identify vulnerable areas to prioritize conservation and habitat restoration efforts.
- Model potential future impacts caused by sea-level rise, flooding, and other environmental influences.
- Respond to concerns mentioned under "Salt Marsh Preservation" in the Town's Amended Comprehensive Plan (page V-5).
- Assist the Town in pursuing goals listed in the Town's amended Comprehensive Plan by providing information about protecting key natural resources and promoting community resilience.
  - Land Use goals 3 & 5
  - Natural Resources goals 2b, 2c, 3a, 3c, 3d, 4d, and 5c
  - Natural Resources goal 6a; Town funding will serve as match funds for a proposed project under the Emergency Coastal Resilience Fund 2019 that has been approved by NFWF, which has received support from federal and state partners.
  - Priority Investment goal 4 (c, d)
- Receive state-of-the-art vulnerability analysis of the marshes surrounding Kiawah Island



Tab | 10

## **TOWN COUNCIL**

### **Agenda Item**

# WORK IN PROGRESS

The materials for this tab are nearly complete and will be sent to you electronically and added to the December Town Council Agenda and Materials

Thank you very much!!



Tab | 11

## **TOWN COUNCIL**

### **Agenda Item**

# TOWN OF KIAWAH ISLAND

## 2021 Town Meeting Schedules\*

All meetings are held at the Municipal Center located at 4475 Betsy Kerrison Parkway, Kiawah Island, SC.  
Schedules are also available at [www.kiawahisland.org](http://www.kiawahisland.org) or by calling 843-768-9166.

### **Town Council**

#### **Meetings at 2:00 pm**

January 5<sup>th</sup>  
February 2<sup>nd</sup>  
March 2<sup>nd</sup>  
April 6<sup>th</sup>  
May 4<sup>th</sup>  
June 1<sup>st</sup>  
July 6<sup>th</sup>  
August 3<sup>rd</sup>  
September 7<sup>th</sup>  
October 5<sup>th</sup>  
November 2<sup>nd</sup>  
December 7<sup>th</sup>

### **Arts & Cultural Events Council**

#### **Meetings at 2:00 pm**

January 7<sup>th</sup>  
February 4<sup>th</sup>  
April 8<sup>th</sup>  
May 6<sup>th</sup>  
June 3<sup>rd</sup>  
August 5<sup>th</sup>  
September 2<sup>nd</sup>  
October 7<sup>th</sup>  
November 4<sup>th</sup>  
December 2<sup>nd</sup>

### **Arts Council Board**

#### **Meetings at 10:00 am**

January 4<sup>th</sup>  
April 5<sup>th</sup>  
July 12<sup>th</sup>  
October 4<sup>th</sup>

### **CERT Team**

#### **Meetings at 3:00 pm**

January 20<sup>th</sup>  
April 21<sup>st</sup>  
July 21<sup>st</sup>  
October 20<sup>th</sup>

### **Planning Commission**

#### **Meetings at 3:00 pm**

January 6<sup>th</sup>  
February 3<sup>rd</sup>  
March 3<sup>rd</sup>  
April 7<sup>th</sup>  
May 5<sup>th</sup>  
June 2<sup>nd</sup>  
July 7<sup>th</sup>  
August 4<sup>th</sup>  
September 8<sup>th</sup>  
October 6<sup>th</sup>  
November 3<sup>rd</sup>  
December 8<sup>th</sup>

### **Public Works Committee**

#### **Meetings at 10:00 am**

January 18<sup>th</sup>  
February 8<sup>th</sup>  
March 8<sup>th</sup>  
April 12<sup>th</sup>  
May 10<sup>th</sup>  
June 14<sup>th</sup>  
July 12<sup>th</sup>  
August 9<sup>th</sup>  
September 13<sup>th</sup>  
October 11<sup>th</sup>  
November 8<sup>th</sup>  
December 13<sup>th</sup>

### **Public Safety Committee**

#### **Meetings at 11:30 am**

January 13<sup>th</sup>  
February 10<sup>th</sup>  
March 10<sup>th</sup>  
April 14<sup>th</sup>  
May 12<sup>th</sup>  
June 9<sup>th</sup>  
July 14<sup>th</sup>  
August 11<sup>th</sup>  
September 15<sup>th</sup>  
October 13<sup>th</sup>  
November 10<sup>th</sup>  
December 15<sup>th</sup>

### **Environmental Committee**

#### **Meetings at 2:00 pm**

January 12<sup>th</sup>  
March 9<sup>th</sup>  
May 11<sup>th</sup>  
July 13<sup>th</sup>  
September 14<sup>th</sup>  
November 9<sup>th</sup>

### **Board of Zoning Appeals**

#### **Meetings at 3:00 pm**

January 25<sup>th</sup>  
February 22<sup>nd</sup>  
March 15<sup>th</sup>  
April 19<sup>th</sup>  
May 17<sup>th</sup>  
June 21<sup>st</sup>  
July 19<sup>th</sup>  
August 16<sup>th</sup>  
September 20<sup>th</sup>  
October 18<sup>th</sup>  
November 15<sup>th</sup>  
December 20<sup>th</sup>

### **Ways and Means Committee**

#### **Meetings at 2:00 pm**

January 26<sup>th</sup>  
February 23<sup>rd</sup>  
March 23<sup>rd</sup>  
April 27<sup>th</sup>  
May 25<sup>th</sup>  
June 22<sup>nd</sup>  
July 27<sup>th</sup>  
August 24<sup>th</sup>  
September 28<sup>th</sup>  
October 26<sup>th</sup>  
November 30<sup>th</sup>  
December 21<sup>st</sup>

\*Rescheduled meetings will be posted on the website