Sea Level Rise is hurting coastal Real Estate Values - say goodby to these cities and towns (/stories/2019/5/11/1857002/-Sea-Level-Rise-is-hurting-coastal-Real-Estate-values)

Lefty Coaster (/user/Lefty%20Coaster)
Community (This content is not subject to review by Daily Kos staff prior to publication.)

2019/05/11 · 23:02

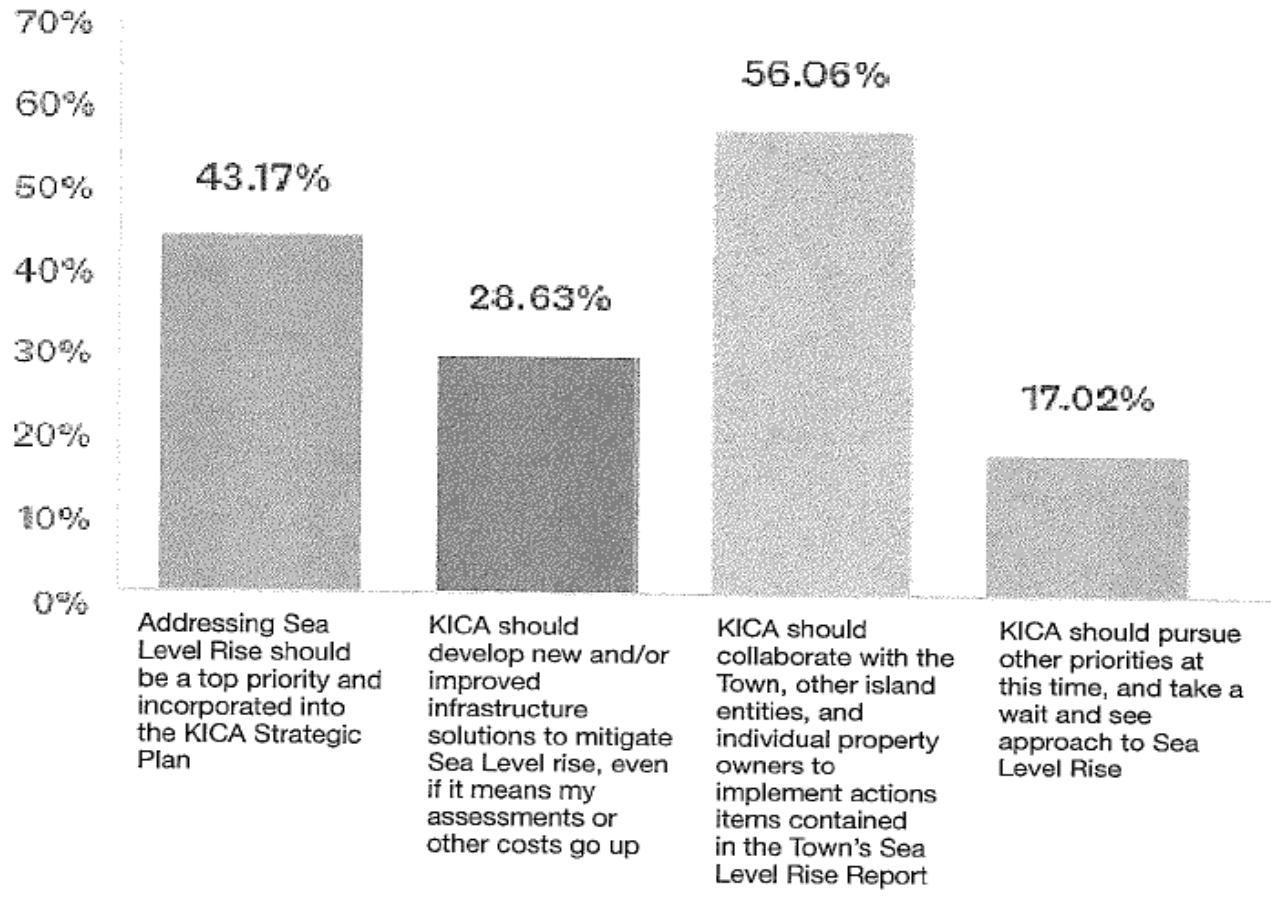
21. Kiawah Island, South Carolina

- **Current median home value:** $942,500
- **Value lost in impacted properties (2005-17):** $90,490,822
- **Percentage of homes underwater by 2100: 93.8%**

With 10 miles of beachfront, it's not surprising that Kiawah Island has the third-highest percentage of homes projected to by underwater by 2100. The resort town also had the second-highest median home value in 2009 at $1,138,400. Its current median home value is in fourth place at $942,500.

Highlight: Sea Level Rise

priority is to collaborate with town and other island entities & address in strategic plan



Sea Level Rise

Subcommittee Priorities

- S**tormwater Management and Flooding**
- R**oad System**
- **Public Services and Utilities**
- **Protecting and adapting residences and landscapes**
- B**each Preservation – as a natural resource and as a protection provider**
- **Salt Marshes Preservation**
- **Groundwater Reservoir**

Sea Level Rise

Town Actions To Date

- Endorsed the findings of the Sea Level Rise Subcommittee
- Adopted 1 ½ to 2 ½ foot sea level rise planning assumption over 30-40 years
- Incorporated some elements of SLR findings and actions into the Comprehensive Plan
- Considered, but deferred, re-elevation of Parkway leading onto Kiawah
- Emphasizing native plant initiative
- Partial funding of two Conservancy led projects (Marsh / Groundwater)
- Considering tidal monitoring stations at Kiawah River bridge

Sea Level Rise

KICA Actions To Date

- Endorsed findings on the Sea Level Rise Subcommittee
- Hired “resilience specialist”
- Created Board-led task force to consider infrastructure investments to address existing flooding and future stormwater and SLR impacts
- Evaluating private property demonstrations projects; resident consultation
- Beginning evaluation of neighborhood specific recommendations

Sea Level Rise

Where do we go from here…

- Are we doing enough?
  - Have made reasonable progress so far
  - Addressing obvious priorities and “low hanging fruit”
  - Existing projects are significant and follow through on existing projects will be critical
  - Resources are limited

- Is there a need for greater coordination?
  - Future issues are likely to require greater shared ownership and collaboration

- Are our efforts and Town’s (and everyone else’s) commitment sustainable?
  - Need to create clearer focus, less “abstract”, more definition of end results and goals

Sea Level Rise

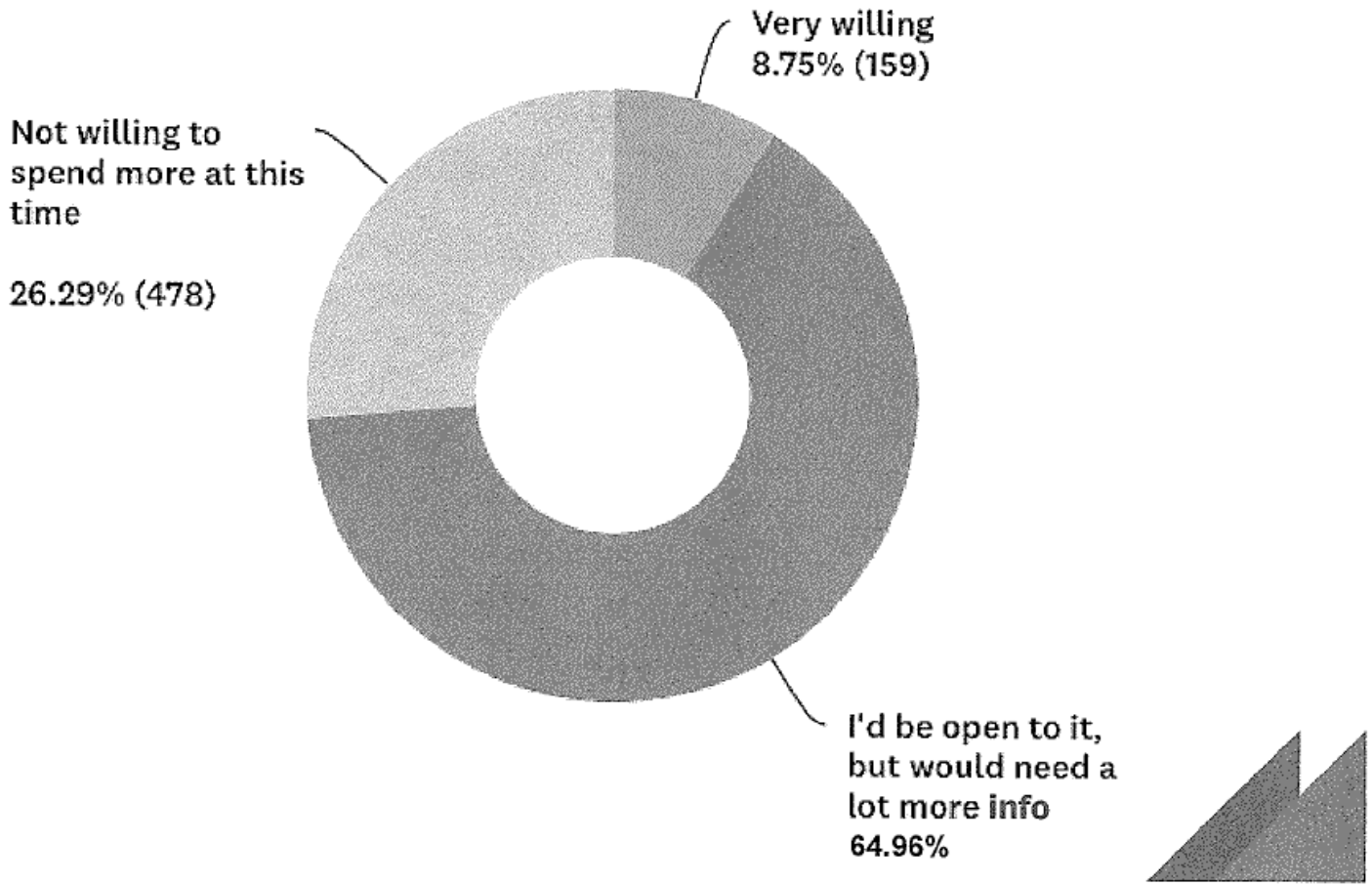
A couple alternative directions…

- No or limited new initiatives
  - Focus on existing activities
  - Supporting KICA and Conservancy projects
  - Continuation of Town efforts (grow native, etc.)
  - Leave to future Town Council to establish next steps

- Begin creating framework for future
  - Coordinated effort of Town, KICA, Conservancy and elements of former sub-committee
  - Make use of expertise of KICA resilience specialist
  - Establish 3 to 5 year plan
  - Thresholds, trigger points, monitoring, etc.
  - Town Council review by late summer ‘20

KICA Assessment Perceptions

willingness to spend more to maintain Kiawah's reputation as a premier community



Town of Kiawah Island Risk Management

Mayor Craig Weaver requested that a council member identify the key risks the town may face over the next decade. The following nine risks were identified and an assessment made regarding the town's current preparedness. This summary is provided to the council in order for its members to better understand these risks and the town's ability to help manage them.

1. Bridge Failure on Parkway
2. Island-wide Power Outage
3. Major Fire (Hotel, Clubhouse or Large Home)
4. Sea Level Rise and Flooding
5. Water Supply or Sewer Treatment Interruption
6. Crippling Hurricane
7. Significant Revenue Shortfall
8. Transition of Current Development Partners
9. Lack of Qualified Candidates for Elected Offices or Committees

Bridge Failure on Parkway

The possibility of a bridge failure on the Kiawah Island Parkway is remote but the consequences of failure are severe. The current two-lane bridge represents the only vehicular, pedestrian and bicycle access for the island and its failure would prevent residents, employees, contractors and guests from entering or leaving the island for a sustained period of time.

In order to manage this critical risk both the bridge structure itself and the land bridge on either side of the structure must be regularly inspected and strictly maintained. Erosion of the soil in any area surrounding the bridge should be immediately repaired and the cause of the erosion evaluated to prevent any future occurrence. The structure itself needs to be regularly inspected by a qualified engineer and any identified concerns addressed.

Since 2015, the town has had a major disaster recovery contract with Phillips and Jordan. Previously the scope of that contract was primarily limited to debris removal. That contract was expanded this year to include: delivery, installation and decommissioning of a single lane or a double lane bridge, portable restrooms and shower units, a climate-controlled bunk-house and a 14-foot motor boat.

Based on what is currently available through Phillips and Jordan, the likely temporary bridge would be a C200 bridge that, once support bases at both ends of the structure are in place, could be erected in a few days. The total time to construct the bridge and its supporting structure is estimated at 14-21 days. The modular panels that create the bridge structure are 10 feet in length and 7 feet high and can accommodate two lanes of traffic over an unsupported span of up to 200 feet. The bridge would be a rigid structure and could accommodate

vehicular traffic at 35 MPH in both directions. The bridge would not be influenced by the rise and fall of tides in the Kiawah River since it would be placed at the approximate level of the current bridge.

The cost of such a temporary structure is significant. A double lane bridge is estimated to cost $570,000 to deliver and install and $500,000 to decommission. After eight weeks of use, an additional rental fee of $17,000 per week would also be incurred. This potential cost underlines the importance of maintaining the current bridge in top condition. Having a two-lane bridge in place for a six month period would cost $306,000 in addition to commissioning and decommissioning.

Island-wide Sustained Power Outage

Kiawah receives its electric power through two relay stations: The Kiawah Relay Station receives its power from the Seabrook Sub-Station while the Vanderhorst Relay Station receives its power from the Lagareville Sub-Station located on Johns Island. Fortunately, all lines from those sub-stations to the rest of the island are underground cables making them more reliable and less vulnerable to storm damage than overhead lines. Power to those substations, however, is delivered by above ground high voltage power lines. The power originates from Santee Cooper and Duke Energy and is distributed to Kiawah by Berkeley Electric Cooperative.

At least annually, the town meets with representatives from Berkeley Electric to assess their readiness to address storm damage and power interruption. This year we met on June 14, 2019. Representing Berkeley was Thomas Harvey, Manager of Distribution Operations and Tony Vincent, Economic Development and Key Account Manager. Craig Weaver and Dan Prickett represented the town. Following the hurricane in September, we met again with Berkeley on September 18th along with representatives from Seabrook. Reliability for the year-to-date 2019 had been exceptional until power was lost during Hurricane Dorian.

In order to continue to improve the reliability of power, the company is working on several fronts. First, in order to quickly wash out ground-level distribution boxes on Kiawah that have been exposed to salt water during flooding, the company has purchased four vehicles built for this specific purpose. Prior to this they have had to rely on the fire department to wash out the boxes which after a storm was untimely and less reliable. The storm this year did not create significant flooding to ground-based distribution boxes so cleaning them was not an issue. Further, Berkeley is working to sectionalize the island so a power outage in one area does not automatically throw other adjacent areas out of service. They have also recently converted a vulnerable installation of switching gear to a waterproof relay that cannot be as easily damaged by flooding.

A new operational headquarters building on Main Road is being constructed to be fully operational during any future major storm (Category 4). This will permit it to be a "hard site" to coordinate emergency relief operations. Transportation, housing and food service is also been preplanned to handle hundreds of temporary power workers during storm recovery operations. The building is expected to be completed in early 2020.

During our June meeting we also learned of a smart phone application that Berkeley has now made available to its retail customers. Through this application customers can download a host of information about power

outages including the number and location of outages, expected duration, etc. The town plans to educate our residents about downloading this application and using it to assist them in the case of a storm and future potential outages.

We also discussed an upcoming dredging project proposed by KICA that is critically close to the underground cables that supply 2/3's of Kiawah's power. Mayor Weaver has discussed this with Jimmy Bailey to insure the contractors are well-aware of this vulnerability and stay clear of these major cables.

During Dorian, above-ground transmission lines on Johns Island that feed Kiawah were knocked out causing several days of power outage for our residents. In addition, a contractor removing debris caused a further outage of 48 hours for 840 homes beyond the second gate.

In spite of the outages experienced during each of the recent hurricanes, the town feels confident that everything that can be done to protect our power supply is being competently addressed by Berkeley Electric Coop.

Major Fire (Hotel, Clubhouse, or Large Homes)

The town is supported by units of the St. Johns Fire District. The district maintains two fire stations on the island, Station #4 on Kiawah Island Parkway and Station #6 on Governors Drive. Station #6 has recently been replaced with a new building that is larger, better able to withstand hurricanes and floods, and better equipped. Station #4 is scheduled to be replaced as well with a contract for construction to be let this fall. The equipment on the island includes two engine trucks with 1000 gallon tanks and a tower ladder truck capable of reaching up to 100 feet. A Tahoe EMT vehicle has been recently added to the inventory with a crew of two. Each engine truck carries four firefighters and each ladder unit three.

While the fire department's traditional role has been the prevention and fighting of fires, more and more calls on the island are for medical emergencies. As a result, the department now has at least one qualified EMT on every unit. Their goal is to have 90% of their personnel qualified as EMT's. The department is also currently conducting additional training for cardiac emergencies.

When a 911 call is made or when an alarm is triggered through a central alarm monitoring system, a host of information is available to the responding fire units. If, for example, the alarm were to come from the Sanctuary Hotel, the responding unit would typically know where in the building the problem may be and also may know the nature of the issue. Any alarm from a major building on the island would automatically bring four engine companies and two ladder trucks. If enough units were not available on the island, through the Charleston Auto-aid Agreement, the nearest equipment from any of five area fire departments would be dispatched. Once engaged, the territories covered by the responding units would be backfilled by other companies in order to maintain a minimum level of coverage everywhere.

The department also pre-plans for fires in every major commercial building on the island once a year. This increases their effectiveness once an alarm is sounded. While fires will remain a risk going forward, the St. Johns Fire District is well-prepared to support our community.

The island brings some special challenges to the St. Johns Fire District. First, 80 percent of our homes are unoccupied many months of the year. This means that unless a home has a fire alarm monitored by a security firm or a sprinkler system, the chances of a fire engulfing a residence before anyone notices are greatly increased. This was the case of the home that recently burned on Capt. Maynard's Point. That home is relatively remote and the alarms were not operational due to a renovation project so by the time another resident noticed the flames, the structure was fully engulfed. In cases like this, there is little the department can do other than monitor the fire until it is extinguished.

The Fire District and the Sherriff's Department also become involved when a missing person is reported. The most effective way for citizens to report any emergency is using the 911 emergency call system. This automatically puts all emergency responders on alert. This is also the case with a missing person. Once a person is reported missing, the closest responder to the incident will take command and begin coordinating a search. The Fire District is best equipped to undertake an area-wide search. The Sherriff has a helicopter and drones quipped with thermal imaging sensors to help in the search. Bloodhounds also are available. On the island itself, KICA security, Resort Security, and the Beach Patrol would be included depending on the nature and scope of any search.

MUSC has recently proposed building an emergency room and trauma center on Seabrook Island. Such a facility would provide EMT's a much closer location for transport in the case of a medical emergency on Kiawah. This would significantly lower the risk level on the island created by a medical emergency.

Sea Level Rise and Flooding

The town appointed a Flood Mitigation and Sea Level Rise Adaptation Subcommittee of the town's Environmental Committee in 2017 to address concerns raised by increased frequency of flooding and future water level changes. In addition to the town's representatives, the committee included property owners, Kiawah Island Community Association, the Kiawah Conservancy, and the Architectural Review Board. Their report was issued on September 4, 2018.

The committee concluded that first, a well-planned and executed storm water management system is critical to handling flooding on the island. The island fortunately already has an interconnected system of ponds that can handle the equivalent of a 100-year flood. Maintaining and upgrading this system to include automated outflow gates, repair and replacement of pipes and reducing the obstruction of drains, swales and current pipes is critical.

Second, the road system needs to be evaluated to ensure main arteries are passable shortly after an event. The town has hired an engineering firm to examine the Kiawah Island Parkway to see if sections need to be elevated in order to meet this requirement. Based on the results of that study, it appears that raising the level of the parkway would not be necessary during the next 20 year period. KICA is likewise evaluating low-lying areas inside the gate to reduce the likelihood of flooding.

Third, water, wastewater, and electrical services need to be made more protected from high-water damage that can cause disruptions to services. Refer to other sections of this risk analysis for more details on their preparedness.

Fourth, property owners themselves need to adapt their residences to higher and more frequent flooding. Examples of recommendations include pervious paving, rain gardens, replacing loose mulch and flood intolerant plants.

Fifth, Kiawah is fortunate to have a beach that currently accretes sand. This may change over the years but is currently very helpful to preserving one of our most critical assets. The committee recommends, however, that we continue to monitor the beach and its dune system as well as beach wildlife while discouraging the construction of any buildings or facilities seaward into the dune system.

Sixth, we have learned the importance of our vast salt marshes to Kiawah's preservation. Recommendations include working with neighborhoods to protect migration routes for marshes and supplying sediment for vertical growth along marsh edges.

The final recommendation of the subcommittee involves the protection of the groundwater reservoir that protects the freshwater which allows our vegetation to survive. Drought can reduce the availability of freshwater which reduces our ability to hold back seawater. Consideration has to be given to ways to retain fresh water on the island including low impact development and modifications to pond management.

The recommendations of this subcommittee have this year been incorporated into the town's ten-year strategic plan.

Water Supply and Sewer Treatment Interruption

Water and sewer services are provided to the island by the Kiawah Island Utility Company. The utility company purchases its water from St. John's Water Company and it is delivered to the island by two large water mains each sized with enough capacity to independently handle the island's requirements. This provides for a complete back-up system were one of the supply lines to be damaged or interrupted. Two storage tanks on the island hold a total of 4.5 million gallons of fresh water. The largest tank is at their Sora Rail facility, the second is located at 400 Governor's Drive. In addition, the company maintains two aquafer storage units with 20 to 30 million gallons of capacity. At any given time, there is at least two weeks supply of water on the island.

Sewage is handled through a series of gravity feeds to 53 different pumping stations located throughout the island. Waste water exits the buildings on the island via gravity until it reaches a pumping station where it is elevated to a level where gravity again takes it to another pumping station and this process is repeated until it reaches a treatment plant. In the case of a power outage affecting the pumps, the company has 4 to 5 portable diesel-powered pumps that can be moved around the island to maintain the system. Additional portable pumps are available through a stand-by contractor. There is enough diesel fuel on site to operate the pumps for a week. Since during a major storm, emergency responders may be housed at the Sanctuary Hotel, the pumps handling that area would be given first priority.

The utility company's operations headquarters is located on Sora Rail Road, on relatively high ground in a central area of the island. It appears the utility is managing its resources in a way to handle most anticipated disruptions to the island.

Crippling Hurricane

The Town of Kiawah Island Comprehensive Emergency Plan was adopted in 2014 to act as a guide for Town officials and staff following standard emergency management methodology used by County, State and Federal agencies. The Town has been delegated to manage emergencies and disasters within the Town limits until those resources have been exhausted and then the Town will request assistance from the higher government authorities.

The Plan is divided into four sections: Mitigate, Prepare, Respond and Recover.

The Comprehensive Plan contains a Hurricane Plan as a major subsection. In summary, Charleston County's Emergency Management Department will lead the regional response to hurricanes and coordinate the regional evacuation and recovery effort with State and Federal officials. The Town will use Operating Conditions (OPCONS) to designate specific response actions to approaching storms. The safe and effective evacuation of the Town's residents, visitors, staff and others is the primary goal of the response plan. The evacuation plan calls for two stages: early evacuation and evacuation. Upon evacuation or mandatory evacuation, town officials will go to the Emergency Operations Center (Municipal Building) so they can coordinate emergency measures and be prepared to return to the island as soon as the hurricane passes.

Recovery operations will be then conducted as quickly and safely as possible. The first group to enter the island after a storm will be emergency response personnel, town officials and members of the Town's Emergency Preparedness Committee. The first team will conduct a preliminary damage assessment while a second team will conduct the initial recovery operation. Once the Town's essential infrastructure and services are restored, the third group (including residents) will be permitted to reenter. Full scale recovery could take from several days to several weeks or longer depending on the storm's strength and duration. Copies of the Comprehensive Emergency Management Plan are available for review at the Town's Offices on Betsy Kerrison Highway. The town's readiness is currently high due to the number of named storms that have impacted the island in recent years.

Significant Revenue Shortfall

The town's revenue base has grown from approximately $5 million in 2008 to approximately $9.3 million in FY 2018. The recession in 2009 saw a decrease in major revenue streams to a low of $4.1 million in FY 2010. This trend reversed itself in 2011 and has grown steadily since that time. Since the town does not levy a property tax, its revenue is based largely on eight other sources of income. They include: Building Permits, Business Licenses, Franchise Fee Revenues, Local Option Sales Tax, State Accommodations Tax, County Accommodations Tax, Local Accommodations Tax and a Hospitality Tax.

The most vulnerable revenue source is Building Permits since the level of activity and the value of construction will decrease as the island becomes more fully developed. The other revenue streams should continue to grow reasonably with the level of residents, guests and visitors to Kiawah.

The town's financial officer carefully monitors the trends in each of these categories over a moving ten-year period and does an annual forecast of the next five-year period. The current forecast shows revenue increasing to approximately $10.3 million by FY2023. These projections give the town council adequate time to adjust its spending or seek additional revenues without creating a deficit.

Immediate revenue options available to the town include the ability to raise the local accommodations tax from 1% to 2% or to raise the hospitality tax similarly. Both of these options are available under state law. At today's level, this would raise an additional $3 million in revenue.

The town's current balance sheet also provides for other fiscal protection. The only long-term debt issued by the town was a bond issued to finance the municipal center. This seven-year bond carries an interest rate of 1.3% and will be paid off in 2023. The principal payment is $333,000 per year plus interest. The town also has available approximately $11 million in unrestricted funds and $9.5 million in restricted funds which can be utilized for unanticipated expenses. The clean-up from Hurricane Dorian, for example, could cost the town as much as $750,000. Based on this analysis, the town is thoughtfully and conservatively managing its risk of a downturn in revenue.

Transition **of Current Development Partners**

The town continues to work to strengthen the partnership among the resort, KICA and TOKI to assume full leadership of the island and its brand upon the potential departure of the current development partners. Currently, these groups meet on a regular basis monthly to discuss issues and insure good relationships and communication links among the management of each entity. They each recognize the common goal of maintaining the island's natural beauty and the need for continued high-level developmental and maintenance standards. While the current partners may for many years continue to hold interests on the island, their historic leadership role may change. The resort, KICA and the Town have the capability to carry forward as long as they remain committed partners and communicate formally and informally on a regular basis.

Lack of Qualified Candidates for Elected Offices and Committees

Because so many owners of island properties are not full-time, the town will continue to be challenged to find qualified candidates for its committees and elected positions among the small base of registered voters and full-time residents.

The Council should therefore task each committee chair with responsibility for identifying no fewer than two qualified committee candidates six months in advance of any planned committee opening. The Mayor and the Committee chair should then interview potential candidates three months in advance of a committee opening. Unanticipated resignations obviously will need to be handled on an ad hoc basis. The Mayor and Mayor Pro Tem should identify potential candidates for council (hopefully from experienced committee members) six

months in advance of an election. Likewise, the Mayor and the Mayor Pro Tem should identify potential mayoral candidates six months in advance of an election. The likely candidate pool may include current and past council members as well as committee heads and other community leaders.

The Council may choose to consider the option of paying a monthly stipend to the Mayor and the council members to increase the attractiveness of the job and to recognize the responsibilities and time commitment of each role. This change should be considered one year prior to the next upcoming election.

This risk will be an ongoing concern and will have to be thoughtfully managed by each administration over the next decade in order to prevent a leadership void that could cripple the town. The professional staff may also be at risk when major turnovers in the elected or appointed representatives occur.

Respectfully Submitted,

Dan Prickett