



## **Jekyll Island Environmental Assessment Procedure (EAP):**

### **Report summarizing the findings of the EAP review team considering the new Public Safety Center project**

**Date of EAP meeting:** 01/13/2021

#### **EAP participants present:**

##### **JIA Staff:**

Ben Carswell, Director of Conservation and Sustainability, JIA  
Dennis Gailey, Director of Public Safety, JIA  
Cliff Gawron, Director of Landscape and Planning, JIA  
Yank Moore, Natural Resources Manager, JIA

##### **External Stakeholders:**

Laura Case, Vice President Program Implementation, Southface Institute  
Jennifer Kline, Coastal Hazards Specialist, Georgia DNR  
Steve Yeager, Jekyll Island resident  
Jay Wiggins, Director of Security and Safety

#### **Project under consideration**

Plans have been developed to build a new Public Safety Center (PSC) facility near the eastern end of Shell Road. The facility is designed to house the Jekyll Island Fire Department along with the local Georgia State Patrol post. Chief among site selection considerations was the need to identify a site that would position the new facility within 1.5 miles of at least 50% of Jekyll's built-upon area. Meeting these criteria, along with building a facility that can accommodate a ladder truck, is important to maintain or improve Jekyll Island's ISO rating, which contributes to reduced home insurance rates for Jekyll Island residents. JIA Operations and Public Safety staff determined that no other viable site met this objective. This location also re-positions public safety personnel for a much quicker response time to the beach and the Island's highest density beach visitation areas, where a large proportion of public safety calls originate during the busier seasons of the year. The site is 3 acres and is one of only two areas converted from an Undeveloped land classification to a Developed land classification since the passage of state legislation in 2014 limited the extent of development on Jekyll Island to a fixed acreage and mandated a process for land conversion.



## **Assessment**

The EAP review finds that this project is conceptually compatible with the Jekyll Island Conservation Plan and poses no inherent conflicts with Conservation Plan goals and objectives. Even so, it is recognized that the project site has been occupied by forest habitat and that careful attention to design and construction details are called-for to preserve valuable ecological elements within the context of its designated future use. Additionally, the project's current design specifications must be evaluated in the context of sea level rise planning and coastal hazard preparedness. Some adjustments may be called for in this respect.

## **Commendations**

### *Protection of trees and preservation of natural area on site*

The facility design restricts the project footprint to the eastern half of the parcel, occupying approximately 50% of the site. The western portion of the site will remain in a natural state, preserving most of the site's large live oak trees, providing a flood buffer along the lower elevation side of the site, and preserving the capacity of the natural area for stormwater infiltration and the provision of wildlife habitat.

### *Solar / battery-storage ready*

It is understood that the building has been designed to accommodate future connection to battery-storage in consideration of a prospective Georgia Power partnership to establish a battery storage micro-grid. Ideally, the battery storage facility will be charged by a solar PV installation. This could be ground based and/or could be linked to rooftop solar on the new public safety facility. It is further understood that the roof design for the building will accommodate the option of a rooftop solar installation either at construction or in the future. Planning for this shows foresight in recognizing the need for the JIA to continue to identify and prepare for opportunities to offset its emission footprint by utilizing innovative, resilient, and renewable sources of electricity, especially when building new facilities.

## **Requirements**

The favorable EAP assessment of this project is contingent upon adherence to the following requirements:

### *Sea-level rise and coastal hazards resiliency evaluation and design adjustment*

The design drawings considered at the time of this review specified a finished floor elevation (FFE) of 10 ft., raising significant concerns regarding sea level rise and coastal hazard preparedness for a new critical infrastructure facility. The 10 ft. FFE meets, but does not exceed, the minimum



acceptable elevation for the FEMA AE9 flood zone. This means that, without additional elevation or flood proofing considerations, the facility will be on the borderline for flood damage in a 100-year storm surge flood event. This is without accounting for sea level rise during the lifetime of the facility as called for in the **Error! Hyperlink reference not valid.** and the [Jekyll Island Master Plan](#).

The appropriate sea-level rise planning horizon depends upon the intended design lifetime of the facility. The current Jekyll Island fire station was constructed in the mid 1960’s and continues to accommodate fire and EMS functions over 50 years later. A 50-year design lifetime therefore seems to be a reasonable minimum, but the JIA may aspire for the new facility to serve for longer.

The Georgia DNR Coastal Resources Division (CRD), in its guidance document, [Enhancing Coastal Resilience with Green Infrastructure](#), recommends that Georgia Communities adopt

NOAA’s “Intermediate-High” global mean sea-level scenario for planning purposes. This scenario projected for the remainder of this century predicts the following:

NOAA Sea Level Rise Projections

Intermediate-High GMSL Scenario	2030	2040	2050	2060	2070	2080	2090	2100
Meters	0.19	0.30	0.44	0.60	0.79	1.0	1.2	1.5
Feet	0.62	0.98	1.44	1.97	2.59	3.28	3.94	4.92

This projection range is also the minimum projection required for the future conditions planning prerequisites in the FEMA Community Rating System (CRS) which provides residents with discounts in flood insurance rates for select community actions that reduce flood risks.

Furthermore, the CRD guidance notes that, for critical infrastructure, communities should adopt a planning scenario that considers “risks across a broad range of possible outcomes, including those associated with high consequence, low-probability situations.” This stance is consistent with the [Glynn County Shoreline Protection Plan](#), which notes that scenarios indicate a 30% greater sea level increase for Glynn County than the global average. The JIA was a partner in the development of this Plan.

As part of the EAP review of the nearby Moorings residential development at Jekyll Harbor Marina in 2019, a flood resiliency study was commissioned by specialty engineering firm for that project. That report, utilizing the NOAA intermediate-high scenarios with adjustments specific for Jekyll Island, concluded that “nuisance flooding, due to large tides, is expected to reach 6.1 ft. NAVD88 over the next 50 years, and a 100-year storm surge flood is likely to attain elevations of 13 ft. NAVD88 (over that timeframe)”. The Tybee Island Public Safety Building, which is in an X500



flood zone on a ground surface elevation of 10+ feet, was built in 2014 and was structurally elevated 2-3 feet above grade for a FFE of 13 ft. The Tybee facility was also built to a Category 4 structural design standard for hurricane force winds.

Given the understanding that the new Jekyll Island PSC will be expected to be among the first critical facilities brought back online following a hurricane evacuation, flood proofing the building, by whatever means are most optimal, to a minimum elevation of 13 ft. NAVD88 is a necessity. An upper limit on the buildable FFE of the apparatus bay is understood to be an architectural constraint imposed by the elevation change gradient between the bay floor and Shell Road. Flood proofing the apparatus bay may not require elevating the FFE on that side of the building if instead fixed equipment can be elevated and mobile equipment can be relocated offsite in a flood hazard situation. Elevating the office and quarters side of the building will likely impose collateral challenges with other priorities including tree canopy protection near the building and avoidance of exterior lighting visibility from the beach, but these issues will need to be overcome or considered acceptable.

#### *Bioswale and stormwater adjustments*

The stormwater detention bioswale bordering the parking area along the west side of the facility should be adjusted to clarify that the design will be a closed system, rather than a ditch with an open connection to the Shell Road roadside stormwater drainage ditch. The bioswale should be equipped with an overflow drain or weir at an appropriate elevation to allow it to fill without allowing water to backup above the rim of the swale. The grading along the borders of this feature should be adjusted to protect two large live oak trees that would be harmed by significant grading and addition of sediment around their bases.

Additionally, the culverts connecting the stormwater drainage ditch underneath the ingress/egress aprons to Shell Road should be designed with an invert elevation at an appropriate height above the low point of the ditch to allow a degree of detention/infiltration before water will flow through the culverts.

#### *Resources encountered during site prep and construction*

All personnel working on site preparation and construction should be informed that appropriate parties with the JIA Conservation and Historic Resources departments should be notified if sensitive wildlife, or historic/prehistoric artifacts or resources are encountered/uncovered during the project. In some circumstances, temporary stoppage of work may be called for while situations/resources are managed and evaluated in a timely fashion.



### *Invasive plant removal across site*

The JIA Conservation team should eliminate all harmful non-native plants across the entire 3--acre site. This will primarily involve herbicide treatment of invasive camphor trees.

### *Beach Lighting Ordinance*

The new Public Safety facility will need to be compliant with the Jekyll Island Beach Lighting Ordinance. The extent to which outdoor light fixtures and associated illumination may or may not be visible from the beach and dunes is unknown at that this time. Decisions about vegetation removal along the eastern boundary of the parcel as well as the mounting height, orientation, shielding, and intensity of exterior fixtures will determine whether illumination is detectable or undetectable from the beach and dunes. If illumination is visible, meeting all the requirements of the ordinance, including the turtle-friendly, long-wavelength standard would be required. A precautionary approach is advisable that calls for mounting exterior fixtures as low as possible on the building, avoiding upward oriented lighting and high-intensity lighting, particularly on high reflective surfaces like concrete, shielded/directional fixtures that direct illumination only to needed areas, and a selection of lighting element wavelength (color) that is warmer/softer. If staff and public safety needs can be met with turtle-friendly amber lighting (emission wavelengths not less than 560), installing this preemptively at construction would be the safest approach. Consultation with GADNR Wildlife Biologist Mark Dodd is advisable if it is determined that there is a significant possibility that exterior illumination will be visible from the beach and/or dunes. Any windows that may be visible from the beach must meet the tinting standard specified in the Beach Lighting Ordinance.

## **Recommendations**

### *Consultation with JIA Historical Resources staff*

A significant prehistoric archaeological site is known to exist nearby on the adjacent Great Dunes Golf Course. In 2019, this site was the subject of a comprehensive Phase 2 archaeological survey. This project also encompassed all lands currently within the bounds of the Jekyll Island Golf Courses in a large-scale Phase 1 archaeological resource assessment. JIA Historical Resources staff should be asked to determine if existing surveys in the vicinity are sufficient to proceed with construction on the PSC site or if additional Phase 1 investigation of the project site is called for.

### *Long term planning for SLR and elevation of Shell Road*

While floodproofing the PSC to a minimum elevation of 13 ft. NAVD88 will be essential to reduce the risk that its critical functions could be compromised within the intended



design life of the structure, it should also be anticipated that the low elevation of Shell Road will become problematic due to sea-level rise in that timeframe. Road surface elevations to the west of the facility, leading to the Jekyll Island Historic District, are low enough that portions of the road will be inundated by “nuisance”, non-storm-surge high tide events with 2-ft of sea level rise. Planning should anticipate this occurring by 2060. Shell Road was identified in the [2018 Jekyll Island Carrying Capacity and Infrastructure Assessment](#) is one of seven stretches of roadway on Jekyll Island predicted to be impacted by between 1 ft. and 3 ft. of sea-level rise.

The siting of the PSC should increase the priority given, in long term planning, to elevating the central portion of Shell Road. When this challenging and important endeavor is undertaken, the optimal concept for wildlife would be a low bridge to maximize opportunities for animals to cross under the roadway. This would support multiple core management objectives in the Conservation Plan by protecting priority species currently impacted by road-crossing mortality, minimizing habitat fragmentation, and minimizing hydrologic alterations to restore natural hydrodynamic conditions.

*Estimate costs and seek funding that will support LEED or GA Peach certification*

The Jekyll Island Authority owns the LEED-silver certified Jekyll Island Convention Center and strongly encourages projects advanced by the private sector to pursue environmental certification for building design and construction. Consequently, the Island hosts both LEED certified and Georgia Peach Green Building Rating System certified hotel properties. After undergoing some adjustments required to comply with state policies, LEED certification is once again an option for state entities along with the Peach Program. The JIA should design the facility to meet LEED or Peach Program minimum standards, estimate costs to certify the PSC under one of these two programs, and pursue funding to meet the goal of certification. If funding sufficient to certify is not acquired, the facility should still be constructed to meet at least minimum certification standards for one or both programs. A 25,000 sq. ft. LEED Gold certified fire station was recently completed at the Atlanta Airport for a cost of approximately 10-million dollars. [Environmental certification for fire stations is not uncommon and LEED certification adds about 17% to a building’s cost on average.](#)

*Parking efficiencies, pedestrian and cyclist visitor flow, and opportunity to reduce hardscape*

The need for having the westernmost ingress/egress to the parking area that borders the west side of the facility should be re-evaluated. If vehicles can safely ingress and egress through the northeastern entryway, then the western ingress/egress apron may be superfluous and should be eliminated to reduce the footprint of the facility.

To explore the potential for improved visitor parking efficiency and better flow of pedestrian/cyclist visitors to the front doors of the facility, the addition of a path connecting to



the adjacent existing parking area should be considered. If this connection were added, the needed number of visitor parking spaces on the PSC parcel should be reevaluated and, if possible, reduced.

*Pervious construction for parking areas as well as walkways*

Pervious construction, either pervious concrete, TRUEGRID style materials, or pervious pavers, should be utilized for all parking areas that do not need to accommodate heavy equipment as well as pedestrian walkways.

*Plant species selection for bioswales*

Plants selection for the bioswale feature should consider the differing capacities of different species of plants to process environmental pollutants found in stormwater runoff. The JIA Conservation team can research this in consultation with JIA Landscaping and make recommendations.

*Bird-safe windows*

All windows on the building should have a bird safe window film applied at construction to reduce the risk of bird mortality from collisions with windows. Georgia Audubon is a prospective partner that may consider supporting this effort.

*Provide compactor for combined service of PSC and existing adjacent facilities*

A space should be identified on the eastern side of the parcel, or between the parcel and existing facilities to the east that can accommodate a trash compactor to service the PSC as well as the Red Bug Pizza and JIA mini-golf and bike rental facilities. This will alleviate existing problems with the Red Bug Pizza waste stream contributing to wildlife access to food garbage at the JIA transfer station on the south end of the Island.

*Electric vehicle charging station (installed or ready)*

The transition from internal combustion vehicles to electric vehicles is accelerating. Electric options for fleet vehicles are on the horizon. Advanced electric UTVs are becoming available now. Jekyll Island is small enough in size that mileage/range demands for passenger vehicles and UTVs performing official public safety functions are relatively minimal. Additionally, the JIA should begin identifying opportunities to make electric car charging available for employees. With this in mind, the PSC electrical plan should, at minimum, accommodate the future addition of one or more electric vehicle charging station(s). Preferably, installing at least one charging station at construction.