



Jekyll Island Environmental Assessment Procedure (EAP):

Report summarizing the findings of the EAP review team considering Georgia Power Company's plan to build a new electrical substation for Jekyll Island adjacent to the existing substation facility.

Date of EAP meeting: 01/13/2021

EAP participants:

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 (was not able to participate in the virtual meeting for this project due to a timing conflict)
Steve Yeager, Jekyll Island resident
Jay Wiggins, Director of Security and Safety

Project under consideration

To modernize electrical service to Jekyll Island and enhance the capacity and resiliency of the associated grid, Georgia Power Company (GPC) plans to construct a new electrical substation replacing the one that currently services Jekyll Island. The site for the new facility will be adjacent to existing site. The site for the new facility is 2.6 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. The majority of this acreage shows evidence of having been previously cleared, likely early in the era of state ownership of Jekyll Island.

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 early-successional forest



habitat and does include some large live oak trees along the northern margin of the existing access road and south of this roadway. Careful attention to design and construction details are therefore 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

Georgia Power Company has indicated a willingness to restore the land occupied by the existing substation to a natural state. At an earlier time, JIA staff had communicated to GPC staff that, while restoration may be desirable, options should be considered for other potentially beneficial uses of the site, including a battery-storage and/or solar energy installation. However, upon further evaluation, the site has been determined not optimal for those uses. This review finds that restoration of the current substation parcel to a natural ecological state is most appropriate and compatible with the Jekyll Island Conservation Plan. Once the restoration is complete the restored parcel may be converted from Developed to Undeveloped land at the JIAs discretion.

Although feasible options to site this facility on a higher elevation site are unavailable, the decision to shift the site further away from the shoreline than the existing substation contributes to improved resiliency to coastal hazards provided the facility's flood proofing anticipates sea level rise as described below.

Requirements

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

Sea-level rise and coastal hazards resiliency planning

The appropriate sea-level rise planning horizon depends upon the intended design lifetime of the facility. The current substation site was first leased by Georgia Power Company in 1960 and continues to serve Jekyll Island over 60 years later. A 50-year design lifetime therefore seems to be a reasonable minimum, but GPC 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)”

Given the understanding that the new GPC substation is a critical facility to have online following a hurricane event, flood proofing, by whatever means are most optimal, to a minimum elevation of 13 ft. NAVD88 is a necessity. To accommodate design lifetime aspirations longer than 50 years and/or to take a more precautionary stance as called for in the CRD guidance and Glynn County planning documents, flood proofing to 14 ft. or 15 ft. NAVD88 would not be excessive.

Coordination with JIA Historical Resources staff

In conjunction with any process GPC may otherwise follow, JIA Historical Resources staff should be consulted in determining if a Phase 1 archaeological investigation of the project site is called for. While the core of the site shows evidence of potentially modern era clearing and soil disturbance, the periphery of the site is relatively undisturbed and a historic roadbed exists along the northern and western periphery of the parcel.

Resources encountered during site prep and construction

All personnel working on site preparation and construction should be informed that appropriate points of contact with the JIA Conservation and Historic Resources departments should be



notified if sensitive wildlife, or historic/prehistoric artifacts or resources are encountered or 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.

Tree Survey and Protection

All trees on within the area of disturbance for the project greater than 2” diameter at breast height (dbh) must be inventoried to produce a tree survey. Trees should be marked with numbered metal tags and survey data should include:

- Location (latitude, longitude)
- DBH measurement
- Identification to species (differentiating between different species of oaks, pines, etc.)
- Condition assessment

Invasive plant removal across site

Any non-native invasive plant species should be eliminated from the entirety of the parcel. Invasive camphor tree is present on the site. The JIA Conservation Department can identify and flag these along with any other undesirable plants to be removed.

Recommendations

Balancing multiple spatial constraints and resource priorities

This project is challenged with multiple priorities for impact avoidance. As previously described, the south side of the site, along the entry/egress route is bordered by large live oak trees, which are prioritized for protection by the JIA and which carry substantial mitigation fees imposed by the Jekyll Island Tree Protection Ordinance if removal is necessary. For this reason, the footprint of the entry/egress route servicing the new facility should be kept to a minimum necessary to meet core service and safety requirements. Large live oak trees are also concentrated along the western boundary of the parcel. Lower elevations and coastal marsh buffer areas lie along the northern boundary of the parcel. Riverview Road is adjacent to the eastern boundary of the parcel, presenting aesthetic concerns that are likewise important to the JIA. In summary, the

following constraints should be carefully evaluated in consultation with the JIA to achieve optimal balance and minimization of overall impacts:



- A substation that is conspicuously visible from Riverview Road and the adjoining bike/pedestrian path should be avoided.
- Cutting live oak (*Quercus virginiana*) trees should be avoided, particularly historic live oaks greater than 20" dbh.
- Building within the 25' minimum marsh buffer must be avoided retaining more depth of buffer if possible.

Stormwater management

The existing access road is gravel. Entry and egress to the new facility should remain pervious. Stormwater runoff should be directed primarily towards the forested area to the west, rather than towards marsh areas to the north and south of the parcel. Careful adherence to erosion and sedimentation regulatory requirements and best practices during construction will be essential to avoid impacts to the marsh or marsh buffer areas.