

Avoidance and Minimization

The proposed project will avoid and minimize impacts to waters of the United States including wetlands to the greatest extent practicable, as discussed below.

Alternative 1 - No Build Alternative

Under this alternative, ETI would not construct and operate the proposed substation. This alternative would not provide the needed relief for existing infrastructure and would not add additional load serving capabilities to the Port Arthur network. This alternative would not result in potential impacts to wetlands or waters of the U.S. and would not affect threatened and endangered species habitat or cultural resources. No Individual Permit (IP) application would be submitted, and no coordination with U.S. Fish and Wildlife Service (USFWS) or State Historic Preservation Office (SHPO) would be required.

Alternative 2 - On Site Alternative (The Preferred Alternative)

Under this scenario, ETI would construct the proposed substation and access road to meet the project's purpose and need. Placement of the substation is limited by the location of existing transmission lines, land ownership, easement restrictions, and the requirements of the Port Arthur Reliability Project. The dearth of properties sufficiently sized to accommodate the substation, located adjacent to transmission lines, and in areas that are uplands make avoidance of wetland fill in the project area impracticable. Therefore, much of the infrastructure would be placed inside of the 500-year floodplain. Permanent fill to construct the substation and the associated infrastructure has been positioned to reduce permanent fill of wetlands as much as possible. However, proposed plans include fill of PSS and PEM wetlands as well as conversion of PSS wetlands to PEM wetlands within a 50-foot perimeter of the substation and within a 225-foot ROW for power pole placement. No fill material would be placed within Rhodair Gully.

This alternative's direct effects include permanent fill of approximately 4.577 acres of wetlands (4.449 acres of PSS and 0.128 acre of PEM). Approximately 5.613 acres of PSS wetlands will be converted to PEM wetlands. Approximately 2.354 acres of PEM may be temporarily impacted by construction activities, but will be allowed to re-vegetate after construction is complete. No lasting pollution will occur.

This alternative does not have the potential to impact cultural resources (Attachment H) or threatened and endangered species (Attachment J).

This alternative provides the least environmentally damaging practical alternative (LEDPA) due to the following:

- The parcels proposed for the substation and access roads are already owned by ETI and the project will not adversely impact any conservation areas;
- The parcels will not require the construction of extensive transmission lines to reach more remote substation locations; and

- This alternative would meet the criteria for the project's purpose outlined above including, but not necessarily limited to, siting close to the existing ETI owned transmission line, ability to construct necessary infrastructure, and will be developed on property already owned by ETI.

This combination of factors is required to render the project economically feasible. Please refer to Attachment C for the project maps and Attachment D for the project drawings.

Compensation

After the maximum practicable avoidance and minimization efforts were implemented, it was determined that unavoidable permanent impacts to 4.577 acres wetlands (4.449 acres of PSS and 0.128 acre of PEM), unavoidable conversion of 5.613 acres of PSS to PEM, and up to 2.354 acres of temporarily impacted PEM wetlands. Therefore, ETI proposes to provide compensatory mitigation for losses associated with permanent fill and conversion of wetlands based on the USACE Galveston District Riverine Herbaceous/Shrub interim hydrogeomorphic model (iHGM).

The objective of the iHGM approach is to provide a means of assessing the functional capacity of a given wetland system. Emphasis is placed on the physical (TSSW), biological (MPAC), and chemical (RSEC) functional characteristics. The USACE Galveston District Riverine Herbaceous/Shrub interim HGM model was used to calculate a functional capacity index (FCI) for each characteristic of the wetland assessment area. FCI values were then multiplied by the respective wetland acreage to calculate functional capacity units (FCU) for each characteristic.

FCUs translate to wetland mitigation credits. The FCU values for each function of the model used for the assessment areas are presented in Table 2.

Table 2. FCUs for PSS and PFO wetlands within the proposed project impacted by fill.

WAA	Type	Acreage	TSSW	FCU	
				MPAC	RSEC
WAA1	PEM	0.128	0.069	0.068	0.059
WAA2	PSS	4.449	1.775	2.225	2.165
Total		4.577	1.844	2.293	2.224

Conversion compensation was determined by calculating the functional loss associated with all of the PSS wetlands that are to be converted to PEM wetlands. This was done by calculating the pre- project score and the predicted post-project score to establish the change (i.e., delta [Δ]) in functional capacity units (FCUs) associated with the conversion (Table 3).

Table 3. Summary of pre-project, predicted post-project, and delta (Δ) iHGM scores for PSS wetland conversion impacts.

WAA	Acreage	Pre-project FCU			Post-project FCU			Conversion		
		TSSW	MPAC	RSEC	TSSW	MPAC	RSEC	TSSW	MPAC	RSEC
WAA 2 (Garden)	5.613	2.239	2.807	2.732	2.300	2.994	2.039	+0.061	+0.187	-0.692

The functional assessment determined that the PSS wetland conversion caused by construction of the proposed project will result in a net increase in TSSW and MPAC functions, but a net decrease of 0.692 RSEC functions.

Based on the functional impact calculations ETI assumes the project will require mitigation for the 1.775, 2.225, and 2.857 physical, biological, and chemical functions, respectively, for fill and conversion impacts to PSS wetlands. Similarly, ETI assumes the project will require mitigation for the 0.069, 0.068, and 0.059 physical, biological, and chemical functions, respectively, for impacts to PEM wetlands. ETI proposes to offset the impacts through the purchase of wetland mitigation credits from approved mitigation banks. The applicant has proposed to mitigate for the proposed impacts by purchasing credits from the Graham Creek Mitigation Bank.