

Replacement of US 1 / SR 5 Low Level Bridges

Services Provided: Environmental Permitting

Client: FDOT District 4 / Design-Build Team:
Johnson Brothers & Beiswenger, Hoch &
Associates, Inc.

Location: Palm Beach County, FL



DESCRIPTION OF WORK:

This Design-Build project involved the replacement of four fixed, low level bridges located along US-1 over the Lake Worth Creek oxbow. The project consisted of constructing parallel (twin) bridge structures for both the northern and southern bridges at the same location as the existing bridges.

This bridge replacement project is located within the Loxahatchee River Aquatic Preserve and Outstanding Florida Water (OFW). CECOS was responsible for the environmental permitting effort and associated environmental support studies. Specific activities included preparation of permit applications (South Florida Water Management District (SFWMD) SLERP, US Army Corps of Engineers (USACE) Section 404 Dredge/Fill permit and USCG Bridge Permit). Support activities included conducting a seagrass survey and mangrove delineation to map and defined wetland impacts. Wetland mapping was conducted using a sub meter GPS unit to position wetlands downloaded into a GIS format. In conjunction with the Design-Build Team, avoidance/minimization measures were developed that reduced seagrass impacts by more than 0.5 acre. This involved elimination of barges and the use of top-down construction. An Endangered Species Biological Assessment was prepared

due to impacts to Johnson's seagrass (*Halophila johnsonii*), a federally listed threatened species, and consultation with National marine Fisheries Service under the Endangered Species Act was required. In addition consultation with NMFS for impact to Essential Fish Habitat (EFH) was also conducted. Determined mitigation required based on a UMAM assessment and coordinated mitigation requirements. Due to the project being located within an OFW, mitigation had to be done within the same basin. Separate mitigation plans were required to address impacts to seagrass and mangroves. Conducted extensive agency coordination to obtain environmental permits within the scheduled time frame. Other activities and issues included avoidance of adjacent Section 4(f) resources and coordination with the Loxahatchee River District.



Dense *Halophila johnsonii* seagrass bed next to northern bridge