

Waterfront Resiliency Project

Project Owner: City of Fernandina Beach

Client: Kimley-Horn & Associates, Inc.

Markets: Municipal

Project Profile:

The site for the subject project is located between Rayonier property and Dade Street along Front Street, Fernandina Beach, Florida. The project includes performing a geotechnical exploration, laboratory testing program, and engineering analysis to assist the design team with the design of the bulkhead structures and low-level earthen berm. The structures are supported by combi-wall and



cantilever sheet pile retaining walls. Our analysis included providing geotechnical soil parameters to assist in the design of the walls. To explore the subsurface conditions behind or east of the existing bulkhead (landside). we located and performed 8 Standard Penetration Test (SPT) borings, drilled to depths of approximately 20 to 50 feet below the existing ground surface using a truck-mounted drill rig. To explore the subsurface conditions in front of or west of the existing bulkhead (waterside), we located and performed 8 Standard Penetration Test (SPT) borings, drilled to depths of 40 to 50 feet below the existing mudline from a drill rig mounted on a spud barge. To explore the subsurface conditions along the proposed berm, we located and performed 7 Standard Penetration Test borings, drilled to depths of 20 feet below the existing ground surface using a truck-mounted drill rig. The existing boat ramp pavement section (asphalt surface and underlying concrete where encountered) was cored at two locations and our personnel performed a soil probing program along the existing boat ramp. Quantitative laboratory testing was performed on selected samples of the soils encountered during the field exploration to better define the composition of the soils encountered and to provide data for correlation to their anticipated strength and compressibility characteristics. The laboratory testing determined the natural moisture content, sieve analysis, organic content, and Atterberg Limits of selected soil samples. In addition, to better determine the corrosion potential of the subsurface conditions adjacent to the landside of the existing bulkhead, collected soils between depths of 2 to 8 feet were tested for their Sulfate and Chloride contents.

Services: Geotechnical Engineering