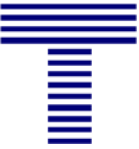

PROJECT MEMORANDUM

TO: Ms. Ellen Posivach, Port Richey City Manager
FROM: Joe Wagner, P.E., Taylor Engineering, Inc.
SUBJECT: Geotechnical Data Collection Results, Port Richey, FL
DATE: November 16, 2009

As noted in previous correspondence, the City of Port Richey has obtained permits from the Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (USACE) to dredge a series of new navigation channels. These include twelve channels within Miller's Bayou (Channels 1, 7, 8, 9, 10, 14, 15, 16, 17, 18, 24, and 26) and six channels within the Cotee River (Channels 3, 4, 5, 6, 19, and 21) that do not impact seagrasses. In addition, five channels within the Cotee River (Channels 2, 20, 22, 25, and 29) do impact seagrasses and have not received a permit from the USACE. The remaining permitted channels are in the North Bay Boulevard area (11 and 13). The remaining non-permitted channels are channels 12, 27, 28, and 30.



This geotechnical study focused on the twelve Miller's Bayou channels and the six Cotee River channels only. Current permits call for the selected contractor to dredge the permitted channels down to -5 feet mean low water (MLW). Taylor Engineering proposes to request modification of these permits to request an additional 1-foot of overdredging. Because others had completed a sediment analysis report, Taylor Engineering did not perform sediment analysis as part of this geotechnical investigation.

The focus of this geotechnical investigation was to evaluate the extent and quality (location, depths, thickness, and degree of weathering) of rock within the dredging template. Ardaman and Associates, Inc. performed this geotechnical investigation to provide data from which Taylor Engineering could then develop a responsible Opinion of Probable Cost for the project's construction.

Taylor Engineering provided Ardaman with two different soil boring location layouts. Prior to commencing the field investigation both parties had agreed that boring Layout 1 would be used if the base borings did not correspond to the previous boring data while Boring Layout 2 would be used if the data did correspond. Taylor Engineering and Ardaman had selected the locations of the proposed borings presented in Boring Layout 2 so that the data would supplement previously collected data on defining the limits of rock, while Boring Layout 1 investigated all channel equally. Both proposed boring layouts

included coordinates for Borings B-01 through B-18 (base borings). As previously mentioned, others have completed a study for sediment analysis. Upon completion of the base borings, Taylor Engineering and Ardaman compared the current data results with the previous data. It was the opinion of both parties that the soil profiles encountered in the base borings were generally consistent with the subsurface conditions presented in the previous study. Therefore, Ardaman used Boring Layout 2 for the remaining borings.

The soil boring logs presented in the Appendix of the geotechnical investigation report detail the delineation of the vertical extent of individual soil strata, the identification of pertinent soil engineering properties and a description of each geologic layer discovered in the course of this geotechnical study. A geotechnical engineer prepared the soil boring logs based upon a visual classification of the recovered soil samples. Ardaman used the stratification lines to indicate a transition from one soil type to another, while the actual boundary between the illustrated soil strata may be gradual or indistinct. Consequently, the stratification boundary lines, shown on the soil boring logs, represent the best estimate of the location of the transition between distinct soil strata. While the borings are representative of subsurface conditions at their respective locations and vertical reaches, the selected contractor may encounter local variations which are characteristic of the subsurface materials of the region, or which may be due to native geologic conditions.

The typical soil conditions encountered in the borings generally consisted of 2 inches to 6 feet of either a very loose to loose dark gray to black silty fine sand or very soft to soft green sandy clay underlain by soft to very hard limestone. There are instances where no overburden was present above the limestone or where Ardaman did not encounter limestone within the depth of the boring. Ardaman found significant variations in the elevation and quality of the limestone layer across the project site as well as within each channel.

Taylor Engineer performed AutoCAD Civil 3D surface analysis to estimate the dredging volumes within each channel. Similarly, we used AutoCAD Civil 3D surface analysis combined with the Ardaman & Associates data to estimate the volume of limestone within each channel. Based on our calculations, the results of this geotechnical exploration indicate that the majority of the rock found with permitted dredging templates can only be efficiently removed using mechanical dredging equipment. Taylor Engineering estimates that the quantity of limestone located within the dredging template ranges from 10,000 to 16,000 cubic yards with a maximum total project volume of 70,700 cubic yards.