

EXECUTIVE SUMMARY

Recommendation to approval the attached Change Order to Coastal Planning and Engineering's scope of work for additional Wiggins Pass permit engineering required to obtain a new permit for Navigational Improvements for Wiggins Pass.

OBJECTIVE: To approve the attached Change Order to Coastal Planning and Engineering's scope of work for additional Wiggins Pass permit engineering required to obtain a new permit for Navigational Improvements for Wiggins Pass.

CONSIDERATIONS: FDEP as part of the RAI process has requested additional vibacore borings at the mouth of Wiggins Pass along with additional engineering information. This is not included in CP&E's current scope of work and expected to cost \$49,671 on a Time and Material not to exceed basis.

ADVISORY COMMITTEE RECOMMENDATIONS: At the June 10, 2010 CAC meeting this item was recommended for approved 6 to 1. Staff is recommending approval of the attached proposal by PBS&J. Staff is recommending approval of this item.

FISCAL IMPACT: The Source of funds is from Category "A" Tourist Development Tax fund 195.

GROWTH MANAGEMENT IMPACT: There is no impact to the Growth Management Plan related to this action.

LEGAL CONSIDERATIONS: This item has been reviewed and approved by the County Attorney's Office and is legally sufficient for Board action. - CMG

RECOMMENDATION: Approve the attached Change Order to Coastal Planning and Engineering scope of work for additional Wiggins Pass permit engineering required to obtain a new permit for navigational improvements for Wiggins Pass.

PREPARED BY: Gary McAlpin, CZM Director



COASTAL PLANNING & ENGINEERING, INC.

2481 NW. BOCA RATON BOULEVARD, BOCA RATON, FL 33431

727-565-4660 PHONE 727-565-4659 FAX
INTERNET: <http://www.coastalplanning.net>
e-mail: mail@coastalplanning.net

May 26, 2010

Gary McAlpin, Director
Collier County Government
W. Harmon Turner Bldg., Suite 103
3301 E. Tamiami Trail
Naples, FL 34112

**Re: Wiggins Pass Maintenance Dredging and Navigation Improvement Project:
Geotechnical Investigation (Contract No. 09-5262)**

Dear Gary:

The following scope of work and associated cost proposal for the “Wiggins Pass Maintenance Dredging and Navigation Improvement Project: Geotechnical Investigation (Contract No. 09-5262)” is enclosed for review and approval by Collier County.

As part of a 2009 field investigation conducted in support of the Wiggins Pass Improvement Project, previously compiled geotechnical data as well as newly collected vibracore and jetprobe data was compiled and analyzed to support navigation improvements. During a recent meeting, the Florida Department of Environmental Protection (FDEP) requested that additional geotechnical data be collected to determine whether geology is the key factor controlling the position of the channel within Wiggins Pass and to better characterize material within the Pass. This scope of services includes the collection and analysis of additional vibracores. The locations of the twelve (12) new vibracores were selected in consultation with FDEP representatives. A map showing the locations of these vibracores is enclosed.

The investigation will be conducted to the geotechnical standards currently acceptable to the Florida Department of Environmental Protection (FDEP). Coastal Planning & Engineering, Inc. (CPE) will work closely with Collier County and FDEP during the field and design phases of the investigation.

If you have any questions, please call me.

Sincerely,

COASTAL PLANNING & ENGINEERING, INC.

Stephen Keehn, P.E.
Senior Coastal Engineer

cc: Tom Campbell, P.E., CPE
Jeff Andrews, PSM, CH, CPE
Melany Larenas, P.G., CPE
Sheri Dindial, CPE

**SCOPE OF CONSULTANT SERVICES FOR
WIGGINS PASS MAINTENANCE DREDGING AND NAVIGATION IMPROVEMENT
PROJECT: ADDITIONAL GEOTECHNICAL INVESTIGATION
(CONTRACT NO. 09-5262)**

May 26, 2010

SCOPE OF SERVICES

As part of a 2009 field investigation conducted in support of the Wiggins Pass Improvement Project, previously compiled geotechnical data as well as newly collected vibracore and jetprobe data was compiled and analyzed. The Florida Department of Environmental Protection (FDEP) requested that additional geotechnical data be collected to determine whether geology is the key factor controlling the position of the channel within Wiggins Pass. This scope of services includes the collection and analysis of these additional cores. Twelve (12) vibracores will be collected and analyzed. This scope also includes the analysis of surface grab samples to characterize surficial sediment on the adjacent shoreline and shoals. This new data, along with the previously assessed data, will be used to develop a geologic description of Wiggins Pass.

The fee to provide the services detailed in this proposal is not to exceed (NTE) \$49,671 which will be invoiced as time and material (T&M) as shown by the tasks below:

Task 1	\$2,200
Task 2	\$40,369
Task 3	\$7,102

TASK 1: ADMINISTRATION/ PLANNING (\$2,200)

Previously compiled geotechnical data will be re-evaluated and analyzed in a GIS (Geographical Information System) framework in order to provide background information in addition to the recent findings of the 2009 vibracore and jetprobe investigations. The information gathered during Task 1 will be used to refine the vibracore plan. CPE will coordinate with the FDEP as necessary.

Prior to conducting the field operations a permit/de minimus exemption must be obtained. In order to do this, a Joint Environmental Resource Permit Application (ERP) application must be submitted to the Florida Department of Environmental Protection for review. This application requires a general project description and a map outlining the area of deployment. The Agency has ninety (90) days to review the permit application. The application is also forwarded to the Bureau of Survey and Mapping, Division of State Lands for title determination. Existing easements must be avoided during deployment or title holders must be notified of the proposed activity. The ERP application is also forwarded to the United States Army Corps of Engineers (USACE), Florida Division of Historical Resources (SHPO) and to Fish and Wildlife Services (FWS) for review and comment. CPE will apply for the necessary permits. CPE will complete and submit the required forms, as well as coordinate with the regulatory agencies.

TASK 2: GEOTECHNICAL SURVEY (\$40,369)

The geotechnical survey includes vibracoring to investigate potential geologic controls on the position of the Wiggins Pass channel and to better define the sediments to be dredged. Twelve (12) vibracores will be collected using the equipment and methods described below. A preliminary vibracore plan is attached.

Geotechnical Survey Equipment

Vibracoring

A Rossfelder P3 Vibracore, or equivalent, configured to collect undisturbed sediment cores up to 20 feet in length, will be used for this project. This self-contained, freestanding electronic vibracore unit contains a vibratory hammer assembly, an aluminum beam which acts as the vertical beam upright on the seafloor, an aluminum coring pipe, and a cutting edge. If recovery is less than 80% of the expected total penetration, the sampled portion of the pipe will be removed, a new core pipe attached, and a jet pump hose will be attached just below the vibracore head. After lowering the rig to the bottom and jetting to one (1) or two (2) feet above the refusal depth, the jet will be turned off and the vibrator turned on in order to attempt to collect the remaining core.

At each core location a vibracore will be taken. If field measurements indicate that less than 80% recovery has been achieved, then up to two additional cores will be taken, or a hydraulic jetting technique will be used to facilitate sampling below previously retained material. In the event a jet is used, the recovery of the original vibracore and additional vibracore sections will be combined to determine total recovery. Should the above procedures not result in 80% or more recovery, then this drilling effort will be considered a completed core for purposes of payment under this contract.

Geotechnical Data Analysis

Sediment Sample Analysis

Upon completion of field operations, all vibracores will be transported to CPE's office in Boca Raton, Florida. There, the vibracores will be logged by describing sedimentary properties by layer in terms of layer thickness, color, texture (grain size), composition and presence of clay, silt, gravel, or shells and any other identifying features. The vibracores will be photographed in 2.0 ft intervals. Sediment samples will be extracted from the vibracores at irregular intervals based on distinct stratigraphic layers in the sediment sequence. The vibracores will then be wrapped and archived. Cores will be stored for a period of up to one (1) year. After this time, cores will either be relinquished to the client or stored for an additional annual cost of \$25 per core.

Mechanical Sieve Analysis

The sediment samples (vibracore samples and grab samples) will be analyzed to determine color and grain size distribution. During sieve analysis, any obvious uncharacteristically large fragments (such as whole shell or large shell fragments) will be removed and the description (weight and size) of the material will be noted. The wet, dry

and washed Munsell colors will be noted. Sieve analysis of the sediment samples will be performed in accordance with the American Society for Testing and Materials (ASTM) Standard Methods Designation D 422-63 for particle size analysis of soils. This method covers the quantitative determination of the distribution of sand size particles. For sediment finer than the No. 230 sieve (4.0 phi) the ASTM Standard Test Method, Designation D 1140-00 will be followed. The sieve stack used for mechanical analysis will conform to the BBCS guidelines provided in Table 1.

Table 1. *Mesh sizes to be used for granulometric analysis.*

Sieve No.	Size (phi)	Size (mm)
3/4	-4.25	19.00
5/8	-4.0	16.00
7/16	-3.5	11.20
5/16	-3.0	8.00
3 1/2	-2.5	5.60
4	-2.25	4.75
5	-2.0	4.00
7	-1.5	2.80
10	-1.0	2.00
14	-0.5	1.40
18	0.0	1.00
25	0.5	0.71
35	1.0	0.50
45	1.5	0.36
60	2.0	0.25
80	2.5	0.18
120	3.0	0.13
170	3.5	0.09
200	3.75	0.08
230	4.0	0.06

Weights retained on each sieve will be recorded cumulatively. Grain size results will be entered into the gINT® software program, which computes the mean and median grain size, sorting, silt/clay percentages for each sample using the moment method.

Carbonate Testing

Approximately half of the samples extracted from the vibrocores will be tested for carbonate content. Carbonate content will be determined by percent weight using the acid leaching methodology described in Twenhofel, W.H. and Tyler, S.A., 1941. *Methods of Study of Sediments*. New York: McGraw-Hill, 183p. Samples representing material above the proposed channel cut depth will also be extracted from the cores previously collected by CPE in 2009. These samples will also be tested for carbonate content.

TASK 3: PRODUCT AND REPORT DEVELOPMENT (\$7,102)

A final report summarizing the results of this vibrocore investigation and discussing the geology of Wiggins Pass will be prepared and submitted to the FDEP and Collier County. This report will include project results, including vibrocore logs, vibrocore photographs, granulometric reports and grain size distribution curves. The report will address FDEP's RAI questions from their March 24, 2010 letter and the May 4, 2010 meeting. The report will also include figures showing the estimated distribution of sand, organics, clay, rock substrate and silty material suitable to address FDEP questions and develop a dredging plan.

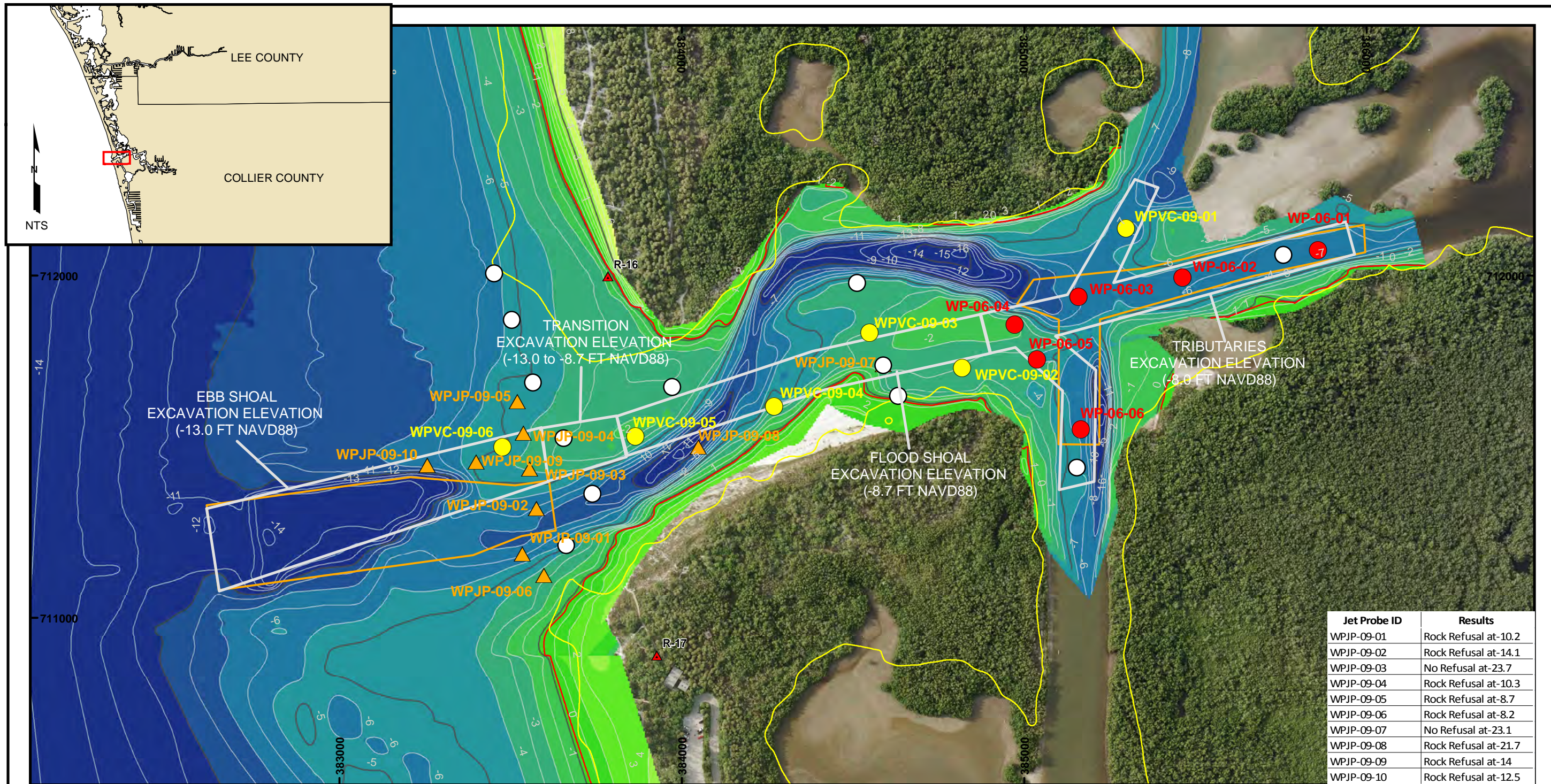
CPE will provide geotechnical information in an electronic format suitable for input to the FDEP Reconnaissance Offshore Sand Search (ROSS) database as required by the FDEP. The data will be submitted in Access or gINT files.

CAVEATS

CPE proposes to perform the Wiggins Pass Geotechnical Investigation to the industry standard of care and will coordinate the investigations with FDEP as required.

In the case that a core (Section 2) does not have 80% retention, FDEP may not approve its use for design purposes.

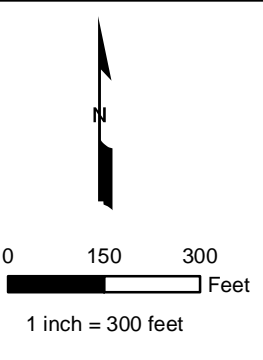
The client herein recognizes the above referenced risks and agrees to work with CPE to complete the work.



Jet Probe ID	Results
WPJP-09-01	Rock Refusal at-10.2
WPJP-09-02	Rock Refusal at-14.1
WPJP-09-03	No Refusal at-23.7
WPJP-09-04	Rock Refusal at-10.3
WPJP-09-05	Rock Refusal at-8.7
WPJP-09-06	Rock Refusal at-8.2
WPJP-09-07	No Refusal at-23.1
WPJP-09-08	Rock Refusal at-21.7
WPJP-09-09	Rock Refusal at-14
WPJP-09-10	Rock Refusal at-12.5

- NOTES**
- 1) DIGITAL ELEVATION MODEL CREATED BY COASTAL PLANNING & ENGINEERING. AERIAL PHOTOGRAPHY FLOWN BY AERIALS CARTOGRAPHICS OF AMERICA, DATE FLOWN JULY 24, 2006.
 - 2) BATHYMETRIC DATA FROM SURVEYS IN MARCH (NORTH AND SOUTH OF INLET) AND JULY (IMMEDIATE VICINITY OF INLET) 2009.
 - 3) DATUMS ARE NORTH AMERICAN DATUM 1983 (NAD83); STATE PLANE FLORIDA EAST, US SURVEY FEET; AND NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
 - 4) 2009 MEAN HIGH WATER (MHW) WAS EXTRACTED FROM THE COMPOSITE DIGITAL ELEVATION MODEL AT 0.33 FEET. ALL OTHER SHORELINES FROM FDEP DATABASE.
 - 5) CHANNEL LOCATION WILL BE REFINED DURING MODELING, DESIGN AND PERMITTING

- LEGEND:**
- 2010 PROPOSED VIBRACORE LOCATIONS
 - ▲ 2009 CPE JET PROBES
 - 2009 CPE VIBRACORES
 - 2006 H&M VIBRACORES
 - ▲ FDEP MONUMENTS
 - 1970 NOAA MHW
 - PROPOSED CUTS (DEC. 2009)
 - DREDGE TEMPLATE
 - 2009 CPE MHW



TITLE:
**WIGGINS PASS 2010
 PROPOSED VIBRACORE LOCATIONS**

COASTAL PLANNING & ENGINEERING, INC
 2481 NW BOCA RATON BLVD.
 BOCA RATON, FL 33431
 PH. (561) 391-8102
 FAX.(561) 391-9116

DATE: 05/25/2010 BY: BF COMM NO: 8500.63 **FIGURE 1**

G:\Collier\850065_DOCTORS_&_WIGGINS_PASS_MAINTENANCE_DREDGE_PLANS_&_SPECS\MXD\Meeting_map.mxd

Schedule B

Contract No: 09-5262 "County Wide Engineering Services"

Standard Hourly Rate Schedule for all disciplines

<u>Personnel Category</u>	<u>Standard Hourly Rate</u>
Principal	\$195
Senior Project Manager	\$165
Project Manager	\$148
Senior Engineer	\$155
Engineer	\$119
Senior Inspector	\$85
Inspector	\$65
Senior Planner	\$140
Planner	\$110
Senior Designer	\$115
Designer	\$100
Environmental Specialist	\$115
Senior GIS Specialist	\$145
GIS Specialist	\$100
Clerical	\$60
Surveyor and Mapper	\$130
CADD Technician	\$85
Survey Crew - 2 man	\$130
Survey Crew - 3 man	\$160
Survey Crew - 4 man	\$180

This list is not intended to be all-inclusive. Hourly rate fees for other categories of professional, support and other services shall be mutually negotiated by the County and firm on a project by project basis as needed.

Wiggins Pass Maintenance Dredging and Navigation Improvement Project: Geotechnical Investigation Contract #09-5262				
Activity Type/ Task	Type	Resource Hours/ Units	Billing Rate	Contract
Wiggins Pass Geotechnical Investigation		264.0		49,671
TASK 1: Administration/Planning		20.0		2,200
Labor	Planner	20.0	110.00	2,200.00
TASK 2: Geotechnical Survey				40,369
CPE Mob/DeMob/Travel		8.0		1,199
Labor	Senior Inspector	8.0	85.00	680.00
Expense	Mileage	250.0	0.45	111.25
Expense	Meals	3.0		108.00
Expense	Lodging	3.0		300.00
CPE Field Work		42.0		3,570
Labor	Senior Inspector	42.0	85.00	3,570.00
Vibracoring Subconsultant				18,500
Consultant	Consultant	1.0		18,500.00
Grab Sample Analysis		10.0		1,600
Labor	Senior Inspector	10.0	85.00	850.00
Expense	Sieve Analysis	10.0	75.00	750.00
Sediment Sample Analysis		114.0		13,660
Labor	Senior Inspector	40.0	85.00	3,400.00
Labor	Senior Inspector	40.0	85.00	3,400.00
Labor	Inspector	34.0	65.00	2,210.00
Expense	Sieve Analysis	48.0	75.00	3,600.00
Expense	Carbonate Analysis	14.0		1,050.00
2009 Carbonate Analysis		4.0		1,840
Labor	Senior Inspector	4.0	85.00	340.00
Expense	Carbonate Analysis	20.0		1,500.00
TASK 3: Product and Report Development		66.0		7,102
Labor	Project Manager	4.0	148.00	592.00
Labor	Senior Engineer	2.0	155.00	310.00
Labor	Planner	20.0	110.00	2,200.00
Labor	Designer	40.0	100.00	4,000.00