VILLAGE OF KEY BISCAYNE

Office of the Village Manager

MEMORANDUM

DATE: October 8, 2009

TO: Honorable Mayor and Members of the Village Council

FROM: Genaro "Chip" Iglesias, Village Manager

RE: Coastal Systems International – Beach Renourishment Maintenance Project

RECOMMENDATION

It is recommended that the Village Council approves the proposal submitted by Coastal Systems International for consulting services relative to the beach renourishment maintenance event project. The project includes restoration of the beach using the design template authorized by Council in 2000.

The total fees and services are estimated at $55,900.00. Funding will be obtained from the capital outlay beach renourishment line item and reimbursed to the Village by the Federal Emergency Management Agency (FEMA); the expenses relating to beach renourishment projects will then be deducted from the total FEMA allocation of $1,329,000.

BACKGROUND

As per resolution 2008-34 dated August 22, 2008, the Village committed funds to the Florida Department of Environmental Protection for the construction and monitoring of the Beach Renourishment Project.

Coastal Systems International has been previously retained by the Village in connection with services needed for the beach renourishment projects. It would be in the best interest of the Village to expand the services from the existing continuing contract provided by Coastal Systems International for the continuance of the project.

Attached is a letter from Coastal Systems International, Inc., as requested at the September 1st meeting, with some comparative professional fees. The direct comparison of these types of projects is very difficult because each beach restoration project brings its unique challenges and demands different level of expertise to be involved. The comparison information was obtained from other projects permitted by the State of Florida Department of Environmental Protection ("DEP"). It provides a consulting cost per mile of shoreline and a consulting cost per cubic yard of fill. In

addition, hourly rate information has been provided from several of these projects. This information supports the efficiency and cost of this recommendation.

This phase is only a preliminary part of the total project. Other consulting services will be required from Coastal Systems International to fulfill the needs of executing this project.

It is my recommendation that we move forward with this agreement for many reasons, of which, several are:

1) Comparative costs are supportive of this proposal.
2) Expertise of developing Request for Qualifications ("RFQ") would have to be retained at an additional cost and time.
3) Staff time & cost dedicated to an extended process.
4) Basic quotes for these services would not be within procurement rules and guidelines. A full procurement process would have to be undertaken.
5) At least an additional four months would be needed for a full process that would require additional expertise that is not in-house.
6) Given the challenges already faced with these projects and delays of overcoming the regulatory requirements, further delays would postpone progress.
7) Any potential savings that may be realized would be offset by the costs of bid document preparation, staff time, and project delays.

RESOLUTION NO. 2009-

A RESOLUTION OF THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AUTHORIZING THE FURTHER PROCUREMENT OF ENGINEERING SERVICES FOR THE VILLAGE OF KEY BISCAYNE, FROM THE FIRM OF COASTAL SYSTEMS INTERNATIONAL, INC.; PROVIDING FOR APPROVAL OF PROPOSAL CONCERNING CONSULTANT SERVICES RELATIVE TO BEACH RENOURISHMENT MAINTENANCE PROJECT; PROVIDING FOR IMPLEMENTATION; PROVIDING FOR EFFECTIVE DATE.

WHEREAS, pursuant to a contractual agreement previously entered into between the Village of Key Biscayne and Coastal Systems International, Inc. (the "Engineer"), the Engineer has been retained by the Village in connection with services needed for the Village of Key Biscayne Beach Renourishment Projects; and

WHEREAS, the Engineer, pursuant to its continuing contract, has proposed to perform initial consulting services relative to the proposed Village Beach Renourishment Maintenance Project (the "Project"), which Project includes the restoration of the beach using the design template created by Engineer and authorized by the Village in 2000 for beach compatible sand placement between R-101 and R-108 and using fill material obtained from one or more of the approved offshore borrow areas; and

WHEREAS, the Village Council finds that it is in the best interest of the Village to utilize the Engineer for the purpose of the Project and reporting thereon, as described in the attached proposal.

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. That each of the recitals stated above is hereby adopted

and confirmed.

Section 2. **Work Authorized.** That pursuant to the existing continuing contract between the Engineer and the Village, the consulting services in furthering the Project and reporting thereon, as described in the proposal attached hereto, are hereby approved.

Section 3. **Proposal Approved.** That the Village Manager is hereby authorized to execute the proposal in substantially the form attached hereto for the engineering work authorized hereunder between the Village and the Engineer, once approved by the Village Attorney as to form and legal sufficiency.

Section 4. **Implementation.** That the Village Manager is hereby authorized to take any necessary action to implement the purposes of this Resolution and the attached proposal.

Section 5. **Effective Date.** That this Resolution shall be effective immediately upon adoption hereof.

PASSED AND ADOPTED this ___ day of October, 2009.

_____
MAYOR ROBERT L. VERNON

ATTEST:

_____
CONCHITA H. ALVAREZ, MMC, VILLAGE CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

_____
VILLAGE ATTORNEY

Proposal

Proposal

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

135040.02

March 30, 2009

Mr. Armando Nunez
Public Works Director
VILLAGE OF KEY BISCAYNE
88 West McIntyre Street
Key Biscayne, Florida 33149

RE: CONSULTING SERVICES RELATIVE TO THE PROPOSED VILLAGE OF KEY BISCAYNE BEACH RENOURISHMENT PROJECT MAINTENANCE EVENT AUTHORIZATION, VILLAGE OF KEY BISCAYNE, MIAMI-DADE COUNTY, FLORIDA

Dear Mr. Nunez:

This is to submit a proposal for initial consulting services relative to the proposed Village of Key Biscayne Beach Renourishment Maintenance Event Project (Project). The Project includes restoration of the beach using the design template that was authorized in 2000 for beach compatible sand placement between Florida Department of Environmental Protection (DEP) reference monument R-101 and R-108 and using fill material obtained from one or more of the approved offshore borrow areas.

Although the agencies generally approved maintenance events under the 2000 permits, these events are subject to "additional conditions which may be determined to be appropriate based upon data submitted ... in support of your request or upon the results of previous monitoring data." Coastal Systems will submit requests for approval of beach maintenance events to the Florida Department of Environmental Protection (DEP), U.S. Army Corps of Engineers (COE) and Miami-Dade County Department of Environmental Resources Management (DERM).

The maintenance event authorization requests should help increase momentum toward resolution of pending permit compliance issues; please note that there may be substantial additional data collection, environmental impact analysis and negotiation required prior to issuance of authorization for the proposed maintenance event. The agencies may require modification of the design template to avoid or further minimize seagrass or other environmental impacts. Upon receipt of comments and/or formal requests for additional information from these agencies, Coastal Systems will confer with the Village relative to appropriate strategy for addressing outstanding permit compliance issues and new data that must be collected and analyzed toward negotiating approvals for the proposed maintenance event.

The following services are to be provided by Coastal Systems International, Inc. (Coastal Systems) for the Village of Key Biscayne (Village).

PART 1 – DATA COLLECTION

a. **Initial Borrow Area Reconnaissance:** Coastal Systems will conduct initial reconnaissance to document the current condition of the three (3) previously authorized borrow sites and pipeline corridors. The reconnaissance will consist of a hydrographic survey of each site, which will be overlaid (under Part 1b) with existing available data regarding rock depths to estimate the available sand volume at each borrow site. This scope of services does not include marine resource surveys, jet probes or other means of groundtruthing the sand volume within the borrow areas, or a search for potential alternate borrow areas.

b. **Borrow Area Sand Volume Estimate:** Coastal Systems will overlay the hydrographic survey depicting the existing substrate surface with available historic data regarding the top of rock elevation in order to estimate the available sand volume within each of the 3 approved borrow areas for the proposed beach maintenance event. The regulatory agencies may require additional data regarding available sediment quality and quantity.

PART 2 – MAINTENANCE EVENT AUTHORIZATIONS

For the initial maintenance event authorization request submittal, Coastal Systems is providing permit sketches depicting the original approved project limits relative to available data regarding current site conditions; all other required items will be provided by the Village or by Coastal Systems under a separate scope of services.

a. **Initial Permit Sketches:** Using data available in our files and received from the County, Coastal Systems will prepare an initial set of project sketches illustrating existing beach profile conditions and the proposed limits of the Project based on the previously authorized beach nourishment project limits and known project performance conditions, previously approved borrow areas and pipeline corridor(s) for submittal to the environmental permitting agencies. The initial permit sketch set will also illustrate the most recent available marine resource boundary data available for the initial permit application submittal. Permit sketches will be prepared on 8 ½ x 11-inch paper. The sketches will be used for initial permit review only (not construction). Coastal Systems will review a draft version of these sketches with the Village prior to submittal to the permitting agencies.

b. **Maintenance Event Authorization Requests:** Coastal Systems will prepare and submit letters requesting maintenance event authorizations under DEP Permit No. 0160856-001-JC, Department of the Army Permit No. 199904294 (IP-DSG) and DERM Permit No. CC99-347, as required for authorization of the proposed Project. A copy of the permit sketches will be attached to the letters.

PART 3 – MAINTENANCE AUTHORIZATION PROCESSING

The level of effort required to negotiate approval of the maintenance event requests will ultimately be affected by many external variables such as environmental resource impact concerns and associated commenting agency Requests for Additional Information (RAIs), Endangered Species Act consultation requirements, Biscayne Bay Aquatic Preserve criteria, compliance issues related to the previous beach renourishment project and recent permit modification for the dune project, public comments/objections, etc. Agency staff workload, recent regulatory precedent, and policy trends may also affect the level of effort required to secure Project authorizations.

Additional hydrographic and marine resource (seagrass/coral) mapping will be required within the potential project impact envelope including equilibrium toe of fill, pipeline corridor, borrow site buffer/mixing zone area, and/or fill mixing zone. This and any other required new data collection will be addressed as an addendum to this contract, upon provision of sufficient criteria by the environmental regulatory agencies during the permit process to precisely define the scope. Additional engineering and environmental impact analysis will likely be required, the scope of which will start to be defined under Part 3(a).

Coastal Systems will maintain clear communication with the Village regarding permitting progress and will address continuing services scope and budget as necessary. Meetings required with the Village and/or agency staff will be provided under Part 4 services.

a. **Initial Permit Processing:** Upon receipt of preliminary agency questions or comments and the first round of formal Requests for Additional Information and Completeness Summaries, Coastal Systems will confer with the Village as to the issues and additional items that are required by agency staff and update the continuing project strategy, schedule and clearly define the required steps for authorization of the Project. Approximately 100 hours of consulting services are budgeted for an initial 8-week period following maintenance event authorization request submittal, in order to start defining those items that must be addressed and additional data that must be collected to resolve old compliance issues and fully process the maintenance event authorization requests. Negotiations regarding ongoing seagrass mitigation and monitoring associated with the previous project will continue to be provided under our existing contract.

b. **Funding Administration:** Coastal Systems will continue to coordinate with the Village, DEP and/or FEMA, as appropriate, to address project funding opportunities. This includes defining project scope, budgets, schedules and applications relative to standard and special appropriations of funding through public sources. Coastal Systems will confer with Village staff regarding recommendations for lobbying or other actions.

PART 4 – GENERAL COORDINATION/MEETINGS

Coastal Systems staff will provide general coordination services and attend meetings, as required, with the Village, other members of the Project team, and/or regulatory agency staff to discuss the design and permitting process for the proposed Project. Coastal Systems will address scope changes and additional services required under an addendum to this agreement with the Village's authorization.

GENERAL

This fee proposal is valid to be executed for 60 days. Coastal Systems is available to discuss and refine the scope of services as necessary. Additional costs may be incurred due to circumstances beyond our control, including but not limited to, changing or unknown site conditions, design modifications, Village or agency staff delays, agency requests for additional information, public comments or objections, rule changes and litigation or other legal actions. Additional data collection, permit processing, construction drawings, bid process assistance and construction administration services, including permit compliance administration services will be provided under a separate scope once they are defined.

Fees for hourly tasks will be invoiced on an hourly basis each month in accordance with the attached updated Rate Schedule. Fees for lump sum tasks will be invoiced each month on a percent complete basis. Expenses for this initial phase of services are estimated at $4,000 and will be billed in accordance with the attached Rate Schedule; authorization of any unanticipated additional budget that may be required for equipment rental, airfare and other Project-related purposes will be requested of the Village, as appropriate.

These services will be provided as an addendum to Coastal Systems' agreement dated August 1, 2006. Please return an executed copy of this addendum or notice to proceed, which will serve as our Authorization to Proceed. We look forward to continuing to work with the Village through the implementation of this beach renourishment project. Should you have any questions or require additional information, please do not hesitate to contact me at 305-669-8650 or tblankenship@coastalsystemsint.com.

Sincerely,
COASTAL SYSTEMS INTERNATIONAL, INC.

for Christy J Bush

Timothy K. Blankenship, P.E.
Director

SIGNED: _____ DATE: _____
VILLAGE OF KEY BISCAYNE

PRINT: _____
NAME TITLE

TKB:ie

Enclosures

File, TKB, CJB, JC, PC, ALA, Accounting, Contract Book
F:\Project\135040.02\Proposals-Contracts\09-03-30 PRO A Nunez Beach Renourishment Permit Appx - final.doc

TABLE 1
SUMMARY OF FEES FOR BEACH RENOURISHMENT PROJECT
MAINTENANCE EVENT AUTHORIZATION
VILLAGE OF KEY BISCAYNE, FLORIDA

DESCRIPTION	TYPE	TOTAL COST
Part 1 - Data Collection		
a) Initial Borrow Area Reconnaissance	Lump Sum	$10,400
b) Borrow Area Sand Volume Estimate	Lump Sum	$6,000
Subtotal:		**$16,400**
Part 2 - Maintenance Event Authorizations		
a) Initial Permit Sketches	Lump Sum	$8,000
b) Maintenance Event Authorization Requests	Hourly, Estimated at	$11,500
Subtotal:		**$19,500**
Part 3 - Maintenance Event Processing		
a) Initial Permit Processing	Hourly, Estimated at	$16,000
b) Funding Administration	Hourly	TBD
Subtotal:		**$16,000**
Part 4 - General Coordination/Meetings	Hourly	**TBD**
Subtotal:		**TBD**
Estimated Reimbursable Expenses		$4,000
TOTAL FEES:		**$55,900**

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

COASTAL SYSTEMS INTERNATIONAL, INC.
RATE SCHEDULE

TITLE	HOURLY RATE
Principal	$ 290.00
Director	$ 250.00
Department Head	$ 220.00
Senior Project Manager	$ 180.00
Project Manager	$ 160.00
Senior Surveyor/Project Engineer	$ 130.00
Scientist	$ 120.00
IT Specialist/Junior Engineer	$ 100.00
Designer/Assistant Project Manager	$ 80.00
Surveyor	$ 75.00
Graphics-Media Technician/GIS Technologist	$ 70.00
CADD/Engineering Technician	$ 65.00
Project Accountant	$ 60.00
Administrative Assistant/Technical Assistant/Clerical	$ 55.00

REIMBURSABLE EXPENSES

Professional Supplies and Standard Expenses: Professional supplies and standard expenses will be billed at 8.5 percent of fees. Professional supplies and standard expenses include standard office supplies, plots and photocopies, telephone calls, facsimiles, mail and courier delivery services and related local travel expenses.

Direct Reimbursable Expenses: Charges above and beyond standard expenses noted above will be invoiced at cost plus 15 percent. These include field equipment rental (see separate Equipment Rate Schedule), field supplies and research materials, permit fees, report and presentation materials, international travel expenses, and other expenses not included in Professional Supplies and Standard Expenses. A 15 percent markup is added to all third-party expenses that are billed through Coastal Systems for administration and financial responsibility. Rates are subject to change at one-year intervals from date of contract execution.

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

COASTAL SYSTEMS INTERNATIONAL, INC.

SCHEDULE OF EQUIPMENT

Effective January 1, 2000

Survey Equipment - Total Station w/Data Collector, Topcon	$ 150/day
Auto Level, Topcon	$ 75/day
Underwater Video Mapping System with GPS Overlay	$ 500/day
Conductivity Meter	$ 100/day
Current Flow Meter	$ 150/day
Turbidity Meter	$ 75/day
Dacor Seasprint U/W Scooter	$ 150/day
Vibracore Sand Sampling Equipment	$ 500/day
Tirtaharapan Tide Gauges (2)	$ 125/day
Boat Rental	$ 425/day
DSM 212L Marine DGPS Unit	$ 150/day
Handheld Radio	$ 25/day
Field Ruggedized Laptop	$ 100/day
Hypack Navigation Software	$ 100/day
Jet Probe System	$ 350/day
Underwater Camera	$ 50/day
Dive Gear (one set)	$ 50/day
Underwater Communications System	$ 150/day
Underwater Video Camera	$ 250/day
Towed Video Housing w/Camera	$ 300/day
RTK 4700 GPS	$ 450/day
Fathometer	$ 125/day
Laptop	$ 50/day
Handheld GPS	$ 50/day
Upland Camera	$ 35/day
Wind Gauges	$1,000/1st month $ 750/2nd month $ 500/subsequent months
Directional Wave Gauge (SP2100)	$5,000/1st month $2,500/2nd month $1,500/subsequent months
Wave and Tide Gauge (SP2200)	$2,500/1st month $1,300/2nd month $1,000/subsequent months

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

135040.02

October 7, 2009

Mr. Chip Iglesias
Village Manager
VILLAGE OF KEY BISCAYNE
88 West McIntyre Street
Key Biscayne, FL 33149

RE: KEY BISCAYNE BEACH MAINTENANCE EVENT – COMPARITIVE PROFESSIONAL FEES FOR BEACH NOURISHMENT PROJECTS
VILLAGE OF KEY BISCAYNE BEACH NOURISHMENT

Dear Mr. Iglesias:

The purpose of this letter is to respond to the request from the Village Council (Council) at the August 25, 2009 Council meeting to provide comparative costs for consulting services provided for beach nourishment projects in South Florida. Coastal Systems International, Inc. (Coastal Systems) prepared a proposal dated March 30, 2009 to the Village for approximately $55,900 to obtain initial field data and to prepare letter requests to the environmental agencies for a beach nourishment maintenance event. The following sections provide a background on beach management in Key Biscayne, discuss beach project funding, provide comparative costs from other beach nourishment projects, and present recommendations for implementation of the next beach nourishment project on Key Biscayne.

Beach Management Background

Coastal Systems developed the 50-year Beach Management Plan on behalf of the Village back in 1997. This document outlines beach nourishment requirements for shore protection, and the initial beach nourishment with approximately 120,000 cubic yards (cy) of beach fill was completed in 2002. The Village authorized a contract with Coastal Systems in June, 2000 for approximately $599K to provide field investigation, engineering design, environmental permitting, bidding, construction administration and monitoring services for the beach nourishment project. This contract has been amended in recent years to provide additional services such as seagrass mitigation, marine turtle lighting ordinance, and dune restoration consulting services.

Environmental permitting for beach management projects in Florida is extremely complex, and each beach project is site-specific. The environmental permits secured by Coastal Systems for the beach nourishment Project allow for "maintenance events" to be completed based on specific conditions after completion of the initial 2002 nourishment event. In other words, the Village is one of the few municipalities/counties in the State of Florida with active environmental permits from three agencies:

- Federal – U.S. Army Corps of Engineers (Corps)
- State - Florida Department of Environmental Protection (DEP)
- Local – Miami-Dade County Department of Environmental Resource Management (DERM)

These types of permits are no longer issued, and most beach nourishment "events" must be processed as a new permit.

Funding

Coastal Systems has been proactive on behalf of the Village to secure funding from local, state and federal agencies for ongoing beach management projects. The 2002 Project was cost-shared as follows:

- DEP: 49%
- DERM: 25%

This cost-sharing included not only construction costs but also professional services provided by Coastal Systems. The final check from the DEP was received by the Village at the completion of the funding agreement in 2007.

After the hurricanes of 2005, Coastal Systems assisted the Village to secure funding from FEMA as an engineered beach. Two beach management projects qualified for this funding, which is a 100% reimbursement:

- Dune Restoration Project (completed in early 2008) Total Reimbursement: $203K
- Beach Nourishment: project budget $1.329M

The FEMA funding will be utilized for a portion of the next beach nourishment maintenance event. The FEMA funding would only reimburse the Village for the volume of fill eroded during the coastal storm event, and will not cover ongoing normal beach erosion. However, the FEMA funding covers the mobilization of the dredge equipment, which is a large component of any dredging project. The unit cost per cubic yard to place additional beach fill is generally economical once the dredge is mobilized.

For the next beach maintenance event, Coastal Systems has applied to the DEP for funding in their fiscal year 2010-2011; refer to DEP correspondence dated August 18, 2009. The total request for funding is approximately $440K for Professional Consulting Services, and approximately $3M for construction of the 124,000 cy maintenance event. The requested DEP cost-share for these consulting services would be approximately $210K. The initial proposal for $59K is to begin the permitting process and initiate consultation with the environmental agencies. Due to the maintenance event (as opposed to a new permit application), reliance will be placed on as much historical data as possible to reduce overall consulting costs. Therefore, Coastal Systems plans to prepare permit modification requests with the minimal amount of data through this initial work effort. Additional costs saving efforts include the use of annual beach

survey data that is generally provided by DERM. This initial work request for $59K will not cover the professional services required to implement the next beach nourishment. Additional studies/analyses, if required, will be addressed once feedback is received in the form of Requests for Additional Information (RAI). Coastal Systems has conducted initial discussions with DERM requiring additional funding from Miami-Dade County, and Coastal Systems will begin this funding request process upon authorization of the scope of services.

Comparative Beach Nourishment Costs

Comparing consulting costs for beach nourishment projects is challenging, since each project is site-specific. Factors that influence the cost of a beach renourishment project include, but are not limited to, 1)location, 2)environmental impacts, 3)sand source 4)proximity to inlets, 5)Federal Shore Protection Projects 6)Project Size, 7)complexity of environmental permit issues and 8)legal challenges. Developing an "apples to apples" comparison for beach consulting services is next to impossible. Each project requires multi-disciplined teams of engineers, marine biologists, geologists, surveyors, and project managers. For example, Key Biscayne is one of the few beach nourishment projects in Florida with adjacent seagrass marine resources. Most south Florida beach projects have nearshore hardbottom adjacent to the beaches, which in many cases is coral reef habitat.

Three recent developments within the last few years are currently influencing the design and permitting of beach nourishment projects in Florida:

- Town of Palm Beach Reach 8 Project – the DEP Permit was denied in April for this 700,000 cy beach renourishment as a result of a Section 120 Administrative Hearing. The Town spent approximately $3.6M in engineering, permitting and legal fees since the project was initiated in 2002.
- Walton County and the City of Destin – pending U.S. Supreme Court Ruling on Chapter 161 Florida Statutes (F.S.). The merit brief for the Petitioner, Stop the Beach Renourishment, Inc. (08-1151) can be viewed on this web site:
  http://www.abanet.org/publiced/preview/briefs/unscheduled.html
  This legal process has delayed the beach nourishment project since 2004 due to the challenge of the establishment of the Erosion Control Line (ECL). The case is scheduled to be heard during the 2009-2010 term.
- Broward County Segment 3 Beach Renourishment – unanticipated impacts to nearshore hardbottom (benthic habitat) from beach construction in 2006 are still being evaluated/quantified. These impacts have further delayed the Segment 2 (Ft. Lauderdale area) beach project. The DEP is now requiring the redesign of Segment 2 beach for which permits were originally applied for in 2000. The Segment III project also set a precedent in the industry with consulting costs almost as high as the construction cost, with a total project implementation cost of $47M as of FY 2007.

Coastal engineering and permitting for beach management in Florida will continue to evolve and be dynamic as these three recent developments in the industry influence environmental permit conditions.

Coastal Systems researched and obtained comparative consulting cost information for five (5) beach projects in South Florida that are (or have been) designed and permitted by other consulting firms. Most of the information was obtained directly from the DEP, since the DEP cost-shares in most Florida beach nourishment projects. The research was limited to Southeast Florida, from Martin to Broward Counties. Miami-Dade County is within a Federal Shore Protection Project which is managed and designed by the U.S. Army Corps of Engineers with the County as the local sponsor. A detailed summary of consulting cost comparisons for the 5 projects is enclosed with this letter, and following is a brief summary of comparative costs:

- Consulting services provided from 2000-present, with most project costs within the last two years
- Evaluated field investigation, engineering design and permitting costs; construction administration and monitoring costs were not compared
- Project sizes ranged from 25,000 to 1.9M cy
- Shoreline lengths ranged from 0.5 to 6.9 miles
- Consulting costs ranged from $220K to $22M

The enclosed detailed summary provides more information and comments relative to each project. Since no direct comparison can be made for the site-specific projects, consulting costs were estimated per cy of beach fill and per mile of beach in the summary table, with general results as follows:

- $1.2 to $12 per cy of beach fill
- $272K to $3.3M per mile of shoreline
- Comparisons were not provided for two of the projects because of required redesign and permit denial

For comparison purposes, the estimated consulting costs for Key Biscayne's maintenance beach nourishment event were included in the enclosed Table. The current estimates are $2.5/cy and $250K per mile of shoreline based on the information provided in the latest DEP funding application.

Furthermore, the DEP reviews all consulting cost proposals and scopes of services prepared by consulting firms retained by municipal and county governments. Cost-sharing agreements are not approved if the consultant fees are not in general accordance with industry costs.

Recommendations for Implementation of the Beach Maintenance Event

Coastal Systems has continued to provide cost-effective beach management consulting services for the Village of Key Biscayne since 1997. We are confident that the cost comparison data provided and the review of the consulting costs by Village staff as well as the DEP for cost

reimbursement will provide the required justification for the Village to continue to retain Coastal Systems for the next beach maintenance event. Other key reasons for retaining Coastal Systems include the following:

- Immediate Permit Processing - Coastal Systems has the ability to immediately begin processing the permit modifications based on thorough knowledge of the Project and background data. If the Council elects to evaluate other engineering firms for the maintenance event consulting services, the Village will have to retain a firm through a Request for Qualifications (RFQ) process in accordance with the Consultants Competitive Negotiation Act (CCNA) required by Florida Statutes. This process will likely require 3-6 months to implement.
- Permit Expirations – the DERM Permit for the Maintenance event will expire in 2010, and avoiding a new Class 1 Coastal Construction Permit Application process will result in significant cost savings. Most beach nourishment projects only require DEP and Corps of Engineers (state and federal) permits. Miami-Dade County also requires permits through DERM, the local County agency.
- Location of Firm – Coastal Systems has always been responsive to the needs of Key Biscayne. The firm is conveniently located in nearby Coral Gables, within Miami-Dade County. The firm also has a regional office in West Palm Beach, which is convenient to the Corps of Engineer's offices. There are no costs associated with travel due to the local office location.
- Full Services – Coastal Systems provides the majority of consulting services required for beach management projects with in-house staff. Engineering and environmental permitting staff work closely to navigate the challenging permitting issues.

Coastal Systems looks forward to continuing the 10+ year working relationship with the Village. Should you have any questions or require additional information, please contact me at (305) 669-8650 or email to tblankenship@coastalsystemsint.com.

Sincerely,
COASTAL SYSTEMS INTERNATIONAL, INC.

Timothy K. Blankenship, P.E.
Director

TKB:mr

Enclosures

cc: Mr. Armando Nunez, Director of Public Works, Village of Key Biscayne

File, TKB, CJB, PC, JC
F:\Project\135040.02\Correspondence\(09-10-07) Rev LTR Chip Iglesias - fee justification summary.docx

COMPARTIVE CONSULTING COSTS - SOUTH FLORIDA BEACH NOURISHMENT PROJECTS

PROJECT NO.	PROJECT NAME	LOCATION	YEAR	ESTIMATED SHORELINE LENGTH (miles)	ESTIMATED BEACH FILL QTY (cubic yards)	CONSULTING COSTS	CONSULTING COST PER MILE SHORELINE	CONSULTING COST PER CY OF FILL	COMMENTS
1	Bathtub Beach	Martin County	2008	0.5	25,000	$ 224,360.00	$ 448,720.00	$ 8.97	Does not include sand source investigations, nor full environmental permit RAI processing. Borrow area marine biological investigations included the evaluation of adjacent seagrass beds in the flood shoal of Jupiter Inlet. Prime consultant retained 6 subconsultants to provide all required consulting services.
2	Reach 8 - Town of Palm Beach	Palm Beach County	2009	1.8	724,000	$ 2,000,000.00	N/A	N/A	Permit application withdrawn in May, 2009. Construction not completed. Environmental groups challenged DEP notice of intent to grant permit Permit challenge went to Section 120 Administrative Hearing Administrative law judge recommended DEP deny the permit Town failed to provide reasonable assurance that the environment would be protected. Since 2002, the town has spent $1.6 million legal costs tied to its applications for state and federal environmental permits for Reach 8
3	South Boca Raton	Palm Beach County	2006 to 2009	0.9	200,000	$ 245,000.00	$ 272,222.22	$ 1.23	Environmental Permits issued in 2002 Project completed as Boca Inlet management Consulting costs for maintenance event Ebb shoal of inlet dredged as sand source Construction scheduled for late 2009 Construction bid: $1.85M
4	Segment 2 Broward County	Broward County	2009		300,000 (current estimate)	$ 5,810,000.00	N/A	N/A	Initial design and permitting conducted under Project 5 beginning in 2000, Projects 5 and 6 were combined. Original design included 935,000 cy of beach fill; 5.3 miles of shoreline that would impact approx. 2.5 acres of nearshore hardbottom Segment 2 consists of Ft. Lauderdale, Lauderdale-by-the Sea and Pompano Beach Scope is for redesign of Segment 2 (Ft. Lauderdale area) beach project Redesign required due to unanticipated impacts to nearshore benthic resources from construction of Project 5 in 2007 Environmental permit issuance dependendent on Project 5 performance Scope includes preparation of federal NEPA and EIS documents Scope includes federal GRR Addendum preparation Scope Includes Mitigation Planning and negotiations for additional mitigation from unanticipated benthic resource impacts from Project 5 Scope includes extensive field data collection efforts. Consulting costs for initial redesign efforts. Final consulting costs, not including construction administration and monitoring remain to be determined. Construction budgeted at $30.2M
5	Segment 3 Broward County	Broward County	2006	6.9	1,900,000	$ 22,900,000.00	$ 3,318,840.58	$ 12.05	$46.7M expended through FY 07 Mitigation completed in 2003, $6.1M Included construction of 3 coastal structures at Port Everglades inlet Project includes John U. Lloyd Park and Hollywood/Hallandale Beaches Construction was approximately $23.8M Impacted 7.6 acres of nearshore hardbottom Unanticipated impacts to additional nearshore hardbottom are still being quantified Consulting costs include a portion of the construction monitoring, breakdown was not available
6	Key Biscayne	Miami-Dade County	2010	1.2	120,000	$ 300,000.00	$ 250,000.00	$ 2.50	Consulting cost estimated based on DEP Funding Application

Notes

1. Consulting Costs provided by DEP for Projects 1, 3, 4 and 5. The remainder of project costs obtained from published data
2. Consulting costs include field investigations, engineering design, and environmental permitting. Costs for construction administration and monitoring not included
3. Cost comparison analysis prepared by Coastal Systems in September, 2009.

ATTACHMENT "A"
Work Order 1
North Boca Raton Beach Nourishment Construction-Phase Biological and Physical Monitoring Services
Detailed Costs and Expenses

	Task Description and Breakdown	Coastal Team Leader	Project Manager/Sr. Engineer	Staff Engineer	Junior Engineer/ Engineer Tech.	Professional Surveyor/ Mapper	Survey Technician	AutoCAD/ GIS Tech.	Admin./ Clerical	Senior Biologist/ Scientist	Biologist/ Scientist	CEG	SEA	Pickett	Total Subcontractor (raw)	ATM Total Labor	Subcontractor	Equip. Costs	Internal Direct Expenses	Total Task Budget
		$163.77	$123.91	$101.80	$77.19	$105.33	$60.00	$75.18	$77.01	$125.00	$90.00									
Task 1	**Biol. Mon. Station Establishment and Agency Coord.**																			
1.1	Biol. Mon. Station Establishment and Agency Coord.		16									$30,347			$30,347	$1,983	$33,382	$0	$99	$35,463
1.2	Regulatory Agency Coord.											$5,650			$5,650	$0	$6,215	$0	$0	$6,215
	Total Cost - Task 1	0	16	0	0	0	0	0	0	0	0	$35,997	$0	$0	$35,997	$1,983	$39,597	$0	$99	$41,678
Task 2	**Pre-Construction Biological Monitoring**																			
2	Pre-Construction Biological Monitoring	1	32		46	90			8			$21,712			$21,712	$17,775	$23,883	$11,234	$889	$53,781
	Total Cost - Task 2	1	32	0	46	90	0	0	8	0	0	$21,712	$0	$0	$21,712	$17,775	$23,883	$11,234	$889	$53,781
Task 3	**During-Construction Biological Monitoring**																			
3.1	During-Construction Biological Monitoring	4	30		84	224						$47,006			$47,006	$34,450	$51,707	$20,888	$1,723	$108,767
3.2	Pipeline Across Hardbottom Monitoring	2	2			70						$15,526			$15,526	$7,948	$17,079	$9,625	$397	$35,049
	Total Cost - Task 3	6	32	0	84	294	0	0	0	0	0	$62,532	$0	$0	$62,532	$42,399	$68,786	$30,513	$2,120	$143,817
Task 4	**Daily Construction Biological Monitoring**																			
4.1	Daily Construction Biological Monitoring	2	8			100						$10,616			$10,616	$11,852	$11,678	$8,045	$593	$32,167
4.2	Patch Reef Sedimentation/Damage Contingency	2	2			50						$6,361			$6,361	$5,842	$6,997	$6,875	$292	$20,006
	Total Cost - Task 4	4	10	0	0	150	0	0	0	0	0	$16,977	$0	$0	$16,977	$17,694	$18,675	$14,920	$885	$52,173
Task 5	**Immediate Post-Const. Biol. Mon. and Reporting**																			
5.1	Immediate Post-Const. Biol. Mon. and Reporting	1	16		50	98						$55,575			$55,575	$16,328	$61,133	$9,859	$816	$88,136
5.2	Immediate Post-Const. Pipline											$6,168			$6,168	$0	$6,785	$0	$0	$6,785
	Total Cost - Task 5	1	16	0	50	98	0	0	0	0	0	$61,743	$0	$0	$61,743	$16,328	$67,917	$9,859	$816	$94,921
Task 6	**Post-Const. Beach Profile and Borrow Area Survey**																			
6	Post-Const. Beach Profile and Borrow Area Survey		12		69	108	32	36	10						$0	$23,585	$0	$3,584	$1,179	$28,349
	Total Cost - Task 6	0	12	0	69	108	32	36	10	0	0	$0	$0	$0	$0	$23,585	$0	$3,584	$1,179	$28,349
Task 7	**Aerial Photography**																			
7	Aerial Photography	1	8	2										$7,830	$7,830	$1,359	$8,613	$0	$68	$10,040
	Total Cost - Task 7	1	8	2	0	0	0	0	0	0	0	$0	$0	$7,830	$7,830	$1,359	$8,613	$0	$68	$10,040
Task 8	**Post-Const. Physical Monitoring Report**																			
8	Post-Const. Physical Monitoring Report	12	100	140				48	40						$0	$35,297	$0	$0	$1,765	$37,062
	Total Cost - Task 8	12	100	140	0	0	0	48	40	0	0	$0	$0	$0	$0	$35,297	$0	$0	$1,765	$37,062
	Total Task Order Costs	25	226	142	249	740	32	84	58	0	0	$198,961	$0	$7,830	$206,791	$156,426	$227,470	$70,119	$7,821	$461,821

	Task Description and Breakdown	Mileage (miles)	Survey Boat (days)	Tide Gauge (days)	Towing Vehicle (days)	Boat Supplies (days)	SCUBA (person days)	Diver Supplies (days)	Fuel Surcharge (days)	RTK GPS System (days)	GPS Total Station/ Differential GPS (days)	Trimble GeoXM Handheld (days)	Trimble Pro-XR Pathfinder (days)	Camera w/ Housing (days)	Video w/ Housing (days)	24"x36" (pages)
		$0.585	$1,200	$75	$100	$25	$25	$25	$50	$400	$300	$50	$75	$30	$50	$1.25
Task 1	**Biol. Mon. Station Establishment and Agency Coord.**															
1.1	Biol. Mon. Station Establishment and Agency Coord.															
1.2	Regulatory Agency Coord.															
	Total Cost - Task 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Task 2	**Pre-Construction Biological Monitoring**															
2	Pre-Construction Biological Monitoring	400	8		8	8			8							
	Total Cost - Task 2	400	8	0	8	8	0	0	8	0	0	0	0	0	0	0
Task 3	**During-Construction Biological Monitoring**															
3.1	During-Construction Biological Monitoring	2800	14		14	14			14							
3.2	Pipeline Across Hardbottom Monitoring		7		7	7			7							
	Total Cost - Task 3	2800	21	0	21	21	0	0	21	0	0	0	0	0	0	0
Task 4	**Daily Construction Biological Monitoring**															
4.1	Daily Construction Biological Monitoring	2000	5		5	5			5							
4.2	Patch Reef Sedimentation/Damage Contingency		5		5	5			5							
	Total Cost - Task 4	2000	10	0	10	10	0	0	10	0	0	0	0	0	0	0
Task 5	**Immediate Post-Const. Biol. Mon. and Reporting**															
5.1	Immediate Post-Const. Biol. Mon. and Reporting	400	7		7	7			7							
5.2	Immediate Post-Const. Pipline															
	Total Cost - Task 5	400	7	0	7	7	0	0	7	0	0	0	0	0	0	0
Task 6	**Post-Const. Beach Profile and Borrow Area Survey**															
6	Post-Const. Beach Profile and Borrow Area Survey	400	2	2	2	2	2		2	1						
	Total Cost - Task 6	400	2	2	2	2	2	0	2	1	0	0	0	0	0	0
Task 7	**Aerial Photography**															
7	Aerial Photography															
	Total Cost - Task 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Task 8	**Post-Const. Physical Monitoring Report**															
8	Post-Const. Physical Monitoring Report															
	Total Cost - Task 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Task Order Costs	6000	48	2	48	48	2	0	48	1	0	0	0	0	0	0

CITY OF BOCA RATON, FLORIDA

NORTH BOCA RATON SECOND BEACH RENOURISHMENT PROJECT
PRE-CONSTRUCTION AND CONSTRUCTION PHASE ENGINEERING SERVICES

LABOR, EQUIPMENT & DIRECT COST RATES
PREPARED BY: COASTAL PLANNING & ENGINEERING, INC.

	Nov. 2006 to Oct. 2007
LABOR RATES (HOURLY)	
Principal Engineer	$259.35
Project Manager	$184.80
Senior Coastal Engineer	$115.50
Coastal Engineer	$81.90
Professional Surveyor & Mapper	$140.70
Project Surveyor	$94.50
Survey Tech / Boat Operator	$78.75
Senior Geologist	$133.35
Marine Geologist	$75.60
Marine Biologist	$71.40
Senior CAD Operator	$94.50
CAD Operator	$82.95
Clerical	$53.55
EQUIPMENT RATES (DAILY)	
Survey Boat (24 ft.)	$750.00
Sea Sled	$300.00
Level	$55.00
Range Finder	$15.00
Fathometer	$150.00
Heave Compensator	$200.00
RTK	$475.00
ATV	$75.00
Navigation System	$250.00
Digital Camera	$10.00
Sieve Analysis (per sample)	$70.00
DIRECT COSTS	
Misc. Expenses *	1.10

* - Miscellaneous expenses will be billed at cost. Miscellaneous expenses include field supplies, expendables, and related field equipment that will be purchased and utilized in the performance of these activities. Rates are used in the spreadsheet to determine contract value.

BROWARD COUNTY SHORE PROTECTION PROJECT

RLI #040897-RB PHASE V SERVICES

LABOR, EQUIPMENT & DIRECT COST RATES
COASTAL PLANNING & ENGINEERING, INC.

	2009	2010	2011	2012	2013
LABOR RATES (HOURLY)					
Principal Engineer	$191.00	$197.00	$203.00	$209.00	$215.00
Project Manager	$170.00	$175.00	$180.00	$185.00	$191.00
Senior Coastal Engineer	$134.00	$138.00	$142.00	$146.00	$150.00
Coastal Engineer	$113.00	$116.00	$119.00	$123.00	$127.00
Senior Marine Biologist	$134.00	$138.00	$142.00	$146.00	$150.00
Marine Biologist	$98.00	$101.00	$104.00	$107.00	$110.00
Certified Inshore Hydrographer	$144.00	$148.00	$152.00	$157.00	$162.00
Professional Surveyor & Mapper	$144.00	$148.00	$152.00	$157.00	$162.00
Surveyor	$88.00	$91.00	$94.00	$97.00	$100.00
Senior Marine Geologist	$124.00	$128.00	$132.00	$136.00	$140.00
Professional Geologist	$113.00	$116.00	$119.00	$123.00	$127.00
Geologist	$98.00	$101.00	$104.00	$107.00	$110.00
Boat Operator	$82.00	$84.00	$87.00	$90.00	$93.00
CADD Operator	$88.00	$91.00	$94.00	$97.00	$100.00
GIS Operator	$88.00	$91.00	$94.00	$97.00	$100.00
Technician	$77.00	$79.00	$81.00	$83.00	$85.00
Bookkeeper	$67.00	$69.00	$71.00	$73.00	$75.00
Clerical	$67.00	$69.00	$71.00	$73.00	$75.00
EQUIPMENT RATES (DAILY)					
Survey Boat (28 ft.)	$1,030.00	$1,061.00	$1,093.00	$1,126.00	$1,160.00
Survey Boat (24 ft.)	$647.00	$666.00	$686.00	$707.00	$728.00
Seismic Survey Vessel	$2,266.00	$2,334.00	$2,404.00	$2,476.00	$2,550.00
RTK GPS	$454.00	$468.00	$482.00	$496.00	$511.00
Fathometer	$143.00	$147.00	$151.00	$156.00	$161.00
Differential GPS	$28.00	$29.00	$30.00	$31.00	$32.00
Navigation System	$37.00	$38.00	$39.00	$40.00	$41.00
512i CHIRP Seismic System	$1,030.00	$1,061.00	$1,093.00	$1,126.00	$1,160.00
Side Scan Sonar System	$721.00	$743.00	$765.00	$788.00	$812.00
Sonar Wizard Processing	$155.00	$160.00	$165.00	$170.00	$175.00
Multibeam System	$965.00	$994.00	$1,024.00	$1,055.00	$1,087.00
Magnetometer	$412.00	$424.00	$437.00	$450.00	$464.00
Vibracore	$2,472.00	$2,546.00	$2,622.00	$2,701.00	$2,782.00
Engineering Computer	$34.00	$35.00	$36.00	$37.00	$38.00
ATV	$72.00	$74.00	$76.00	$78.00	$80.00
Total Station	$118.00	$122.00	$126.00	$130.00	$134.00
Level/Rod/Stilling Well	$52.00	$54.00	$56.00	$58.00	$60.00
Survey Disks	$14.30	$14.70	$15.10	$15.60	$16.10
Carsonite	$14.30	$14.70	$15.10	$15.60	$16.10
PC PowerPoint Projector	$47.00	$48.00	$49.00	$50.00	$52.00
Portable AC Generator	$47.00	$48.00	$49.00	$50.00	$52.00
Turbidimeter	$29.00	$30.00	$31.00	$32.00	$33.00
Land Camera	$9.00	$9.00	$9.00	$9.00	$9.00
Digital Underwater Camera	$46.00	$47.00	$48.00	$49.00	$50.00
Underwater Video Camera	$97.00	$100.00	$103.00	$106.00	$109.00
Underwater Scooter	$47.00	$48.00	$49.00	$50.00	$52.00
Dive Equipment & Insurance	$72.00	$74.00	$76.00	$78.00	$80.00
Sieve Analysis	$75.00	$77.30	$79.60	$82.00	$84.50
Carbonate Testing	$65.00	$67.00	$69.00	$71.10	$73.20
DIRECT COSTS					
Copies	1.00	1.00	1.00	1.00	1.00
Minority Sub-consultants	1.00	1.00	1.00	1.00	1.00
Misc. Expenses (*)	1.00	1.00	1.00	1.00	1.00

Annual Inflation Factor 1.03

*Miscellaneous expenses include field supplies and expendables (stainless steel pins and markers) and related field equipment that will be purchased and utilized in the performance of these activities. Other expenses in this category include digital video tapes, DVD and similar media to provide agency personnel with digital imagery and video records in compliance with the monitoring plan deliverable requirements.

RENOURISHMENT PROJECT DESIGN

SOUTH BOCA RATON BEACH RENOURISHMENT PROJECT
PRE-CONSTRUCTION PHASE COASTAL ENGINEERING SERVICES
CITY OF BOCA RATON, FLORIDA

TASK	LABOR COST							
	PRINCIPAL ENGINEER (HOURS)	PROJECT MANAGER (HOURS)	SENIOR COASTAL ENGINEER (HOURS)	COASTAL ENGINEER (HOURS)	MARINE BIOLOGIST (HOURS)	GEOLOGIST (HOURS)	CADD OPERATOR (HOURS)	CLERICAL (HOURS)
B. RENOURISHMENT PROJECT DESIGN								
1. EVALUATE PREVIOUS PROJECT PERFORMANCE	4	4	8					4
2. EVALUATE SEDIMENT SOURCES FOR PROJECT DESIGN		8	12	8		8		
3. BEACH FILL DESIGN								
a. DEVELOP PERMIT DESIGNATED PLAN	2	4	4	4				
b. EVALUATE ENVIRONMENTAL IMPACTS (MODEL)		4	4	16	8			4
c. DEVELOP DESIGN DETAILS		4	8	8				4
d. PROVIDE PERMITTED PLAN TO AGENCIES	2	4	4				8	4
4. BEACH FILL CROSS-SECTIONS (500 FT. SPACING)								
a. DETERMINE CONSTRUCTION BERM WIDTH		4	2	16			16	
b. DEFINE EQUILIBRIUM PROFILE ADJUSTMENT		4	2	16			16	
5. DEVELOP PROJECT AREA PLAN VIEW (WITH TAPERS)	2	4	4	8			24	2
6. BORROW AREA CROSS-SECTIONS		8				16	24	4
7. PROJECT COST ESTIMATE	2	12	12					4
Total =	10	48	48	76	8	24	88	22
Rate =	$195	$160	$120	$95	$85	$85	$75	$58
Cost =	$1,950	$7,680	$5,760	$7,220	$680	$2,040	$6,600	$1,276

TOTAL COST = $33,206

STATE AND FEDERAL PERMITS

SOUTH BOCA RATON BEACH RENOURISHMENT PROJECT
PRE-CONSTRUCTION PHASE COASTAL ENGINEERING SERVICES
CITY OF BOCA RATON, FLORIDA

TASK	LABOR COST									DIRECT COST				
	PRINCIPAL ENGINEER (HOURS)	PROJECT MANAGER (HOURS)	SENIOR COASTAL ENGINEER (HOURS)	COASTAL ENGINEER (HOURS)	MARINE BIOLOGIST (HOURS)	PROFESSIONAL SURVEYOR & MAPPER (HOURS)	GEOLOGIST (HOURS)	CADD OPERATOR (HOURS)	CLERICAL (HOURS)	AIRFARE (TRIPS)	CAR RENTAL (DAYS)	VEHICLES (PER MILE)	MEALS (DAYS)	PARKING (DAYS)
C. STATE AND FEDERAL PERMITS														
1. ADMINISTRATION / PLANNING	2	8	4			2	2							
2. PERMIT ACTIVATION														
a. USACE MEETING (WEST PALM BEACH)	2	16	16	8	2		2	2	2			70		
b. FDEP MEETING (TALLAHASSEE)	2	16	8	8	2		2	2	2	1	1	65	1	1
c. PROVIDE REQUESTED INFORMATION		8	16	16			4		2					
d. RESPOND TO QUESTIONS		24	24	16	2	8	8	8	2					
e. BORROW AREA INFORMATION		16	16	8			24	16	4					
f. COORDINATE PROJECT WITH CITY		24	16						2					
3. PERMIT COORDINATION														
a. DETERMINE PERMIT REQUIREMENTS		4	2		2	2			2					
b. DETERMINE MONITORING REQUIREMENTS		4	4		2	2			2					
c. PROVIDE RECOMMENDATIONS TO CLIENT		4	4						4					
Total =	6	124	110	56	10	14	42	28	22	1	1	135	1	1
Rate =	$195	$160	$120	$95	$85	$115	$85	$75	$58	$300	$70	$0.50	$35	$12
Cost =	$1,170	$19,840	$13,200	$5,320	$850	$1,610	$3,570	$2,100	$1,276	$300	$70	$67.50	$35	$12

TOTAL LABOR COST = $48,936
TOTAL DIRECT COST= $485

TOTAL TASK COST = $49,421

Broward County Shore Protection Project
RLI #040897-RB Phase V

TASK 1.0: SUBTASK DIRECT LABOR BREAKDOWN
Pre-Design / Reevaluation Surveys

TOTAL HOURS	ALL										
					DIRECT LABOR						
LABOR CATEGORY	ADMIN/ MGMT	DESIGN	ANALYSES	MODELING	FIELD WORK	LIASON	TRAVEL	REVIEW& COMMENT	TOTAL HOURS	RATE	COST
Principal	286	48	0	10	42	84	60	158	688	$206	$141,728
Principal II	0	44	122	32	44	74	50	276	642	$183	$117,486
Senior Engineer	276	192	734	318	260	498	540	1162	3980	$155	$616,900
Coastal Engineer I	0	192	632	1208	144	92	390	840	3498	$118	$412,764
Coastal Engineer II	0	80	852	1476	300	0	130	604	3442	$99	$340,758
Field Inspector	0	0	0	0	0	0	0	0	0	$82	$0
Draftsman	0	0	0	0	0	0	0	64	64	$74	$4,736
CADD	0	200	288	108	64	40	24	784	1508	$87	$131,196
Admin. Assist./Word Process.	328	16	0	16	20	16	8	484	888	$64	$56,832
SUBTOTAL DIRECT LABOR											$1,822,400
									14710.0	hours	
									7.1	man years	

Attachment B

Taylor Engineering, Inc.
Cost Summary by Task
Bathtub Beach Engineering Design and Permitting

TASK 1: Project Management - Fixed Fee

Labor	Days	Cost ($)	Task Totals
Vice President	1.000	1,264.00	
Director	17.000	17,952.00	
Administrative Support	1.000	400.00	
Total Man-Days	19.000		
Labor Cost			19,616.00
Non-Labor	Units	Cost ($)	
vehicle + fuel (1 d rental -Stuart)	3.0	330.00	
Meals (lunch+dinner)	3.0	105.00	
Total Non-Labor Cost			435.00
Total Task 1			$ 20,051.00

TASK 2: Fill Design - Fixed Fee

Labor	Days	Cost ($)	Task Totals
Director	0.875	924.00	
Senior Professional	1.625	1,456.00	
Project Professional	4.500	3,384.00	
Staff Professional	4.500	2,772.00	
Administrative Support	1.000	400.00	
Total Man-Days	12.875		
Labor Cost			9,410.00
Total Task 2			$ 9,410.00

TASK 3: Permit Drawings - Fixed Fee

Labor	Days	Cost ($)	Task Totals
Director	0.625	660.00	
Senior Professional	1.500	1,344.00	
Project Professional	1.500	1,128.00	
Senior Technical Support	6.000	4,224.00	
Total Man-Days	9.625		
Labor Cost			7,356.00
Total Task 3			$ 7,356.00

Attachment B (continued)

Taylor Engineering, Inc.
Cost Summary by Task
Bathtub Beach Engineering Design and Permitting

TASK 4: Preapplication Meetings and Follow-up - Fixed Fee

Labor	Days	Cost ($)	Task Totals
Director	2.500	2,640.00	
Senior Professional	2.000	1,792.00	
Administrative Support	0.250	100.00	
Total Man-Days	4.750		
Labor Cost			4,532.00
Non-Labor	Units	Cost ($)	
vehicle rental and fuel (Tal, WPB)	2.0	210.00	
meals (lunch and dinner)	4.0	140.00	
copying	12.0	120.00	
Total Non-Labor Cost			470.00
Total Task 4			$ 5,002.00

TASK 5: Bid Documents and Pre-Bid Meeting - Fixed Fee

Labor	Days	Cost ($)	Task Totals
Vice President	3.000	3,792.00	
Director	7.000	7,392.00	
Senior Professional	7.000	6,272.00	
Project Professional	4.000	3,008.00	
Senior Technical Support	3.000	2,112.00	
Administrative Support	2.000	800.00	
Total Man-Days	26.000		
Labor Cost			23,376.00
Non-Labor	Units	Cost ($)	
vehicle + fuel (1 d rental -Stuart)	1.0	110.00	
Meals (lunch+dinner)	2.0	70.00	
Total Non-Labor Cost			180.00
Total Task 5			$ 23,556.00

TASK 6: Permit Application Assistance - Not to Exceed $25,000

Labor	Days	Cost ($)	Task Totals
Director	4.750	5,016.00	
Senior Professional	10.750	9,632.00	
Staff Professional	15.500	9,548.00	
Administrative Support	1.750	700.00	
Total Man-Days	32.750		
Labor Cost			24,896.00
Non-Labor	Units	Cost ($)	
copying	5.0	100.00	
Total Non-Labor Cost			100.00
Total Task 6			$ 24,996.00

Project Total $ 90,371.00