

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2012	2013	2014	2015	2016
Capital Expenditures	<u>\$237,019</u>	_____	_____	_____	_____
Operating Costs	_____	_____	_____	_____	_____
External Revenues	_____	_____	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
NET FISCAL IMPACT	<u>\$237,019</u>	_____	_____	_____	_____
# ADDITIONAL FTE POSITIONS (Cumulative)	_____	_____	_____	_____	_____

Is Item Included in Current Budget? Yes X No _____

Budget Account No.: Fund _____ Department _____ Unit _____ Object _____
 Program _____

B. Recommended Sources of Funds/Summary of Fiscal Impact:

South Lake Worth Inlet Fund:		
3653-381-M703-3120	South Lake Worth Inlet STP	\$55,767
Beach Improvement Fund:		
3652-381-M037-4630	Singer Island Dune	\$92,306
3652-381-M015-3120	Ocean Ridge Shore Protection	\$39,813
3652-381-M028-3120	Juno Beach Shore Protection	\$ 9,344
3652-381-M045-3120	Jupiter/Carlin Shore Protection	\$10,439
3652-381-M046-3120	South Lake Worth Inlet Mgmt	<u>\$29,350</u>
		\$237,019

C. Department Fiscal Review:

JP

III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Dev. and Control Comments:

<p><i>[Signature]</i> OFMB <i>11/23/12</i></p>	<p><i>[Signature]</i> Contract Development and Control <i>11/27/12</i> <i>1-27-12 B.W. [unclear]</i></p>
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B. Legal Sufficiency:

[Signature] *1/31/12*
 Assistant County Attorney

This item complies with current County policies.

C. Other Department Review:

 Department Director

TASK ORDER

TASK ORDER: 1435-03 CONSULTANT: Taylor Engineering, Inc.

ACCOUNT: various CONTRACT: R2010-1435
[Fiscal approval of Budget Availability: see attached BAS]

PROJECT MANAGER: Paul Davis PHONE: 561-233-2509

CONTRACT MANAGER: Juan Cueto PHONE: 561-233-2431

PROJECT NAME: 2012 Sea Turtle Monitoring

LOCATION/DISTRICT #: Jupiter, Juno Beach, Singer Island & Ocean Ridge / Districts 1, 4 & 7

TASK DESCRIPTION (use additional pages if necessary): The Consultant shall monitor sea turtle nesting along the beaches of Singer Island and Ocean Ridge, and provide data management and analysis for these and other projects, as described in the Scope of Work.

DELIVERABLES: See scope of work dated 1/10/2012.

TASK ORDER TYPE: FIXED PRICE \$233,971.86 DUE DATE: 3/30/2013
NOT-TO-EXCEED \$3,046.25

TOTAL AMOUNT \$ 237,018.11 See attached proposal dated 1/10/2012

(Check where appropriate)
for Contract and Subcontract Amounts:

	Black	Hispanic	Women	Other (specify)	White Male
M/WBE(State) <input type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
SBE-M/WBE* <input type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
SBE <input checked="" type="checkbox"/>	\$ _____	\$ _____	\$176,886.11	\$ _____	\$ _____

*certified as both an SBE and a State MBE

TOTAL SBE-M/WBE PARTICIPATION: \$176,886.11

CONSULTANT REP: [Signature] DATE: 1/13/2012

APPROVED AS TO TERMS AND CONDITIONS:

ERM DIRECTOR/DEPUTY: [Signature] DATE: 1-18-12

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

ASSISTANT COUNTY ATTORNEY: [Signature] DATE: 1/31/12

BOARD OF COUNTY COMMISSIONERS: _____ DATE: _____
Shelley Vana, Chair

TAYLOR ENGINEERING INC

January 10, 2012

Mr. Paul Davis
Palm Beach County
Department of Environmental Resources Management
2300 N Jog Road, 4th Floor
West Palm Beach, FL 33411

EMAILED

RE: 2012 Sea Turtle Monitoring Proposal – Singer Island and Ocean Ridge
Palm Beach County, Florida

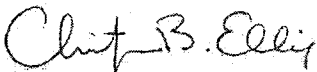
Dear Mr. Davis,

Taylor Engineering is pleased to present this proposal for the project referenced above. Exhibit A contains our proposed scope of work and Exhibit B contains our proposed fees.

Taylor Engineering will team with DB Ecological Services, Inc. on this project. This team provides a high level of local monitoring experience. DB Ecological Services will provide all monitoring and reporting services. As requested by Palm Beach County, Taylor Engineering's role is restricted to providing only limited project oversight and invoicing services over the duration of the project. We propose to execute Tasks 1 – 11 as described in Exhibit A for a fixed, lump sum fee of \$233,971.86. We propose to complete Additional Tasks A – D in accordance with the rates shown in Exhibit B for a total cost not to exceed \$3,046.25. Exhibit C provides a breakdown of DB Ecological Services' costs.

As always, we appreciate the opportunity to serve Palm Beach County on this project. Please contact me (904-731-7040 or cellis@taylorengeering.com) if you have any questions.

Best regards,



Christopher B. Ellis
Environmental Services

Enclosures

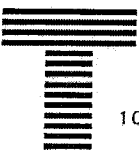


Exhibit A
Scope of Work
2012 Palm Beach County Sea Turtle Monitoring

Palm Beach County's Department of Environmental Resources Management (COUNTY) intends to contract with Taylor Engineering (TE) and its subcontractor, DB Ecological Services (DB), to provide sea turtle monitoring services. This work is in support of current and anticipated State and Federal permit requirements issued to Palm Beach County for shore protection projects at Singer Island and Ocean Ridge. This includes four capital projects- Singer Island Dune Restoration, , Ocean Ridge Shoreline Protection, South Lake Worth Inlet Maintenance Dredging, and South Lake Worth Inlet Sand Transfer Plant Bypassing. It will also include detailed analysis and quality control of data gathered by other consultants including those collecting data for the Juno Beach and Jupiter/Carlin beach nourishment projects. The TE/DB team (hereafter referred to as the CONSULTANT) provides a beneficial combination of resources and skills to fulfill the monitoring needs for Palm Beach County (COUNTY).

Section 1- NEST MONITORING TASKS

The CONSULTANT shall provide services associated with monitoring sea turtle nesting along two beaches in Palm Beach County:

- A. Singer Island North – the southern boundary of John D. MacArthur Beach State Park to the northern property boundary of the Oasis Condominium (~1.25 miles; Attachment 1).
- B. Ocean Ridge – 1500 feet north of the South Lake Worth Inlet to Adams Road (~2.25 miles; Attachment 2)

The CONSULTANT shall obtain all Florida Fish and Wildlife Conservation Commission (FWC) permits required for sea turtle monitoring, including authorization for nest relocation and to screen nests with restraining cages. All standard sea turtle permit required reports shall be submitted to FWC by the CONSULTANT. The CONSULTANT shall utilize trained and experienced staff to conduct all monitoring activities. All data shall be collected and entered into a computerized data management system, quality control and assurance conditions satisfied, and then submitted to the COUNTY as set forth in this Scope of Work. All data entered will be summarized by the CONSULTANT in an annual report. The COUNTY may, at its discretion, conduct independent surveys and observe data collection and analysis techniques for the purpose of comparing and validating compliance with FWC guidelines and this contract. Proven and unjustifiable discrepancies of more than 10% on 10% of observations on a given day may be cause for contract termination.

All sea turtle crawl data shall be entered into the COUNTY's web-based data management system (database). In the event the COUNTY's database fails to function as designed, the CONSULTANT and the COUNTY shall determine mutually agreeable alternatives for data management and reporting. All physical beach monitoring data shall be compiled, stored, and submitted as outlined in each Task.

In order to maintain consistency in data collection techniques, the CONSULTANT shall be provided a set of COUNTY sea turtle monitoring guidelines, containing specific definitions and monitoring criteria. The CONSULTANT shall be required to follow the same methodology unless written approval has been given for alternate methods. In the event of a conflict between the guidelines and scope of work, the scope shall prevail and the CONSULTANT shall notify the COUNTY of any conflicts. The CONSULTANT (including all monitoring staff) shall also be required to have read and understood the guidelines and to attend an early season consistency meeting with COUNTY staff. Additional training and/or clarification of monitoring criteria shall be provided as necessary at that meeting.

Task 1: Daily Nesting Surveys and Beach Monitoring

Daily surveys for sea turtle monitoring activity shall be conducted for all zones between March 1 and October 31. In Singer Island North, the location of all crawls shall be collected with the use of a real-time corrected, differential GPS unit (DGPS) with sub-meter accuracy. In Ocean Ridge, the locations of all nests marked for evaluation are to be collected with a DGPS unit with sub-meter accuracy; locations of all unmarked nests, protected nests, and non-nesting emergences are to be collected with either a WAAS enabled handheld GPS unit or with a DGPS unit with sub-meter accuracy. In Singer Island North, GPS data shall be uploaded to the database within one business day of data collection and examined for accuracy of content and position and for real-time correction. In Ocean Ridge, GPS data shall be uploaded to the database within one week of data collection and examined for accuracy of content and position and for real-time correction. If necessary, data may be post-processed to obtain sub-meter accuracy using a base station approved by the COUNTY. Each occurrence where post-processing is necessary, as well as the steps taken to identify and resolve the problem, shall be reported to the COUNTY with the appropriate monthly data submittal.

The following parameters shall be recorded for each crawl encountered on a daily survey form approved by the COUNTY:

- A. Date
- B. Start and end time of survey
- C. Weather conditions during survey
- D. Survey zone
- E. Species of turtle
- F. Crawl type
- G. Estimated distance from the egg chamber or landward extent of the non-nesting emergence to the high water line
- H. Estimated distance from the egg chamber or landward extent of the non-nesting emergence to the toe of dune
- I. Number of abandoned body pits
- J. Number of abandoned egg chambers
- K. Any obstructions (natural or man-made) encountered by the turtle and the turtle's response to that obstruction. Interactions with beach furniture, boats, or recreational equipment shall be recorded on a FWC Obstructed Nesting Attempt form and submitted to FWC per FWC guidelines and the COUNTY with the appropriate monthly data submittal.

Additionally, each nest record must contain a designation of marked/staked (yes/no) and clutch located (yes/no). If the nest is marked, a unique nest identification number must be assigned according to the COUNTY's naming convention .

If authorized by the FWC Marine Turtle Permit, nests may be relocated for conservation purposes, in accordance with FWC guidelines. All relocated nests must be marked for evaluation, regardless of species or marking rotation. Relocated nests shall be identified by the addition of "R" after the marked nest number (example: CC-060308-4BR-OR).

Zone boundary markers will be maintained by the CONSULTANT in the dune at historical locations within the entire survey area, and maintained throughout the nesting season.

Frequency: Daily from March 1 through October 31.

Data Reporting: Each crawl record, including all parameters mentioned above, shall be entered into the COUNTY's database within one business day of collection. If the database is malfunctioning, the

CONSULTANT will immediately notify the COUNTY. Original datasheets are to be kept at least until the annual report has been approved by the County. Copies will be provided upon request. A monthly summary of daily surveys will be submitted as described in Task 4 (Program Management) and will confirm survey extents and times and summarize any unusual activity on the beach. All original or post-processed GPS datafiles shall be submitted with the appropriate monthly data submittal. Any crawl location that cannot be corrected through real-time or post-processing shall be reported to the COUNTY with the appropriate monthly data submittal.

Task 2: Escarpment Mapping

Weekly visual surveys for escarpment formation at the base of the dune in Singer Island and on the beach in Ocean Ridge shall be conducted for the entire survey area. Escarpments steeper than 60° that exceed 18 inches in height for a distance of 100 feet or greater shall be mapped as a line feature with DGPS. The average height of any escarpments meeting the above criteria shall be estimated and the maximum height measured.

Frequency: Weekly from March 1 to September 30.

Data Reporting: A cumulative summary spreadsheet of all surveys, including date and time, environmental conditions (winds, tide, and sea state), zone, average height, and maximum height and length of the escarpments (as a Microsoft Excel file), as well as GIS line features of escarpments (as ArcMap shapefiles in NAD83, Florida East) and the original GPS datafiles shall be included with each monthly data submittal.

Task 3: Nest Evaluations and Monitoring

Selected nests shall be located, marked, tracked throughout the incubation period, and nest contents evaluated, if applicable. Nests shall be marked approximately 2 feet west of the egg chamber using a 2 foot (or larger) painted wooden stake. An additional painted wooden stake shall be placed at the toe of the dune in the dune vegetation. Precise measurements (distance and bearing) shall be made to the dune stake and recorded on the datasheet. If nest poaching occurs, an alternate staking method, proposed by the CONSULTANT and approved by the COUNTY, may be implemented in high-risk poaching areas upon FWC recommendation.

The clutch for each marked nest shall be located by digging a maximum of 10 narrow holes. If the clutch is not found, the approximate location shall be marked and monitored throughout the incubation period.

The nest marking rotation for each species within each beach survey area shall be developed in consultation with the COUNTY prior to the start of each sea turtle nesting season. In Singer Island North, the goal shall be to randomly mark a sufficient number of nests in order to evaluate a statistically meaningful number of nests in the project and non-project areas (mark approximately 150 loggerhead nests and 150 green nests in order to evaluate approximately 125 nests of each species); nests in Ocean Ridge shall be marked as described below. The nest marking protocol shall take into account variable nesting densities and potential losses due to erosion or depredation in the project and non-project areas to ensure similar sample sizes for each treatment. Historic and predicted trends shall be used to formulate the protocol. A running count shall be maintained and the beach shall be surveyed in the same direction each day to ensure randomization. By June 15 of each nesting season, the CONSULTANT shall compare the current data to predictions and, as necessary, make adjustments to the marking protocol to ensure a sufficient number of evaluated nests.

When sufficient numbers of nests are available, the following minimum numbers of nests shall be marked for each species:

- A. Singer Island North zones 1 – 4
 - a. Loggerhead – every 4th nest, approximately 150 nests
 - b. Green – all nests, approximately 150 nests
 - c. Leatherback – all nests, approximately 10 nests
 - d. Dune fill nests- a marking scheme will be created so that a sufficient number of nests will be marked in the dune fill with the goal of evaluating at least 50 loggerhead nests, 50 green nests and all leatherback nests laid in the dune fill. The data from dune fill will be compared in the annual report to data from marked nests on the beach seaward of the dune project.
- B. Ocean Ridge zones 1 – 13
 - a. Loggerhead – all nests in zones 2, 3, 4, and every 5th nest in the remaining zones (1, 5-13)= approximately 110 nests total
 - b. Green – 0 nests
 - c. Leatherback – 0 nests

Protected Nest Designation: In addition to the nest marking schedule, all nests shall be marked for protection purposes that are laid in:

- 1. Zone 4;
- 2. a vehicle access;
- 3. within 10 feet of a lifeguard tower; or,
- 4. within 10 feet of the average tide line in Ocean Ridge in areas where mechanical beach cleaning is permitted by DEP. Areas that will not be cleaned during the season do not need to have low nests marked.

To identify these nests as protected (unless they would have been marked as part of the marking rotation), they shall be assigned a nest ID as described in Task 1, with the addition of "P" after the marked nest number (example: CC-060308-4BP-OR). These nests shall be checked daily for the parameters A, D, and E below, but shall not be evaluated for overwash or reproductive success. All stakes shall be removed either 72 hours post-emergence or after 70 days post-deposition, whichever occurs first. All protected nests shall be assigned a nest fate of "Protected".

Every marked nest shall be checked daily for:

- A. Presence of nest stakes – if the nest stake is missing, the stake shall be reset, that day, using either the distance and bearing information recorded in the database or GPS coordinates, unless continued stake loss due to ongoing, extreme tidal events is likely
- B. Evidence of overwash – overwash events shall be categorized as to severity using the following criteria:
 - a. 1 = overwash over the egg chamber but less than 1 meter west of the egg chamber
 - b. 2 = overwash extent greater than 1 meter west of the egg chamber
- C. Evidence of predation – all depredation events, by a mammalian predator or nesting turtle, that involve loss of viable eggs and/or hatchlings (not just loss of hatchlings) shall be recorded using the following parameters:
 - a. Predator species
 - b. Number of eggs lost
 - c. Incubation stage at time of depredation
 - i. Pre-hatchling emergence
 - ii. Post-hatchling emergence

All predated nests shall be assigned a fate of "Prenated" on the first instance of egg loss, even if viable eggs remain intact; these nests shall not be evaluated for reproductive success. Depredation events by non-mammalian predators, such as crabs, birds, or ants, shall be recorded only in the comments section; these nests shall be evaluated for reproductive success. If hatchlings are depredated after leaving the chamber, but before entering the water, the number of depredated hatchlings and the predator, shall be recorded in the comments section; these nests shall be evaluated for reproductive success.

- D. Evidence of hatchling emergence – each marked nest, older than 45 days post-deposition, shall be checked daily for hatchling emergence. If emergence is noted, the estimated number of emerged hatchlings shall be recorded.
- E. Evidence of disorientation – **all** hatchling emergences observed in the survey area (not just those from marked nests) shall be evaluated for disorientation. A disorientation report shall be completed for any amount of disoriented hatchlings. All disorientation events shall be recorded on the FWC Marine Turtle Disorientation Incident Report form and faxed or emailed to the COUNTY and FWC within 24 hours of observation; the original form shall be submitted to FWC within one week of observation.

All appropriate information shall be recorded daily on a nest inspection datasheet (automatically generated by the database).

Each marked nest shall be evaluated for reproductive success no earlier than 72 hours post-emergence or 70 days post deposition (80 days for leatherbacks), whichever is earlier, in accordance with FWC guidelines. For each marked nest, the following parameters shall be recorded on a hatch success form approved by the COUNTY:

- A. Number of hatched eggs
- B. Number of unhatched eggs
- C. Number of pipped live eggs
- D. Number of pipped dead eggs
- E. Number of live hatchlings
- F. Number of dead hatchlings
- G. Number of spacer eggs
- H. Depth to the top of the chamber (inches)
- I. Depth to the bottom of the chamber (inches)

Each marked nest shall be assigned a fate according to the following codes:

- A. Hatched (H) – hatched, eggs found
- B. Hatched, emergence not observed (HNO) – hatched, emergence not observed, eggs found
- C. Prenated (PD) – predated, any number of eggs lost
- D. Protected (PR) – marked solely for protection or project purposes
- E. Poached (PV) – poached, any number of eggs lost
- F. Washout (WO) – eroded prior to anticipated or actual emergence, any number of eggs lost
- G. Lost (L) – not evaluated due to erosion after anticipated or actual emergence or proximity to a viable nest, all marking stakes removed and GPS coordinates unavailable, etc
- H. Could Not Locate (CNL) – eggs unable to be located
- I. Scavenged (SCV) – predated after hatchling emergence, any number of eggs lost
- J. Turtle Scattered (TS) – eggs scattered by nesting female, any number of eggs lost

For nests assigned a fate of "Lost", an explanation of the circumstances must be entered into the comments section (example: nest eroded on 9/21 from Hurricane Xavier at 74 days post-deposition). If hatchling emergence is not observed after 70 days (80 days for leatherbacks), the nest site shall be

excavated to locate the clutch. A nest fate of "Could Not Locate" may only be used after a 4'x4'x4' area has been excavated. All relocated nests must be marked and evaluated, regardless of species or marking rotation.

Frequency: Daily from March 1 until the last marked nest is evaluated.

Data Reporting: Each nest inspection event and hatch success record, including the above mentioned parameters, shall be entered into the COUNTY's database within one business day of collection. Copies of nest inspection sheets and hatch success datasheets are to be provided with the appropriate monthly data submittal.

Task 4: Program Management, Quality Assurance/Quality Control, and Reporting

All data reporting forms shall be checked for accuracy and clarity by a CONSULTANT supervisor or senior staff member and all problems resolved within one business day of data collection. Data shall be entered into the COUNTY's database and each entry verified for accuracy by at least one other person within four (4) weeks of data collection. Persons performing data entry and all verification checks shall initial and date each original datasheet. Alternative methods for data verification and quality assurance may be implemented by the CONSULTANT if approved in advance by the COUNTY.

A summary of all problems encountered associated with any task and problem resolution shall be included with each monthly data submittal. All deliverables and invoices shall be submitted on or before the 15th of each month following the month of data collection in order to receive payment.

Task 5: Annual Report

An electronic copy (in PDF format along with supporting Word and Excel files) of a final annual report for each beach shall be prepared by the CONSULTANT and submitted to the COUNTY by December 31. Data shall be tabulated and summarized for each species and survey zone. This data summary shall include the following in tabular, graphic, and/or written form, as applicable:

- A. Executive summary
- B. Description of the study area and data collection methods
- C. Summary of crawl activity
 - a. Total number of crawls by type and species
 - b. Nesting density
 - c. Nesting success
 - d. Graph of nest and false crawls totals by zone
 - e. Comparison of the previous three parameters by year for each species and treatment area
 - f. Summary of abandoned digs by crawl type
 - g. Summary of beach utilization (percent of beach used) by crawl type
 - h. Summary of obstruction interactions, including but not limited to:
 - i. Escarpment formation
 - ii. Beach furniture
 - iii. Structures (groins, jetties, breakwaters, seawalls, etc)
- D. Summary of overwash events
- E. A summary of reproductive success/nest fate
 - a. Total number of nests marked for reproductive success evaluation
 - b. Total number of nests evaluated for reproductive success
 - c. A summary of the following parameters:
 - i. Clutch size
 - ii. Hatched eggs

- iii. Unhatched eggs
 - iv. Pipped dead eggs
 - v. Pipped live eggs
 - vi. Live hatchlings
 - vii. Dead hatchlings
 - viii. Hatch success
 - ix. Emergence success
 - x. Hatchling productivity
- d. Total number of nests in each nest fate category
- F. Description of storm events and effects
 - G. Summary of shore protection construction activities, impacts and recommendations for minimizing future impact.
 - H. Summary of beach response monitoring
 - a. Maps of escarpment formation
 - b. A summary of compaction monitoring (data to be provided by COUNTY to the CONSULTANT by September 30)
 - c. Labeled photos of each survey zone depicting typical beach conditions.
 - d. Recommendations for future monitoring activities to improve the quality of the COUNTY sea turtle program.

Deliverables and Invoices

All deliverable reports or data submittal and invoices shall be submitted by no later than the fifteenth (15th) of each month following the month of data collection unless a date certain is provided. All deliverables shall be complete and accurate before full payment for each task shall be authorized.

ADDITIONAL TASKS/CONDITIONS SPECIFIC TO OCEAN RIDGE

In addition to the standard sea turtle monitoring work described above, the CONSULTANT must complete the following additional monitoring tasks for Ocean Ridge:

Additional Task A: Nest Relocation

Nests deposited in zones 2 and 3 may require relocation out of the area of influence of the sand transfer plant intake and discharge to an appropriate incubation area; the relocation area shall be selected in consultation with the CONSULTANT and COUNTY prior to each nesting season and shall be reevaluated periodically during the nesting season to ensure nests are adequately protected and/or are not unnecessarily relocated. Relocation activities must be completed prior to 9:00 AM on the date deposited. All relocated nests must be marked as described in Task 1 and evaluated as described in Task 5. Relocation and incubation areas are shown on Attachment 2. An estimated 5 nests per season may require relocation. The CONSULTANT must be able to obtain a FWC permit authorizing relocation activities.

Frequency: As required when nests are deposited within the relocation area.

Data Reporting: Observer, relocation start and end time, number of eggs, and egg chamber dimensions shall be recorded. Copies of datasheets shall be provided with the appropriate monthly data submittal. Data reporting shall occur in accordance with Tasks 1 and 5.

Additional Task B: Caging Activities

Nests deposited in the groin field (zones 3 and 4) may require screening with restraining cages to prevent hatchling interaction with the T-head groins. The CONSULTANT shall locate the egg chamber for all nests deposited within the groin field (Attachment 2) as described in Task 5; if the nest marker is

lost during incubation, it must be reset using sub-meter accurate DGPS coordinates and the top of the egg chamber reconfirmed, as described in Task 5, prior to cage deployment. The minimum caging criteria based on beach and lighting conditions shall be determined in coordination with the CONSULTANT, COUNTY, and FWC prior to the first cage deployment. After 45 days of incubation, a restraining cage will be placed over the egg chamber by the CONSULTANT for nests that require screening. The COUNTY will close cages at sunset and check them once between 11:00 PM and 1:00 AM., The CONSULTANT will open the cages at sunrise every day. Hatchlings found in the cages at night by the COUNTY shall be released immediately at a location that is not influenced by artificial lighting. The cage will be removed by the CONSULTANT 72 hours post-emergence, during nest excavation, not upon nest emergence. The CONSULTANT must be able to obtain a FWC permit authorizing restraining cage activities.

Frequency: As required when nests are deposited within the groin field.

Data Reporting: Date of cage checks, observer, cage open, check, and close times, emergence, number of hatchlings, and position of hatchlings within the cage shall be recorded . Data reporting shall occur in accordance with Tasks 1 and 5. Cost for this task shall be provided on a per cage basis.

Additional Task C: Beach Cleaning Activities

All nests laid within 10 feet of the average tide line will be staked (using FWC criteria) and treated as a protected nest. Daily coordination with the beach cleaner must occur in Ocean Ridge. Two signs, one each located north and south of the South Lake Worth Inlet, must be changed daily to indicate that the daily nesting survey has been conducted in the area and that beach cleaning activities may begin. If any stakes are lost, they must be replaced daily prior to beach cleaning activities.

Frequency: Daily from March 1 through October 31.

Data Reporting: The beach cleaning clear time(s) shall be recorded on the daily survey datasheet used for Task 1. Copies of datasheets shall be provided to the COUNTY with the appropriate monthly data submittal. Data reporting shall occur in accordance with Task 1.

Additional Task D: Sand Transfer Plant/Construction Coordination

Daily coordination with sand transfer plant or construction personnel must occur indicating that the daily nesting survey has been completed in the area (Attachment 2) and either sand transfer plant or construction activities may begin. Daily coordination may be accomplished through either a daily phone call to sand transfer plant or construction personnel, visual/verbal coordination with sand transfer plant or construction personnel, or use of beach cleaning signage, whichever is authorized by the COUNTY at that time (all three methodologies may be used throughout the nesting season).

Frequency: Daily from March 1 through October 31.

Data Reporting: The sand transfer plant clear time shall be recorded on the daily survey datasheet used for Task 1. Copies of datasheets shall be provided to the COUNTY with the appropriate monthly data submittal. Data reporting shall occur in accordance with Task 1.

OPTIONAL TASKS: SPECIAL PROJECT AND CONSTRUCTION RELATED MONITORING

In addition to the standard and additional sea turtle monitoring tasks described above, the COUNTY may authorize the CONSULTANT to provide the following special project monitoring as a supplement to this task order.

Section 2- QUALITY CONTROL, DATA MANAGEMENT AND REPORT PREPARATION TASKS

Task 6 – Weekly Review of Sea Turtle Nesting Data: All data entered into the COUNTY's web-based sea turtle database by any consultant working for the County shall be reviewed weekly for timely data entry and verification, accuracy, and compliance with the marking scheme and other parameters outlined in all sea turtle monitoring services scopes.

Frequency: Data review shall occur once per week and shall include only data entered into the database since the last weekly data review. Cumulative data review shall be conducted during Task 7.

Deliverables: An Excel spreadsheet shall be submitted with each monthly data submittal detailing the dates of data review and the date range of reviewed data. A list of problems encountered during data review and recommended solutions shall be sent via e-mail to the COUNTY within 24 hours of observation.

Task 7 – Monthly Sea Turtle Data Quality Control and Data Summary Preparation: All data deliverables submitted by the COUNTY's sea turtle nest monitoring consultants shall be reviewed monthly for accuracy, correctness, and compliance with the marking scheme and other parameters outlined in the sea turtle monitoring services contracts and a mid-season (March-June) data summary prepared, summarizing the following parameters in narrative, tabular, and/or graphic format by beach, species and a comparison to the previous season and the 5-year average (where available):

- a. Crawl totals
- b. Nesting success
- c. Nesting density
- d. Reproductive success
- e. Erosion rates
- f. Disorientation rates

Frequency: Quality control summary preparation shall be completed within 15 days of receipt from to the COUNTY and shall include a cumulative review of all data entered into the database. A mid-season summary report shall be completed by July 31.

Deliverables: An Excel spreadsheet, approved by the COUNTY, shall be submitted with each monthly data submittal detailing the dates of deliverable review, a log of all discrepancies, and recommended solutions to resolve discrepancies. The mid-season data summary (not to exceed one page per beach) shall include the above parameters in narrative, tabular, and/or graphic format, as applicable.

Task 8 – Florida Fish and Wildlife Conservation Commission (FWC) Shoreline Protection Project Spreadsheets: FWC Project Spreadsheets (provided by FWC) shall be completed for all Palm Beach County Shoreline Protection Projects, where required by permit, and may include the following projects, as authorized by a separate Notice to Proceed:

- a. Jupiter Inlet District Maintenance Dredging Project
- b. Florida Inland Navigation District Maintenance Dredging Project
- c. Juno Beach Shoreline Protection Project
- d. Singer Island Dune Restoration Project
- e. South Lake Worth Inlet Sand Transfer Plant Reconstruction and Bypassing Project

Frequency: Project spreadsheets shall be completed once per season and submitted to the COUNTY by the December 31 following the nesting season.

Deliverables: FWC Project Spreadsheets shall be as Excel files.

Task 9 – Palm Beach County Shoreline Protection Project Annual Summaries: A narrative, not to exceed two pages, shall be prepared summarizing the sea turtle nesting season results for each of the Palm Beach County Shoreline Protection Projects:

- a. Jupiter Carlin Shoreline Protection Project
- b. Juno Beach Shoreline Protection Project
- c. Singer Island Shoreline Protection Project
- d. Ocean Ridge Shoreline Protection Project

Summaries shall include the following parameters in either narrative, graphic, and/or tabular format by species and project area (fill, dune fill, seawall, etc; and shall be compared to the previous season and the 5-year average (where available):

- a. Total crawl activity
- b. Nesting success
- c. Nesting density
- d. Reproductive success
- e. Erosion rates
- f. Disorientation rates
- g. Hatchling productivity

Frequency: Summaries shall be submitted to the COUNTY by the 31st of December following the nesting season.

Deliverables: A narrative shall be prepared and submitted to the COUNTY for each shoreline protection project authorized by a Notice to Proceed. Deliverables will be provided as electronic files.

Task 10 – Palm Beach County Countywide Annual Data Summaries: Single page graphics shall be prepared summarizing Palm Beach County's sea turtle nesting season results in the following formats:

- a. Crawl totals, nesting success, nesting density by species and beach
- b. 10-year countywide nesting density by species
- c. Nesting density of east coast counties by species

Frequency: Summaries shall be submitted to the COUNTY by the 1st of March following the nesting season or 15 days following the release of final nesting numbers by FWC, whichever is earlier.

Deliverables: Single page graphics shall be prepared summarizing countywide nesting season results. Deliverables will be provided as electronic files.

Task 11 – Inwater Research Group (IRG) Nearshore Transect Report Review and Analysis: Four quarterly nearshore transect reports submitted to the COUNTY by Inwater Research Group shall be reviewed for accuracy and compliance with their scope. Graphs and maps tracking sightings by transect and season shall be prepared and incorporated into the report to satisfy Department of Environmental Protection (DEP) shoreline protection permit requirements for inwater monitoring. The following parameters, by species, age class, season, or project, where applicable, shall be incorporated into each quarterly nearshore transect report:

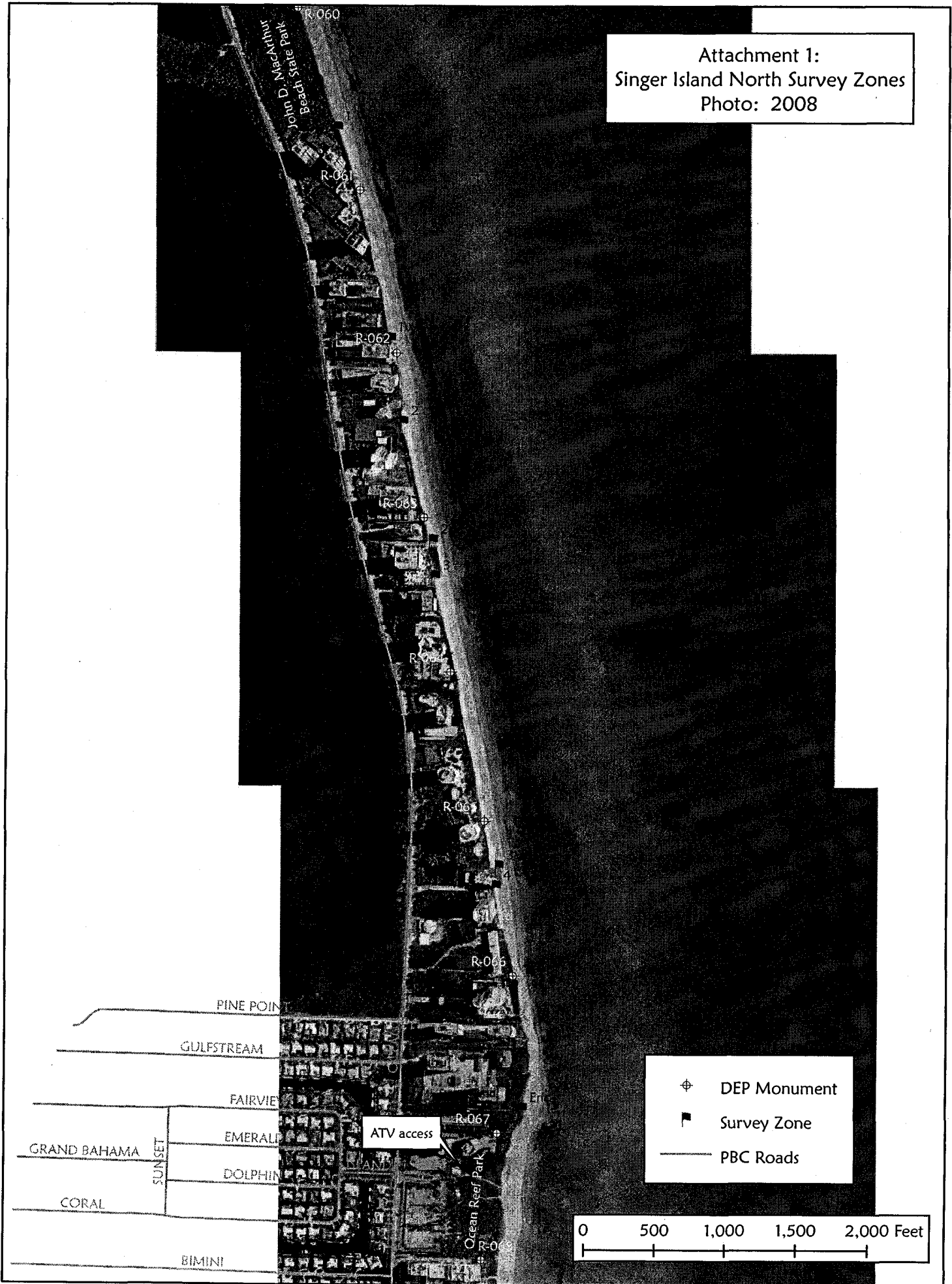
- a. seasonal trends
- b. sighting maps (GIS)
- c. cumulative results

- d. analysis of potential impacts from shoreline protection projects (changes in number of sightings, distribution of sightings, sightings characteristics, etc)

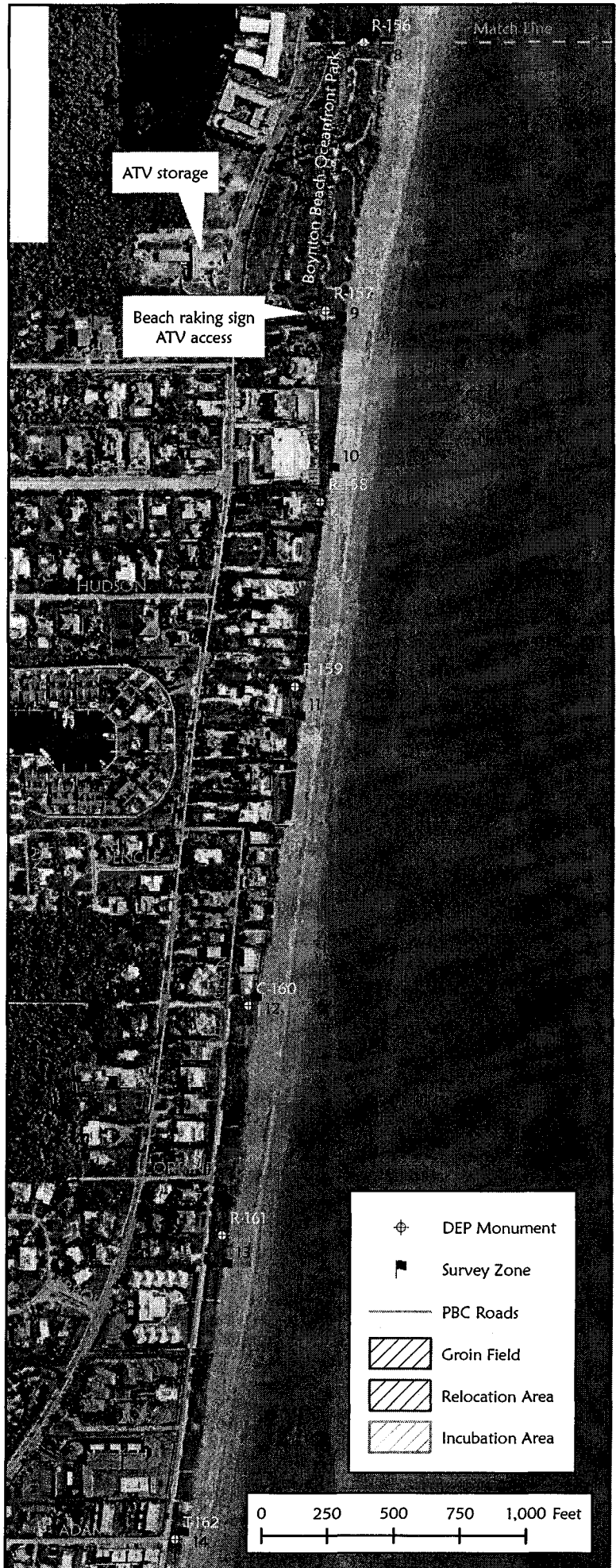
Frequency: Report review and analysis shall occur within 30 days of report submission from IRG to the COUNTY.

Deliverables: One report for each sampling period shall be reviewed and analyzed to satisfy the inwater monitoring requirements of DEP shoreline protection permits and improve understanding of the nearshore reef use as developmental habitat. Deliverables will be provided as electronic files (PDF, Word, Excel and GIS shape files).

Attachment 1:
Singer Island North Survey Zones
Photo: 2008



Attachment 2:
Ocean Ridge Survey Zones
Photo: 2008



- ⊕ DEP Monument
- ▣ Survey Zone
- PBC Roads
- ▨ Groin Field
- ▨ Relocation Area
- ▨ Incubation Area

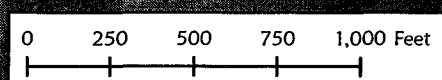


EXHIBIT B

TAYLOR ENGINEERING, INC.
COST SUMMARY BY TASK
P2012-006: 2012 PBC SEA TURTLE MONITORING - SI & OR

TASK 1: Daily Nesting Surveys and Beach Monitoring

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	81,133.60	
Total Non-Labor Cost			<u>81,133.60</u>
<i>Total Task 1</i>			<u>\$ 81,133.60</u>

TASK 2: Escarpment Mapping

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	3,115.00	
Total Non-Labor Cost			<u>3,115.00</u>
<i>Total Task 2</i>			<u>\$ 3,115.00</u>

TASK 3: Nest Evaluations and Monitoring

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	15,130.89	
Total Non-Labor Cost			<u>15,130.89</u>
<i>Total Task 3</i>			<u>\$ 15,130.89</u>

TASK 4: Program Management, Quality Assurance/Quality Control, and Reporting

<i>Labor</i>	Hours	Cost	Task Totals
Senior Professional	32.0	3,840.00	
Project Professional	26.0	2,626.00	
Administrative	8.0	376.00	
Total Man-Hours		66.0	
Labor Cost			6,842.00
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	62,685.37	
Total Non-Labor Cost			<u>62,685.37</u>
<i>Total Task 4</i>			<u>\$ 69,527.37</u>

EXHIBIT B

P2012-006: 2012 PBC SEA TURTLE MONITORING - SI & OR

TASK 5: Annual Report

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	11,775.00	
Total Non-Labor Cost			11,775.00
<i>Total Task 5</i>			\$ 11,775.00

TASK 6: Weekly Review of Sea Turtle Nesting Data

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	14,892.00	
Total Non-Labor Cost			14,892.00
<i>Total Task 6</i>			\$ 14,892.00

TASK 7: Monthly Sea Turtle Data Quality Control and Data Summary Preparation

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	24,528.00	
Total Non-Labor Cost			24,528.00
<i>Total Task 7</i>			\$ 24,528.00

TASK 8: FWC Shoreline Protection Project Spreadsheets

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	6,570.00	
Total Non-Labor Cost			6,570.00
<i>Total Task 8</i>			\$ 6,570.00

EXHIBIT B

P2012-006: 2012 PBC SEA TURTLE MONITORING - SI & OR

TASK 9: Palm Beach County Shoreline Protection Project Annual Summaries

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	2,920.00	
Total Non-Labor Cost			2,920.00
<i>Total Task 9</i>			\$ 2,920.00

TASK 10: Palm Beach County Countywide Annual Data Summaries

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	876.00	
Total Non-Labor Cost			876.00
<i>Total Task 10</i>			\$ 876.00

TASK 11: IRG Nearshore Transect Report Review and Analysis

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	3,504.00	
Total Non-Labor Cost			3,504.00
<i>Total Task 11</i>			\$ 3,504.00

Additional Task A: Nest Relocation

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological (\$30 / nest relocation)	1.0	150.00	
Total Non-Labor Cost			150.00
<i>Total Additional Task A</i>			\$ 150.00

EXHIBIT B

P2012-006: 2012 PBC SEA TURTLE MONITORING - SI & OR

Additional Task B: Caging Activities

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological (\$15 / cage)	1.0	600.00	
Total Non-Labor Cost			<u>600.00</u>
<i>Total Additional Task B</i>			<u>\$ 600.00</u>

Additional Task D: Sand Transfer Plant/Construction Coordination

<i>Labor</i>	Hours	Cost	Task Totals
<i>Non-Labor</i>			
	Units	Cost	
DB Ecological	1.0	2,296.25	
Total Non-Labor Cost			<u>2,296.25</u>
<i>Total Additional Task D</i>			<u>\$ 2,296.25</u>

Project Total \$ 237,018.11

2012 Detailed Cost Breakdown for DB Eco ST monitoring

Section 1 - Monitoring

Singer Island

Task		Cost	Unit	# Units	Unit Rate	Position
1	Nest survey	\$ 31,483.60	Day	245	\$ 128.50	Field Tech
2	Scarps	\$ 1,440.00	Wk	32	\$ 45.00	Field Tech
3	Nest eval	\$ 9,930.89	Nest	320	\$ 31.03	Field Tech
4	Prog Mgmt	\$ 27,608.58	day	290	\$ 95.20	Env/SR
5	Annual rpt	\$ 5,775.00	Hr	75	\$ 77.00	Env/SR
Subtotal=		\$ 76,238.07				

Ocean Ridge

Task		Cost	Unit	# Units	Unit Rate	Position
1	Nest survey	\$ 49,650.00	Day	245	\$ 202.65	Field Tech
2	Scarps	\$ 1,675.00	Wk	32	\$ 52.34	Field Tech
3	Nest eval	\$ 5,200.00	Nest	185	\$ 28.11	Field Tech
4	Prog Mgmt	\$ 35,076.79	day	290	\$ 120.95	Env/SR
5	Annual rpt	\$ 6,000.00	Hr	75	\$ 80.00	Env/SR
Subtotal=		\$ 97,601.79				

SI/OR Combined		
1	Nest survey	\$ 81,133.60
2	Scarps	\$ 3,115.00
3	Nest eval	\$ 15,130.89
4	Prog Mgmt	\$ 62,685.37
5	Annual rpt	\$ 11,775.00
Subtotal=		\$ 173,839.86

DB Sect 1 Lump Sum Subtotal= \$ 173,839.86

Section 2- QC+ Reports

Task		Cost	Unit	# Units	Unit Rate	Position
6	Weekly data review	\$ 14,892.00	hr	204	\$ 73.00	Env
7	Monthly QC/Analysis	\$ 24,528.00	Month	8	\$ 3,066.00	Env
8	FWC annual rpt	\$ 6,570.00	Annual	1	\$ 6,570.00	Env
9	Annual Shoreline rpt	\$ 2,920.00	Annual	1	\$ 2,920.00	Env
10	Countywide summary	\$ 876.00	Annual	1	\$ 876.00	Env
11	IRG Nearshore rpt	\$ 3,504.00	Quarterly	4	\$ 876.00	Env

Sect 2 Lump Sum Subtotal= \$ 53,290.00 (non SBE)

DB Eco Lump Sum Total=	\$ 227,129.86	
Taylor Contract Mgmt=	\$6,842	3.01%
Combined Lump Sum Total=	\$ 233,971.86	

OR Optional Tasks (Not to Exceed)

A	Reloc	\$ 150.00	Nest	5	\$ 30.00	Field Tech
B	Caging	\$ 600.00	Nest	40	\$ 15.00	Field Tech 2
D	STP coord	\$ 2,296.25	Day	245	\$ 9.37	Field Tech
NTE Subtotal=		\$ 3,046.25				

TOTAL including NTE= \$ 237,018.11

EXHIBIT C

D.B. Ecological Services, Inc.
1012 SW 7th St
Boca Raton, FL 33486
Phone # (561) 376-5502
Fax # (561) 393-0394

1/14/12

**D.B. ECOLOGICAL SERVICES, INC. 2012 COST PROPOSAL FOR PALM
BEACH COUNTY SEA TURTLE MONITORING
SINGER ISLAND & OCEAN RIDGE**

- TASK 1: Daily Nesting Surveys and Beach Monitoring : \$81,133.60
- TASK 2: Escarpment Mapping: \$3115.00
- TASK 3: Nest Evaluations and Monitoring: \$15,130.89
- TASK 4: Program Management, Quality Assurance/Quality Control, and Reporting: \$62,685.37
- TASK 5: Annual Reports: \$11,775.00

Total Cost Estimates for: Tasks 1-5: \$173,839.86

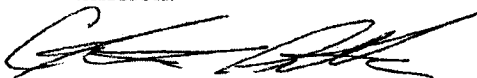
Additional Tasks A-D: Ocean Ridge:

- ADDITIONAL TASK A: Nest Relocation: \$30.00/nest relocation x 5 estimated nests. Estimated Cost: \$150.00
- ADDITIONAL TASK B: Caging Activities: \$15 for each cage set estimated not to exceed 40 cages. Estimated Cost: \$600.00
- ADDITIONAL TASK C: Beach Cleaning Activities: No additional cost due to above tasks. No Additional Cost Task C
- ADDITIONAL TASK D: Sand Transfer Plant/Construction Coordination:
Cost: \$2296.25

Total Cost Estimates for: Additional Tasks A-D: \$3046.25

Total Overall Cost For all Tasks: \$176,886.11

All work to be performed as indicated in the 2012 Palm Beach County Scope for the associated projects. All work will be performed adhering to all marine turtle regulations imposed by the US Fish & Wildlife Service and the Florida Fish & Wildlife Conservation Commission.



Christine Perretta
DB Ecological Services, Inc.

EXHIBIT C

1/14/12

**CARLY DE MAYE 2012 COST PROPOSAL FOR PALM BEACH COUNTY
DATA MANAGEMENT TASKS**

- TASK 6: Weekly Data Review: \$14,892.00
- TASK 7: Monthly QC/Analysis: \$24,528.00
- TASK 8: FWC Annual Report: \$6,570.00
- TASK 9: Annual Shoreline Report \$2,920.00
- TASK 10: Countywide Summary: \$876.00
- TASK 11: Nearshore Report: \$3504.00

Total Cost: Tasks 6-11: \$53,290.00

All work to be performed as indicated in the 2012 Palm Beach County Scope for the associated projects.

Carly deMaye

Carly deMaye



**BUDGET AVAILABILITY STATEMENT
Palm Beach County
Environmental Resources Management**

REQUEST DATE: 01/18/2012

REQUESTED BY: Juan Cueto

PHONE: 233-2431

PROJECT TITLE: 2012 Sea Turtle Monitoring

PROJECT NO:

SITE: Various

ACTIVITY: Sea turtle Monitoring

CONTRACTOR/CONSULTANT NAME: Taylor Engineering, Inc.

SCOPE OF SERVICES: to monitor sea turtle nesting along the beaches of Singer Island and Ocean Ridge, and provide data management and analysis for these and other projects, as described in the scope of work.

BCC RESOLUTION #: _____ **ORIGINAL CONTRACT AMOUNT:** _____

TASK ORDER #: 1435-03 **TASK ORDER AMOUNT:** not to exceed \$237,018.11

BUDGET ACCOUNT NUMBER(S):

<u>Fund</u>	<u>Dept</u>	<u>Unit</u>	<u>Obj</u>	<u>SOBJ</u>	<u>Program</u>	<u>PPC</u>	<u>(Proj) Task</u>	<u>(Site) Sub Task</u>	<u>(Activity) Task Ord</u>	<u>Amount</u>
3653	381	M703	3120	03	E703	CIP	S017	CSLW	029	\$55,767
3652	381	M037	4630	03	E037	CIP	S015	CSII	029	\$92,306
3652	381	M015	3120	03	E015	CIP	S027	COCR	029	\$39,813
3652	381	M028	3120	03	E028	CIP	S005	CJUB	029	\$9,344
3652	381	M045	3120	03	E045	CIP	S019	CJUC	029	\$10,439
3652	381	M046	3120	03	E046	CIP	S017	CSLW	029	\$29,350

BAS APPROVED BY: Elizabeth Purina **DATE:** 1/18/12

ENCUMBRANCE NUMBER: _____

JC

R 2010 14 35

**CONTRACT FOR PROFESSIONAL CONSULTANT SERVICES
BETWEEN PALM BEACH COUNTY AND
TAYLOR ENGINEERING, INC.**

This Contract is made as of SEP 14 2010, by and between Palm Beach County, a Political Subdivision of the State of Florida, by and through its Board of County Commissioners, hereinafter referred to as the COUNTY, and Taylor Engineering, Inc., 10151 Deerwood Park Boulevard, Building 300, Suite 300, Jacksonville, FL 32256, an engineering firm, a corporation, authorized to do business in the State of Florida, hereinafter referred to as the CONSULTANT, whose Federal I.D. Number is 59-2850478

In consideration of the mutual promises contained herein, the COUNTY and the CONSULTANT agree as follows:

ARTICLE 1 - SERVICES

The CONSULTANT's responsibility under this Contract is to provide professional coastal and marine engineering services and incidental services as more specifically set forth in the Scope of Work attached hereto as Exhibit "A". In the event services are required to be performed that are not described in Exhibit "A", but are within the general scope of services, the COUNTY and the CONSULTANT hereby reserve the right to negotiate task orders covering the desired services.

The CONSULTANT shall conduct professional services in accordance with Chapters 471 and 472, Florida Statutes and other applicable local, state and federal standards. The CONSULTANT shall conduct topographic and hydrographic survey work in compliance with the most current U.S. Army Corps of Engineers "Technical Requirements for Surveying, Mapping and Photogrammetric Services", the most current U.S. Army Corps of Engineers "Engineering Design: Hydrographic Surveying," EM 1110-2-1003, and the most current Florida Department of Environmental Protection specifications for topographic (section 02000) and bathymetric (section 02100) surveying.

ARTICLE 2 - PERIODS OF SERVICE AND SCHEDULES

This Contract commences on the day and year first written above and ends two years later. At the option of the COUNTY, the Contract can be renewed for an additional one-year period.

Reports and other work items shall be delivered or completed according to schedules established in each task order.

ARTICLE 3 - ASSIGNMENT OF WORK

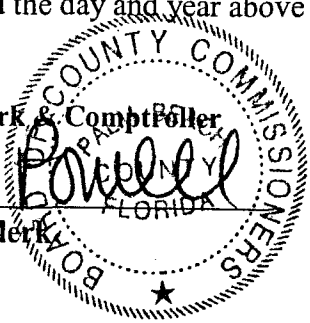
The CONSULTANT shall provide professional services on a task order basis. A copy of the Task Order form and Task Change Order form are attached hereto as Exhibit "C" and Exhibit "D". The COUNTY reserves the right to modify these forms during the term of the Contract. The

IN WITNESS WHEREOF, the Board of County Commissioners of Palm Beach County, Florida has made and executed this Contract on behalf of the COUNTY and CONSULTANT has hereunto set its hand the day and year above written.

ATTEST:

Sharon R. Bock, Clerk & Comptroller

By: *Sharon Bock*
Deputy Clerk



R 2010 1435 SEP 14 2010

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS:

By: *Burt Aaronson*
Burt Aaronson, Chair

WITNESS:

Carla M. Cannon
Signature
Carla M. Cannon
Name (type or print)

CONSULTANT:
Taylor Engineering, Inc.
Company Name
M. J. Hall, President, for
Signature

Steven J. Schropp, Ph.D.
Typed Name
Vice President
Title
(corporate seal)

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

By: *James H. [unclear]*
Assistant County Attorney

APPROVED AS TO TERMS
AND CONDITIONS

By: *Richard E. Walesky*
Richard E. Walesky, Director
Dept. of Environmental Resources Mgmt.

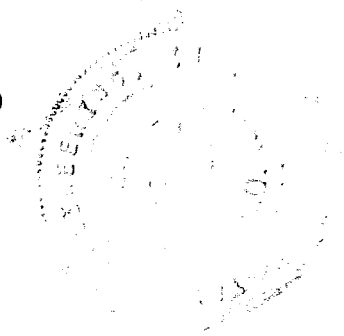


EXHIBIT B
Taylor Engineering, Inc.
Schedule of Hourly Labor Rates
and Equipment Fees and Other Direct Costs
Palm Beach County
Coastal & Marine Engineering Services

Position	Rate Basis Hourly Wage	Burdened Hourly Billing Rate*
CEO	100.16	\$295.00
President	72.44	\$214.00
Vice President	62.17	\$183.00
Senior Advisor	56.31	\$166.00
Director	49.90	\$147.00
Senior Professional	40.70	\$120.00
Project Professional	34.17	\$101.00
Staff Professional	27.88	\$82.00
Technical Editor	30.06	\$89.00
Sr. Technical Support	31.27	\$92.00
Technical Support	25.85	\$76.00
Administrative	15.95	\$47.00

Equipment Fee and Other Direct Costs	Rate	Unit
Black & White Photocopies (8-1/2 x 11)	\$0.15	/page
Black & White Photocopies (11 x 17)	\$0.20	/page
Color Photocopies (8-1/2 x 11)	\$1.25	/page
Color Photocopies (11 x 17)	\$1.50	/page
Computer Generated Glossy Plots (24" x 36" Glossy Paper)	\$65.00	/page
Computer Generated Glossy Plots (24" x 36" Standard Paper)	\$35.00	/page
14' Aluminum Jonboat	\$80.00	/day
Truck	\$85.00	/day
Trimble Differential GPS	\$100.00	/day
ADFM Velocity Profiler Pro20	\$200.00	/day
ADCP Rio Grande Current Meter	\$200.00	/day
Sokkia SET6E Total Station	\$350.00	/day
Cone Penetrometer	\$15.00	/day
YSI SCT Meter	\$50.00	/day
YSI DO Meter	\$50.00	/day
Hand-held GPS	\$10.00	/day

*The Burdened Hourly Billing Rates are based on a 2.95 multiplier, which includes 180.26% overhead and 5% profit.