

AGENDA ITEM SUMMARY

Department

Submitted By: Environmental Resources Management

Districts 1 and 4 (JM)

Attachments:

- Recommended by:**

3-21-14

Date _____

County Administrator

Date _____

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2014	2015	2016	2017	2018
Capital Expenditures	\$186,066	\$238,077	_____	_____	_____
Operating Costs	_____	_____	_____	_____	_____
External Revenues	_____	_____	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
NET FISCAL IMPACT	<u>\$186,066</u>	<u>\$238,077</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 \$39,296.85

Beach Improvement Fund:

3652-381-M015-3120 Ocean Ridge Shore Protection \$120,467.40

3652-381-M037-4630 Singer Island Dune \$209,405.73

3652-381-M046-3120 South Lake Worth Inlet Mgmt \$54,972.64

C. Department Fiscal Review:

JP

III. REVIEW COMMENTS

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

M. Diaz 3/27/2014
 OFMB *366 364*

Dr. J. Jacobson 4/1/14
 Contract Development and Control

B. Legal Sufficiency:

Andrew G. [Signature] 4/3/14
 Assistant County Attorney

C. Other Department Review:

 Department Director

TASK ORDER

TASK ORDER: 1330-02 CONSULTANT: Taylor Engineering, Inc.

ACCOUNT: various CONTRACT: R2013-1330

[Fiscal approval of Budget Availability: see attached BAS]

PROJECT MANAGER: Jacey Biery PHONE: 561-233-2461

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

PROJECT NAME: 2014-2015 Sea Turtle Monitoring – Singer Island & Ocean Ridge

LOCATION/DISTRICT #: Singer Island & Ocean Ridge / Districts 1 & 4

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 May 1, 2014 through December 31, 2015, as described in the Scope of Work.

DELIVERABLES: See scope of work dated March 20, 2014.

TASK ORDER TYPE: FIXED PRICE \$370,079.41 DUE DATES: 12/31/2014 (year 2014)
NOT-TO-EXCEED \$54,063.21 12/31/2015 (year 2015)

TOTAL AMOUNT \$ 424,142.62 See attached proposal dated 3/20/2014

(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"/>	\$ _____	\$ _____	\$ <u>411,822.62</u>	\$ _____	\$ _____

*certified as both an SBE and a State MBE

TOTAL SBE-M/WBE PARTICIPATION: \$411,822.62

CONSULTANT REP:  DATE: 3/21/2014

APPROVED AS TO TERMS AND CONDITIONS:

ERM DIRECTOR/DEPUTY:  DATE: 3/24/14

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

ASSISTANT COUNTY ATTORNEY:  DATE: 4/3/14

BOARD OF COUNTY COMMISSIONERS: _____ DATE: _____

Priscilla A. Taylor, Mayor



March 20, 2014

Ms. Jacey Biery
Palm Beach County
Department of Environmental Resources Management
2300 N Jog Road, 4th Floor
West Palm Beach, FL 33411

EMAILED

RE: May 2014 – December 2015 Sea Turtle Monitoring
Singer Island and Ocean Ridge, Palm Beach County, Florida

Dear Ms. Biery,

Taylor Engineering is pleased to present this proposal for the project referenced above. As requested, this proposal covers monitoring services provided from May 1, 2014 through December 31, 2015. Exhibits A and B contain our proposed scopes of work and Exhibits C1 (May – December 2014) and C2 (March – December 2015) present 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 limited project oversight and invoicing services over the duration of the project. We propose to execute Tasks 1 through 5 as described in Exhibits A and B for a fixed, lump sum fee of \$370,079.41. We propose to complete Additional Tasks A and B as detailed in Exhibit A and in accordance with the rates shown in Exhibits C1 and C2 for a total cost not to exceed \$32,300. We propose to complete Optional Tasks B and E as described in Exhibit A according to the rates listed in Exhibit C1 for a total cost not to exceed \$4,225.71. Finally, we propose to complete Optional Tasks A through F as described in Exhibit A according to the rates listed in Exhibit C2 for a total cost not to exceed \$17,537.50. Exhibit D provides DB Ecological Services' signed proposal and SBE Schedule 2 form.

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
Senior Scientist, Environmental Services

Enclosures

Exhibit A
Scope of Work
2014 (May – December Only) & 2015 Ocean Ridge 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 three shore protection projects along the Ocean Ridge beach. They are - Ocean Ridge Shoreline Protection, South Lake Worth Inlet Maintenance Dredging, and South Lake Worth Inlet Sand Transfer Plant Bypassing. 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).

The CONSULTANT shall provide services associated with monitoring sea turtle nesting for the beach 1500 feet north of the South Lake Worth Inlet running south to Adams Road (~2.25 miles; Attachment A-1).

The CONSULTANT shall obtain all Florida Fish and Wildlife Conservation Commission (FWC) permits required for sea turtle monitoring, including authorization for nest relocation. 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. 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. 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-060314-4BR-OR).

Zone boundary markers will be installed at the beginning of the season (if missing) and maintained by the CONSULTANT in the dune at historical locations within the entire survey area throughout the nesting season.

Daily coordination with sand transfer plant or construction personnel must occur indicating that the daily nesting survey has been completed in the area and either sand transfer plant or construction activities may begin.

Frequency: Daily from March 1 through October 31.

Data Reporting: The sand transfer plant clear time shall be recorded on the daily survey datasheet. 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 on the beach 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. Task to be a not-to-exceed item based on the number of weeks an escarpment is mapped.

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 shall be developed in consultation with the COUNTY prior to the start of each sea turtle nesting season. 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 of nests selected for marking. 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. Loggerhead – all nests in zones 2-10 (approximately 100 nests) and every 2nd nest in the remaining zones 1, 11-13 which will serve as a reference to evaluate potential construction impacts (approximately 100 nests)
- B. Green – all nests in zones 1-13
- C. Leatherback – all nests in zones 1-13

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

1. a vehicle access;
2. within 10 feet of a lifeguard tower; or,
3. 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. Daily coordination with the beach cleaner must occur. Two signs, one each located north of the South Lake Worth Inlet and another at Oceanfront Park tractor access, 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 (unless prevented by severe storm conditions) prior to beach cleaning activities.

To identify protected nests (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 "Predated" 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. Predated (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 quality control manager shall perform the following:

- A. Weekly review for timely data entry and verification, accuracy, and overall compliance with the scope.
- B. Monthly data quality control summary.
- C. Mid-season 1 page summary summarizing in narrative, tabular and graphic format for each species a comparison to the previous season and the 5-year average for:
 - a. Crawl totals
 - b. Nesting success
 - c. Nesting density
 - d. Reproductive success
 - e. Erosion rates
 - f. Disorientation rates

A summary of the range of dates reviewed, 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. Deliverables for A and B under Task 4 shall be submitted on or before the last day of the month. Mid-season summary is due July 7.

Task 5: Annual Report

Three types of annual reports shall be completed and include:

- A) FWC Shoreline Protection Project Excel Spreadsheets in format specified by FWC;
- B) Internal Summary for ERM managers consisting of a 2 page report in narrative, graphic, and 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

C) Detailed Final Report as described below.

An electronic copy (in PDF format along with supporting Word and Excel files) of a final annual report 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 and support data to compile the report shall be provided in electronic formats (Word, Excel, ArcGIS, PDF) and 2 hardcopies of the detailed final report and shall be submitted by no later than December 31. All deliverables shall be complete and accurate before full payment for each task shall be authorized.

ADDITIONAL TASKS In addition to the standard sea turtle monitoring work described above, the CONSULTANT must complete the following additional tasks to be billed on a per nest basis:

Additional Task A: Nest Relocation for Sand Transfer Plant Operation

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 3. Relocation and incubation areas are shown on Attachment 1. 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 egg chamber must be located for all nests deposited within the groin field (Attachment 1) 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 COUNTY prior to the first cage deployment. After 45 days of incubation, a restraining cage will be placed over the egg chamber for nests that require screening. The cage must be closed at sunset, checked once between 11:00 PM and 1:00 AM, and opened at sunrise every day. Hatchlings found in the cages shall be released immediately at a location that is not influenced by artificial lighting. The CONSULTANT shall conduct all nest and monitoring evaluations as described in Task 3. The cage will be removed 72 hours post-emergence, during nest excavation, not upon nest emergence.

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 night visit.

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 construction project monitoring as a supplement to this task order.

Optional Task A- Weekly Shorebird Surveys

A bi-weekly survey for shorebird activity shall be conducted for all zones, including shorebird activity visible from the beach on breakwaters, groins and jetties, 10 days prior to project initiation through September 30. The daily shorebird survey must occur prior to movement of equipment or operation of vehicles outside of the overnight work area. Shorebird surveys shall be conducted in accordance with FWC guidelines. The following parameters shall be recorded for each shorebird observance on a shorebird survey form approved by the COUNTY:

- A. Date of survey
- B. Start and end time of survey
- C. Weather conditions during survey
- D. Survey zone
- E. Species of shorebird
- F. Location (beach, structure, in flight, etc)
- G. Number
- H. Activity

- a. Loafing
- b. Feeding
- c. Nesting
- d. Courtship behavior

If nesting activities are observed, the CONSULTANT must notify the COUNTY within 12 hours. The COUNTY, in consultation with FWC, will then decide if protective action must be taken. Credentials of all staff conducting shorebird surveys must be submitted to and approved by the COUNTY and the FWC Regional Biologist prior to April 1.

Frequency: Once a week from April 1 to September 30.

Data Reporting: All shorebird activity shall be summarized in an Excel spreadsheet or Access database, as directed by the COUNTY, and submitted with the appropriate monthly data submittal. The data shall also be entered into the Florida Fish and Wildlife Commission Florida Shorebird Database (<https://public.myfwc.com/crossdoi/shorebirds/index.html>).

Optional Task B- Early Season Construction Monitoring

If construction activities occur between March 1 and April 30, daily sea turtle nesting surveys and nest monitoring and evaluations shall be conducted in accordance with permit conditions and Tasks 1 and 5. Activities may include marking nests with perimeter stakes and flagging tape for protection from construction activity or relocation of nests from active construction zones as described in Additional Task A.

Frequency: Daily surveys and monitoring of nests.

Data Reporting: As described in Tasks 1 and 3.

Optional Task C- Early Season Nighttime Monitoring and Nest Relocation

If dredging and filling activities occur between March 1 to April 30, daily nighttime surveys for nesting activity shall begin when the first leatherback nest is recorded in the project area or adjacent beaches and continue through project completion, or April 30, whichever is later. Nesting surveys shall be conducted hourly from 9:00 PM to 6:00 AM. Nests deposited in areas that will be directly affected by dredging and filling activities shall be relocated to a nearby area that will not be affected by construction activities. All relocated nests shall be managed as described in previous tasks and evaluated for reproductive success regardless of species or marking rotation. The CONSULTANT shall be responsible for all daily coordination with the dredging contractor to notify the contractor of survey status and nest locations.

Frequency: Daily after first leatherback nest through project completion or April 30, whichever is earlier.

Data Reporting: Observer, start and end time of each hourly survey, and number and type of turtle crawls encountered (by zone) shall be recorded on a datasheet approved by the COUNTY. Raw datasheets shall be submitted to the COUNTY weekly by email. All nighttime survey information shall be summarized in an Excel spreadsheet, as directed by the COUNTY, and submitted with the appropriate monthly data submittal. Data reporting for relocated nests shall occur in accordance with Tasks 1 and 3.

Optional Task D- Late Season Construction Monitoring

If construction activities occur between November 1 and November 30, daily sea turtle nesting surveys and nest monitoring and evaluations shall be conducted through November 30 in accordance with permit conditions and Tasks 1 and 5. Activities may include marking nests with perimeter stakes and flagging tape for protection from construction activity and relocation of nests from active construction zones as described in Additional Task A. Relocation could begin as early as August 28 (65 days prior to construction).

Frequency: Daily surveys and monitoring of nests shall occur until the last nest has been evaluated.

Data Reporting: As described in Tasks 1 and 3.

Optional Task E- Compaction

Once immediately after construction is complete and before March 1 in subsequent years, the CONSULTANT shall take sediment compaction readings at each DEP survey monument and half-monument throughout the survey area. Three sampling stations shall be established on each transect at high, mid, and low beach between the toe of the dune and the high water line. If less than 50 feet of dry beach are present, the sampling stations may be reduced to only high and low beach. In areas of existing dune restoration projects, compaction stations shall also be established at the mid-dune face and seaward base of the dune (in the fill). At each station, five (5) replicate sediment compaction measurements shall be made using a cone penetrometer at three (3) depths (0-6", 6-12", and 12-18"); the sand shall be excavated from the sampling station between each depth reading. Penetrometers are to be provided by the CONSULTANT and approved by the COUNTY prior to use. All compaction data (transect ID, beach position, sampling depth, and compaction measurements {in psi}) shall be recorded on a compaction monitoring datasheet provided by the COUNTY.

Frequency: Once per year prior to March 1.

Data Reporting: The raw compaction datasheets shall be included with the appropriate monthly data submittal. All compaction data shall be entered into an Access database by the COUNTY.

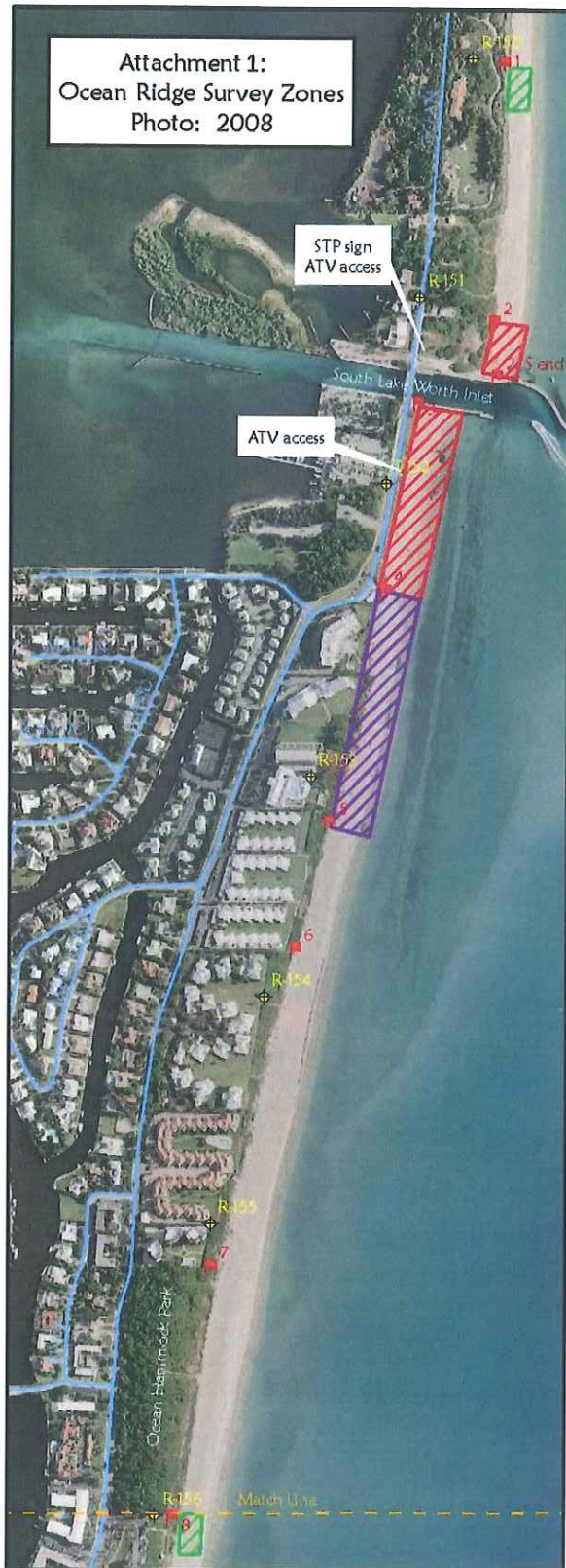


Exhibit B
Scope of Work
2014 (May – December Only) & 2015 Singer Island Sea Turtle Monitoring

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 in support of State permit requirements issued to Palm Beach County for the Singer Island dune restoration project. The project is 1.25 miles in length (Attachment B-1).

The CONSULTANT shall obtain all Florida Fish and Wildlife Conservation Commission (FWC) permits required for sea turtle monitoring, including authorization for nest relocation. 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. The locations of all crawls marked for evaluation are to be collected with a real time corrected DGPS unit with sub-meter accuracy. 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. 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-060314-4BR-OR).

Zone boundary markers will be installed at the beginning of the season (if missing) and maintained by the CONSULTANT in the dune at historical locations within the entire survey area throughout the nesting season.

Frequency: Daily from March 1 through September 30.

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 in the dune fill 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. Task to be a not-to-exceed item based on the number of weeks an escarpment is mapped.

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 shall be developed in consultation with the COUNTY prior to the start of each sea turtle nesting season. 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 of nests selected for marking. 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.

The goal for nest marking is to evaluate the effects of the dune fill by obtaining reproductive success data from 50 loggerhead nests and 50 green nests in the dune fill and 50 loggerhead nests and 50 green nests on the beach berm. Based on 2011 data, the following minimum numbers of nests is estimated to be:

- A. Loggerhead – all nests in the dune fill (zones 1-3) (approximately 100 nests) and every 10th nest on the beach in all zones (approximately 100 nests)
- B. Green – all nests in the dune fill (zones 1-3) (up to 100 nests) and every 5th nest on the beach in all zones (approximately 100 nests)
- C. Leatherback – 0 nests

An alternative marking scheme can be proposed by the CONSULTANT.

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 "Predated" 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. Predated (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 quality control manager shall perform the following:

- A. Weekly review for timely data entry and verification, accuracy, and overall compliance with the scope.
- B. Monthly data quality control summary.
- C. Mid-season 1 page summary summarizing in narrative, tabular and graphic format for each species a comparison to the previous season and the 5-year average for:
 - a. Crawl totals
 - b. Nesting success
 - c. Nesting density
 - d. Reproductive success
 - e. Erosion rates
 - f. Disorientation rates

A summary of the range of dates reviewed, 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. Deliverables for A and B under Task 4 shall be submitted on or before the last day of the month. Mid-season summary is due July 7.

Task 5: Annual Report

Three types of annual reports shall be completed and include:

- A) FWC Shoreline Protection Project Excel Spreadsheets in format specified by FWC;

B) Internal Summary for ERM managers consisting of a 2 page report in narrative, graphic, and 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

C) Detailed Final Report as described below.

An electronic copy (in PDF format along with supporting Word and Excel files) of a final annual report 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 and support data to compile the report shall be provided in electronic formats (Word, Excel, ArcGIS, PDF) and 2 hardcopies of the detailed final report and shall be submitted by no later than December 31. All deliverables shall be complete and accurate before full payment for each task shall be authorized.

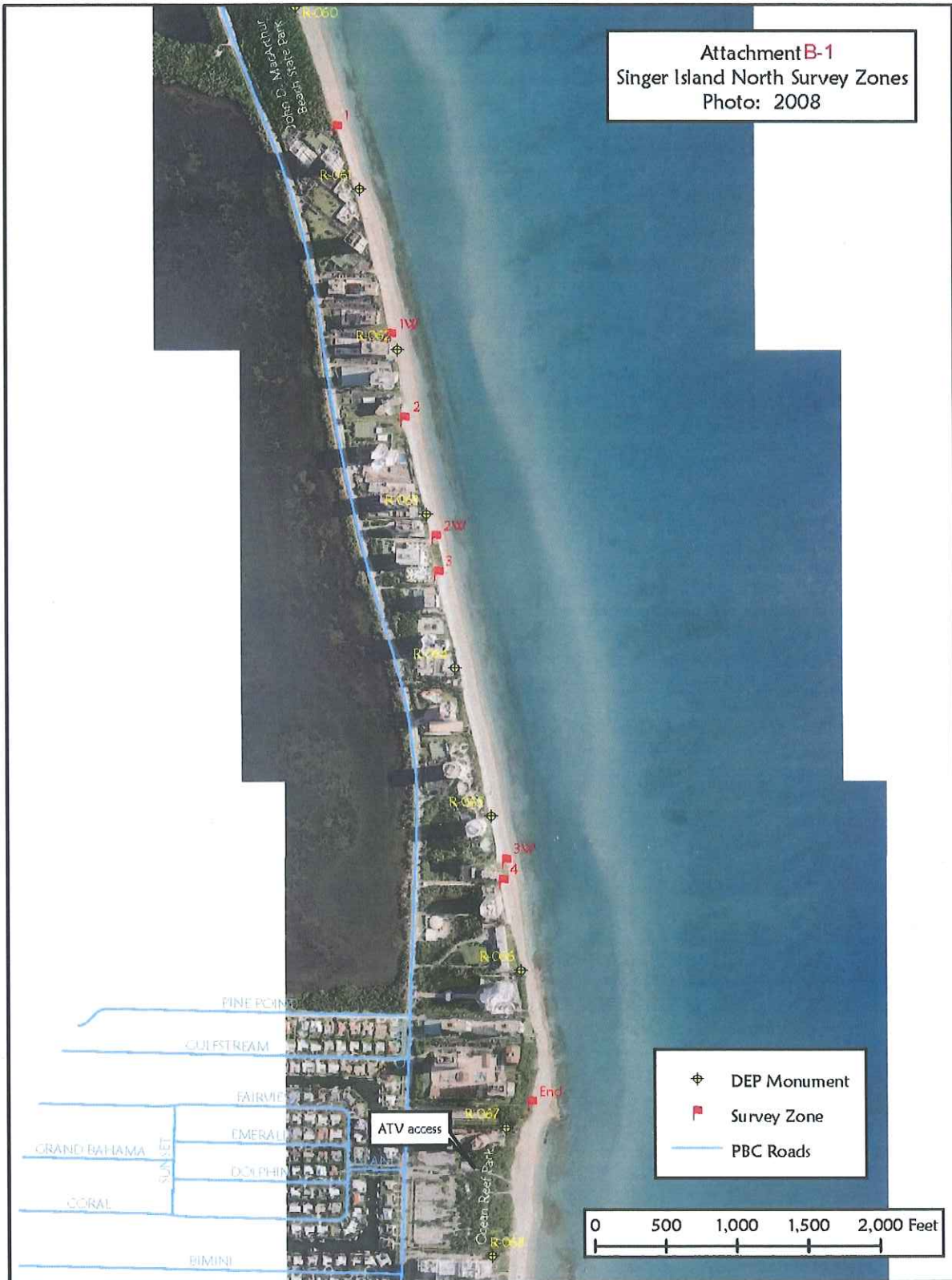


Exhibit C1
Detailed Cost Breakdown
Sea Turtle Monitoring - Singer Island & Ocean Ridge
May 1, 2014 – December 31, 2014

Ocean Ridge (Exhibit A SOW) – Fixed Fee

Task	Description	Cost	Unit	# Units	Unit Rate
1	Nest Survey	\$ 25,897.44	month	6	\$ 4,316.24
2	Scarps	\$ 1,196.40	month	5	\$ 239.28
3	Nest Eval	\$ 6,524.98	month	7	\$ 932.14
4	Prog Mgmt	\$ 21,541.66	month	7	\$ 3,077.38
4 A,B,C	Prog Mgmt	\$ 5,173.86	month	6	\$ 862.31
4 ^{Taylor}	Prog Mgmt	\$ 2,695.00	month	7	\$ 385.00
5A	FWC Spreadsheet	\$ 2,190.00	one time		
5B	Summary	\$ 730.00	one time		
5C	Annual Report	\$ 6,000.00	one time		
Subtotal=		\$ 71,949.34			

Singer Island (Exhibit B SOW) – Fixed Fee

Task	Description	Cost	Unit	# Units	Unit Rate
1	Nest survey	\$ 32,991.00	month	6	\$ 5,498.50
2	Scarps	\$ 1,142.85	month	5	\$ 228.57
3	Nest Eval	\$ 15,610.00	month	7	\$ 2,230.00
4	Prog Mgmt	\$ 26,091.94	month	7	\$ 3,727.42
4 A,B,C	Prog Mgmt	\$ 7,610.22	month	6	\$ 1,268.37
4 ^{Taylor}	Prog Mgmt	\$ 2,695.00	month	7	\$ 385.00
5A	FWC Spreadsheet	\$ 1,095.00	one time		
5B	Summary	\$ 730.00	one time		
5C	Annual Report	\$ 5,775.00	one time		
Subtotal=		\$ 93,741.01			

Total SI & OR Fixed Fee Costs = \$ 165,690.35

Ocean Ridge Additional Tasks (Exhibit A SOW) – Not to Exceed

Task	Description	Cost	Unit	# Units	Unit Rate	Unit	# Units	Unit Rate
A	Relocation	\$ 150.00	nest	5	\$ 30.00	one time		\$ 150.00
B	Caging	\$ 16,000.00	night	80	\$ 200.00	Night	80	\$ 200.00
Total=		\$ 16,150.00						

Ocean Ridge Optional Tasks (Exhibit A SOW) – Not to Exceed

Task	Description	Cost	Unit	# Units	Unit Rate	Unit	# Units	Unit Rate
B	Shorebird Survey	\$ 925.71	month	5	\$ 185.14	month	5	\$ 185.14
E	Late Season Mon	\$ 3,300.00	day	30	\$ 110.00	month	1	\$ 3,300.00
Total=		\$ 4,225.71						

Total OR Optional & AdditionalTasks Not to Exceed Costs= \$ 20,375.71

Note: All tasks and associated costs listed above provided by DB Ecological Services, Inc. unless otherwise noted (Taylor superscript)

Exhibit C2
Detailed Cost Breakdown
Sea Turtle Monitoring - Singer Island & Ocean Ridge
March 1, 2015 – December 31, 2015

Ocean Ridge (Exhibit A SOW) – Fixed Fee

Task	Description	Cost	Unit	# Units	Unit Rate
1	Nest Survey	\$ 34,529.92	month	8	\$ 4,316.24
2	Scarps	\$ 1,675.00	month	7	\$ 239.28
3	Nest Eval	\$ 6,525.00	month	7	\$ 932.14
4	Prog Mgmt	\$ 27,696.42	month	9	\$ 3,077.38
4 A,B,C	Prog Mgmt	\$ 5,913.00	month	8	\$ 739.13
4 ^{Taylor}	Prog Mgmt	\$ 3,465.00	month	9	\$ 385.00
5A	FWC Spreadsheet	\$ 2,190.00	one time		
5B	Summary	\$ 730.00	one time		
5C	Annual Report	\$ 6,000.00	one time		
Subtotal=		\$ 88,724.34			

Singer Island (Exhibit B SOW) – Fixed Fee

Task	Description	Cost	Unit	# Units	Unit Rate
1	Nest survey	\$ 43,987.93	month	8	\$ 5,498.50
2	Scarps	\$ 1,600.00	month	7	\$ 228.57
3	Nest Eval	\$ 15,610.00	month	7	\$ 2,230.00
4	Prog Mgmt	\$ 33,546.75	month	9	\$ 3,727.42
4 A,B,C	Prog Mgmt	\$ 9,855.04	month	8	\$ 1,231.88
4 ^{Taylor}	Prog Mgmt	\$ 3,465.00	month	9	\$ 385.00
5A	FWC Spreadsheet	\$ 1,095.00	one time		
5B	Summary	\$ 730.00	one time		
5C	Annual Report	\$ 5,775.00	one time		
Subtotal=		\$ 115,664.72			

Total SI & OR Fixed Fee Costs = \$ 204,389.06

Ocean Ridge Additional Tasks (Exhibit A SOW) – Not to Exceed

Task	Description	Cost	Unit	# Units	Unit Rate	Unit	# Units	Unit Rate
A	Relocation	\$ 150.00	nest	5	\$ 30.00	one time		\$ 150.00
B	Caging	\$ 16,000.00	night	80	\$ 200.00	night	80	\$ 200.00
Total=		\$ 16,150.00						

Ocean Ridge Optional Tasks (Exhibit A SOW) – Not to Exceed

Task	Description	Cost	Unit	# Units	Unit Rate	Unit	# Units	Unit Rate
A	Pre-con Meeting	\$ 187.50	hour	1.5	\$ 125.00	one time		\$ 187.50
B	Shorebird Survey	\$ 1,080.00	month	6	\$ 180.00	month	6	\$ 180.00
C	Early Season Mon	\$ 1,220.00	day	61	\$ 20.00	month	2	\$ 610.00
D	Nighttime Mon	\$ 8,250.00	day	15	\$ 550.00	day	15	\$ 8,250.00
E	Late Season Mon	\$ 3,300.00	day	30	\$ 110.00	month	1	\$ 3,300.00
F	Compaction	\$ 3,500.00	one time			one time		\$ 3,500.00
Total=		\$ 17,537.50						

Total OR Optional & Additional Tasks Not to Exceed Costs= \$ 33,687.50

Note: All tasks and associated costs listed above provided by DB Ecological Services, Inc. unless otherwise noted (Taylor superscript)

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

3/19/14

**D.B. ECOLOGICAL SERVICES, INC. 2014 COST PROPOSAL FOR PALM
BEACH COUNTY SEA TURTLE MONITORING
SINGER ISLAND & OCEAN RIDGE**

All work to be performed as indicated in the 2014 Palm Beach County Scope for the associated projects. This cost proposal is to provide services from 1 May 2014 – 31 December 2015.

Work will be performed adhering to all marine turtle regulations imposed by the US Fish & Wildlife Service and the Florida Fish & Wildlife Conservation Commission.

A cost breakdown has been provided for Ocean Ridge on the attached spreadsheet labeled Exhibit A. The tasks referenced in Exhibit A are only for tasks that necessary from 1 May 2014– 31 December 2015. The Total costs established in Exhibit A for Tasks 1-5 = \$154,513.68. The total the proposed additional and optional tasks = \$54,063.21. ✓

A cost breakdown has been provided for Singer Island on the attached spreadsheet labeled Exhibit B. The tasks referenced in Exhibit B are only for tasks that necessary from 1 May 2014 – 31 December 2015. Any additional services will be provided under a separate Agreement. The Total costs established in Exhibit B for Tasks 1-5 = \$203,245.73. ✓



Christine Perretta
DB Ecological Services, Inc.

2014 Detailed Cost Breakdown for DB Eco ST monitoring Exhibit A

MAY - DEC

Ocean Ridge

Task		Cost	Unit	# Units	Unit Rate
1	Nest survey	\$ ✓ 25,897.44	month	6	4316.24
2	Scarps	\$ ✓ 1,196.40	month	5	239.28
3	Nest eval	\$ ✓ 6,524.98	month	7	932.14
4	Prog Mgmt	\$ ✓ 21,541.66	month	7	3077.38
4 A,B,C	Prog Mgmt	\$ ✓ 5,173.86	month	6	862.31
5A	FWC spreadsheet	\$ ✓ 2,190.00	one time		
5 B	summary	\$ ✓ 730.00	one time		
5 C	Annual rpt	\$ ✓ 6,000.00	one time		
	Subtotal=	\$ ✓ 69,254.34			

OR Additional Tasks (Not to Exceed)

						unit	# units	Unit Rate
A	Reloc	\$ ✓ 150.00	Nest	5	\$ 30.00	one time		\$ 150.00
B	Caging	\$ ✓ 16,000.00	night	80	\$ 200.00	nightly	80	\$ 200.00
		\$ ✓ 16,150.00						

OR Optional Tasks

						unit	# units	Unit Rate
A	Pre-con Meeting	N/A	hr			one time		
B	Shorebird survey	\$ ✓ 925.71	month	5	\$ 185.14	month	5	\$ 185.14
C	Early Season Mon	N/A	day					
D	Nighttime Mon.	N/A	day					
E	Late season Mon	\$ ✓ 3,300.00	day	30	\$ 110.00	month	1	\$ 3,300.00
F	Compaction	N/A	one time					
		\$ 4,225.71 ✓						

Total Optional & AdditionalTasks= \$ ✓ 20,375.71

2015 Detailed Cost Breakdown for DB Eco ST monitoring Exhibit A

March-Dec

Ocean Ridge

Task		Cost	Unit	# Units	Unit Rate
1	Nest survey	\$ 34,529.92	month	8	4316.24
2	Scarps	\$ 1,675.00	month	7	239.28
3	Nest eval	\$ 6,525.00	month	7	932.14
4	Prog Mgmt	\$ 27,696.42	month	9	3077.38
4 A,B,C	Prog Mgmt	\$ 5,913.00	month	8	739.13
5A	FWC spreadsheet	\$ 2,190.00	one time		
5 B	summary	\$ 730.00	one time		
5 C	Annual rpt	\$ 6,000.00	one time		
	Subtotal=	\$ 85,259.34			

OR Additional Tasks (Not to Exceed)

					unit	# units	Unit Rate
A	Reloc	\$ 150.00	Nest	5	\$ 30.00	one time	\$ 150.00
B	Caging	\$ 16,000.00	night	80	\$ 200.00	nightly	\$ 200.00
		\$ 16,150.00					

OR Optional Tasks

					unit	# units	Unit Rate
A	Pre-con Meeting	\$ 187.50	hr	1.5	\$ 125.00	one time	
B	Shorebird survey	\$ 1,080.00	month	6	\$ 180.00	month	6 \$ 180.00
C	Early Season Mon	\$ 1,220.00	day	61	\$ 20.00	month	2 \$ 610.00
D	Nighttime Mon.	\$ 8,250.00	day	15	\$ 550.00	day	15 \$ 8,250.00
E	Late season Mon	\$ 3,300.00	day	30	\$ 110.00	month	1 \$ 3,300.00
F	Compaction	\$ 3,500.00		one time			3500
		\$ 17,537.50					

Total Optional & AdditionalTasks= \$ 33,687.50 ✓

2014 Detailed Cost Breakdown for DB Eco ST monitoring Per Exhibit B**Section 1 - Monitoring**

Singer Island

Task		Cost	Unit	# Units	Unit Rate
1	Nest survey	\$ 32,991.00	month	6	5498.5
2	Scarps	\$ 1,142.85	month	5	228.57
3	Nest eval	\$ 15,610.00	month	7	2230
4	Prog Mgmt	\$ 26,091.94	month	7	3727.42
4 A,B,C	Prog Mgmt	\$ 7,610.22	month	6	1268.37
5 A	FWC spreadsheet	\$ 1,095.00	one time		
5 B	summary	\$ 730.00	one time		
5 C	Annual rpt	\$ 5,775.00	one time		
	Subtotal=	\$ 91,046.01			

2015 Detailed Cost Breakdown for DB Eco ST monitoring Per Exhibit B

MARCH-DECEMBER

Section 1 - Monitoring

Singer Island

Task		Cost	Unit	# Units	Unit Rate
1	Nest survey	\$ ✓ 43,987.93	month	8	5498.5
2	Scarps	\$ ✓ 1,600.00	month	7	228.57
3	Nest eval	\$ ✓ 15,610.00	month	7	2230
4	Prog Mgmt	\$ ✓ 33,546.75	month	9	3727.42
4 A,B,C	Prog Mgmt	\$ ✓ 9,855.04	month	8	1231.88
5 A	FWC spreadsheet	\$ ✓ 1,095.00	one time		
5 B	summary	\$ ✓ 730.00	one time		
5 C	Annual rpt	\$ ✓ 5,775.00	one time		
	Subtotal=	\$ ✓ 112,199.72			

OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE

This document must be completed by ALL SBE-M/WBE's and submitted with this bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: 1.0. # 1330-02 PROJECT NAME: May 2014 - December 2015 Sea Turtle Monitoring

TO: Taylor Engineering, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise _____ Minority Business Enterprise _____

Black _____ Hispanic _____ Women X Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: February 2012

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
	<u>Sea Turtle monitoring surveys</u>	_____	_____	_____
	<u>for Ocean Ridge and Singer Island</u>	_____	_____	_____
	<u>For May 2014 - Dec 2015</u>	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

at the following price or percentage \$ 411,822.62 ✓
(SBE Prime or Subcontractor's Quote)

and will enter into a formal agreement for work with you contingent upon your execution of a contract with Palm Beach County.

If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE subcontractor, please list the name of that subcontractor and the amount below.

Price or Percentage _____
(Name of Subcontractor)

The Prime affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the work with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

DB Ecological Services, Inc.

Print name of
SBE-M/WBE Company

By: 
(Signature)

Christine Perretta / President

Print name/title of person executing on behalf
of SBE-M/WBE

Taylor Engineering, Inc.
Continuing Contract for Coastal and Marine Engineering

Contract R2013-1330 dated October 1, 2013 for period of two years expires on September 30, 2015.
SBE-M/WBE Goal 20.0% (15% SBE/Woman; 5% State MBE/Woman)

Task order summary:

TASK NUMBER	TOTAL/ SBE and/or MWBE AMOUNT	TASK DUE DATE	TASK DESCRIPTION	APPROVED BY/DATE
1330-01	48,680.47 47,120.47	5/31/2014	2014 Sea Turtle Monitoring - March & April	ERM 2/27/2014
1330-02	424,142.62 411,822.62	12/31/2015	2014-2015 Sea Turtle Monitoring - Singer Island & Ocean Ridge	BCC

Total: 472,823.09

SBE-MBE: 458,943.09

SBE-MBE Participation: 97.1%

Report Date & Filename: 03/21/14

T:\eeringer\Consultants\Taylor 2013-2015\history_1330.xls]Sheet1



**Palm Beach County
Environmental Resources Management**

INTERDEPARTMENTAL BUDGET AVAILABILITY STATEMENT

REQUEST DATE: 03/21/14

REQUESTED BY: Juan Cueto

PHONE: 233-2431

PROJECT TITLE: 2014 & 2015 Sea Turtle Monitoring

PROJECT NO:

SITE: Singer Island & Ocean Ridge & SLWI

ACTIVITY: Sea Turtle Monitoring

CONTRACTOR/CONSULTANT NAME: Taylor Engineering, Inc.

SCOPE OF SERVICES: Monitor sea turtle nesting along the beaches of Singer Island , Ocean Ridge, and South Lake Worth Inlet as defined in the contract R2013-1330 Task Order 1330-02

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>
3652	381	M037	3120	03	E037		S015	CSII	029	209,405.73
3653	381	M703	3120	03	CIP		S029	CSLW	029	39,296.85
3652	381	M015	3120	03	E015		S027	COCR	029	120,467.40
3652	381	M046	3120	03	E046		S029	CSLW	029	54,972.64

FISCAL APPROVAL: _____

DATE: _____

ENCUMBRANCE NUMBER: _____

TBD

R 2013 : 1330

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

This Contract is made as of OCT 01 2013, by and between Palm Beach County, a Political Subdivision of the State of Florida, by and through its Board of 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.

The period of service shall continue until completion of all phases or any outstanding additional service authorizations issued within the period of the Contract, unless otherwise terminated as provided herein.

ARTICLE 3 - ASSIGNMENT OF WORK

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 R. Bock*
Deputy Clerk

WITNESS:

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

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

By: *James C. Hargrave*
Assistant County Attorney

APPROVED AS TO TERMS
AND CONDITIONS

By: *Robert Robbins*
Robert Robbins, Director
Dept. of Environmental Resources Mgmt.

R 2013 : 1330 OCT 01 2013
PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS:

By: *Steven L. Abrams*
Steven L. Abrams, Mayor

CONSULTANT:

Taylor Engineering, Inc.
Company Name

Kenneth Craig
Signature

Kenneth Craig, P.E.
Typed Name

Vice President
Title

(corporate seal)



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*
President	84.33	\$252.00
Vice President	56.65	\$169.00
Senior Advisor	66.89	\$200.00
Director	50.67	\$152.00
Senior Professional	45.52	\$136.00
Project Professional	33.63	\$101.00
Staff Professional	27.78	\$83.00
Technical Editor	27.33	\$82.00
Sr. Technical Support	36.82	\$110.00
Technical Support	26.51	\$79.00
Administrative	12.36	\$37.00

Equipment Fee and Other Direct Costs	Rate	Unit
21-foot Center Console Boat	\$220.00	/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 2.99 multiplier, which includes 185% overhead and 5% profit.