

FOURTH AMENDMENT
TO
AGREEMENT BETWEEN BROWARD COUNTY AND DAVID MILLER & ASSOCIATES, INC.
FOR CONSULTING AND PROFESSIONAL ENGINEERING SERVICES FOR PORT EVERGLADES
DEEPENING AND WIDENING PROJECT
(RLI# R1049105R1)

This is a Fourth Amendment to the Agreement between BROWARD COUNTY, a political subdivision of the state of Florida ("COUNTY"), and DAVID MILLER & ASSOCIATES, INC., a foreign corporation authorized to conduct business in Florida ("CONSULTANT"), (collectively referred to as the "Parties").

WHEREAS, the Parties entered into an agreement for consulting and professional engineering services for Port Everglades Deepening and Widening Project dated December 12, 2012; a First Amendment dated March 27, 2013; a Second Amendment dated August 20, 2013; and a Third Amendment dated April 26, 2016, hereinafter collectively referred to as the "Agreement"; and

WHEREAS, pursuant to Article 6 of the Agreement, either party may request changes that would increase, decrease, or otherwise modify the Scope of Services to be provided under the Agreement; and

WHEREAS, the Parties desire to amend the Agreement to provide for additional effort related to coral survey and outreach/facilitation services for the Project; and

WHEREAS, the Parties met and negotiated the additional scope of services and fees for the Project, all in accordance with the Broward County Procurement Code, and this Fourth Amendment to the Agreement incorporates the results of such negotiation; NOW, THEREFORE,

IN CONSIDERATION of the mutual terms and conditions, promises, and covenants hereinafter set forth, the Parties agree as follows:

1. The above recitals are true and correct and are incorporated herein as if set forth in full hereunder.
2. Unless otherwise stated, words in ~~struck-through~~ type are deletions from existing text and words in underlined type are additions to existing text.
3. All references to "Revised Exhibit A" in Sections 3.1, 4.1, 4.6, and 7.3 of the Agreement are hereby revised to reference "Revised Exhibit A, Revised Exhibit A-1, and Exhibit A-2."
4. Article 1, DEFINITIONS AND IDENTIFICATIONS, Sections 1.4, 1.9, and 1.11 of the Agreement are hereby amended to read as follows (original underlining omitted):

- 1.4 **Contract Administrator:** ~~The ranking managerial employee of the agency of COUNTY government which requested the Project, or some other employee expressly designated as Contract Administrator in writing by the County Administrator Port Everglades Chief Executive, or Assistant Director of Port Everglades, who is the representative of the Board of County Commissioners of Broward County, Florida~~ COUNTY concerning the Project. In the administration of this Agreement, as contrasted with matters of policy, all ~~p~~Parties may rely upon instructions or determinations made by the Contract Administrator; provided, however, that such instructions and determinations do not change the Scope of Services.
- 1.9 **Notice To Proceed:** A written ~~notice~~ authorization to proceed with the Project, phase, or task thereof, issued by the Contract Administrator.
- 1.11 **Subconsultant:** A firm, partnership, corporation, independent contractor (including 1099 individuals), or combination thereof ~~having a direct contract with a Consultant providing services to COUNTY through CONSULTANT~~ for all or any portion of the ~~advertised work or who furnishes skills or materials worked into a special design according to the plans and specifications for such work, but not those who merely furnish equipment or materials required by the plans and specifications~~ services under this Agreement.
5. Article 3, SCOPE OF SERVICES, Section 3.4 of the Agreement is hereby deleted and replaced with the following:
- 3.4 CONSULTANT shall pay its Subconsultants and suppliers providing services under this Agreement within fifteen (15) days following receipt of payment from COUNTY for such subcontracted work or supplies. CONSULTANT agrees that if it withholds an amount as retainage from a Subconsultant or supplier, it will release such retainage and pay same within fifteen (15) days following receipt of payment of retained amounts from COUNTY. The Contract Administrator may, at its option, increase allowable retainage or withhold progress payments unless and until CONSULTANT demonstrates timely payments of sums due to all its Subconsultants and suppliers.
6. Article 4, TIME FOR PERFORMANCE; CONTRACTORS DAMAGES; LIQUIDATED DAMAGES, Sections 4.2 and 4.3 of the Agreement are hereby amended to read as follows:
- 4.2 Prior to beginning the performance of any services under this Agreement, CONSULTANT must receive a Notice to Proceed. ~~CONSULTANT must receive written approval~~ a Notice to Proceed from the Contract Administrator prior to beginning the performance of services in any subsequent phases of this Agreement. Prior to granting approval for CONSULTANT to proceed to a subsequent phase, the Contract Administrator may, at his or her sole option,

require CONSULTANT to submit the itemized deliverables/ and documents identified in Revised Exhibit "A," Revised Exhibit "A-1," and Exhibit "A-2" for the Contract Administrator's review.

- 4.3 In the event CONSULTANT is unable to complete the above services because of delays resulting from untimely review by COUNTY or other governmental authorities having jurisdiction over the Project, and such delays are not the fault of CONSULTANT, or because of delays which were caused by factors outside the control of CONSULTANT, COUNTY shall grant a reasonable extension of time for completion of the services and shall provide reasonable compensation, if appropriate. It shall be the responsibility of CONSULTANT to notify COUNTY the Contract Administrator promptly in writing whenever a delay in approval by a governmental agency is anticipated or experienced, and to inform COUNTY the Contract Administrator of all facts and details related to the delay.

7. Article 5, COMPENSATION AND METHOD OF PAYMENT, Section 5.1, AMOUNT AND METHOD OF COMPENSATION, of the Agreement is hereby amended to read as follows (original underlining omitted):

5.1.1 Maximum Amount Not-To-Exceed Compensation

~~COUNTY agrees to pay CONSULTANT, as compensation for performance of all services as related to Revised Exhibit "A-1," required under the terms of this Agreement, the Salary Costs as described in Section 5.2 up to a maximum amount not to exceed of Five Hundred Fifty four Thousand Fifty two Dollars (\$554,052.00) for Basic Services, up to \$Zero (\$0) for Optional Services, and to reimburse CONSULTANT for Reimbursables as described in Section 5.3, up to a maximum amount not to exceed of Forty nine Thousand Four Hundred Twenty three Dollars and Fifty Cents (\$49,423.50) relating to services set forth in Revised Exhibit "A," for a total maximum amount not to exceed Six Hundred Three Thousand Four Hundred Seventy five Dollars and Fifty Cents (\$603,475.50). COUNTY agrees to pay CONSULTANT, as compensation for performance of all services specifically described as Phase II and as set forth in Revised Exhibit "A," the Salary Costs as described in Section 5.2 up to a maximum amount not to exceed of One Million Nine Hundred Eighty four Thousand Seven Hundred Seventeen Dollars (\$1,984,717.00) for such Services, up to \$Zero (\$0) for Optional Services, and to reimburse CONSULTANT for Reimbursables as described in Section 5.3, up to a maximum amount not to exceed of Four Hundred Fifty three Thousand Six Hundred Sixty six Dollars (\$453,666.00) for Phase II Reimbursables. Compensation to CONSULTANT for the performance of services identified in Revised Exhibit "A," Revised Exhibit "A-1," and Exhibit "A-2," and as otherwise required by this Agreement, shall be based upon the Salary Costs as described in Section 5.2 up to a maximum amount not-to-exceed of: Five Hundred Fifty-four Thousand Fifty-two Dollars (\$554,052.00) for services related to Phase 1, and Two~~

~~Million Four Hundred Two Thousand Seven Hundred Seventy-one Dollars (\$2,402,771.00) for services related to Phase 2, Tasks 2.1 – 2.6. The method of compensation shall be that of "maximum amount not-to-exceed," which means CONSULTANT shall perform all services set forth herein for total compensation in the amount of or less than that stated above. The total hourly rates payable by COUNTY for each of CONSULTANT's employee categories shall be shown on Revised Exhibit "B."~~

~~The maximum amount not to exceed compensation of Two Million Five Hundred Thirty-eight Thousand Seven Hundred Sixty-nine Dollars (\$2,538,769.00) for Phase I and Phase II Basic Services as set forth in Revised Exhibit "A" shall be paid out in accordance with the percentage amount set forth below:~~

~~Revised Exhibit "A"~~

Project Phase	Fee %	Fee Amount/Phase
Phase I:	100%	\$554,052.00

Project Phase	Fee %	Fee Amount/Phase
Phase II:	100%	\$1,984,717.00

5.1.2 Lump Sum Compensation. [Intentionally Left Blank]

~~COUNTY agrees to pay CONSULTANT, as compensation for performance of all Basic Services related to Revised Exhibit "A" that are required under the terms of this Agreement, a lump sum of \$ _____. In addition, COUNTY agrees to pay CONSULTANT up to \$ _____ for Optional Services, and to reimburse CONSULTANT for Reimbursables up to a maximum amount not to exceed of \$ _____ as described in Section 5.3. The total maximum not to exceed amount for Basic Services, Optional Services, and Reimbursables shall be \$ _____. The method of compensation for Basic Services shall be "lump sum," which means CONSULTANT shall perform all Basic Services set forth herein for total compensation in the amount stated above. The total hourly rates payable by COUNTY for each of CONSULTANT's employee categories are shown on composite Exhibit "B." COUNTY shall not pay CONSULTANT any additional sum for reimbursable expenses or additional services, if any, unless otherwise stated in Section 5.3 and Article 6.~~

~~The lump sum compensation of \$ _____ for Basic Services shall be paid out in accordance with the percentage amount set forth below:~~

Project Phase	Fee %	Fee Amount/Phase
Phase I:	____%	\$ _____
Phase II	____%	\$ _____

constitute a limitation, of any sort, upon CONSULTANT's obligation to incur such expenses in the performance of services hereunder.

8. Article 5, COMPENSATION AND METHOD OF PAYMENT, Section 5.2 of the Agreement is hereby amended, in part, to read as follows (original underlining omitted):

5.2 SALARY COSTS

The term Salary Costs as used herein shall mean the hourly rate actually paid to all personnel engaged directly on the Project, as adjusted by an overall multiplier which consists of the following: 1) a fringe benefits factor; 2) an overhead factor; and 3) an operating margin ~~as set forth on Revised Exhibit "B."~~ Said Salary Costs are to be used only for time directly attributable to the ~~Project~~ Project. The fringe benefit and overhead ~~factors~~ rates shall be certified by an independent Certified Public Accountant in accordance with the Federal Acquisition Regulation ("FAR") guidelines. Said certification shall be dated within one hundred eighty (180) days after CONSULTANT's most recently completed fiscal year. These rates shall remain in effect for the term of this Agreement except as provided for in this Section 5.2 inclusive of the subsections below.

If the certification for the most recently completed fiscal year is not available at the time of contracting, the certification shall be provided when it becomes available; provided however, CONSULTANT certifies that the rates and factors set forth herein are accurate, complete, and consistent with the FAR guidelines at the time of contracting. If applicable, Revised Exhibit "B" shall be modified to reflect any reduction in the FAR audited overhead and fringe benefit rates from the rates provided at the time of contracting. Any modification to Revised Exhibit "B" shall be effective retroactive to the date of execution of the Agreement, and if applicable, the CONSULTANT shall reimburse ~~the~~ COUNTY for any overbilling.

5.2.1 CONSULTANT shall require all of its ~~s~~Subconsultants to comply with the requirements of Section 5.2. Subconsultants may be exempted from the FAR audit requirements of Section 5.2 upon application to, and written approval by County Auditor.

5.2.2 Salary Costs for CONSULTANT and ~~s~~Subconsultants as shown in Revised Exhibit "B" are the Maximum Billing Rates, which are provisional, subject to audit of actual costs, and if the audit discloses that the actual costs are less than the costs set forth on Revised Exhibit "B" for ~~the~~ CONSULTANT or any ~~s~~Subconsultant, ~~the~~ CONSULTANT shall reimburse ~~the~~ COUNTY based upon the actual costs determined by the audit.

5.2.3 Unless otherwise noted, the Salary Costs stated above are based upon ~~the~~ CONSULTANT's "home office" rates. Should it become appropriate during

the course of ~~the~~ this Agreement that a "field office" rate be applied, then it is incumbent upon ~~the~~ CONSULTANT to submit a supplemental Revised Exhibit "B" reflective of such rates for approval by Contract Administrator and invoice ~~the~~ COUNTY accordingly.

- 5.2.4 The total hours payable by ~~the~~ COUNTY for any "exempt" or "non-exempt" personnel shall not exceed forty (40) hours per employee in any week. In the event the work requires ~~the~~ CONSULTANT's or ~~s~~Subconsultant's personnel to work in excess of forty (40) hours per week, any additional hours must be authorized in advance, in writing, by the Contract Administrator. If approved, Salary Costs for additional hours of service provided by nonexempt (hourly) employees or exempt (salaried) employees shall be invoiced to ~~the~~ COUNTY at no more than one and one-half of the employee's hourly rate and in a manner consistent with ~~the~~ CONSULTANT's or ~~s~~Subconsultant's applicable certified FAR audit and all other provisions of Section 5.2. In the event a "Safe Harbor" rate is elected for use by ~~the~~ CONSULTANT or ~~s~~Subconsultant, then the additional hours are payable at no more than the ~~maximum rates established in Revised Exhibit "B."~~ employee's regular rate.
- 5.2.5 CONSULTANT and any of its ~~s~~Subconsultants may alternatively use a "Safe Harbor" combined fringe benefit and overhead rate of 110% in lieu of providing fringe benefit and overhead cost factors certified by an independent Certified Public Accountant in accordance with the Federal Acquisition Regulation ("FAR") guidelines. The Safe Harbor rate, once elected, shall remain in place for the entire term of ~~the~~ Agreement, and be applicable for use as "home" and "field" fringe benefit and overhead rates, if applicable, and shall not be subject to audit under this Agreement. All other provisions of Section 5.2 remain in place.
- 5.2.6 The maximum hourly rates shown on Revised Exhibit "B" are subject to change annually beginning on January 1, 2017, and on each January 1 thereafter, upon written request thirty (30) calendar days prior to the ~~anniversary date~~ beginning of each annual period by CONSULTANT and approval by the Contract Administrator. Any increase in these rates shall be limited to the lesser of the change in cost of living or three percent (3%). The increase or decrease in CPI shall be calculated as follows: the difference of CPI current period less CPI previous period, divided by CPI previous period, times 100. The CPI current period shall mean the most recent published monthly index prior to contract anniversary. The CPI previous period shall mean for the same month of the prior year. All CPI indices shall be obtained from the U.S. Department of Labor table for Consumer Price Index - All Urban Consumers (Series ID CUURA320SA0) for the area of Miami-Fort Lauderdale, FL (All Items), with a base period of

1982-84 = 100. Any changes to the hourly rates shall be set forth on an amended Exhibit "B" executed by the Contract Administrator and the CONSULTANT.

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9. Article 5, COMPENSATION AND METHOD OF PAYMENT, Section 5.3, REIMBURSABLES, of the Agreement is hereby amended, in part, to read as follows:

5.3.1 In accordance with and pursuant to the Broward County Procurement Code, direct nonsalary expenses, entitled Reimbursables, directly attributable to the Project will be charged at actual cost, and shall be limited to the following:

...

e) Identifiable diving survey and testing costs approved by Contract Administrator.

...

10. Article 5, COMPENSATION AND METHOD OF PAYMENT, Section 5.4, METHOD OF BILLING, of the Agreement is hereby amended to read as follows (original underlining omitted):

5.4.1 For Maximum Amount Not-To-Exceed Compensation under Section 5.1.1

CONSULTANT shall submit billings which are identified by the specific project number on a monthly basis in a timely manner for all Salary Costs and Reimbursables attributable to the Project. These billings shall identify the nature of the work performed, the total hours of work performed and the employee category of the individuals performing same. Billings shall itemize and summarize Reimbursables by category and identify same as to the personnel incurring the expense and the nature of the work with which such expense was associated. Where prior written approval by Contract Administrator is required for Reimbursables, a copy of said approval shall accompany the billing for such reimbursable. Billings shall also indicate the cumulative amount of CBE participation to date ~~by completing Exhibit D, CBE Performance Report~~. The statement shall show a summary of Salary Costs and Reimbursables with accrual of the total and credits for portions paid previously. External Reimbursables and Subconsultant fees must be documented by copies of invoices or receipts which describe the nature of the expenses and contain a project number or other identifier which clearly indicates the expense is identifiable to the Project. Subsequent addition of the identifier to the invoice or receipt by CONSULTANT is not acceptable except for meals and travel expenses. Internal expenses must be documented by appropriate CONSULTANT's cost accounting forms with a

summary of charges by category. When requested, CONSULTANT shall provide backup for past and current invoices that records hours and Salary Costs by employee category, Reimbursables by category, and ~~subcontractor~~ Subconsultant fees on a task basis, so that total hours and costs by task may be determined.

5.4.2 For Lump Sum Compensation under Section 5.1.2

~~This Section is not applicable.~~ CONSULTANT shall submit billings which are identified by the specific project number on a monthly basis in a timely manner. These billings shall identify the nature of the work performed, the phase of work, and the estimated percent of work accomplished. Billings for each phase shall not exceed the amounts allocated to said phase. Billings shall also indicate the cumulative amount of CBE participation to date. The statement shall show a summary of fees with accrual of the total and credits for portions paid previously. When requested, CONSULTANT shall provide backup for past and current invoices that record hours, salary costs, and expense costs on a task basis, so that total hours and costs by task may be determined.

11. Article 6, OPTIONAL AND ADDITIONAL SERVICES, CHANGES IN SCOPE OF SERVICES, of the Agreement is hereby retitled to read "ADDITIONAL SERVICES; CHANGES IN SCOPE OF SERVICES" and Section 6.4, including all subsections thereunder, is hereby deleted and replaced with the following:

6.4 [Intentionally Left Blank]

12. Article 6, ADDITIONAL SERVICES, CHANGES IN SCOPE OF SERVICES, Sections 6.2, 6.3, and 6.5 of the Agreement are hereby amended to read as follows:

6.2 Costs of Additional Services identified by the Contract Administrator during the life of this ~~a~~Agreement and as contained in a written amendment will be compensated on an hourly basis, or an agreed upon lump sum, or as a reimbursable as provided in Article 5. Additional Services authorized by the Contract Administrator shall include a required completion date for CONSULTANT's performance of those additional services.

6.3 In the event a dispute between the Contract Administrator and CONSULTANT arise over whether requested services constitute additional services and such dispute cannot be resolved by the Contract Administrator and CONSULTANT, such dispute shall be promptly presented to COUNTY's ~~committee which negotiated this Agreement,~~ Director of Purchasing for resolution. The ~~committee's~~ Director's decision shall be final and binding on the ~~p~~Parties. The resolution shall be set forth in a written document in accordance with Section 6.1 above, if applicable. During the pendency of any dispute, CONSULTANT shall promptly perform the disputed services.

6.5 ~~As provided in Section 9.2.1, e~~Each proposed contract modification request that, by itself or aggregated with previous modification requests, increases the contract value by ten percent (10%) or more of the initial contract value, ~~or Fifty Thousand Dollars (\$50,000.00), whichever is less,~~ shall be reviewed by COUNTY for opportunities to include or increase CBE participation. CONSULTANT shall demonstrate good faith efforts to include CBE participation in change order work and shall report such efforts to the Office of Economic and Small Business Development.

13. Article 9, EEO AND CBE COMPLIANCE, of the Agreement is hereby deleted and replaced with the following:

ARTICLE 9
EQUAL EMPLOYMENT OPPORTUNITY AND CBE COMPLIANCE

9.1 No party to this Agreement may discriminate on the basis of race, color, sex, religion, national origin, disability, age, marital status, political affiliation, sexual orientation, pregnancy, or gender identity and expression in the performance of this Agreement. CONSULTANT shall comply with all applicable requirements of COUNTY's CBE Program as established by Broward County Business Opportunity Act of 2012, Section 1-81, Broward County Code of Ordinances (the "Act"), in the award and administration of this Agreement.

CONSULTANT shall include the foregoing or similar language in its contracts with any Subconsultants, except that any project assisted by the U.S. Department of Transportation funds shall comply with the non-discrimination requirements in 49 C.F.R. Parts 23 and 26.

Failure by CONSULTANT to carry out any of the requirements of this section shall constitute a material breach of this Agreement, which shall permit COUNTY to terminate this Agreement or to exercise any other remedy provided under this Agreement, Broward County Code of Ordinances, Broward County Administrative Code, or under other applicable law, all such remedies being cumulative.

9.2 CONSULTANT acknowledges that the Board, acting through the OESBD, may make minor administrative modifications to the CBE Program which shall become applicable to this Agreement if the administrative modifications are not unreasonable. Written notice of any such modification shall be provided to CONSULTANT and shall include a deadline for CONSULTANT to notify COUNTY if CONSULTANT concludes that the modification exceeds the authority under this section. Failure of CONSULTANT to timely notify COUNTY of its conclusion that the modification exceeds such authority shall be deemed acceptance of the modification by CONSULTANT.

COUNTY may add or increase the required participation of CBE firms under this Agreement in connection with any amendment, extension, modification, or change order to this Agreement that, by itself or aggregated with previous amendments, extensions, modifications, or change orders, increases the initial Agreement price by ten percent (10%) or more. CONSULTANT shall make a good faith effort to include CBE firms in work resulting from any such amendment, extension, modification, or change order and shall report such efforts, along with evidence thereof, to the OESBD.

9.3 CONSULTANT will meet the following CBE participation goal by utilizing the CBE firms for the following percentage of Services under this Agreement:

<u>CBE participation goal</u>	<u>10%</u>
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CONSULTANT stipulates that each CBE firm utilized to meet the CBE participation goal must be certified by the OESBD. CONSULTANT shall inform COUNTY immediately when a CBE firm is not able to perform or if CONSULTANT believes the CBE firm should be replaced for any other reason, so that the OESBD may review and verify the good faith efforts of CONSULTANT to substitute the CBE firm with another CBE firm. Whenever a CBE firm is terminated for any reason, including cause, CONSULTANT shall provide written notice to the OESBD and shall substitute another CBE firm in order to maintain the level of CBE participation required herein, unless otherwise provided herein or agreed in writing by the Parties. Such substitution shall not be required in the event the termination results from COUNTY modifying the scope of services and there is no available CBE to perform the new scope of services, in which event CONSULTANT shall notify COUNTY and the OESBD may adjust the CBE participation goal by written notice to CONSULTANT. CONSULTANT may not terminate for convenience a CBE firm without COUNTY's prior written consent, which consent shall not be unreasonably withheld.

9.4 In performing the services for this Project, the Parties hereby incorporate the list of CONSULTANT's participating CBE firms, addresses, scope of work, and the percentage of work amounts identified on each Letter of Intent into this Agreement (Exhibit C). Promptly upon execution of this Agreement by COUNTY, CONSULTANT shall enter into a formal contract with the CBE firms listed in Exhibit C and, upon request, shall provide copies of the contracts to the Contract Administrator and the OESBD.

9.5 CONSULTANT shall provide written monthly reports to the Contract Administrator attesting to CONSULTANT's compliance with the CBE participation goals stated in this article. In addition, CONSULTANT shall allow COUNTY to engage in on-site

reviews to monitor CONSULTANT's progress in achieving and maintaining its contractual and CBE Program obligations. Such review and monitoring shall be by the Contract Administrator in conjunction with the OESBD, unless otherwise determined by the County Administrator. COUNTY shall have access, without limitation, to CONSULTANT's books and records, including payroll records, tax returns and records, and books of account, on five (5) business days' notice.

9.6 In the event of CONSULTANT's noncompliance with its CBE participation goal (including without limitation the unexcused reduction of a CBE firm's participation), the affected CBE firm shall have the right to exercise any remedies as may be available as between the CBE firm and CONSULTANT.

9.7 The presence of a "pay when paid" provision in a CONSULTANT's contract with a CBE firm shall not preclude COUNTY or its representatives from inquiring into allegations of nonpayment.

9.8 By execution of this Agreement, CONSULTANT represents that it has not been placed on the discriminatory vendor list as provided in Section 287.134, Florida Statutes. COUNTY hereby materially relies on such representation in entering into this Agreement. An untrue representation of the foregoing shall entitle COUNTY to terminate this Agreement and recover from CONSULTANT all monies paid by COUNTY pursuant to this Agreement, and may result in debarment from COUNTY's competitive procurement activities.

14. Article 10, MISCELLANEOUS, Sections 10.3, 10.5, 10.12, and 10.23 of the Agreement are hereby deleted and replaced with the following:

10.3 AUDIT RIGHTS AND RETENTION OF RECORDS

CONSULTANT shall preserve all Contract Records (as defined below) for a minimum period of three (3) years after expiration or termination of this Agreement or until resolution of any audit findings, whichever is longer. Contract Records shall, upon reasonable notice, be open to COUNTY inspection and subject to audit and reproduction during normal business hours. COUNTY audits and inspections pursuant to this section may be performed by any COUNTY representative (including any outside representative engaged by COUNTY). COUNTY may conduct audits or inspections at any time during the term of this Agreement and for a period of three years after the expiration or termination of this Agreement (or longer if required by law). COUNTY may, without limitation, verify information, payroll distribution, and amounts through interviews, written affirmations, and on-site inspection with CONSULTANT's employees, Subconsultants, vendors, or other labor.

Contract Records include any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase orders, leases, contracts, commitments, arrangements, notes, daily diaries, drawings, receipts, vouchers and memoranda, and any and all other documents that pertain to rights, duties, obligations or performance under this Agreement. Contract Records include hard copy and electronic records, written policies and procedures, time sheets, payroll records and registers, cancelled payroll checks, estimating work sheets, correspondence, invoices and related payment documentation, general ledgers, insurance rebates and dividends, and any other records pertaining to rights, duties, obligations, or performance under this Agreement, whether by CONSULTANT or Subconsultants.

COUNTY shall have the right to audit, review, examine, inspect, analyze, and make copies of all Contract Records at a location within Broward County. COUNTY reserves the right to conduct such audit or review at CONSULTANT's place of business, if deemed appropriate by COUNTY, with seventy-two (72) hours' advance notice. CONSULTANT agrees to provide adequate and appropriate work space. CONSULTANT shall provide COUNTY with reasonable access to CONSULTANT's facilities, and COUNTY shall be allowed to interview all current or former employees to discuss matters pertinent to the performance of this Agreement.

CONSULTANT shall, by written contract, require its Subconsultants to agree to the requirements and obligations of this section.

Any incomplete or incorrect entry in such books, records, and accounts shall be a basis for COUNTY's disallowance and recovery of any payment reliant upon such entry. If an audit or inspection in accordance with this section discloses overpricing or overcharges to COUNTY of any nature by CONSULTANT or its Subconsultants in excess of five percent (5%) of the total contract billings reviewed by COUNTY, the reasonable actual cost of COUNTY's audit shall be reimbursed to COUNTY by CONSULTANT in addition to making adjustments for the overcharges. Any adjustments or payments due as a result of such audit or inspection shall be made within thirty (30) days from presentation of COUNTY's findings to CONSULTANT.

10.5 SUBCONSULTANTS

CONSULTANT shall utilize the Subconsultants identified in the proposal that were a material part of the selection of CONSULTANT to provide the services for this Project. CONSULTANT shall obtain written approval of the Contract Administrator prior to changing or modifying the list of Subconsultants submitted by CONSULTANT. Where CONSULTANT's failure to use Subconsultant results in

CONSULTANT's noncompliance with CBE participation goals, such failure shall entitle the affected CBE firm to damages available under local and state law. The list of Subconsultants is provided on Exhibit C-1, Schedule of Subconsultants, as attached hereto and made a part hereof. CONSULTANT shall bind in writing each and every approved Subconsultant to the terms stated in this Agreement, provided that this provision shall not, in and of itself, impose the insurance requirements set forth in Article 8 on CONSULTANT's Subconsultants.

10.12 TRUTH-IN-NEGOTIATION CERTIFICATE

CONSULTANT's compensation under this Agreement is based upon representations supplied to COUNTY by CONSULTANT, and CONSULTANT certifies that the wage rates, factual unit costs, and other information supplied to substantiate CONSULTANT's compensation, including, without limitation, in the negotiation of this Agreement, are accurate, complete, and current at the time of contracting. COUNTY shall be entitled to recover any damages it incurs to the extent any such representation is untrue.

10.23 SEVERABILITY

In the event any part of this Agreement is found to be unenforceable by any court of competent jurisdiction, that part shall be deemed severed from this Agreement and the balance of this Agreement shall remain in full force and effect.

15. Article 10, MISCELLANEOUS, Sections 10.7, 10.17, 10.18, 10.26, and 10.29 are hereby amended to read as follows (original underlining omitted):

10.7 INDEMNIFICATION OF COUNTY

CONSULTANT shall indemnify and hold harmless COUNTY, its officers and employees from liabilities, damages, losses, and costs, including, but not limited to, reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of CONSULTANT, ~~and~~ or other persons employed or utilized by CONSULTANT in the performance of this Agreement. The provisions of this section shall survive the expiration or earlier termination of this Agreement. To the extent considered necessary by Contract Administrator and County Attorney, any sums due CONSULTANT under this Agreement may be retained by COUNTY until all of COUNTY's claims for indemnification pursuant to this Agreement have been settled or otherwise resolved, and any amount withheld shall not be subject to payment of interest by COUNTY.

10.17 INDEPENDENT CONTRACTOR

CONSULTANT is an independent contractor under this Agreement. Services provided by CONSULTANT shall be subject to the supervision of COUNTY. In providing the services, CONSULTANT or its agents shall not be acting and shall not be deemed as acting as officers, employees, or agents of COUNTY, except as authorized by the Contract Administrator for permitting, licensing, or other regulatory requirements.

10.18 THIRD PARTY BENEFICIARIES

~~Except as provided under Section 9.2.6, n~~Neither CONSULTANT nor COUNTY intends to directly or substantially benefit a third party by this Agreement. ~~The parties expressly acknowledge that it is not their intent to create any rights or obligations in any third person or entity under this Agreement.~~ Therefore, the parties agree acknowledge that there are no third party beneficiaries to this Agreement and that no third party shall be entitled to assert a right or claim against either of them based upon this Agreement.

10.26 LAW, JURISDICTION, VENUE, WAIVER OF JURY TRIAL

This Agreement shall be interpreted and construed in accordance with and governed by the laws of the state of Florida. All parties agree acknowledge and accept that jurisdiction of any controversies or legal problems arising out of this Agreement, and any action involving the enforcement or interpretation of any rights hereunder, shall be exclusively in the state courts of the Seventeenth Judicial Circuit in Broward County, Florida, and venue for litigation arising out of this Agreement shall be exclusively in such state courts, forsaking any other jurisdiction which either party may claim by virtue of its residency or other jurisdictional device. **BY ENTERING INTO THIS AGREEMENT, CONSULTANT AND COUNTY HEREBY EXPRESSLY WAIVE ANY RIGHTS EITHER PARTY MAY HAVE TO A TRIAL BY JURY OF ANY CIVIL LITIGATION RELATED TO THIS AGREEMENT. IF A PARTY FAILS TO WITHDRAW A REQUEST FOR A JURY TRIAL IN A LAWSUIT ARISING OUT OF THIS AGREEMENT AFTER WRITTEN NOTICE BY THE OTHER PARTY OF VIOLATION OF THIS SECTION, THE PARTY MAKING THE REQUEST FOR JURY TRIAL SHALL BE LIABLE FOR THE REASONABLE ATTORNEYS' FEES AND COSTS OF THE OTHER PARTY IN CONTESTING THE REQUEST FOR JURY TRIAL, AND SUCH AMOUNTS SHALL BE AWARDED BY THE COURT IN ADJUDICATING THE MOTION.**

10.29 PAYABLE INTEREST

10.29.1 Payment of Interest. ~~Except as required by the Broward County Prompt Payment Ordinance,~~ COUNTY shall not be liable for to pay any interest

to CONSULTANT for any reason, whether as prejudgment interest or for any other purpose, and in furtherance thereof CONSULTANT waives, rejects, disclaims, and surrenders any and all entitlement it has or may have to receive interest in connection with a dispute or claim based on or arising from, related to, or in connection with this Agreement. This subsection shall not apply to any claim of interest, including for post-judgment interest, if such application would be contrary to applicable law.

10.29.2 Rate of Interest. ~~In any instance where the prohibition or limitations of Section 10.29.1 are~~ If the preceding subsection is inapplicable or is determined to be invalid or unenforceable by a court of competent jurisdiction, the annual rate of interest payable by COUNTY under this Agreement, whether as prejudgment interest or for any other purpose, shall be, to the full extent permissible under applicable law, 0.25 percent (one quarter of one percent) simple interest (uncompounded).

16. Article 10, MISCELLANEOUS, of the Agreement is hereby amended by adding the following new section:

10.33 PUBLIC RECORDS

To the extent CONSULTANT is acting on behalf of COUNTY as stated in Section 119.0701, Florida Statutes, CONSULTANT shall:

- a. Keep and maintain public records required by COUNTY to perform the services under this Agreement;
- b. Upon request from COUNTY, provide COUNTY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time and at a cost that does not exceed that provided in Chapter 119, Florida Statutes, or as otherwise provided by law;
- c. Ensure that public records that are exempt or confidential and exempt from public record requirements are not disclosed except as authorized by law for the duration of this Agreement and following completion or termination of this Agreement if the records are not transferred to COUNTY; and
- d. Upon expiration or termination of this Agreement, transfer to COUNTY, at no cost, all public records in possession of CONSULTANT or keep and maintain public records required by COUNTY to perform the services. If CONSULTANT transfers the records to COUNTY, CONSULTANT shall destroy any duplicate public records that are exempt or confidential and

exempt. If CONSULTANT keeps and maintains the public records, CONSULTANT shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to COUNTY upon request in a format that is compatible with the information technology systems of COUNTY.

The failure of CONSULTANT to comply with the provisions of this section shall constitute a material breach of this Agreement entitling COUNTY to exercise any remedy provided in this Agreement or under applicable law.

A request for public records regarding this Agreement must be made directly to COUNTY, who will be responsible for responding to any such public records requests. CONSULTANT will provide any requested records to COUNTY to enable COUNTY to respond to the public records request.

Any material submitted to COUNTY that CONSULTANT contends constitutes or contains trade secrets or is otherwise exempt from production under Florida public records laws (including Florida Statutes Chapter 119) ("Trade Secret Materials") must be separately submitted and conspicuously labeled "EXEMPT FROM PUBLIC RECORD PRODUCT – TRADE SECRET." In addition, CONSULTANT must, simultaneous with the submission of any Trade Secret Materials, provide a sworn affidavit from a person with personal knowledge attesting that the Trade Secret Materials constitute trade secrets under Florida Statutes Section 812.081 and stating the factual basis for same. In the event that a third party submits a request to COUNTY for records designated by CONSULTANT as Trade Secret Materials, COUNTY shall refrain from disclosing the Trade Secret Materials, unless otherwise ordered by a court of competent jurisdiction or authorized in writing by CONSULTANT. CONSULTANT shall indemnify and defend COUNTY and its employees and agents from any and all claims, causes of action, losses, fines, penalties, damages, judgments, and liabilities of any kind, including attorneys' fees, litigation expenses, and court costs, relating to the non-disclosure of any Trade Secret Materials in response to a records request by a third party.

IF CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF FLORIDA STATUTES CHAPTER 119 TO CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (954) 523-3404, JORHERNANDEZ@broward.org, 1850 ELLER DRIVE, SUITE 603, FORT LAUDERDALE, FLORIDA 33316.

17. Revised Exhibit "A" and Revised Exhibit "A-1," Scope of Services, of the Agreement are hereby supplemented with Exhibit "A-2," attached hereto and incorporated into and made part of the Agreement.
18. Revised Exhibit "E" of the Agreement is hereby deleted and replaced with Revised Exhibit "E," Insurance Requirement for Port Everglades Deepening and Widening Project, attached hereto and incorporated into and made part of the Agreement.
19. Preparation of this Fourth Amendment to the Agreement has been a joint effort of COUNTY and CONSULTANT, and the resulting document shall not, solely as a matter of judicial construction, be construed more severely against one of the parties than any other.
20. All other terms and conditions of the Agreement, not inconsistent herewith, shall remain in full force and effect and are to be performed at the level specified in the Agreement.
21. This Fourth Amendment to the Agreement shall be effective upon execution by the Parties, and may be fully executed in multiple copies by all parties, each of which, bearing original signatures, shall have the force and effect of an original document.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

IN WITNESS WHEREOF, the Parties have made and executed this Fourth Amendment to the Agreement: BROWARD COUNTY, through its BOARD OF COUNTY COMMISSIONERS, signing by and through its Mayor or Vice-Mayor, authorized to execute same by Board action on the ___ day of _____, 20___, and DAVID MILLER & ASSOCIATES, INC., INC., signing by and through its Resident, duly authorized to execute same.

COUNTY

ATTEST:

BROWARD COUNTY, by and through its Board of County Commissioners

Broward County Administrator, as
Ex-Officio Clerk of the Broward County
Board of County Commissioners

By _____
Mayor

____ day of _____, 20__

Insurance requirements
approved by Broward County
Risk Management Division

Approved as to form by
Joni Armstrong Coffey
Broward County Attorney
Port Everglades Department
1850 Eller Drive, Suite 502
Fort Lauderdale, Florida 33316
Telephone: (954) 523-3404
Telecopier: (954) 468-3690

By Carlos De La Guerra 6.2.17
Signature (Date)
CARLOS DE LA GUERRA
RISK MANAGEMENT & CONT
BUSINESS ADMINISTRATION DIVISION
PORT EVERGLADES

By Al A. DiCalvo 6/2/17
Signature (Date)
Al A. DiCalvo
Assistant County Attorney

Russell J. Morrison 6/2/17
Signature (Date)
Russell J. Morrison (Date)
Senior Assistant County Attorney

Print Name and Title above

AAD:cr
DavidMiller 4thAmd_v4Final-2017-0530
5/30/17
#12-3004.03

FOURTH AMENDMENT TO AGREEMENT BETWEEN BROWARD COUNTY AND DAVID MILLER & ASSOCIATES, INC., FOR CONSULTING AND PROFESSIONAL ENGINEERING SERVICES FOR PORT EVERGLADES DEEPENING AND WIDENING PROJECT (RLI# R1049105R1)

CONSULTANT

ATTEST:

Corporate Secretary

(Print/Type Name)

(Corporate Seal)

DAVID MILLER & ASSOCIATES, INC.

By

President or Vice-President

David Miller, President
(Print/Type Name and Title)

31 day of May, 2017.

OR

WITNESSES:

Signature

Vinico Vannicola
Print/Type Name

Signature

Luke Miller
Print/Type Name

EXHIBIT "A-2"
SCOPE OF SERVICES

To

FOURTH AMENDMENT

**Consulting and Professional Engineering Services
Port Everglades Deepening and Widening Project**

RLI R1049105R1

I. Introduction / Background

This amendment will consist of providing Broward County Port Everglades Department (and Seaport Engineering & Construction Division) with additional consulting and professional engineering services by David Miller & Associates, Inc. ("CONSULTANT"). The following scope of work includes revisions to a) the Phase 2 Preconstruction Engineering and Design (PED) phase diving survey protocols (Tasks 2.1.2 and 2.4.1 of Amendment 3) that have become necessary due to interagency coordination with the various environmental resource agencies that make up the Interagency Working Group (IWG), and b) interagency coordination and facilitation efforts (Tasks 2.2.1, 2.2.2, 2.2.3, and 2.2.4 of Amendment 3). These tasks are critical pieces of the environmental and facilitation efforts per the Port Everglades Navigation Improvements Project (PENIP) Design Agreement between Port Everglades and the Department of the Army (DOA), and is considered "Work In Kind". The diving protocols referenced herein have been discussed and vetted during IWG conferences with the resource agencies and contain the agreed upon field work, documentation, and reporting procedures for the PED phase of the Federal Harbor Civil Works PENIP.

II. Phase 2 – Preconstruction Engineering and Design (PED) Phase Activities

Only the tasks listed herein are modified by this Scope of Services; all other tasks remain as described in the existing Phase 2 Scope of Services.

Task 2.1 Biological Studies and Investigations in Support of Permitting

...

Task 2.1.2 Perform Quantitative Baseline Reef Survey

Perform Baseline (Reconnaissance) Survey and provide deliverables as stipulated by Attachment 2.1.2, "Reconnaissance Survey Protocol Port Everglades Navigation Improvements Project, March 2017"

Deliverable: 1) in water baseline survey; 2) draft and final reports
Due Date (from date of NTP): 1) 120 days; 2) 195 days (draft), 2 weeks after comments received from Port (final)

...

Task 2.2 Interagency Coordination and Facilitation:

Task 2.2.1 Participation in Agency and PDT Meetings and Teleconference Calls

The CONSULTANT will participate in all applicable calls and meetings at the request of the Port regarding the permitting of the PENIP project, including those with the FDEP, USACE, NMFS, USFWS, Broward County and others. Minutes of all meetings, if not prepared by others, shall be prepared by CONSULTANT.

Deliverable: Meeting summaries
Due Date: Project completion

Task 2.2.2 Prepare Public, Interagency, and Stakeholder Outreach Plan

In order to provide stakeholder (governmental and public) involvement in the development of the revised comprehensive monitoring plan, identification of coral relocation sites, and visual monitoring during construction, consultant shall prepare an outreach plan. The plan will identify stakeholders, opportunities for stakeholder involvement, goals and expectations of facilitation efforts proposed and means to attract involvement from the various maritime user groups such as dive shops, commercial and recreational fisherman, and others. A draft plan will be prepared for County and United States Army Corps of Engineers (USACE) review and a final plan will be prepared following receipt of comments.

Deliverable: Draft and final plan submittal
Due Date (from date of NTP): 75 days (draft), 14 days following receipt of comments (final)

Task 2.2.3 Provide Facilitation for Revised Monitoring Plan, Agency, and Stakeholder Meeting

In order to facilitate overall revision to the comprehensive monitoring plan, Essential Fish Habitat Plan, the Endangered Species Biological Opinion, and the Adaptive Management Plan, there will be a review of the background material on the environmental issues and participation in the presentation by the USACE on the lessons learned from the PortMiami dredging project. Initial discussions with the USACE Environmental Lead, the Port Everglades Environmental Program Manager, and project consultants and scientists would also be part of the background discussions.

At a minimum, expected governmental stakeholders would include:

- United States Army Corps of Engineers, Jacksonville District
- United States Environmental Protection Agency
- United States National Marine Fisheries Service
- Florida Department of Environmental Protection
- Florida Fish & Wildlife Conservation Commission
- Broward County Port Everglades and Broward County Environmental Protection and Growth Management Department Environmental Staff

Representatives of each key stakeholder organization will be initially identified through consultation and interviews with USACE staff, Broward County staff, and with their lead project consultants. This list of stakeholders will be refined through the one-on-one meetings with the key stakeholders.

The CONSULTANT will assess through one-on-one meetings the concerns that each of the stakeholders will want addressed through facilitated discussions. This will be done preferably through face-to-face meetings, and possibly via telephone conference calls. The CONSULTANT will seek agreement on which stakeholders participate in the facilitated discussions.

Facilitate meetings of the stakeholders (Port Everglades Interagency Work Group (IWG)) using an agenda developed through the one-on-one meetings and from previous IWG meetings. Goals and objectives of the meeting shall be clearly outlined based on discussions with the stakeholders. In addition to staff attending the facilitation session, the meeting will be video-recorded so as to ensure all recommendations and comments are captured for inclusion in the report.

The meeting shall be attended by CONSULTANT facilitation staff and, if appropriate, the marine scientists leading the environmental studies.

A separate public outreach effort will be made, and coordinated with Broward County's Public Relations firm, where the general concepts of the monitoring plan are presented and comments and suggestions solicited from attendees. Attendees will be solicited through newspaper and other social media announcements and through the USACE National Environmental Policy Act (NEPA) Scoping Meetings. Notification can also be sent to the names on the USACE Public Notice mailing list used during the Feasibility Study process. Comments from the public outreach meeting will be included in a report to the government stakeholders.

Follow-up discussions with interested non-governmental stakeholders will occur to ensure that their interests, issues, and concerns are accurately represented. Notes from the governmental stakeholder meetings, after verification with meeting attendants, will be shared with the interested non-governmental parties and any comments or issues raised will be shared with the governmental stakeholder meeting attendants.

CONSULTANT will coordinate logistics of the various meetings and recordings outlined above.

Deliverable: Work plan and facilitation preparation and coordination

Due Date: Completion of all environmental regulatory requirements.

Task 2.2.4 Prepare Summary Report from Facilitation Meeting

CONSULTANT will prepare a summary report of the stakeholder and agency involvement during the facilitation session. This report will include a list of attendees and their affiliations, comments, and copies of the notes taken by the facilitator during the meeting. This report will summarize the goals of the meeting, findings of the meeting, and conclusions regarding potential requests of all parties as to input on the comprehensive monitoring program.

Deliverable: Draft and final reports

Due Date: 30 days and 45 days after receipt of comments, respectively, from each meeting date.

...

Task 2.4 Listed Coral Species Surveys

Task 2.4.1 Conduct Coral Survey and Prepare Report

Provide Endangered Species Act (ESA) Survey, including deliverables, as stipulated by Attachment 2.4.1, “Endangered Species Act Listed Coral Species Survey Study Plan Port Everglades Navigation Improvements Project, March 2017”

Deliverable: 1) ESA listed species survey protocol; 2) Draft and final reports

Due Date (from date of NTP): 1) 150 days; 2) 195 days (draft), 2 weeks after comments received from Port (final)

...

Task 2.7 Optional Additional Services

Consultant shall provide additional services, as identified by the Contract Administrator, which are related to but beyond the level of effort of the scope of work outlined for Phase II, Tasks 2.1 through 2.6. Services provided under this task must be initiated by a separate written Notice to Proceed issued by the Contract Administrator.

III. Time for Performance

The schedule for deliverables and milestones to be performed under this scope of services is detailed above for each Task, with the total number of calendar days calculated from the Notice to Proceed unless noted otherwise.

**Attachment 2.1.2 to Exhibit "A-2"
(RLI# R1049105R1)**

**Reconnaissance Survey Protocol
Port Everglades
Navigation Improvements Project**

March 2017

**(Developed at the Interagency Working Group (IWG) meeting October 4, 2016,
Amended per IWG conference call January 18, 2017 and per draft review on
February 1, 2017)**

Prepared for:

**David Miller and Associates
130 Park Street SE, Suite 350
Vienna, VA 22180**

and

**Broward County
Port Everglades Department
1850 Eller Drive
Fort Lauderdale, FL 33316**

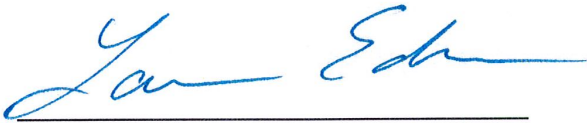
and

**Jacksonville District
US Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, FL 32207**

Prepared by:

**Dial Cordy and Associates Inc.
1011 Ives Dairy Road, Suite 210
Miami, FL 33179**

The following signatories agree to the contents of this document, Reconnaissance Survey Protocol for the Port Everglades Navigation Improvements Project. This Survey is based on the best available information as of the date of this document as well as budget and schedule considerations. The action area as defined by the purple line on Figure 1 will be reevaluated if additional information is received at a later date which shows a change in the expected extent of potential indirect impacts.

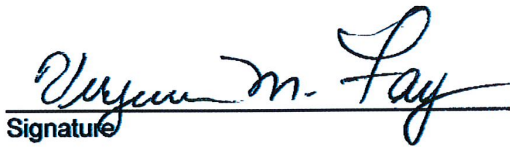


Signature

3/28/2017

Date

Lainie Edwards
Program Administrator
Beaches, Inlets and Ports Program
Florida Department of Environmental Protection



Signature

4/3/17

Date

Virginia Fay
Assistant Regional Administrator
Habitat Conservation Division
NOAA Fisheries Service

See Electronic signature below.

Signature

Date

Eric T. Summa
Chief, Planning and Policy Division
U.S. Army Corps of Engineers
Jacksonville District



Signature

3/22/17

Date

David Anderton
Assistant Director
Port Everglades

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Reconnaissance Survey Protocol for Port Everglades Navigation Improvements Project

The following reconnaissance survey protocol for the Port Everglades Navigation Improvements Project (PENIP) reflects the methods described and discussed at the Interagency Working Group (IWG) meeting held on October 4, 2016 at Loxahatchee National Wildlife Refuge, Boynton Beach, Florida. This protocol was further amended per comments received during a follow up IWG teleconference on January 18, 2017, and further revised on February 1, 2017, as part of the draft review.

1.0 RECONNAISSANCE SURVEY GOAL

The goal of the Port Everglades reconnaissance survey is to obtain information on natural communities for project planning and Florida Department of Environmental Protection (FDEP) state permitting within 150 meters (m) of the existing Port Everglades entrance channel. The area within 150 m of the entrance channel (also known as the "mixing zone") was identified through the National Environmental Policy Act (NEPA) process by the Army Corps of Engineers (USACE) to be the area of direct and indirect impact predicted to occur due to the deepening and widening of the Outer Entrance Channel (OEC) (USACE 2015).

2.0 RECONNAISSANCE SURVEY OBJECTIVES

The specific objectives of the reconnaissance survey are to obtain information to determine the following:

- a) Amount of compensatory mitigation required to offset impacts
 - i) Uniform Mitigation Assessment Method (UMAM) (62-345, Florida Administrative Code (F.A.C.))
 - ii) Current condition of resources (373.414(1)(a)(7), and 373.414(18), Florida Statute (F.S.))
- b) Mitigation Plan (373.414, F.S.)
 - i) Establish a reference dataset to set success criteria
 - ii) Determine appropriate enhancement activities (e.g., nurseries and out-planting).
- c) Impact Minimization (Environmental Resource Permit (ERP) Applicant's Handbook, Vol. 1, 10.2.1)
 - i) Distribution and abundance of benthic organisms (not limited to corals)
 - ii) Plan for relocation of benthic organisms out of the predicted impact area
- d) Provide data outside of the 150 m mixing zone to characterize habitats more distant from the channel for consultation with National Marine Fisheries Service (NMFS) and NEPA determinations, including Essential Fish Habitat (EFH).
- e) Document any seagrasses that are present along transects.
- f) Inform the design of future surveys, including pre-construction, construction, and post-construction.

3.0 SPATIAL EXTENT OF RECONNAISSANCE SURVEY

The spatial extent of the reconnaissance survey area includes the predicted direct impact area (area of the dredging footprint) and the 150 m indirect impact area (mixing zone) both north and south of the channel, for which USACE agreed in the final EIS to provide up front mitigation. This area covers potential dredge and dredge support vessel anchoring areas outside of the dredge footprint. Additional survey areas outside of the mixing zone have also been added within the Endangered Species Act (ESA) study area boundary as requested by NMFS for EFH consultation purposes. For multiple purposes, including EFH and ESA, an area larger than the mixing zone is being evaluated for potential project-related sedimentation (Figure 1, purple line) and assist in

characterizing this area for the EFH consultation, 25 additional transects have been added to this survey protocol.

For the resources within the direct impact areas and downslope areas that will not be surveyed due to concerns regarding diver safety, the data collected within the adjacent habitat type will be used to estimate current condition. The outer reef direct impact area will be evaluated using data collected only from the northern side of the channel.

Benthic resource data from other sources will be reviewed, discussed, compared and contrasted with data collected from this survey and will be included within the report.

4.0 RECONNAISSANCE SURVEY ASSESSMENT AREAS

Reconnaissance survey areas will be conducted by habitat type, using the Walker and Klug 2014 data set. Within the mixing zone there are eight (8) habitat types north and nine (9) habitat types to the south of the channel that will be surveyed. Habitat types on the north side to be surveyed in order from west to east include: artificial, colonized pavement shallow; linear reef inner, linear reef middle, colonized pavement deep, linear reef outer, spur and groove, aggregated patch reef deep. Habitat types on the south side include: ridge shallow, colonized pavement shallow, artificial, linear reef inner, linear reef middle, colonized pavement deep, linear reef outer, spur and groove, and aggregated patch reef deep. The eastern most habitat type, outer ridge deep, will not be surveyed using this protocol.

5.0 SURVEY METHODS

Reconnaissance survey methods will employ *in situ* data collection methods along temporary transects by qualified scientific divers. Scientific divers completing in-water survey work and staff tasked with data management and analysis shall be qualified biologists and shall meet at least the following minimum requirements:

- 1) Bachelor of Science in Marine Biology, Biology with a concentration in marine sciences, Environmental Science with a minor in Biology, or similar degree;
- 2) Documented experience monitoring hardbottom / coral reef communities;
- 3) Scientific knowledge of marine benthic ecosystems and organisms, including but not limited to scleractinian corals, octocorals, sponges and algae.

Video will be recorded along each transect at a rate of five (5) m per minute. Video will also include a panoramic video of the landscape at the beginning and end of each transect. Representative photographs including landscape views and substrate types will be collected for all sites. See Figure 1 for graphic display of proposed sampling transect locations and see Appendix A for transect coordinates.

Each transect will be 30 m long. Along each transect a 1 meter wide belt survey (30 m²) will be conducted on the right side of the transect tape. On the left side of the transect tape quadrat data will be collected within seven (7) 0.5 m² quadrats (located at the transect ends and every 5 m in between), for a total area of 3.5 m² quadrat data per transect.

In each habitat type to the north and south of the channel and within the mixing zone, 10 transects will be sampled for a sub-total of 170 transects (Figure 1 and Table 1). Transects have been randomly stratified in each habitat type within a buffered area. In ArcView GIS a 10 m buffer area was established for each habitat type, so that no transect would be closer to a habitat boundary than 10 m, including a transition from reef to sand. Also, a 10 m boundary was applied to transects, so that no transects touch or overlap each other. An additional 25 transects will be placed outside of the mixing zone to provide additional information for EFH consultation (Table 2). A result a total of 195 transects will be surveyed under this protocol (Figure 1). Based upon bathymetry data, the 195 proposed transects are in depths from 11-86 feet. There are 65 transects in 11-29 feet, 85 transects in 30-59 feet, and 45 transects in 60-86 feet. The same methods will be used for all 195 transects and the results for all transects will be included in the reconnaissance survey report. Planned GPS points for all transect

origins and ends are provided in Appendix A. Actual coordinates will be provided in the report.

Table 1 Port Everglades reconnaissance survey sampling design for transects within 150 m mixing zone.

	Port Everglades Reconnaissance Survey Plan
Number of transects	170
Number of quadrats per transect	7
Area per quadrat (m ²)	0.5
Area sampled in quadrats per transect (m ²)	3.5
Area sampled in belt per transect (m ²)	30
Total area sampled in quads (m ²)	595
Total area sampled in belt (m ²)	5,100
Acres of reef within mixing zone	130.6
Reef (m ²) area within mixing zone*	528,644.9
% of area sampled with quads	0.11
% of area sampled with belt	0.96

* For the deep ridge habitat type, data from previous surveys will be reviewed and synthesized into the report.

Table 2 Port Everglades reconnaissance survey sampling design that will be used to help characterize the reef habitats more distant from the channel

	Port Everglades Reconnaissance Survey Plan - EFH
Number of transects	25
Number of quadrats per transect	7
Area per quadrat (m ²)	0.5
Area sampled in quadrats per transect (m ²)	3.5
Area sampled in belt per transect (m ²)	30
Total area sampled in quads (m ²)	87.5
Total area sampled in belt (m ²)	750
Acres of reef within 1050x1020m	695.5
Reef (m ²) area within 1050x1020m*	2,814,783
% of area sampled with quads	0.003
% of area sampled with belt	0.027

* For the deep ridge habitat type, data from previous surveys will be reviewed and synthesized into the report.

5.1 Transect Data Collection

The following data will be collected along each transect line:

1. Digital video will be collected 50 cm above the bottom. No analysis of the video is required under the reconnaissance survey. It should be noted that small organisms (<3 cm) from this height may not be identifiable to species. Video will be acquired at a rate of 5 m per minute to provide video that may be analyzed using Point Count, but this analysis will not be completed under this plan. A camera without distortion (i.e., without a fish-eye lens) will preferentially be used to collect video. Cameras with fish-eye lens (e.g., GoPro cameras) will not be used to collect video, except as a back-up if the primary camera fails. Any videos collected with a GoPro or other camera not suitable for quantitative analysis will be recorded in the field notes and provided in the final report.

2. Physical features, including sand patches and substrate type along the transect, will be noted. Soft substrate categories will include coarse sand, fine sand (mud-like), and mixed (coarse and fine) sand. Soft substrates will be characterized visually and tactilely. Additional categories, after consultation with the IWG, may be added when encountered.

The following data will be collected from within the belt transect:

1. Coral identification to species, maximum dimension measured, and counted.
2. *Xestospongia muta* counts by size classes (to 0-10 cm, 10.1 – 25 cm, 25.1 – 50 cm, >50 cm).

The following data will be collected from within each quadrat:

1. Percent cover by functional groups (simplified Benthic Ecological Assessment for Marginal Reefs) (BEAMR)) (Makowski et al. 2009). See Table 3 for a list of functional groups.
2. Octocorals will be identified to genus, maximum dimension measured, and counted.
3. Sponges will be identified by morphotype (i.e., encrusting, erect branching, tube / vase, massive / amorphous, and spherical) and counted by size class to 0-10 cm, 10.1 – 25 cm, 25.1 – 50 cm, >50 cm.).

Draft data sheets for the quadrat data and belt transect data are included as Figure 2. These may be updated and will be finalized with concurrence from agencies before field work is initiated.

Table 3 Functional group data to be collected within reconnaissance survey quadrats.

Functional Groups to be Used (N=14):
Sediment (by type: fine, coarse, mixed)
Bare substratum
Seagrasses
Macroalgae (by Family)
Turf algae
CCA
Cyanobacteria
Sponges
Corals
Octocorals
Zoanthids
Hydrocorals
Sessile worms
"Other invertebrates"
"Other Invertebrates" includes:
-Anemones
-Bivalves
-Barnacles
-Bryozoans
-Tunicates

6.0 QUALITY CONTROL/QUALITY ASSURANCE

Quality control and quality assurance (QA/QC) are ongoing processes with checks and balances to ensure consistent, accurate and precise data collection, entry, and analysis. Quality control begins with scientific diver training and calibration exercises, before actual data collection commences. Scientific divers will spend up to three (3) full field days training, collecting data, comparing results and discussing differences in order to reduce inter-observer variability (to attain 10% or less). Divers will be cross trained across tasks. Agency staff are invited to participate in part or all of the field days, including days devoted to QA/QC activities.

During data collection, all scientific divers will check their own field datasheets after a dive to ensure completeness, legibility, and accuracy. Once field data sheets are

cleaned and dried at the office, if any changes to data sheets need to be made, the changes will be made by a single strikethrough of the original entry, and the new entry made with a colored marker initialed and dated. Changes will only be made by the original data collector, and an explanation for changes will be provided. After any changes to the data sheet are finalized, data will be entered into a project specific Excel spreadsheet. A staff member (other than the person who entered the data) will QA/QC the entered spreadsheet data against the original data sheet (or a photocopy) to ensure the correct transfer of the data. Once data is entered and QA'd both the original data collector and person conducting the QA should sign and date the data sheet to confirm that the data has been validated and finalized. Data sheets will be electronically scanned for the record. All photographs and video will be filed by transect on a routine basis.

7.0 REPORTING

Data deliverables will include digital photo and video files named with transect information, sorted by assessment area, copies of field datasheets (if requested by agencies), and Excel spreadsheets with complete and accurate data.

A narrative report will be written and provided with descriptive statistics (mean and standard deviation presented in tabular format), which shall be summarized by transect, assessment area, habitat type, and reef zone. Excel spreadsheets for all statistics within the report shall also be provided. The report will include a qualitative description of assessment areas, a list of taxa observed, and any notable physical features.

All data (*in situ* (actual) transect coordinates, photo and video files, scanned data sheets, and Excel spreadsheets – raw data) will be available within 30 days after all field data collection is completed. Data will be submitted to Port Everglades and the USACE. Once data have been reviewed by the Port and Corps, it will be made available to the IWG. A draft report will be provided to Port Everglades and the USACE within 90 days after field data collection is completed. Once the report is acceptable to the Port and USACE, it will be sent to agencies for review. A final report will be submitted within 10 days of receiving comments from all agencies.

8.0 LITERATURE CITED

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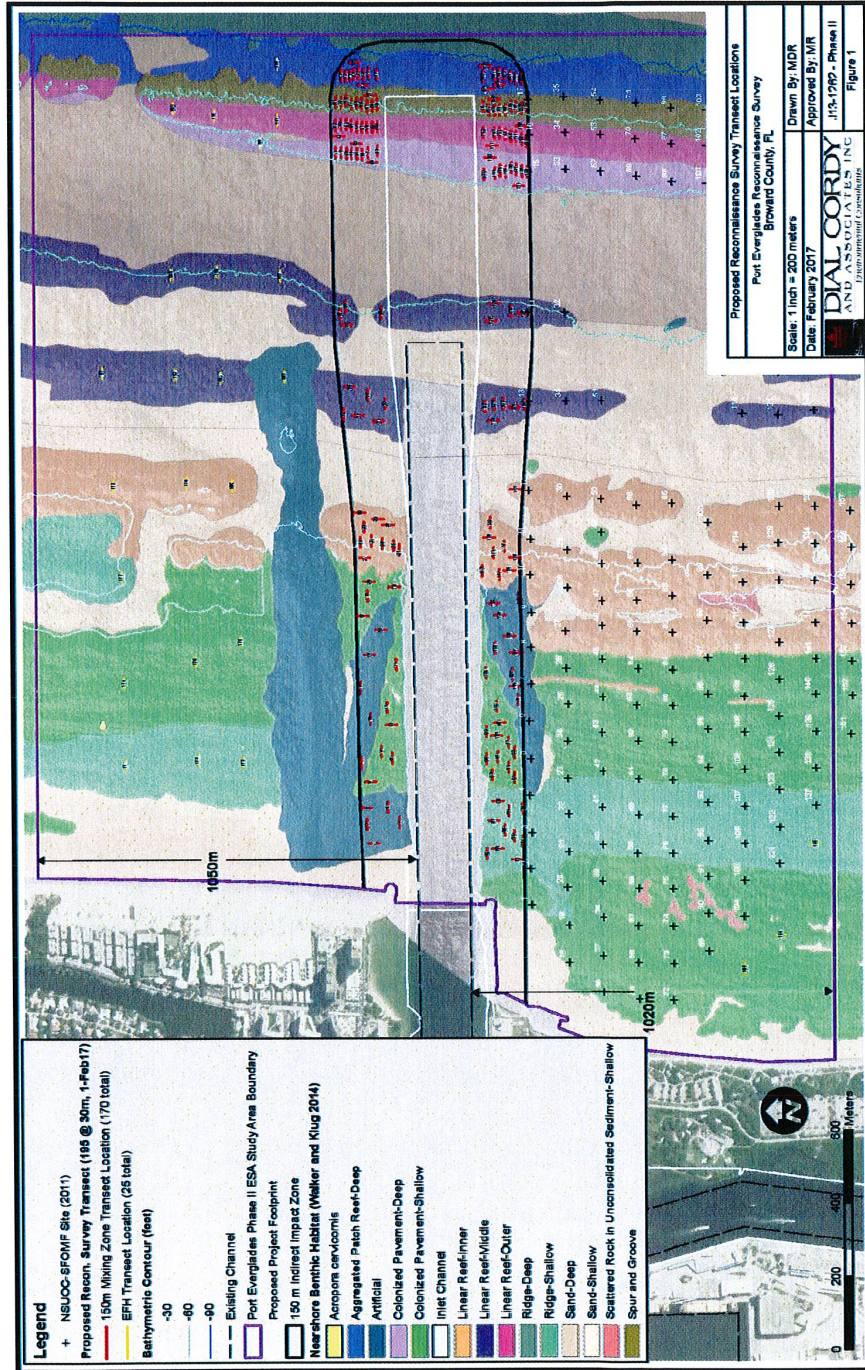


Figure 1. Proposed Reconnaissance Survey Transect Locations

Project Name: PE Date: 8/17/17 Time: 12:30/45
 Transect Name: Transect 1 Date: 8/17/17 Time: 2:5/55
 Date: 8/17/17 Date: 8/17/17 Date: 8/17/17
 Transect Name: Transect 2 Date: 8/17/17 Time: 2:5/55
 Date: 8/17/17 Date: 8/17/17 Date: 8/17/17

Count	Species	Count	Species	Count	Species	Count	Species	Count	Species
1	...	1	...	1	...	1	...	1	...
2	...	2	...	2	...	2	...	2	...
3	...	3	...	3	...	3	...	3	...
4	...	4	...	4	...	4	...	4	...
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Project Name: PE Date: 8/17/17 Time: 12:30/45
 Transect Name: Transect 1 Date: 8/17/17 Time: 2:5/55
 Date: 8/17/17 Date: 8/17/17 Date: 8/17/17

Count	Species	Count	Species	Count	Species	Count	Species
1	...	1	...	1	...	1	...
2	...	2	...	2	...	2	...
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Figure 2. Draft modified BEAMR (quadrat) and belt transect data sheet for Port Everglades reconnaissance protocol.

Appendix A – Planned Reconnaissance Transect Locations

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
1	START	950419.8	641428.0	-80.10341	26.09554
1	END	950419.8	641329.4	-80.10341	26.09527
2	START	950550.7	641147.8	-80.10302	26.09477
2	END	950649.2	641147.8	-80.10272	26.09476
3	START	950535.4	641440.3	-80.10306	26.09557
3	END	950633.9	641440.3	-80.10276	26.09557
4	START	950691.8	641251.6	-80.10259	26.09505
4	END	950790.3	641251.6	-80.10229	26.09505
5	START	950734.5	641491.7	-80.10245	26.09571
5	END	950734.5	641393.2	-80.10245	26.09544
6	START	950968.6	641453.2	-80.10174	26.09560
6	END	950968.6	641354.7	-80.10174	26.09533
7	START	951089.9	641486.3	-80.10137	26.09569
7	END	951188.4	641486.3	-80.10107	26.09569
8	START	951131.3	641207.7	-80.10125	26.09492
8	END	951229.8	641207.7	-80.10095	26.09492
9	START	951193.5	641307.1	-80.10106	26.09519
9	END	951292.0	641307.1	-80.10076	26.09519
10	START	951480.0	641403.4	-80.10018	26.09545
10	END	951578.5	641403.4	-80.09988	26.09545
11	START	951478.5	641263.5	-80.10019	26.09507
11	END	951478.5	641164.9	-80.10019	26.09480
12	START	951587.7	641253.3	-80.09986	26.09504
12	END	951686.2	641253.3	-80.09956	26.09504
13	START	951765.8	641492.8	-80.09931	26.09569
13	END	951864.3	641492.8	-80.09901	26.09569
14	START	951971.3	641170.9	-80.09869	26.09480
14	END	952069.8	641170.9	-80.09839	26.09480
15	START	952106.0	641457.6	-80.09827	26.09559
15	END	952106.0	641359.1	-80.09828	26.09532
16	START	952333.6	641355.4	-80.09758	26.09530
16	END	952333.6	641256.9	-80.09759	26.09503
17	START	952459.2	641517.7	-80.09720	26.09575
17	END	952459.2	641419.1	-80.09720	26.09548
18	START	952588.6	641425.5	-80.09680	26.09549
18	END	952687.1	641425.5	-80.09650	26.09549
19	START	952718.2	641227.5	-80.09641	26.09494
19	END	952718.2	641128.9	-80.09642	26.09467
20	START	952762.7	641456.5	-80.09627	26.09557
20	END	952762.7	641357.9	-80.09628	26.09530
21	START	952974.9	641495.6	-80.09563	26.09568
21	END	952974.9	641397.0	-80.09563	26.09541
22	START	953068.8	641484.4	-80.09534	26.09564
22	END	953167.3	641484.4	-80.09504	26.09564
23	START	953204.8	641449.7	-80.09493	26.09555
23	END	953303.3	641449.7	-80.09463	26.09554
24	START	953081.3	641382.2	-80.09530	26.09536

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
24	END	953179.8	641382.2	-80.09500	26.09536
25	START	953054.3	641284.8	-80.09539	26.09510
25	END	953152.8	641284.8	-80.09509	26.09509
26	START	953038.9	641185.5	-80.09544	26.09482
26	END	953137.4	641185.5	-80.09514	26.09482
27	START	952998.4	641134.3	-80.09556	26.09468
27	END	953096.9	641134.3	-80.09526	26.09468
28	START	953273.0	641283.4	-80.09472	26.09509
28	END	953273.0	641184.9	-80.09473	26.09482
29	START	953327.0	641372.1	-80.09456	26.09533
29	END	953327.0	641273.6	-80.09456	26.09506
30	START	953386.8	641539.0	-80.09437	26.09579
30	END	953386.8	641440.4	-80.09437	26.09552
31	START	954203.9	641362.6	-80.09188	26.09529
31	END	954203.9	641264.1	-80.09189	26.09502
32	START	954214.1	641633.4	-80.09185	26.09603
32	END	954312.6	641633.4	-80.09155	26.09603
33	START	954309.5	641257.3	-80.09157	26.09500
33	END	954408.0	641257.3	-80.09127	26.09499
34	START	954253.7	641555.0	-80.09173	26.09582
34	END	954253.7	641456.5	-80.09173	26.09555
35	START	954387.3	641410.4	-80.09133	26.09542
35	END	954485.7	641410.4	-80.09103	26.09541
36	START	954510.2	641626.4	-80.09095	26.09601
36	END	954510.2	641527.9	-80.09095	26.09574
37	START	955115.5	641661.4	-80.08910	26.09609
37	END	955214.0	641661.4	-80.08880	26.09609
38	START	955181.2	641612.9	-80.08890	26.09596
38	END	955279.6	641612.9	-80.08860	26.09596
39	START	955067.3	641652.1	-80.08925	26.09607
39	END	955067.3	641553.6	-80.08925	26.09580
40	START	955126.1	641285.3	-80.08908	26.09506
40	END	955224.6	641285.3	-80.08878	26.09506
41	START	956556.1	641696.2	-80.08471	26.09616
41	END	956654.6	641696.2	-80.08441	26.09616
42	START	956558.6	641648.2	-80.08470	26.09603
42	END	956657.1	641648.2	-80.08440	26.09603
43	START	956549.2	641596.4	-80.08473	26.09589
43	END	956647.7	641596.4	-80.08443	26.09588
44	START	956549.2	641550.5	-80.08474	26.09576
44	END	956647.7	641550.5	-80.08444	26.09576
45	START	956547.4	641499.8	-80.08474	26.09562
45	END	956645.9	641499.8	-80.08444	26.09562
46	START	956542.6	641451.0	-80.08476	26.09549
46	END	956641.0	641451.0	-80.08446	26.09548
47	START	956557.4	641401.2	-80.08471	26.09535
47	END	956655.9	641401.2	-80.08441	26.09535
48	START	956519.5	641412.3	-80.08483	26.09538
48	END	956519.5	641313.7	-80.08483	26.09511
49	START	956574.7	641316.0	-80.08466	26.09511
49	END	956673.2	641316.0	-80.08436	26.09511

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
50	START	956691.4	641556.1	-80.08430	26.09577
50	END	956691.4	641457.6	-80.08430	26.09550
51	START	956755.0	641716.1	-80.08411	26.09621
51	END	956755.0	641617.6	-80.08411	26.09594
52	START	956802.5	641698.4	-80.08396	26.09616
52	END	956900.9	641698.4	-80.08366	26.09616
53	START	956814.1	641649.1	-80.08393	26.09603
53	END	956912.6	641649.1	-80.08363	26.09602
54	START	956811.4	641599.2	-80.08394	26.09589
54	END	956909.9	641599.2	-80.08364	26.09589
55	START	956804.1	641550.9	-80.08396	26.09576
55	END	956902.6	641550.9	-80.08366	26.09575
56	START	956791.2	641500.4	-80.08400	26.09562
56	END	956889.7	641500.4	-80.08370	26.09562
57	START	956786.8	641451.2	-80.08401	26.09548
57	END	956885.3	641451.2	-80.08371	26.09548
58	START	956787.7	641406.5	-80.08401	26.09536
58	END	956886.2	641406.5	-80.08371	26.09536
59	START	956789.1	641358.7	-80.08401	26.09523
59	END	956887.6	641358.7	-80.08371	26.09523
60	START	956794.7	641315.8	-80.08399	26.09511
60	END	956893.2	641315.8	-80.08369	26.09511
61	START	957017.5	641697.7	-80.08331	26.09616
61	END	957116.0	641697.7	-80.08301	26.09615
62	START	957011.6	641650.5	-80.08332	26.09603
62	END	957110.1	641650.5	-80.08302	26.09602
63	START	957029.1	641601.8	-80.08327	26.09589
63	END	957127.6	641601.8	-80.08297	26.09589
64	START	956996.3	641551.5	-80.08337	26.09575
64	END	957094.8	641551.5	-80.08307	26.09575
65	START	957003.3	641503.6	-80.08335	26.09562
65	END	957101.8	641503.6	-80.08305	26.09562
66	START	956999.5	641456.1	-80.08337	26.09549
66	END	957098.0	641456.1	-80.08307	26.09549
67	START	956975.4	641405.5	-80.08344	26.09535
67	END	957073.9	641405.5	-80.08314	26.09535
68	START	956980.8	641358.6	-80.08342	26.09522
68	END	957079.3	641358.6	-80.08312	26.09522
69	START	956993.8	641317.9	-80.08339	26.09511
69	END	957092.3	641317.9	-80.08309	26.09511
70	START	957125.7	641428.4	-80.08298	26.09541
70	END	957125.7	641329.9	-80.08298	26.09514
71	START	957212.4	641489.7	-80.08272	26.09558
71	END	957212.4	641391.2	-80.08272	26.09531
72	START	957248.0	641646.3	-80.08260	26.09601
72	END	957346.5	641646.3	-80.08230	26.09601
73	START	957244.4	641604.9	-80.08262	26.09590
73	END	957342.9	641604.9	-80.08232	26.09589
74	START	957246.4	641564.7	-80.08261	26.09578
74	END	957344.9	641564.7	-80.08231	26.09578
75	START	957259.9	641524.1	-80.08257	26.09567

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
75	END	957358.4	641524.1	-80.08227	26.09567
76	START	957272.8	641485.0	-80.08253	26.09557
76	END	957371.3	641485.0	-80.08223	26.09556
77	START	957259.7	641437.8	-80.08257	26.09544
77	END	957358.2	641437.8	-80.08227	26.09543
78	START	957273.0	641393.3	-80.08253	26.09531
78	END	957371.5	641393.3	-80.08223	26.09531
79	START	957259.9	641321.2	-80.08258	26.09511
79	END	957358.4	641321.2	-80.08228	26.09511
80	START	957418.7	641573.2	-80.08209	26.09581
80	END	957418.7	641474.6	-80.08209	26.09553
81	START	950270.2	640139.9	-80.10390	26.09200
81	END	950270.2	640041.4	-80.10390	26.09173
82	START	950275.5	640363.5	-80.10387	26.09261
82	END	950374.0	640363.5	-80.10357	26.09261
83	START	950369.2	640313.2	-80.10359	26.09247
83	END	950369.2	640214.7	-80.10359	26.09220
84	START	950384.9	640034.4	-80.10355	26.09171
84	END	950483.4	640034.4	-80.10325	26.09170
85	START	950427.7	640120.7	-80.10342	26.09194
85	END	950526.2	640120.7	-80.10312	26.09194
86	START	950483.7	640203.6	-80.10324	26.09217
86	END	950582.2	640203.6	-80.10294	26.09217
87	START	950615.3	640349.2	-80.10284	26.09257
87	END	950615.3	640250.7	-80.10284	26.09230
88	START	950653.9	640166.8	-80.10273	26.09207
88	END	950752.4	640166.8	-80.10243	26.09206
89	START	950681.2	640033.0	-80.10265	26.09170
89	END	950779.6	640033.0	-80.10235	26.09170
90	START	950790.9	640310.5	-80.10231	26.09246
90	END	950790.9	640212.0	-80.10231	26.09219
91	START	950955.2	640113.8	-80.10181	26.09191
91	END	951053.7	640113.8	-80.10151	26.09191
92	START	951178.9	640113.8	-80.10113	26.09191
92	END	951277.4	640113.8	-80.10083	26.09191
93	START	950979.7	640310.1	-80.10173	26.09245
93	END	951078.2	640310.1	-80.10143	26.09245
94	START	951049.3	640165.3	-80.10152	26.09205
94	END	951147.7	640165.3	-80.10122	26.09205
95	START	951124.3	640361.8	-80.10129	26.09259
95	END	951222.8	640361.8	-80.10099	26.09259
96	START	951140.5	640264.7	-80.10124	26.09233
96	END	951239.0	640264.7	-80.10094	26.09232
97	START	951270.5	640167.7	-80.10085	26.09206
97	END	951368.9	640167.7	-80.10055	26.09205
98	START	951653.5	640075.2	-80.09968	26.09179
98	END	951752.0	640075.2	-80.09938	26.09179
99	START	951365.0	640362.6	-80.10056	26.09259
99	END	951463.5	640362.6	-80.10026	26.09259
100	START	951380.6	640322.3	-80.10051	26.09248
100	END	951380.6	640223.8	-80.10051	26.09221

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
101	START	951493.7	640292.3	-80.10016	26.09240
101	END	951493.7	640193.7	-80.10017	26.09212
102	START	951595.2	640271.8	-80.09986	26.09234
102	END	951693.7	640271.8	-80.09956	26.09233
103	START	951826.4	640148.7	-80.09915	26.09199
103	END	951826.4	640050.2	-80.09916	26.09172
104	START	951896.1	640363.1	-80.09894	26.09258
104	END	951994.6	640363.1	-80.09864	26.09258
105	START	951882.8	640128.4	-80.09898	26.09194
105	END	951981.3	640128.4	-80.09868	26.09193
106	START	952118.0	640279.1	-80.09826	26.09235
106	END	952216.5	640279.1	-80.09796	26.09235
107	START	952126.1	640144.8	-80.09824	26.09198
107	END	952126.1	640046.3	-80.09824	26.09171
108	START	952275.6	640199.8	-80.09778	26.09213
108	END	952275.6	640101.3	-80.09779	26.09185
109	START	952462.3	640286.8	-80.09721	26.09236
109	END	952462.3	640188.3	-80.09722	26.09209
110	START	952573.2	640341.8	-80.09687	26.09251
110	END	952573.2	640243.2	-80.09688	26.09224
111	START	952574.9	640063.3	-80.09688	26.09174
111	END	952673.4	640063.3	-80.09658	26.09174
112	START	952774.9	640238.1	-80.09626	26.09222
112	END	952873.4	640238.1	-80.09596	26.09222
113	START	952811.4	640389.0	-80.09615	26.09264
113	END	952909.9	640389.0	-80.09585	26.09263
114	START	952969.9	640289.6	-80.09567	26.09236
114	END	953068.4	640289.6	-80.09537	26.09236
115	START	952862.4	640199.3	-80.09600	26.09211
115	END	952862.4	640100.8	-80.09600	26.09184
116	START	952979.1	640146.3	-80.09564	26.09197
116	END	952979.1	640047.8	-80.09564	26.09169
117	START	953031.7	640193.1	-80.09548	26.09209
117	END	953130.2	640193.1	-80.09518	26.09209
118	START	953158.8	640375.5	-80.09509	26.09259
118	END	953158.8	640276.9	-80.09509	26.09232
119	START	953243.5	640316.5	-80.09483	26.09243
119	END	953342.0	640316.5	-80.09453	26.09243
120	START	953587.3	640138.3	-80.09379	26.09193
120	END	953587.3	640039.8	-80.09379	26.09166
121	START	954206.8	640333.1	-80.09190	26.09246
121	END	954206.8	640234.6	-80.09190	26.09218
122	START	954284.0	640358.0	-80.09166	26.09252
122	END	954382.5	640358.0	-80.09136	26.09252
123	START	954302.0	640278.3	-80.09161	26.09230
123	END	954400.5	640278.3	-80.09131	26.09230
124	START	954306.9	640195.0	-80.09160	26.09207
124	END	954405.4	640195.0	-80.09130	26.09207
125	START	954327.0	640146.8	-80.09154	26.09194
125	END	954327.0	640048.3	-80.09154	26.09167
126	START	954299.9	639998.6	-80.09162	26.09153

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
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127	START	955170.6	640056.3	-80.08897	26.09168
127	END	955170.6	639957.7	-80.08897	26.09140
128	START	955102.5	640347.1	-80.08917	26.09248
128	END	955102.5	640248.5	-80.08917	26.09221
129	START	955261.7	640317.9	-80.08868	26.09239
129	END	955261.7	640219.3	-80.08869	26.09212
130	START	955143.0	640121.8	-80.08905	26.09186
130	END	955241.5	640121.8	-80.08875	26.09185
131	START	956311.7	640094.4	-80.08549	26.09176
131	END	956311.7	639995.9	-80.08549	26.09149
132	START	956362.6	640358.1	-80.08533	26.09248
132	END	956461.1	640358.1	-80.08503	26.09248
133	START	956372.9	640261.5	-80.08530	26.09222
133	END	956471.4	640261.5	-80.08500	26.09221
134	START	956397.7	640214.5	-80.08523	26.09209
134	END	956496.2	640214.5	-80.08493	26.09209
135	START	956389.8	640163.8	-80.08525	26.09195
135	END	956488.3	640163.8	-80.08495	26.09195
136	START	956422.8	640115.0	-80.08515	26.09181
136	END	956521.3	640115.0	-80.08485	26.09181
137	START	956406.6	640067.2	-80.08520	26.09168
137	END	956505.0	640067.2	-80.08490	26.09168
138	START	956393.9	640015.8	-80.08524	26.09154
138	END	956492.4	640015.8	-80.08494	26.09154
139	START	956385.0	639967.4	-80.08527	26.09141
139	END	956483.4	639967.4	-80.08497	26.09141
140	START	956561.2	640351.5	-80.08472	26.09246
140	END	956561.2	640253.0	-80.08473	26.09219
141	START	956671.0	640333.7	-80.08439	26.09241
141	END	956671.0	640235.2	-80.08439	26.09214
142	START	956739.9	640362.6	-80.08418	26.09249
142	END	956838.4	640362.6	-80.08388	26.09249
143	START	956735.1	640265.1	-80.08420	26.09222
143	END	956833.6	640265.1	-80.08390	26.09222
144	START	956735.4	640215.4	-80.08420	26.09208
144	END	956833.9	640215.4	-80.08390	26.09208
145	START	956721.1	640165.8	-80.08424	26.09195
145	END	956819.6	640165.8	-80.08394	26.09195
146	START	956703.4	640116.6	-80.08430	26.09181
146	END	956801.9	640116.6	-80.08400	26.09181
147	START	956703.4	640069.2	-80.08430	26.09168
147	END	956801.9	640069.2	-80.08400	26.09168
148	START	956676.4	640016.9	-80.08438	26.09154
148	END	956774.9	640016.9	-80.08408	26.09154
149	START	956653.4	639969.8	-80.08445	26.09141
149	END	956751.9	639969.8	-80.08415	26.09141
150	START	956847.2	640076.0	-80.08386	26.09170
150	END	956847.2	639977.5	-80.08386	26.09143
151	START	956972.4	640365.7	-80.08347	26.09249
151	END	957070.9	640365.7	-80.08317	26.09249

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
152	START	956944.6	640314.1	-80.08356	26.09235
152	END	957043.1	640314.1	-80.08326	26.09235
153	START	956940.3	640264.0	-80.08357	26.09221
153	END	957038.8	640264.0	-80.08327	26.09221
154	START	956943.1	640217.6	-80.08356	26.09209
154	END	957041.6	640217.6	-80.08326	26.09208
155	START	956941.8	640166.5	-80.08357	26.09194
155	END	957040.3	640166.5	-80.08327	26.09194
156	START	956975.8	640115.9	-80.08347	26.09180
156	END	957074.3	640115.9	-80.08317	26.09180
157	START	956966.3	640068.5	-80.08350	26.09167
157	END	957064.8	640068.5	-80.08320	26.09167
158	START	956958.5	640018.8	-80.08352	26.09154
158	END	957057.0	640018.8	-80.08322	26.09154
159	START	956981.8	639974.1	-80.08345	26.09141
159	END	957080.3	639974.1	-80.08315	26.09141
160	START	957087.4	640318.4	-80.08312	26.09236
160	END	957087.4	640219.8	-80.08312	26.09209
161	START	957176.7	640367.0	-80.08285	26.09249
161	END	957176.7	640268.5	-80.08285	26.09222
162	START	957216.2	640267.4	-80.08273	26.09222
162	END	957216.2	640168.9	-80.08273	26.09195
163	START	957240.2	640364.8	-80.08266	26.09248
163	END	957338.7	640364.8	-80.08236	26.09248
164	START	957256.2	640267.3	-80.08261	26.09222
164	END	957354.7	640267.3	-80.08231	26.09221
165	START	957265.0	640219.7	-80.08258	26.09208
165	END	957363.5	640219.7	-80.08228	26.09208
166	START	957257.3	640169.5	-80.08261	26.09195
166	END	957355.8	640169.5	-80.08231	26.09194
167	START	957237.1	640118.4	-80.08267	26.09181
167	END	957335.6	640118.4	-80.08237	26.09180
168	START	957217.9	640070.9	-80.08273	26.09168
168	END	957316.3	640070.9	-80.08243	26.09167
169	START	957222.6	640017.2	-80.08272	26.09153
169	END	957321.1	640017.2	-80.08242	26.09153
170	START	957380.0	640392.7	-80.08223	26.09256
170	END	957380.0	640294.1	-80.08223	26.09229
171	START	951078.7	643634.4	-80.10136	26.10160
171	END	951177.2	643634.4	-80.10106	26.10160
172	START	951213.0	642976.9	-80.10096	26.09979
172	END	951114.4	642976.8	-80.10126	26.09979
173	START	951191.5	642569.7	-80.10104	26.09867
173	END	951093.0	642569.9	-80.10134	26.09867
174	START	951811.7	643643.6	-80.09913	26.10161
174	END	951910.2	643643.6	-80.09882	26.10161
175	START	951998.5	642992.8	-80.09857	26.09981
175	END	952097.0	642992.8	-80.09827	26.09981
176	START	952177.7	642585.7	-80.09803	26.09869
176	END	952276.2	642585.7	-80.09773	26.09869
177	START	952756.3	643660.0	-80.09625	26.10164

TRANSECT_ID	START_END	EASTING_X	NORTHING_Y	LONGITUDE	LATITUDE
177	END	952854.8	643660.0	-80.09595	26.10163
178	START	953577.8	643725.6	-80.09374	26.10180
178	END	953676.2	643725.6	-80.09344	26.10180
179	START	953601.6	643068.6	-80.09368	26.09999
179	END	953700.1	643068.6	-80.09338	26.09999
180	START	953577.1	642654.8	-80.09377	26.09885
180	END	953675.6	642654.8	-80.09347	26.09885
181	START	954587.6	643826.6	-80.09066	26.10206
181	END	954686.1	643826.6	-80.09036	26.10206
182	START	954572.8	643161.9	-80.09072	26.10023
182	END	954671.3	643162.2	-80.09042	26.10023
183	START	954554.4	642175.5	-80.09080	26.09752
183	END	954653.0	642175.5	-80.09050	26.09752
184	START	954540.0	642749.4	-80.09083	26.09910
184	END	954638.5	642749.4	-80.09053	26.09909
185	START	955472.7	643192.0	-80.08798	26.10030
185	END	955571.2	643192.0	-80.08768	26.10029
186	START	955500.8	642781.0	-80.08790	26.09916
186	END	955599.3	642781.0	-80.08760	26.09916
187	START	955462.0	642208.0	-80.08803	26.09759
187	END	955560.4	642208.0	-80.08773	26.09759
188	START	956645.6	642388.0	-80.08442	26.09806
188	END	956744.1	642388.0	-80.08412	26.09806
189	START	956958.8	643171.5	-80.08345	26.10021
189	END	957057.3	643171.5	-80.08315	26.10021
190	START	956891.9	642801.6	-80.08366	26.09919
190	END	956990.4	642801.6	-80.08336	26.09919
191	START	956848.7	642227.1	-80.08381	26.09762
191	END	956947.2	642227.1	-80.08351	26.09761
192	START	957352.3	642227.2	-80.08227	26.09761
192	END	957450.8	642227.0	-80.08197	26.09760
194	START	949603.3	637708.8	-80.10598	26.08532
194	END	949603.3	637610.2	-80.10598	26.08505
193	START	949242.1	637994.9	-80.10707	26.08612
193	END	949340.6	637994.9	-80.10677	26.08612
195	START	950414.5	637390.8	-80.10351	26.08443
195	END	950414.5	637292.2	-80.10352	26.08416

**Attachment 2.4.1 to Exhibit "A-2"
(RLI# R1049105R1)**

**Endangered Species Act
Listed Coral Species
Survey Study Plan
Port Everglades
Navigation Improvements Project**

March 2017

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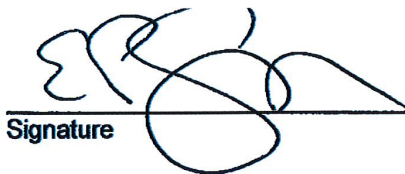
The following signatories approve this Endangered Species Act Listed Coral Species Survey Study Plan for the Port Everglades Harbor Deepening and Widening Project with the following caveat. If in the future additional information is received that shows a change in the expected extent of potential impacts to ESA-listed coral and elkhorn and staghorn coral critical habitat that effect the ESA action area as defined by this Plan and shown in Figure 1, the parties agree to reevaluate and appropriately address the boundaries of the Action Area.



Signature

3/17/2017
Date

Mark Lamb
Chief, Coral Program Branch
Protected Resources Division
NOAA Fisheries Service



Signature

27 MAR 2017
Date

Eric Summa
Chief, Planning Division
U.S. Army Corps of Engineers
Jacksonville District



Signature

3/14/17
Date

David Anderton
Assistant Director of Port Everglades

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1.0 SURVEY OBJECTIVES

The objectives of the Endangered Species Act (ESA) Listed Coral Species Survey Study Plan are to outline a method of survey to quantitatively estimate the population of ESA-listed coral species on coral reef and hardbottom habitats¹ both adjacent to and as far away as 1050 m to the north and 1020 m to the south of the Port Everglades entrance channel as shown in Figure 1. This area includes the anticipated direct and indirect impact areas of the Port Everglades Navigation Improvement Project (PENIP). The estimates of ESA-listed coral species gathered from this survey will provide the necessary information required for the National Marine Fisheries Service (NMFS) to complete an updated Biological Opinion (Biop) on the PENIP.

1.1 Background - Corals listed under the Endangered Species Act

In the Caribbean and western Atlantic there are a total of seven (7) coral species listed as threatened under the ESA (NOAA 2014). These are:

- *Acropora palmata* - Elkhorn coral
- *Acropora cervicornis* - Staghorn coral
- *Dendrogyra cylindrus* - Pillar coral
- *Mycetophyllia ferox* - Rough cactus coral
- *Orbicella annularis* - Lobed star coral
- *Orbicella faveolata* - Mountainous star coral
- *Orbicella franksi* - Boulder star coral

Based on previous field efforts performed during the Feasibility process for the PENIP, some of the recently listed coral species (2014) are known to occur within the project impact areas. Surveys performed by Dial Cordy and Associates (DC&A 2009), identified that at least two of the three sibling species of the *Orbicella annularis* species complex and *Mycetophyllia ferox* occurred in the project area in 2006. To allow NMFS to complete their updated Biop under Section 7 it is necessary to conduct a new survey to estimate the populations of ESA-listed corals species within the project area (1050 m north and 1020 m south).

2.0 SURVEY METHODS

All Atlantic coral species presently listed under the ESA will be identified and surveyed within predicted direct and indirect impact areas as shown in Figure 1. The following areas will not be surveyed: the existing channel (channel bottom and walls), the area south of the channel where previous ESA coral surveys have been conducted (NSUOC 2011); and in the nearshore hardbottom (artificial habitat type), north of the channel where data from the Broward County Sand Bypass project ESA survey will be incorporated.

¹ These habitats include the following Southeast Florida Habitat Types and Modifiers: *Acropora cervicornis*, Aggregated Patch Reef-Shallow, Artificial*, Colonized Pavement-Deep, Colonized Pavement-Shallow, Linear Reef-Inner, Linear Reef-Middle, Linear Reef-Outer, Patch Reef, Ridge-Shallow, Scattered Coral/Rock in Sand, Spur and Groove, Aggregated Patch Reef Ridge-Deep

2.1 ESA Listed Coral Species Surveys

This survey method is based upon the "Recommended Survey Protocol for *Acropora* spp. In Support of Section 7 Consultation (Revised October 2007)," as well as NMFS specific recommendation for this project (NMFS 2007). A total of 163 survey sites predetermined in ArcView GIS, are overlaid on the benthic habitat maps developed by Walker and Klug (2014). As shown in Figure 1, a grid pattern comprised of 100 x 100 m (10,000 m²) survey sites, will be sampled using a clover leaf pattern by one or more pairs of scientific divers, as suggested by NMFS.

Divers will conduct four belt transects from the referenced center point to the north, south, east and west of the center point, forming a "+" from the center point. A diver pair will swim away from the center point with a transect tape marked in meter increments and swim to 50 m in one direction. The second diver of the pair will carry a clipboard, ruler, and camera in order to record observations of any of the listed species on the swim away from the center point and on the return swim to the center point. Divers will swim one meter above the bottom and all ESA listed species that are visible will be recorded within a 4 m wide belt transect, with the transect as the center line. For sites with an entire cross, each belt transect will measure 4 m x 50 m, for a total of 800 m² sampled per site. Due to absence of habitat, some sites do not have four 50 m transects. For the 163 sites 12.34 hectares (30.51 acres and approximately 8%) of listed species habitat will be surveyed. Presence of ESA species (densities) in areas not surveyed by scientific divers will be accounted for by using adjacent habitat values. The following information will be collected for each individual coral encountered.

All listed corals observed will be documented, the species and colony size measured as stated in b below, and photographed. Percent live tissue will be estimated for each documented colony, in 10% increments. The location (decimal degrees) for each colony will be recorded in one of two ways: 1. using a Shark Marine Navigator. 2. A colony may be located based on transect distance, bearing, and distance from the transect. Since this information is tied to a known center point, a colony location (decimal/degrees) may be estimated using this method.

- a. Species;
- b. Dimensions of the colony length, height, and width (units = mm) ;
- c. Visual estimate of percent live tissue for colony (10% increments)
- d. GPS coordinate of each colony (as close as possible) or each survey site (unit = decimal degrees and state datum);
- e. Site map with locations of each colony. If actual GPS coordinates of each colony were not collected, approximate location, based on direction and distance from center point, shall be mapped.

3.0 REPORTING AND LOGISTICS

All data including photos, videos, and spreadsheets will be shared via the internet or via external hard drive within 30 days after data collection is completed. A draft report will be

submitted 60 days after data collection is completed to Port Everglades, USACE and NMFS. Agencies are expected to return comments within 15 days of receipt. A final report will be issued within 10 days of the receipt of all draft report comments.

3.1 Products

- Georeferenced map (ArcGIS files) and GPS coordinates for all sites
- Report summarizing field-data collection
- Output files from statistical analyses software programs used to analyze datasets
- All photos
- Map of location of ESA listed coral species critical habitat essential feature [Only required within the boundaries of ESA listed species critical habitat] within direct and indirect impact area(s)
- Total acres of hardbottom habitat that were directly surveyed by this protocol.
- Total number of ESA listed species per acre surveyed (by species).
- Any other data products (i.e. data collected in items 2. a-e above) should be made available to agencies in a usable electronic format (e.g., spreadsheets provided in excel and not in pdf format).
- Electronic copies of any reports/other datasets utilized to estimate colony densities in areas not surveyed by the survey team.
-

4.0 REFERENCES

DC&A 2009. Benthic and Fish Community Assessment at Port Everglades Harbor Entrance Channel. Prepared for Corps of Engineers. 143 pages.

NMFS 2007. Recommended Survey Protocol for *Acropora* species in Support of Section 7 Consultation. <http://sero.nmfs.noaa.gov/pr/pdf/RecommendedSurveyProtocolforAcropora.pdf>

[NOAA 2014. Endangered and Threatened Wildlife and Plants: Final Listing Determination on Proposal to list 66 reef-building coral species and to reclassify Elkhorn and Staghorn Corals. 79 FR 53851 Pages 53851-54123.](#)

Walker, B.K. and Klug, K. 2014. Southeast Florida Shallow-Water Habitat Mapping & Coral Reef Community Characterization. Florida DEP Coral Reef Conservation Program report : 1 - 71. http://nsuworks.nova.edu/occ_facreports/87.

NSUOC. 2011. Benthic Habitat Characterization for the South Florida Ocean Measurement Facility (SFOMF) Protected Stony Coral Species Assessment. Prepared for Seaward Services. 54 pages.

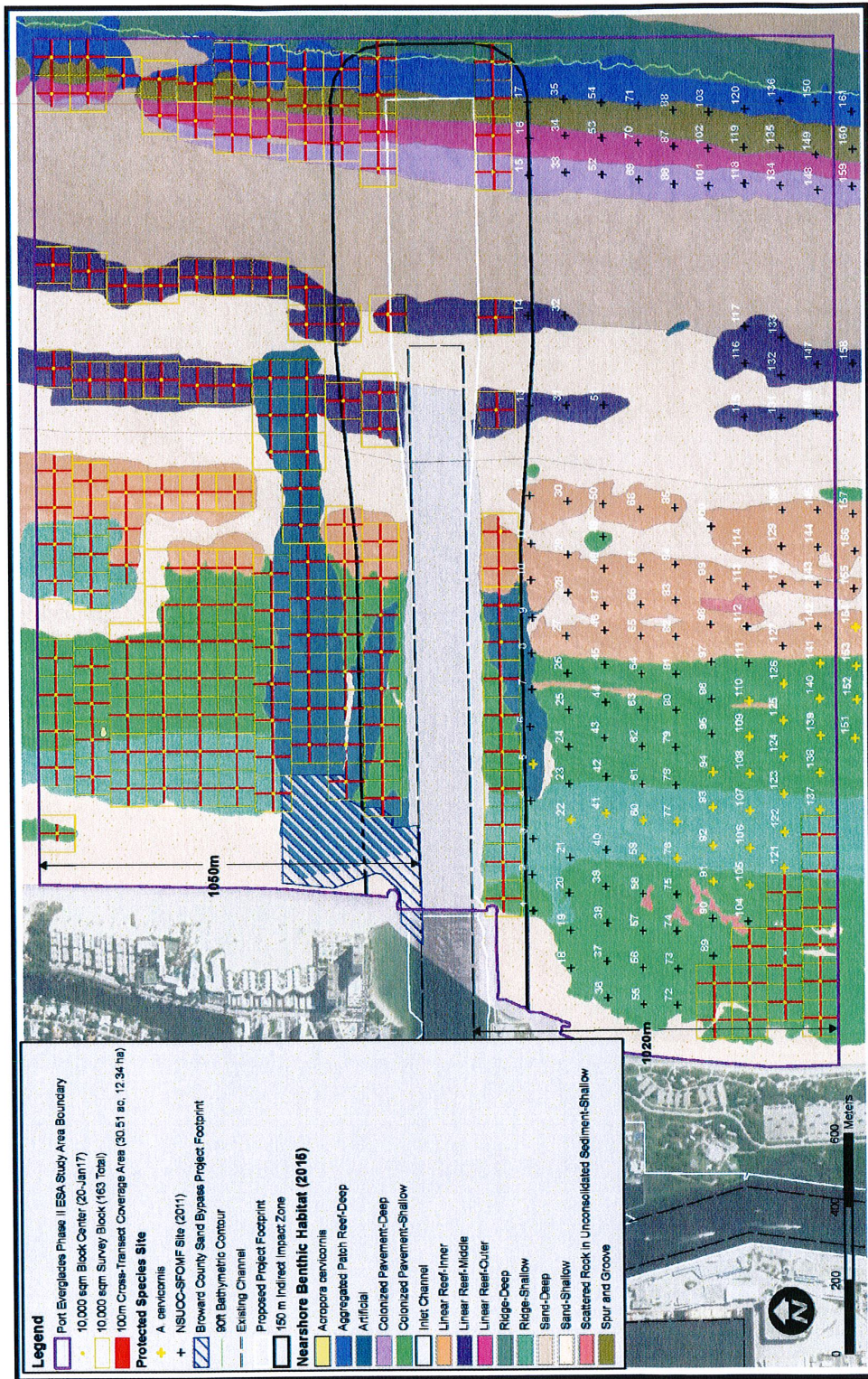


Figure 1. Design of ESA Listed Coral Species Survey sites for Port Everglades. The survey area spans 1050 m north and 1020 m south of the Port Everglades Entrance Channel.

Insurance Requirement for Port Everglades Deepening and Widening Project – Exhibit “E”

The following coverage is deemed the minimum insurance required for this project. The selected firm must be prepared to provide proof of insurance commensurate with or in excess of this requirement. Any deviation is subject to the approval of Risk Management.

TYPE OF INSURANCE	Limits on Liability in Thousands of Dollars		
		Each Occurrence	Aggregate
GENERAL LIABILITY - Broad form <input checked="" type="checkbox"/> Commercial General Liability <input checked="" type="checkbox"/> Premises–Operations <input checked="" type="checkbox"/> XCU Explosion/Collapse/Underground <input checked="" type="checkbox"/> Products/Completed Operations Hazard <input checked="" type="checkbox"/> Contractual Insurance <input checked="" type="checkbox"/> Broad Form Property Damage <input checked="" type="checkbox"/> Independent Contractors <input checked="" type="checkbox"/> Personal Injury <input type="checkbox"/> Other:	Bodily Injury		
	Property Damage		
	Bodily Injury and Property Damage Combined	\$ 1 mil	\$ 3 mil
	Personal Injury		
AUTO LIABILITY <input type="checkbox"/> Comprehensive Form <input checked="" type="checkbox"/> Owned <input checked="" type="checkbox"/> Hired <input checked="" type="checkbox"/> Non-owned <input checked="" type="checkbox"/> Any Auto If applicable	Bodily Injury (each person)		
	Bodily Injury (each accident)		
	Property Damage		
	Bodily Injury and Property Damage Combined	\$ 1 mil	
EXCESS LIABILITY <input type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella Form	Bodily Injury and Property Damage Combined	\$	\$
<input checked="" type="checkbox"/> WORKERS' COMPENSATION <input checked="" type="checkbox"/> U.S. Longshoremen & Harbor Workers' Act/ & Jones Act <input checked="" type="checkbox"/> EMPLOYERS' LIABILITY	Chapter 440 FS	STATUTORY	U.S. Longshoremen & Harbor Workers' Act & Jones Act is required for any activities on or about navigable water
	(each accident)	\$ 1 mil	
<input checked="" type="checkbox"/> PROFESSIONAL LIABILITY ~ E&O	(each accident)	\$ 1 mil	Deductible not to exceed \$100K
	Extended reporting period	3 years	
<input type="checkbox"/> POLLUTION LIABILITY/ENVIRONMENTAL IMPAIRMENT LIABILITY (Land side & Vessel) including clean-up costs	Claims-made form w/ Extended Reporting Period of yrs. Deductible not to exceed:		
<input type="checkbox"/> BUILDER'S RISK (PROPERTY) "All Risk" <input type="checkbox"/> Inland Marine Coverage - Installation Floater. Coverage must be "All Risk", completed value. Coverage must remain in force until written final acceptance by County.	Maximum Deductible: \$10 k		Completed Value
	DED for WIND or WIND & FLOOD not to exceed 5% of completed value		
<input type="checkbox"/> Miscellaneous Coverage (P&I) – (Collision liability with other watercraft)	Maximum Deductible:	\$10 k	
	Minimum coverage		
Note: "Broward County" must be certificate holder and endorsed as an Additional Insured except WC. Policy to provide Blanket Waiver of Subrogation as per contract. Thirty (30) Day written notice of cancellation is required to the Certificate Holder.			

Certificate Holder:
Broward County
 1850 Eller Drive
 Fort Lauderdale, FL 33316
 Attn: Matthew Harold

 Risk Management Division