

ATTACHMENT 1

CONTRACT FOR CONSULTING/PROFESSIONAL SERVICES

This Contract is made as of the _____ day of _____, 20____, by and between Palm Beach County, a Political Subdivision of the State of Florida, by and through its Board of Commissioners, hereinafter referred to as the COUNTY, and Florida Fish & Wildlife Conservation Commission, a State Agency authorized to do business in the State of Florida, hereinafter referred to as the CONSULTANT, whose Federal I.D. is 59-3105845.

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

ARTICLE 1 - SERVICES

The CONSULTANT'S responsibility under this Contract is to provide professional/consultation services in the area of oyster monitoring, as more specifically set forth in the Scope of Work detailed in Exhibit "A".

The COUNTY'S representative/liaison during the performance of this Contract shall be Deborah Drum, Director, Environmental Resources Management, telephone no. (561) 233-2400.

The CONSULTANT'S representative/liaison during the performance of this Contract shall be Shelly Allen, Grant Administrator, telephone no. (727) 502-4987.

ARTICLE 2 - SCHEDULE

The CONSULTANT shall commence services upon execution of this Contract and complete all services by December 30, 2023.

Reports and other items shall be delivered or completed in accordance with the detailed schedule set forth in Exhibit "A".

ARTICLE 3 - PAYMENTS TO CONSULTANT

- A. The total amount to be paid by the COUNTY under this Contract for all services described in the Scope of Work Exhibit A shall not exceed a total contract amount of one hundred ninety eight thousand dollars and 00/100 Dollars (\$198,000.00). The CONSULTANT will bill the COUNTY on a deliverable basis, at the amounts set forth in Exhibit "B" for services rendered toward the completion of the Scope of Work. Where incremental billings for partially completed items are permitted, the total billings shall not exceed the estimated percentage of completion as of the billing date.
- B. Invoices received from the CONSULTANT pursuant to this Contract will be reviewed and approved by the COUNTY's representative, to verify that services have been rendered in conformity with the Contract. Approved invoices will then be sent to the Finance Department for payment. Invoices will normally be paid within thirty (30) days following the COUNTY representative's approval.

- C. Final Invoice: In order for both parties herein to close their books and records, the CONSULTANT will clearly state "final invoice" on the CONSULTANT'S final/last billing to the COUNTY. This shall constitute CONSULTANT'S certification that all services have been properly performed and all charges and costs have been invoiced to Palm Beach County. Any other charges not properly included on this final invoice are waived by the CONSULTANT.
- D. In order to do business with Palm Beach County, CONSULTANTS are required to create a Vendor Registration Account OR activate an existing Vendor Registration Account through the Purchasing Department's Vendor Self Service (VSS) system, which can be accessed at <https://pbcvssp.co.palm-beach.fl.us/webapp/vssp/AltSelfService>. If CONSULTANT intends to use sub-consultants, CONSULTANT must also ensure that all sub-consultants are registered as consultants in VSS. All subcontractor agreements must include a contractual provision requiring that the sub-consultant register in VSS. COUNTY will not finalize a contract award until the COUNTY has verified that the CONSULTANT and all of its sub-consultants are registered in VSS.

ARTICLE 4 - TRUTH-IN-NEGOTIATION CERTIFICATE

Signature of this Contract by the CONSULTANT shall also act as the execution of a truth-in-negotiation certificate certifying that the wage rates, over-head charges, and other costs used to determine the compensation provided for in this Contract are accurate, complete and current as of the date of the Contract and no higher than those charged the CONSULTANT'S most favored customer for the same or substantially similar service.

The said rates and costs shall be adjusted to exclude any significant sums should the COUNTY determine that the rates and costs were increased due to inaccurate, incomplete or noncurrent wage rates or due to inaccurate representations of fees paid to outside consultants. The COUNTY shall exercise its rights under this Article 4 within three (3) years following final payment.

ARTICLE 5 - TERMINATION

This Contract may be terminated by the CONSULTANT upon sixty (60) days' prior written notice to the COUNTY in the event of substantial failure by the COUNTY to perform in accordance with the terms of this Contract through no fault of the CONSULTANT. It may also be terminated, in whole or in part, by the COUNTY, with cause upon five (5) business days written notice to the CONSULTANT or without cause upon ten (10) business days written notice to the CONSULTANT. Unless the CONSULTANT is in breach of this Contract, the CONSULTANT shall be paid for services rendered to the COUNTY'S satisfaction through the date of termination. After receipt of a Termination Notice, except as otherwise directed by the COUNTY, in writing, the CONSULTANT shall:

- A. Stop work on the date and to the extent specified.
- B. Terminate and settle all orders and subcontracts relating to the performance of the

terminated work.

- C. Transfer all work in process, completed work, and other materials related to the terminated work to the COUNTY.
- D. Continue and complete all parts of the work that have not been terminated.

ARTICLE 6 - PERSONNEL

The CONSULTANT represents that it has, or will secure at its own expense, all necessary personnel required to perform the services under this Contract. Such personnel shall not be employees of or have any contractual relationship with the COUNTY.

All of the services required hereinunder shall be performed by the CONSULTANT or under its supervision, and all personnel engaged in performing the services shall be fully qualified and, if required, authorized or permitted under state and local law to perform such services.

Any changes or substitutions in the CONSULTANT'S key personnel, as may be listed in Exhibit "A", must be made known to the COUNTY'S representative and written approval must be granted by the COUNTY'S representative before said change or substitution can become effective.

The CONSULTANT warrants that all services shall be performed by skilled and competent personnel to the highest professional standards in the field.

All of the CONSULTANT'S personnel (and all Subcontractors), while on County premises, will comply with all COUNTY requirements governing conduct, safety and security.

ARTICLE 7 - SUBCONTRACTING

The CONSULTANT agrees that it shall not subcontract any of the services to be provided under this Contract.

ARTICLE 8 - FEDERAL AND STATE TAX

The COUNTY is exempt from payment of Florida State Sales and Use Taxes. The COUNTY will sign an exemption certificate submitted by the CONSULTANT. The CONSULTANT shall not be exempted from paying sales tax to its suppliers for materials used to fulfill contractual obligations with the COUNTY, nor is the CONSULTANT authorized to use the COUNTY'S Tax Exemption Number in securing such materials.

The CONSULTANT shall be responsible for payment of its own and its share of its employees' payroll, payroll taxes, and benefits with respect to this contract.

ARTICLE 9 - AVAILABILITY OF FUNDS

The COUNTY'S performance and obligation to pay under this contract for subsequent fiscal years

are contingent upon annual appropriations for its purpose by the Board of County Commissioners.

ARTICLE 10 - INSURANCE

Without waiving the right to sovereign immunity as provided by section 768.28, Florida Statutes, (Statute), CONSULTANT represents that it is self-insured subject to the limitations of the Statute, as may be amended.

CONSULTANT agrees to maintain or to be self-insured for Workers' Compensation insurance in accordance with Chapter 440, Florida Statutes.

Should CONSULTANT contract with a third-party (Contractor) to perform any service related to the AGREEMENT, CONSULTANT shall require the Contractor to provide the following minimum insurance:

- Commercial General Liability insurance with minimum limits of \$1,000,000 combined single limit for property damage and bodily injury per occurrence and \$2,000,000 per aggregate. Such policy shall be endorsed to include CONSULTANT and COUNTY as Additional Insureds. CONSULTANT shall also require that the Contractor include a Waiver of Subrogation against COUNTY
- Business Automobile Liability insurance with minimum limits of \$1,000,000 combined single limits for property damage and bodily injury per occurrence.
- Workers' Compensation insurance in compliance with Chapter 440, Florida Statutes, and which shall include coverage for Employer's Liability with minimum limits of \$1,000,000 each accident.
- Professional Liability insurance with minimum limits of \$1,000,000 per claim and in the aggregate.

When requested, CONSULTANT shall provide an affidavit or Certificate of Insurance evidencing insurance or self-insurance.

Compliance with the foregoing requirement shall not relieve the CONSULTANT of its liability and obligations under this Agreement.

ARTICLE 11 - INDEMNIFICATION

Each party shall be liable for its own actions and negligence and, to the extent permitted by law, the COUNTY shall indemnify, defend and hold harmless the CONSULTANT against any actions, claims or damages arising out of the COUNTY'S negligence in connection with this Agreement, and the CONSULTANT shall indemnify, defend and hold harmless the County against any actions, claims, or damages arising out of the CONSULTANT'S negligence in connection with this Agreement. The foregoing indemnification shall not constitute a waiver of sovereign immunity beyond the limits set forth in Florida Statutes, Section 768.28, nor shall the same be construed to

constitute agreement by either party to indemnify the other party for such other party's negligent, willful or intentional acts or omissions.

ARTICLE 12 - SUCCESSORS AND ASSIGNS

The COUNTY and the CONSULTANT each binds itself and its partners, successors, executors, administrators and assigns to the other party and to the partners, successors, executors, administrators and assigns of such other party, in respect to all covenants of this Contract. Except as above, neither the COUNTY nor the CONSULTANT shall assign, sublet, convey or transfer its interest in this Contract without the prior written consent of the other.

ARTICLE 13 - REMEDIES

This Contract shall be governed by the laws of the State of Florida. Any legal action necessary to enforce the Contract will be held in a court of competent jurisdiction located in Palm Beach County, Florida. No remedy herein conferred upon any party is intended to be exclusive of any other remedy, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or in equity, by statute or otherwise. No single or partial exercise by any party of any right, power, or remedy hereunder shall preclude any other or further exercise thereof.

No provision of this Contract is intended to, or shall be construed to, create any third party beneficiary or to provide any rights to any person or entity not a party to this Contract, including but not limited to any citizen or employees of the COUNTY and/or CONSULTANT.

ARTICLE 14 - CONFLICT OF INTEREST

The CONSULTANT represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance of services required hereunder, as provided for in Chapter 112, Part III, Florida Statutes, and the Palm Beach County Code of Ethics. The CONSULTANT further represents that no person having any such conflict of interest shall be employed for said performance of services.

The CONSULTANT shall promptly notify the COUNTY's representative, in writing, by certified mail, of all potential conflicts of interest of any prospective business association, interest or other circumstance which may influence or appear to influence the CONSULTANT'S judgement or quality of services being provided hereunder. Such written notification shall identify the prospective business association, interest or circumstance, the nature of work that the CONSULTANT may undertake and request an opinion of the COUNTY as to whether the association, interest or circumstance would, in the opinion of the COUNTY, constitute a conflict of interest if entered into by the CONSULTANT. The COUNTY agrees to notify the CONSULTANT of its opinion by certified mail within thirty (30) days of receipt of notification by the CONSULTANT. If, in the opinion of the COUNTY, the prospective business association, interest or circumstance would not constitute a conflict of interest by the CONSULTANT, the COUNTY shall so state in the notification and the CONSULTANT shall, at its option, enter into said association, interest or circumstance and it shall be deemed not in conflict of interest with

respect to services provided to the COUNTY by the CONSULTANT under the terms of this Contract.

ARTICLE 15 - EXCUSABLE DELAYS

The CONSULTANT shall not be considered in default by reason of any failure in performance if such failure arises out of causes reasonably beyond the control of the CONSULTANT or its subcontractors and without their fault or negligence. Such causes include, but are not limited to, acts of God, force majeure, natural or public health emergencies, labor disputes, freight embargoes, and abnormally severe and unusual weather conditions.

Upon the CONSULTANT'S request, the COUNTY shall consider the facts and extent of any failure to perform the work and, if the CONSULTANT'S failure to perform was without it or its subcontractors fault or negligence, the Contract Schedule and/or any other affected provision of this Contract shall be revised accordingly, subject to the COUNTY'S rights to change, terminate, or stop any or all of the work at any time.

ARTICLE 16 - ARREARS

The CONSULTANT shall not pledge the COUNTY'S credit or make it a guarantor of payment or surety for any contract, debt, obligation, judgement, lien, or any form of indebtedness. The CONSULTANT further warrants and represents that it has no obligation or indebtedness that would impair its ability to fulfill the terms of this Contract.

ARTICLE 17 - DISCLOSURE AND OWNERSHIP OF DOCUMENTS

The CONSULTANT shall deliver to the COUNTY'S representative for approval and acceptance, and before being eligible for final payment of any amounts due, all documents and materials prepared by and for the COUNTY under this Contract.

To the extent allowed by Chapter 119, Florida Statutes, all written and oral information not in the public domain or not previously known, and all information and data obtained, developed, or supplied by the COUNTY or at its expense will be kept confidential by the CONSULTANT and will not be disclosed to any other party, directly or indirectly, without the COUNTY'S prior written consent unless required by a lawful court order. All drawings, maps, sketches, programs, data base, reports and other data developed, or purchased, under this Contract for or at the COUNTY'S expense shall be and remain the COUNTY'S property and may be reproduced and reused at the discretion of the COUNTY.

All covenants, agreements, representations and warranties made herein, or otherwise made in writing by any party pursuant hereto, including but not limited to any representations made herein relating to disclosure or ownership of documents, shall survive the execution and delivery of this Contract and the consummation of the transactions contemplated hereby.

Notwithstanding any other provision in this Contract, all documents, records, reports and any other materials produced hereunder shall be subject to disclosure, inspection and audit, pursuant to the

Palm Beach County Office of the Inspector General, Palm Beach County Code, Sections 2-421 - 2-440, as amended.

ARTICLE 18 - INDEPENDENT CONTRACTOR RELATIONSHIP

The CONSULTANT is, and shall be, in the performance of all work services and activities under this Contract, an Independent Contractor, and not an employee, agent, or servant of the COUNTY. All persons engaged in any of the work or services performed pursuant to this Contract shall at all times, and in all places, be subject to the CONSULTANT'S sole direction, supervision, and control. The CONSULTANT shall exercise control over the means and manner in which it and its employees perform the work, and in all respects the CONSULTANT'S relationship and the relationship of its employees to the COUNTY shall be that of an Independent Contractor and not as employees or agents of the COUNTY.

The CONSULTANT does not have the power or authority to bind the COUNTY in any promise, agreement or representation.

ARTICLE 19 - CONTINGENT FEES

The CONSULTANT warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT to solicit or secure this Contract and that it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, gift, or any other consideration contingent upon or resulting from the award or making of this Contract.

ARTICLE 20 - ACCESS AND AUDITS

The CONSULTANT shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the work for at least five (5) years after completion or termination of this Contract. The COUNTY shall have access to such books, records, and documents as required in this section for the purpose of inspection or audit during normal business hours, at the CONSULTANT'S place of business.

Palm Beach County has established the Office of the Inspector General in Palm Beach County Code, Section 2-421 - 2-440, as may be amended. The Inspector General's authority includes but is not limited to the power to review past, present and proposed County contracts, transactions, accounts and records, to require the production of records, and to audit, investigate, monitor, and inspect the activities of the CONSULTANT, its officers, agents, employees, and lobbyists in order to ensure compliance with contract requirements and detect corruption and fraud.

Failure to cooperate with the Inspector General or interfering with or impeding any investigation shall be in violation of Palm Beach County Code, Section 2-421 - 2-440, and punished pursuant to Section 125.69, Florida Statutes, in the same manner as a second degree misdemeanor.

ARTICLE 21 – NONDISCRIMINATION

The COUNTY is committed to assuring equal opportunity in the award of contracts and complies with all laws prohibiting discrimination. Pursuant to Palm Beach County Resolution R2017-1770, as may be amended, the CONSULTANT warrants and represents that throughout the term of the Contract, including any renewals thereof, if applicable, all of its employees are treated equally during employment without regard to race, color, religion, disability, sex, age, national origin, ancestry, marital status, familial status, sexual orientation, gender identity or expression, or genetic information. Failure to meet this requirement shall be considered default of the Contract.

As a condition of entering into this Contract, the CONSULTANT represents and warrants that it will comply with the COUNTY’S Commercial Nondiscrimination Policy as described in Resolution 2017-1770, as amended. As part of such compliance, the CONSULTANT shall not discriminate on the basis of race, color, national origin, religion, ancestry, sex, age, marital status, familial status, sexual orientation, gender identity or expression, disability, or genetic information in the solicitation, selection, hiring or commercial treatment of subcontractors, vendors, suppliers, or commercial customers, nor shall the CONSULTANT retaliate against any person for reporting instances of such discrimination. The CONSULTANT shall provide equal opportunity for subcontractors, vendors and suppliers to participate in all of its public sector and private sector subcontracting and supply opportunities, provided that nothing contained in this clause shall prohibit or limit otherwise lawful efforts to remedy the effects of marketplace discrimination that have occurred or are occurring in the COUNTY’S relevant marketplace in Palm Beach County. The CONSULTANT understands and agrees that a material violation of this clause shall be considered a material breach of this Contract and may result in termination of this Contract, disqualification or debarment of the company from participating in COUNTY contracts, or other sanctions. This clause is not enforceable by or for the benefit of, and creates no obligation to, any third party. CONSULTANT shall include this language in its subcontracts.

ARTICLE 22 - AUTHORITY TO PRACTICE

The CONSULTANT hereby represents and warrants that it has and will continue to maintain all licenses and approvals required to conduct its business, and that it will at all times conduct its business activities in a reputable manner. Proof of such licenses and approvals shall be submitted to the COUNTY’s representative upon request.

ARTICLE 23 - SEVERABILITY

If any term or provision of this Contract, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this Contract, or the application of such terms or provision, to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term and provision of this Contract shall be deemed valid and enforceable to the extent permitted by law.

ARTICLE 24- PUBLIC ENTITY CRIMES

As provided in F.S. 287.132-133, by entering into this contract or performing any work in

furtherance hereof, the CONSULTANT certifies that it, its affiliates, suppliers, subcontractors and consultants who will perform hereunder, have not been placed on the convicted vendor list maintained by the State of Florida Department of Management Services within the 36 months immediately preceding the date hereof. This notice is required by F.S. 287.133(3)(a).

ARTICLE 25 - MODIFICATIONS OF WORK

The COUNTY reserves the right to make changes in Scope of Work, including alterations, reductions therein or additions thereto. Upon receipt by the CONSULTANT of the COUNTY'S notification of a contemplated change, the CONSULTANT shall, in writing: (1) provide a detailed estimate for the increase or decrease in cost due to the contemplated change, (2) notify the COUNTY of any estimated change in the completion date, and (3) advise the COUNTY if the contemplated change shall affect the CONSULTANT'S ability to meet the completion dates or schedules of this Contract.

If the COUNTY so instructs in writing, the CONSULTANT shall suspend work on that portion of the Scope of Work affected by a contemplated change, pending the COUNTY'S decision to proceed with the change.

If the COUNTY elects to make the change, the COUNTY shall initiate a Contract Amendment and the CONSULTANT shall not commence work on any such change until such written amendment is signed by the CONSULTANT and approved and executed on behalf of Palm Beach County.

ARTICLE 26 - NOTICE

All notices required in this Contract shall be sent by certified mail, return receipt requested, hand delivery or other delivery service requiring signed acceptance. If sent to the COUNTY, notices shall be addressed to:

Deborah Drum, Director
Department of Environmental Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411-2743

With copy to:

Palm Beach County Attorney's Office
301 North Olive Ave.
West Palm Beach, Florida 33401

If sent to the CONSULTANT, notices shall be addressed to:

Shelly Allen, Grant Administrator
Fish & Wildlife Research Institute
100 8th Avenue S.E.
St. Petersburg, Florida 33701

ARTICLE 27 - ENTIRETY OF CONTRACTUAL AGREEMENT

The COUNTY and the CONSULTANT agree that this Contract sets forth the entire agreement between the parties, and that there are no promises or understandings other than those stated herein. None of the provisions, terms and conditions contained in this Contract may be added to, modified, superseded or otherwise altered, except by written instrument executed by the parties hereto in accordance with Article 25- Modifications of Work.

ARTICLE 28 - CRIMINAL HISTORY RECORDS CHECK

The CONSULTANT, CONSULTANT'S employees, subcontractors of CONSULTANT and employees of subcontractors shall comply with Palm Beach County Code, Section 2-371 - 2-377, the Palm Beach County Criminal History Records Check Ordinance ("Ordinance"), for unescorted access to critical facilities ("Critical Facilities") or criminal justice information facilities ("CJI Facilities") as identified in Resolution R-2003-1274, as amended. The CONSULTANT is solely responsible for the financial, schedule, and/or staffing implications of this Ordinance. Further, the CONSULTANT acknowledges that its Contract price includes any and all direct or indirect costs associated with compliance with this Ordinance, except for the applicable FDLE/FBI fees that shall be paid by the COUNTY.

This Contract may include sites and/or buildings which have been designated as either "critical facilities" or "criminal justice information facilities" pursuant to the Ordinance and Resolution R2003-1274, as amended. COUNTY staff representing the COUNTY department will contact the CONSULTANT(S) and provide specific instructions for meeting the requirements of this Ordinance. Individuals passing the background check will be issued a badge. The CONSULTANT shall make every effort to collect the badges of its employees and its subcontractors' employees upon conclusion of the contract and return them to the COUNTY. If the CONSULTANT or its subcontractor(s) terminates an employee who has been issued a badge, the CONSULTANT must notify the COUNTY within two (2) hours. At the time of termination, the CONSULTANT shall retrieve the badge and shall return it to the COUNTY in a timely manner.

The COUNTY reserves the right to suspend the CONSULTANT if the CONSULTANT 1) does not comply with the requirements of County Code Section 2-371 - 2-377, as amended; 2) does not contact the COUNTY regarding a terminated CONSULTANT employee or subcontractor employee within the stated time; or 3) fails to make a good faith effort in attempting to comply with the badge retrieval policy.

ARTICLE 29 - REGULATIONS; LICENSING REQUIREMENTS

The CONSULTANT shall comply with all laws, ordinances and regulations applicable to the services contemplated herein, to include those applicable to conflict of interest and collusion. CONSULTANT is presumed to be familiar with all federal, state and local laws, ordinances, codes and regulations that may in any way affect the services offered.

ARTICLE 30 - SCRUTINIZED COMPANIES (when contract value is greater than \$1 million)

- A. As provided in F.S. 287.135, by entering into this Contract or performing any work in furtherance hereof, the CONSULTANT certifies that it, its affiliates, suppliers, subcontractors and consultants who will perform hereunder, have not been placed on the Scrutinized Companies that boycott Israel List, or is engaged in a boycott of Israel, pursuant to F.S. 215.4725.

Pursuant to F.S. 287.135(3)(b), if CONSULTANT is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel, this Contract may be terminated at the option of the COUNTY.

- B. **When contract value is greater than \$1 million:** As provided in F.S. 287.135, by entering into this Contract or performing any work in furtherance hereof, the CONSULTANT certifies that it, its affiliates, suppliers, subcontractors and consultants who will perform hereunder, have not been placed on the Scrutinized Companies With Activities in Sudan List or Scrutinized Companies With Activities in The Iran Petroleum Energy Sector List created pursuant to F.S. 215.473 or is engaged in business operations in Cuba or Syria.

If the COUNTY determines, using credible information available to the public, that a false certification has been submitted by CONSULTANT, this Contract may be terminated and a civil penalty equal to the greater of \$2 million or twice the amount of this Contract shall be imposed, pursuant to F.S. 287.135. Said certification must also be submitted at the time of Contract renewal, if applicable.

ARTICLE 31 - PUBLIC RECORDS

Notwithstanding anything contained herein, as provided under Section 119.0701, F.S., if the CONSULTANT: (i) provides a service; and (ii) acts on behalf of the COUNTY as provided under Section 119.011(2) F.S., the CONSULTANT shall comply with the requirements of Section 119.0701, Florida Statutes, as it may be amended from time to time. The CONSULTANT is specifically required to:

- A. Keep and maintain public records required by the COUNTY to perform services as provided under this Contract.

- B. Upon request from the COUNTY's Custodian of Public Records, provide the COUNTY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law. The CONSULTANT further agrees that all fees, charges and expenses shall be determined in accordance with Palm Beach County PPM CW-F-002, Fees Associated with Public Records Requests, as it may be amended or replaced from time to time.
- C. Ensure that public records that are exempt, or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the Contract, if the Consultant does not transfer the records to the public agency.
- D. Upon completion of the Contract the CONSULTANT shall transfer, at no cost to the COUNTY, all public records in possession of the CONSULTANT unless notified by COUNTY's representative/liason, on behalf of the COUNTY's Custodian of Public Records, to keep and maintain public records required by the COUNTY to perform the service. If the CONSULTANT transfers all public records to the COUNTY upon completion of the Contract, the CONSULTANT shall destroy any duplicate public records that are exempt, or confidential and exempt from public records disclosure requirements. If the CONSULTANT keeps and maintains public records upon completion of the Contract, the CONSULTANT shall meet all applicable requirements for retaining public records. All records stored electronically by the CONSULTANT must be provided to COUNTY, upon request of the COUNTY's Custodian of Public Records, in a format that is compatible with the information technology systems of COUNTY, at no cost to COUNTY.

Failure of the CONSULTANT to comply with the requirements of this article shall be a material breach of this Contract. COUNTY shall have the right to exercise any and all remedies available to it, including but not limited to, the right to terminate for cause. CONSULTANT acknowledges that it has familiarized itself with the requirements of Chapter 119, F.S., and other requirements of state law applicable to public records not specifically set forth herein.

IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, PLEASE CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT RECORDS REQUEST, PALM BEACH COUNTY PUBLIC AFFAIRS DEPARTMENT, 301 N. OLIVE AVENUE, WEST PALM BEACH, FL 33401, BY E-MAIL AT RECORDSREQUEST@PBCGOV.ORG OR BY TELEPHONE AT 561-355-6680.

ARTICLE 32 - COUNTERPARTS

This Contract, including the exhibits referenced herein, may be executed in one or more counterparts, all of which shall constitute collectively but one and the same Contract. The

COUNTY may execute the Contract through electronic or manual means. CONSULTANT shall execute by manual means only, unless the COUNTY provides otherwise.

Attachments:

Exhibit A: Scope of Work

Exhibit B: Schedule of Payments

Remainder of page intentionally left blank.

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

ATTEST:
SHARON R. BOCK
CLERK AND COMPTROLLER

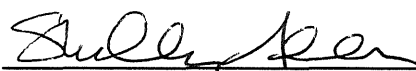
PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS:

By: _____
Deputy Clerk

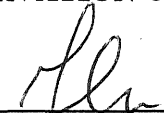
By: _____
Dave Kerner, Mayor

WITNESS:

FLORIDA FISH & WILDLIFE
CONSERVATION COMMISSION:



Signature



Signature

Shelly Allen

Name (type or print)

Gil McRae

Name (type or print)

Director, FWRI

Title

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY

By _____
Assistant County Attorney

APPROVED AS TO TERMS
AND CONDITIONS

By 
Deborah Drum, Director
Department of Environmental Resources Management

EXHIBIT "A"

SCOPE OF WORK Oyster Monitoring in Lake Worth Lagoon

1.0 BACKGROUND

The eastern oyster, *Crassostrea virginica* (Gmelin, 1791), is abundant throughout much of the Atlantic and Gulf of Mexico coasts of the U.S. (Carriker and Gaffney 1996). This commercially valuable species prefers shallow, moderate salinity waters, and attaches to both hard and soft substrata (Shumway 1996). It has been the subject of farming and aquaculture since the 1800's and, more recently, the focus of restoration (Coen et al. 1999). Because of its wide distribution, historical context, and essential habitat value, the eastern oyster has been selected as a target species for monitoring (Parker et al. 2013). Changes in health and abundance will be monitored within the Lake Worth Lagoon (LWL).

From 2005 through 2014, the Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute (FWC-FWRI) was funded by the South Florida Water Management District (SFWMD) to conduct long-term monitoring of eastern oysters in three south Florida estuaries, including three natural reef stations in LWL. When funding from the SFWMD ended in 2014, Palm Beach County funded an 18-month project to continue monitoring oysters at the three long-term natural reef stations, as well as three additional man-made reef stations in LWL: one near John's Island, one near Grassy Flats, and the other near Snook Island. In subsequent years, Palm Beach County has continued to fund monitoring efforts with the most recent contract covering monitoring efforts through June 2020.

This is a 40-month contract that includes funding for 36 months of field sampling (July 2020 through June 2023), followed by 4 months for preparation of a final report, between the Palm Beach County and selected consultant (FWC-FWRI) for the collection, analysis and summary of oyster data from six stations within the LWL. No special activities license (SAL) is needed for oyster collections since work will be conducted by FWC-FWRI staff. Analysis of data generated from samples collected under this scope of work (SOW) will be used to guide management decisions affecting oyster restoration projects.

2.0 OBJECTIVES

In order to fulfill the objectives required by this SOW, the Consultant shall:

- a) Assemble and manage staff ensuring capacity to complete all tasks in this SOW
- b) Provide all transportation required to access all monitoring stations in this SOW;
- c) Provide sampling equipment and supplies required to complete monitoring;
- d) Perform field collection and;
- e) Deliver verified data on the specified due dates.

3.0 POINT OF CONTACT

All communication associated with this work order shall be through Palm Beach County Environmental Resources Management Department (ERM) **Contract Manager, Mayra Ashton, telephone: (561) 233-2451, Email: MAshton@pbcgov.org**. In the event Ms. Ashton is unavailable, Jennifer Báez (561-233-2424) will act as an alternate contact. Communication with FWC-FWRI shall be through Melanie Parker, Research Scientist, telephone: 727-502-4919, email: melanie.parker@myfwc.com.

All communication between ERM and the Consultant shall be done through the contract manager unless directed otherwise by the contract manager for project specific issues. The role of the contract manager is to ensure that communication between ERM and the Consultant is frequent, consistent, and documented. This includes gathering and disseminating documentation and deliverables, schedule review, and invoice review and approval.

4.0 SCOPE OF WORK

This SOW is for the collection, analysis and summary of oyster data from six locations within the LWL. All tasks associated with this SOW shall be conducted by the Consultant in accordance with established techniques outlined within this SOW.

The primary goal of this study is to assess settled oyster density, reproductive development, the prevalence and intensity of *Perkinsus marinus* parasitic infections, and recruitment of juvenile oysters at six locations in the LWL (Figure 1).

5.0 WORK BREAKDOWN STRUCTURE

Study Sites

Oyster sampling will be conducted from July 2020 through June 2023 on three natural reef and three restored reef stations in LWL. The six stations serve as replicates and will be divided into two groups for comparisons of oyster population ecology at natural reefs and restored reefs in LWL. This strategy results in two groups (LW and LW-R) each with three replicate sampling stations. In previous contracts, the restored reef stations were located near John's Island, Grassy Flats and Snook Island. For this contract, a new restored reef station near Tarpon Cove (LW-R 4) will replace the John's Island restored reef station (LW-R 1). Station coordinates are shown in Figure 1 and listed in Table 1.

Water Quality

Water quality sampling will be conducted in conjunction with monthly field sampling at all stations. Recorded parameters will include water depth, temperature, salinity, clarity, pH, and dissolved oxygen concentration. Water depth will be determined with a sounding line and clarity with a standard Secchi disk.



Figure 1. Natural reef (green) and restored reef (red) oyster monitoring stations in Lake Worth Lagoon.

Table 1. Station coordinates for oyster monitoring stations in Lake Worth Lagoon

Group	Type	Station	Latitude °N	Longitude °W
Lake Worth	Natural	1	26 40.181	80 02.618
Lake Worth	Natural	2	26 38.848	80 02.436
Lake Worth	Natural	3	26 35.851	80 02.417
Lake Worth - Restoration	Restored	2	26 37.954	80 02.433
Lake Worth - Restoration	Restored	3	26 37.440	80 02.700
Lake Worth – Restoration	Restored	4	26 41.450	80 02.897

Task 1: Settled Oyster Density

Density sampling will be conducted at all six stations in the spring (March) and fall (September) of each year following methods described in Parker et al. (2013). At each sampled station, fifteen replicate 1/4-m² quadrats will be haphazardly deployed and all oysters within each quadrat will be collected for determination of the number of live and dead oysters with articulated shells, as well as the proportion of dead oysters to the total number of live oysters and dead oysters. In addition, a maximum of 10 live oyster shell heights (SH = maximum linear distance from the umbo to the ventral shell margin) will also be measured from each quadrat.

Task 2: Reproductive and Disease Monitoring

When present, live oysters will be collected monthly for analysis of gonadal development stage and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo). Each month, a sample of five oysters from each of the six stations (total N = five oysters * six reefs = 30 per month) will be transported, live and chilled, to the FWRI laboratory for processing. If no live oysters are available at a station, additional oysters will be collected from another similar station if possible. For example, if no live oysters are available from a restored oyster reef station, then additional oysters will be collected from another restored oyster reef station. Each individual oyster will be processed to assess the reproductive stage and disease status according to the methods described below.

For *P. marinus* (dermo) disease analyses, prevalence and intensity will be diagnosed with Ray's fluid thioglycollate media (RFTM) method (Ray 1966). Small pieces (1 cm²) of gill and mantle tissue will be clipped from each individual oyster and incubated in RFTM media treated with antibiotics and antifungals for 7 days in the dark at room temperature. After the incubation period, tissue pieces will be placed onto glass slides, macerated with sterile razor blades, and stained with Lugol's solution. Mantle and gill tissues were then examined at ×40 magnification for the presence of *P. marinus* hypnospores. Parasite density (infection intensity) will be ranked according to the Mackin scale (Table 2; Mackin 1962).

For reproductive analyses, the tissue remaining after excising the gill and mantle for dermo analyses will be preserved in a modified Davidson's fixative solution (Shaw and Battle 1957) for a minimum of 2 days. Once fixed, cross-sections will be taken approximately halfway between

the adductor muscle and the anterior margin, to include the gonad. Cross-sections will then be **Table 2.** Mackin scale showing stages of *Perkinsus marinus* (dermo) infection intensity (Mackin 1962).

Stage	Category	Number of cells
0	Uninfected	None detected
0.5	Very light	<10
1	Light	11–100 cells
2	Light to moderate	Local concentrations of 24–50 cells
3	Moderate	3 cells in all fields at 100×
4	Moderate heavy	High numbers in all tissues
5	Heavy	Enormous numbers

placed in tissue-embedding cassettes, rinsed and transferred to a 70% solution of ethanol. Histological preparation will consist of dehydrating each oyster in 95% ethanol then embedding the tissue in paraffin. Depending upon the size of the individual oyster, a minimum of one to a maximum of six 3.5- μ m sections will be cut from each embedded sample using a microtome mounted with a glass knife, maintaining a minimum separation of 60 μ m (the approximate maximum diameter of an oocyte) between sections. The sections will be stained with hematoxylin and eosin, and then mounted onto pre-labeled glass slides for analysis. Resultant slides will be examined at \times 200-400 magnification with a compound microscope to ascertain sex and assigned one of four reproductive stages (Table 3) according to a classification scheme modified from the work of Fisher et al. (1996). Because variability of reproductive development stage among oysters is high, oysters collected for analysis are pooled by group, rather than by station to increase sample size.

Table 3. Qualitative reproductive staging criteria for oysters collected from Florida waters (modified from Fisher et al. 1996).

Value	Stage	Observations
1	Developing	Gametogenesis has begun immature gametes located on follicle walls mature gametes may be present
2	Ripe/Spawning	Follicles distended and full of ripe gametes ova compact/sperm with visible tails no immature gametes on follicle walls active spawning, but less than 2/3 depleted
3	Spent/Recycling	Most gametes evacuated from the follicles more than 2/3 depleted
4	Indifferent	Gonads devoid of gametes, cytolysis ongoing

Task 3: Spat Recruitment

To estimate spat recruitment rates, three replicate spat monitoring arrays will be deployed and retrieved at each station on a monthly schedule. Spat monitoring arrays will be constructed and processed as adapted from Southworth and Mann (2004). Each array will consist of 12 axenic adult oyster shells (SH, 5-10 cm) with a hole drilled in the center. Two lengths of galvanized wire will be strung with 6 shells each, then suspended from the arms of a T-shaped PVC frame. The shells will be oriented with their inner surfaces facing downward, and the PVC frame will be pushed into the sediment until the bottommost shell is approximately 5 cm above the sediment surface. Upon retrieval, the shell strings will be labeled and bagged, and new shell strings will immediately be placed on the PVC frame. The retrieved shell strings will be returned to the laboratory, where each shell will be examined for oyster spat with the aid of a magnification lamp or dissecting microscope (maximum magnification, $\times 65$). Juvenile oyster recruitment will be estimated by counting settled spat on the underside of the middle shells on each shell string (Southworth and Mann 2004). Recruitment rates will be obtained by dividing the raw number of spat per shell by the number of days the shell had been deployed, and then standardizing to a 28-day month.

6.0 DELIVERABLES

Task 1: Settled Oyster Abundance

Descriptive statistics, figures and summaries of semi-annual live oyster density, ratio of dead oysters, and shell height will be generated for each applicable quarterly report. For the final report, statistical comparisons will be performed using generalized linear mixed modeling with the SAS Glimmix procedure (Littell et al. 2006). Statistical tests of each parameter will include fixed factors of group (natural vs. restored) and sampling event.

Task 2: Reproductive and Disease Monitoring

Reproductive development will be classified according to the previously described scheme, presented in figures and summarized for each quarterly report. Descriptive statistics, figures and summaries of dermo prevalence and intensity will also be generated for each quarterly report. For the final report, statistical comparisons of dermo prevalence and intensity will be performed using generalized linear mixed modeling with the SAS Glimmix procedure (Littell et al. 2006). Statistical tests of each parameter will include fixed factors of group (natural vs. restored) and sampling event.

Task 3: Spat Recruitment

Descriptive statistics, figures and summaries of spat recruitment rates will be generated for each quarterly report. For the final report, statistical comparisons will be performed using generalized linear mixed modeling with the SAS Glimmix procedure (Littell et al. 2006). Statistical tests will include fixed factors of group (natural vs. restored) and sampling event.

Due Dates: Quarterly summary reports of Tasks 1, 2, and 3 are due 30 days after each quarter. A draft final report is due 90 days after the final sampling month, or September 30, 2023, whichever is later. The completed final report is due no later than 120 days after the final sampling month, or October 30, 2023, whichever is later. Assuming a start date of July 2020, reports will be due on the following dates:

Deliverable	Period Covered	Due Date
Year 1		
Quarterly Report 1	Jul 1, 2020 – Sep 30, 2020	Oct 30, 2020
Quarterly Report 2	Oct 1, 2020 – Dec 31, 2020	Jan 30, 2021
Quarterly Report 3	Jan 1, 2021 – Mar 31, 2021	Apr 30, 2021
Quarterly Report 4	Apr 1, 2021 – Jun 30, 2021	Jul 30, 2021
Year 2		
Quarterly Report 5	Jul 1, 2021 – Sep 30, 2021	Oct 30, 2021
Quarterly Report 6	Oct 1, 2021 – Dec 31, 2021	Jan 30, 2022
Quarterly Report 7	Jan 1, 2022 – Mar 31, 2022	Apr 30, 2022
Quarterly Report 8	Apr 1, 2022 – Jun 30, 2022	Jul 30, 2022
Year 3		
Quarterly Report 9	Jul 1, 2021 – Sep 30, 2022	Oct 30, 2022
Quarterly Report 10	Oct 1, 2021 – Dec 31, 2022	Jan 30, 2023
Quarterly Report 11	Jan 1, 2022 – Mar 31, 2023	Apr 30, 2023
Quarterly Report 12	Apr 1, 2022 – Jun 30, 2023	Jul 30, 2023
Draft Final Report	Jul 1, 2020 – Jun 30, 2023	Sep 30, 2023
Final Report	Jul 1, 2020 – Jun 30, 2023	Oct 30, 2023

Reporting

All data shall be maintained in Microsoft Excel spreadsheets and reports shall be submitted in Microsoft Word. The Consultant shall submit quarterly reports consisting of the following:

- A summary of work performed on each site, including the dates of site visits, and water quality physical parameters;
- Descriptive statistics, figures and summaries of semi-annual settled oyster density and shell height monitoring for each station during applicable quarters;
- Descriptive statistics, figures and summaries of monthly reproductive development and disease monitoring for each station;
- Descriptive statistics, figures and summaries of monthly spat recruitment monitoring for each station;

The final report shall be cumulative and shall summarize all data collected for the 36-month period of the study. It will include statistical comparisons (using the methods described above) of appropriate parameters between groups (natural vs. restored) and among sampling periods and will also relate measured biological parameters to flow associated with freshwater discharges and the physical data, especially salinity, collected during the study. The final report shall include a

discussion of all analytical results, an assessment of limiting factors for reef success, and comparisons to relevant previously published studies (e.g., Scarpa and Laramore 2010).

Budget and Cost Schedule

Budget for 40-month Contract (36 months of sampling)

Category	Cost
OPS Salary (36 months)	\$150,000
Materials & Supplies	\$30,000
Travel	\$8,571
TOTAL DIRECT COST (TDC)	\$188,571
TOTAL INDIRECT COST (5% of TDC)	\$9,429
TOTAL COST (TC)	\$198,000

Deliverable	Period Covered	Due Date	Invoice Amount
Quarterly Report 1	Jul 1, 2020 – Sep 30, 2020	Oct 30, 2020	\$16,000
Quarterly Report 2	Oct 1, 2020 – Dec 31, 2020	Jan 30, 2021	\$16,000
Quarterly Report 3	Jan 1, 2021 – Mar 31, 2021	Apr 30, 2021	\$16,000
Quarterly Report 4	Apr 1, 2021 – Jun 30, 2021	Jul 30, 2021	\$16,000
Year 1 Total			\$64,000
Quarterly Report 5	Jul 1, 2021 – Sep 30, 2021	Oct 30, 2021	\$16,000
Quarterly Report 6	Oct 1, 2021 – Dec 31, 2021	Jan 30, 2022	\$16,000
Quarterly Report 7	Jan 1, 2022 – Mar 31, 2022	Apr 30, 2022	\$16,000
Quarterly Report 8	Apr 1, 2022 – Jun 30, 2022	Jul 30, 2022	\$16,000
Year 2 Total			\$64,000
Quarterly Report 9	Jul 1, 2021 – Sep 30, 2022	Oct 30, 2022	\$16,000
Quarterly Report 10	Oct 1, 2021 – Dec 31, 2022	Jan 30, 2023	\$16,000
Quarterly Report 11	Jan 1, 2022 – Mar 31, 2023	Apr 30, 2023	\$16,000
Quarterly Report 12	Apr 1, 2022 – Jun 30, 2023	Jul 30, 2023	\$16,000
Year 3 Total			\$64,000
Draft Final Report	Jul 1, 2020 – Jun 30, 2023	Sep 30, 2023	\$4,000
Final Report	Jul 1, 2020 – Jun 30, 2023	Oct 30, 2023	\$2,000
Year 4 Total			\$6,000
		Project Total	\$198,000

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recruitment in the Virginia sub estuaries of the Chesapeake Bay. *Journal of Shellfish Research* 23: 391-402.

EXHIBIT "B"

SCHEDULE OF PAYMENTS

The Scope of Work to be completed by CONSULTANT as defined in Exhibit "A" consists of specific completion phases which shall be clearly identified on a phase-by-phase basis upon submission to the COUNTY of certain "deliverables"* as expressly indicated below. Compensation for the work tasks stated herein shall be in accordance with the following Schedule of Payments:

Deliverable 1

Task(s) to be Completed: October 30, 2020

Task 1: Settled Oyster Abundance – fall sampling of live oyster density, ratio of dead oysters and shell height at six stations

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000

Deliverable(s) Required: Quarterly Report 1

Deliverable 2

Task(s) to be Completed: January 30, 2021

Task 1: Settled Oyster Abundance – no work planned for this period

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 2: \$ 16,000

Deliverable(s) Required: Quarterly Report 2

Deliverable 3

Task(s) to be Completed: April 30, 2021

Task 1: Settled Oyster Abundance – spring sampling of live oyster density, ratio of dead oysters and shell height at six stations

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000
Deliverable(s) Required: Quarterly Report 3

Deliverable 4

Task(s) to be Completed: July 30, 2021

Task 1: Settled Oyster Abundance – no work planned for this period

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000
Deliverable(s) Required: Quarterly Report 4

Deliverable 5

Task(s) to be Completed: October 30, 2021

Task 1: Settled Oyster Abundance – fall sampling of live oyster density, ratio of dead oysters and shell height at six stations

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000
Deliverable(s) Required: Quarterly Report 5

Deliverable 6

Task(s) to be Completed: January 30, 2022

Task 1: Settled Oyster Abundance – no work planned for this period

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 2: \$ 16,000
Deliverable(s) Required: Quarterly Report 6

Deliverable 7

Task(s) to be Completed: April 30, 2022

Task 1: Settled Oyster Abundance – spring sampling of live oyster density, ratio of dead oysters and shell height at six stations

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000

Deliverable(s) Required: Quarterly Report 7

Deliverable 8

Task(s) to be Completed: July 30, 2022

Task 1: Settled Oyster Abundance – no work planned for this period

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000

Deliverable(s) Required: Quarterly Report 8

Deliverable 9

Task(s) to be Completed: October 30, 2022

Task 1: Settled Oyster Abundance – fall sampling of live oyster density, ratio of dead oysters and shell height at six stations

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000

Deliverable(s) Required: Quarterly Report 9

Deliverable 10

Task(s) to be Completed: January 30, 2023

Task 1: Settled Oyster Abundance – no work planned for this period

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 2: \$ 16,000

Deliverable(s) Required: Quarterly Report 10

Deliverable 11

Task(s) to be Completed: April 30, 2023

Task 1: Settled Oyster Abundance – spring sampling of live oyster density, ratio of dead oysters and shell height at six stations

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000

Deliverable(s) Required: Quarterly Report 11

Deliverable 12

Task(s) to be Completed: July 30, 2023

Task 1: Settled Oyster Abundance – no work planned for this period

Task 2: Reproductive and Disease Monitoring – monthly sampling of oysters for analysis of gonadal development state and for the prevalence and intensity of the oyster disease *Perkinsus marinus* (dermo) at six stations

Task 3: Spat Recruitment – monthly sampling of juvenile oyster recruitment at six stations

A quarterly report including descriptive statistics, figures and summaries of all parameters measured in Tasks 1, 2 and 3 will be written and submitted.

Completion Time: 3 months Compensation for Phase 1: \$ 16,000

Deliverable(s) Required: Quarterly Report 12

Deliverable 13

Task(s) to be Completed: September 30, 2023

The draft report is due no later than 90 days after the final sampling month or September 30, 2023, whichever is later. The report shall be cumulative and shall summarize all data collected for the 36-

month period of the study. It will include statistical comparisons (using the methods described above) of appropriate parameters between groups (natural vs. restored) and among sampling periods and will also relate measured biological parameters to flow associated with freshwater discharges and the physical data, especially salinity, collected during the study. The draft final report shall include a discussion of all analytical results, an assessment of limiting factors for reef success, and comparisons to results from relevant previously published studies.

Completion Time: 3 months Compensation for Phase 1: \$ 4,000
Deliverable(s) Required: Draft Final Report

Deliverable 14

Task(s) to be Completed: October 30, 2023

The final report is due 30 days after PBC ERM comments to the draft report or by October 30, 2023, whichever is later. The report shall be cumulative and shall summarize all data collected for the 36-month period of the study. It will include statistical comparisons (using the methods described above) of appropriate parameters between groups (natural vs. restored) and among sampling periods and will also relate measured biological parameters to flow associated with freshwater discharges and the physical data, especially salinity, collected during the study. The draft final report shall include a discussion of all analytical results, an assessment of limiting factors for reef success, and comparisons to results from relevant previously published studies.

Completion Time: 1 month Compensation for Phase 1: \$ 2,000
Deliverable(s) Required: Final Report

* "Deliverables" shall be defined as progress reports, prepared maps, bid documents, completed drawings, specific reports, work plans, documentation of meetings attended, assessment study reports, analysis reports, summary reports, recommendation reports and related draft reports and verifiable deliverables.