PINELLAS COUNTY GOVERNMENT IS COMMITTED TO PROGRESSIVE PUBLIC POLICY, SUPERIOR PUBLIC SERVICE, COURTEOUS PUBLIC CONTACT, JUDICIOUS EXERCISE OF AUTHORITY AND SOUND MANAGEMENT OF PUBLIC RESOURCES, TO MEET THE NEEDS AND CONCERNS OF OUR CITIZENS TODAY AND TOMORROW.

NON-CONTINUING PROFESSIONAL SERVICES AGREEMENT

RFP TITLE: Lake Tarpon – Brooker Creek Watershed Management Plan

RFP CONTRACT NO. 178-0160-NC (SS)

COUNTY PID NO. 003672A and 003688A

NON-CONTINUING FIRM: Wood Environment & Infrastructure Solutions, Inc.

PROFESSIONAL ENGINEERING, BIOLOGICAL, PLANNING AND ENVIRONMENTAL SERVICES NON-CONTINUING SERVICES SAMPLE AGREEMENT

TABLE OF CONTENTS

SECTION 1
INTENT OF AGREEMENT

AGREEMENT FOR PROFESSIONAL ENGINEERING, BIOLOGICAL, PLANNING AND ENVIRONMENTAL SERVICES FOR

Lake Tarpon – Brooker Creek Watershed Management Plan

THIS AGREEMENT, entered into on the 9TH day of APRIL, 2019, between PINELLAS COUNTY, a political subdivision of the State of Florida, hereinafter referred to as the COUNTY, represented by its Board of County Commissioners, and, Wood Environment & Infrastructure Solutions, Inc., with offices in Tampa, Florida hereinafter referred to as the CONSULTANT.

WITNESSETH, That:

WHEREAS, Pinellas County, herein referred to as the COUNTY and the Southwest Florida Water Management District, herein referred to as the District, requires **PROFESSIONAL ENGINEERING, BIOLOGICAL, PLANNING AND ENVIRONMENTAL SERVICES** associated with support to develop a watershed management plan and perform all other professional services as may be required for the Lake Tarpon and Brooker Creek watersheds in accordance with County and The District (SWFWMD) and Federal Emergency Management Agency (FEMA) requirements. The water quality management plan for Lake Tarpon has already been completed, so only the flood management portion of the WMP for the Lake Tarpon watershed will be needed. A new WMP is needed for Brooker Creek.

The WMPs will provide an evaluation of the watersheds, identify problems requiring management of resources, and recommend solutions to improve each respective watershed's hydrology. The WMPs shall identify and address localized flooding situations, erosion, sedimentation and SLR. The WMP will include, the evaluation of existing 10-year, 25-year, 50-year and 100-year flood elevations, the diagnostic evaluation of the watersheds, the use of an appropriate hydraulic/hydrologic model that can be approved by the National Flood Insurance Program, the County and SWFWMD, and the development of a WMP that provides recommendations for non-structural and site-specific structural improvements. Climate change scenarios such as SLR and changes in rainfall patterns should also be considered. The County's preference is to model the watershed using ICRP4.

WHEREAS, the COUNTY desires the CONSULTANT provide PROFESSIONAL ENGINEERING BIOLOGICAL, PLANNING AND ENVIRONMENTAL SERVICES requisite to the development of the PROJECT; and

WHEREAS, the CONSULTANT has expressed the willingness and ability to provide the aforementioned Services; and

NOW THEREFORE, the COUNTY and the CONSULTANT, in consideration of the mutual covenants hereinafter set forth, agree as follows:

SECTION 2
SCOPE OF PROJECT

2.1 PROJECT DESCRIPTION AND PROFESSIONAL REQUIREMENTS

For the purposes of this Agreement the term PROJECT shall include all areas of proposed watershed management plan, all areas that may reasonably be judged to have an impact on the PROJECT, and all PROJECT development phases and the services and activities attendant thereto. It is not the intent of this Agreement to identify the exact limits or details involved in providing satisfactorily completed PROJECT management plan documents. The CONSULTANT shall provide the following professional services to prepare a watershed management plan of the PROJECT. The PROJECT design shall be based on the following data:

The PROJECT will be used as a tool in the planning, regulation, and management of the Watershed for future development and as a basis for determining and prioritizing capital improvements. These objectives will be met, in part, by conducting an analysis of the watershed in order to characterize the existing watershed conditions and recommend improvements for flood protection, natural systems, habitat, water quality, erosion control, public awareness and involvement, regulatory control, and capital improvements.

Exhibit A, Scope of Services is attached.

a) Required Deliverables

- All deliverables listed in the Tasks in the Scope of Services in Exhibit A
- A complete watershed management plan including model input and output data and associated geodatabases.

2.2 PROJECT PHASES

All project phases shall be completed on or before the milestone dates provided in the COUNTY approved PROJECT design schedule referenced in 2.3 E.

2.3 CONSULTING RESPONSIBILITIES

A. It is the intention of the COUNTY that the CONSULTANT is held accountable for its work, including checking and review each task deliverable, and that submittals are complete.

B. The CONSULTANT shall be responsible for the accuracy of the work and shall promptly correct its errors and omissions without additional compensation. Acceptance of the work by the COUNTY will not relieve the CONSULTANT of the responsibility for subsequent correction of any errors and the clarification of any ambiguities.

C. The CONSULTANT represents that it has secured or will secure, at its own expense, all personnel necessary to complete this Agreement; none of whom shall be employees of or have any contractual relationship with the COUNTY. Primary liaison with the COUNTY will be through the CONSULTANT'S Project Manager. All of the services required hereunder will be performed by the CONSULTANT or under the CONSULTANT'S supervision, and all personnel engaged in the work shall be fully qualified and shall be authorized or permitted under law to perform such services.

D. The CONSULTANT shall endorse all reports, calculations, and survey data. Services shall be prepared under the direction of an engineer registered in the State of Florida and qualified in the required discipline. Products or services performed or checked shall be signed and sealed by the CONSULTANT'S Florida registered engineer.

E. The CONSULTANT shall be responsible for the preparation of a PROJECT design schedule, prepared in Microsoft Project 2013 or later, which shows a breakdown of all tasks to be performed, and their relationship in achieving the completion of each phase of work. A bar chart schedule showing overall PROJECT time frames should also be prepared. These schedules must be submitted for COUNTY approval within ten (10) days of the initial PROJECT Notice to Proceed. These schedules will be used to verify CONSULTANT performance in relationship to Fees claimed and to allow the COUNTY'S Project Manager to monitor the CONSULTANT'S efforts. The CONSULTANT shall be responsible for any updates to these schedules and for documenting in writing to the COUNTY any major deviations in the actual versus estimated PROJECT time frames. The CONSULTANT shall be responsible to adhere to the performance schedule in Exhibit A. The COUNTY may approve deviations from this performance schedule upon written justification from the CONSULTANT.

F. The CONSULTANT shall respond, in writing, to all review comments made by the COUNTY, and shall incorporate appropriate design adjustments into the PROJECT, in a timely manner, resulting from the review exchange.

G. CONSULTANT is responsible for carrying out the grant requirements as listed in Attachment A.

2.4 GENERAL DESIGN CONDITIONS

2.4.1 The CONSULTANT shall coordinate and solicit appropriate input, with the knowledge of the COUNTY.

2.4.2 All deliverables shall be delivered electronically and or on an external hard drive as well as providing reproducible hard copies of the reports. All reports and other documents shall be delivered electronically and or on a CD ROM, Microsoft Word & Excel format as required, as well as the reproducible hard copies.

2.4.3 One (1) original and nine (9) copies of all deliverables are required unless specific submittal requirements are specified elsewhere in this Agreement.

2.4.4 The CONSULTANT shall develop acceptable alternates to any and all design recommendations that may be declared unacceptable.

2.5 GOVERNING SPECIFICATIONS REGULATIONS AND PERTINENT DOCUMENTS

The PROJECT shall be designed by the CONSULTANT in accordance with applicable industry standards. The CONSULTANT shall be responsible for utilizing and maintaining current knowledge of any laws, ordinances, codes, rules, regulations, standards, guidelines, special conditions, specifications, or other mandates relevant to the PROJECT or the services to be performed. The CONSULTANT will perform the required professional services in accordance with the guidelines and standards listed below as applicable:

• Flood Hazard Mapping Partners (available at https://www.fema.gov/media-library/assets/documents/13948),

• The nine elements listed in United States Environmental Protection Agency (USEPA) 319(h) Guidance Manual (http://water.epa.gov/polwaste/nps/cwact.cfm),

• SWFWMD Recommended Projection of Sea Level Rise in the Tampa Bay Region (http://www.tbrpc.org/recommended-projection-of-sea-level-rise-in-the-tampa-bay-region/),

• SWFWMD standards (ftp://ftp.swfwmd.state.fl.us/pub/GWIS/)
Username: Anonymous
Password: (your email address)

• Pinellas County Standards (http://www.pinellascounty.org/plan/comprehensive_plan.htm)

SECTION 3
SERVICES TO BE FURNISHED BY THE CONSULTANT

3.1 SEE EXHIBIT A – SCOPE OF SERVICES.

3.2 BIDDING PHASE - Not applicable

3.3 CONSTRUCTION PHASE – Not Applicable

3.4 PROVISIONS RELATED TO ALL PHASES

3.4.1 Not Applicable

3.4.2 The CONSULTANT will coordinate work designed by various disciplines.

3.4.4 Not Applicable

3.4.5 Not Applicable

3.4.6 The CONSULTANT shall make such reviews, visits, attend such meetings and conferences and make such contacts as are necessary for the proper preparation of the watershed management plan for the PROJECT.

3.4.7 The COUNTY in no way obligates itself to check the CONSULTANT'S work and further is not responsible for maintaining project schedules.

3.4.8 Other CONSULTANT responsibilities shall be as listed below:

3.4.9 Not Applicable

3.4.10 All work prepared and/or submitted shall be reviewed and checked by a CONSULTANT (Engineer) registered in Florida. All reports shall be signed and sealed by the Professional CONSULTANT in responsible charge.

3.5 PERMIT APPLICATIONS AND APPROVALS - Not Applicable

3.6 COORDINATION WITH UTILITY SERVICES AND AFFECTED PUBLIC AGENCIES – Not Applicable

SECTION 4
SERVICES TO BE FURNISHED BY THE COUNTY

4.1 The COUNTY shall provide the following for the CONSULTANT'S use and guidance:

A. Copies of existing maps, existing aerial photographs, as-built construction plans and data pertinent to the PROJECT design, existing stormwater inventory, previous watershed management plans which the COUNTY may have in its possession.

SECTION 5
PRESENTATIONS, PUBLIC MEETINGS AND TECHNICAL LIAISON

The following services shall be provided at no additional cost to the COUNTY:

5.1 Prior to the commencement of design activities, the COUNTY will conduct with the CONSULTANT a pre-design conference for the purpose of discussing issues relative to the PROJECT, report preparation and submittal procedures and to convey to the CONSULTANT such items provided for under Section 4 as may be required and available at that time.

5.2 The CONSULTANT shall make presentations to the COUNTY'S Director of Public Works or designee as often as reasonably requested and at any point in the PROJECT development should issues arise which make additional presentations other than those listed elsewhere in this Agreement, in the COUNTY'S best interest.

5.3 The CONSULTANT shall participate in Monthly PROJECT Conferences with COUNTY staff personnel. The meetings will be scheduled by the COUNTY at a location provided by the COUNTY.

5.4 Not Applicable

5.5 The CONSULTANT shall keep accurate minutes of all meetings and distribute copies to all attending. These meetings shall be set up through the COUNTY and appropriate COUNTY staff shall attend.

SECTION 6
PAYMENT GUIDELINES AND CATEGORY OF SERVICES

6.1 BASIC SERVICES

The services described and provided for under Sections 2, 3 and Exhibit A shall constitute the Basic Services to be performed by the CONSULTANT under this Agreement.

6.2 OPTIONAL SERVICES

Services noted in Exhibit A of this Agreement as "Optional" shall constitute the Optional Services to be performed by the CONSULTANT under this Agreement. Optional Services shall be rendered by the CONSULTANT only upon written authorization by the COUNTY's Director of Public Works, or designee.

6.3 CONTINGENCY SERVICES

When authorized in writing by the COUNTY'S Director of Public Works or designee, the CONSULTANT shall furnish services resulting from unforeseen circumstances not anticipated under Basic Services due to minor changes in the PROJECT scope.

Compensation for any Contingency Services assignments shall be negotiated between the COUNTY and the CONSULTANT at the time the need for services becomes known.

6.4 ADDITIONAL SERVICES

When executed by the County Administrator or Board of County Commissioners as an amendment to this Agreement, the CONSULTANT shall provide such additional services as may become necessary because of changes in the Scope of PROJECT. Additional Services shall be classified as any change beyond the Contingency Services upset limit for compensation.

6.5 INVOICING

The CONSULTANT may submit invoices for fees earned upon completion, and acceptance by the County, of individual tasks. Such invoicing shall be supported by a Progress Report showing the actual tasks performed and their relationship to the fee claimed for each phase. The COUNTY shall make payments to the CONSULTANT for work performed in accordance with the Local Government Prompt Payment Act, Section 218.70 et. seq., F.S.

The CONSULTANT shall provide copies of supporting receipts/invoices/billing documentation. Self-performed reimbursable work shall be reimbursed at the firm's standard hourly rates for all related services. A breakdown of man hours and billing rates shall be provided with each invoice. An hourly rate sheet is attached (Exhibit B).Should an invoiced amount for fees earned appear to exceed the work effort believed to be completed, the COUNTY may, prior to processing of the invoice for payment, require the CONSULTANT to submit satisfactory evidence to support the invoice.

All progress reports shall be mailed to the attention of the designated Project Manager, Public Works Department, 22211 US Highway 19 North, Clearwater, FL 33765.

SUPPLIER shall submit invoices for payment due as provided herein with such documentation as required by Pinellas County and all payments shall be made in accordance with the requirements of Section 218.70 *et. seq,* Florida Statutes, "The Local Government Prompt Payment Act." Invoices shall be submitted to the address below unless instructed otherwise on the purchase order, or if no purchase order, by the ordering department:

Finance Division Accounts Payable
Pinellas County Board of County Commissioners
P. O. Box 2438
Clearwater, FL 33757

Each invoice shall include, at a minimum, the Supplier's name, contact information and the standard purchase order number. The County may dispute any payments invoiced by SUPPLIER in accordance with the County's Dispute Resolution Process for Invoiced Payments, established in accordance with Section 218.76, Florida Statutes, and any such disputes shall be resolved in accordance with the County's Dispute Resolution Process.

Fees for contingent or additional services authorized shall be invoiced separately, and shall be due and payable in full upon the presentation of satisfactory evidence that the corresponding services have been performed.

SECTION 7
COMPENSATION TO THE CONSULTANT

7.1 For the BASIC SERVICES provided for in this Agreement, as defined in Section 3.10, the COUNTY agrees to pay the CONSULTANT as follows:

Lake Tarpon Watershed Management Plan:

A Lump Sum Fee of: Six Thousand Eight Hundred Seventy and 00/100 Dollars ($6,870.00) for the Task 1.1 – Project Development Phase of the PROJECT.

A Lump Sum Fee of: Two Hundred Twenty-Seven Thousand One Hundred Fifty-Three and 00/100 Dollars ($227,153.00) for Task 1.2 - Watershed Evaluation Phase of the PROJECT.

A Lump Sum Fee of: One Hundred Twenty-Two Thousand Eight Hundred Two and 00/100 Dollars ($122,802.00) for Task 1.3 – Floodplain Analysis Phase of the PROJECT.

A Lump Sum Fee of: Thirty Seven Thousand Five Hundred Thirty-Eight and 00/100 Dollars ($37,538.00) for the Task 1.4 – FPLOS Determination, Drainage Improvement Alternatives Analysis and Recommendations Phase of the PROJECT.

Brooker Creek Watershed Management Plan:

A Lump Sum Fee of: Twelve Thousand Two Hundred Twenty-Two and 00/100 Dollars ($12,222.00) for the Task 2.1 – Project Development Phase of the PROJECT.

A Lump Sum Fee of: Three Hundred Forty-Two Thousand Four Hundred Thirty-Two and 00/100 Dollars ($342,432.00) for Task 2.2 – Watershed Evaluation Phase of the PROJECT.

A Lump Sum Fee of: Two Hundred Ten Thousand Five Hundred Sixty and 00/100 Dollars ($210,560.00) for the Task 2.3 – Floodplain Analysis Phase of the PROJECT.

A Lump Sum Fee of: One Hundred Sixty-Nine Thousand Two Hundred Seventy-One and 00/100 Dollars ($169,271.00) for the Task 2.4 – FPLOS Determination, Drainage Improvement Alternatives Analysis and Recommendations Phase of the PROJECT.

The above fees shall constitute the total not to exceed amount of One Million One Hundred Twenty-Eight Thousand Eight Hundred Forty-Eight and 00/100 Dollars **($1,128,848.00)** to the CONSULTANT for the performance of Basic Services. All man hours are billed per the established and agreed hourly rates. The hourly rates are fully loaded and include all labor, overhead, expenses and profit of any nature including travel within the Tampa Bay Metropolitan Statistical area. Travel outside of that area will be reimbursed in accordance with Section 112.061 F.S.

7.2 For the OPTIONAL SERVICES provided for in the Agreement, as defined in Exhibit A, the COUNTY agrees to pay the CONSULTANT as follows:

A Lump Sum Fee of: **($N/A)** for the Task 8a of the PROJECT

7.3 For any CONTINGENCY SERVICES performed, the COUNTY agrees to pay the CONSULTANT, a negotiated fee based on the assignment, up to a maximum amount not to exceed Thirty-Nine Thousand Four Hundred Thirty-Six and 00/100 Dollars (**$39,436.00**) for the Lake Tarpon Watershed Management Plan and Seventy-Three Thousand Four Hundred Forty-Nine and 00/100 Dollars for the **($73,449.00)** for the Brooker Watershed Management Plan for a total CONTINGENTY SERVICES amount of One Hundred Twelve Thousand Eight Hundred Eighty-Five and 00/100 Dollars (**$112,885.00**) for all assignments performed.

7.4 Total agreement amount is One Million Two Hundred Forty-One Thousand Seven Hundred Thirty-Three and 00/100 Dollars **($1,241,733.00)**.

7.5 For any ADDITIONAL SERVICES, the COUNTY agrees to pay the CONSULTANT a negotiated total fee based on the work to be performed as detailed by a written amendment to this Agreement.

7.6 In the event that this Agreement is terminated under the provisions of this contract the total and complete compensation due the CONSULTANT shall be as established by the COUNTY based on the COUNTY'S determination of the percentage of work effort completed to date of termination.

SECTION 8
PERFORMANCE SCHEDULE

Time is of the essence in this Agreement. The CONSULTANT shall plan and execute the performance of all services provided for in this Agreement in such manner as to ensure their proper and timely completion in accordance with the following schedule:

8.1 The services to be rendered by the CONSULTANT shall be commenced upon receipt from the COUNTY of written "NOTICE TO PROCEED."

8.2 All project phases shall be completed on or before the milestone dates provided in the COUNTY approved PROJECT design schedule referenced in 2.3 E.

8.3 The CONSULTANT shall not be held responsible for delays in the completion of the PROJECT design when the COUNTY causes such delays. The COUNTY reviews related to the above submittals shall not exceed twenty-one (21) days.

SECTION 9
AUTHORIZATION FOR CONTINGENT OR ADDITIONAL SERVICES

9.1 The CONTINGENCY services provided for under this Agreement shall be performed only upon prior written authorization from the Director of Public Works or designee.

9.2 The ADDITIONAL services provided for under this Agreement shall be performed only upon approval of the County Administrator or Board of County Commissioners.

9.3 The CONSULTANT shall perform no services contemplated to merit compensation beyond that provided for in this Agreement unless such services, and compensation therefore, shall be provided for by appropriate written authorization or amendment(s) to this Agreement.

SECTION 10
FIRMS AND INDIVIDUALS PROVIDING SUBCONSULTING SERVICES

The COUNTY reserves the right to review the qualifications of any and all subconsultants, and to reject any subconsultant in a proper and timely manner, deemed not qualified to perform the services for which it shall have been engaged. Any subconsultant not listed as part of the prime consultants team at time of award must be approved by the Director of Purchasing prior to performing any service.

SECTION 11
SATISFACTORY PERFORMANCE

All services to be provided by the CONSULTANT under the provisions of this Agreement, including services to be provided by subcontractors, shall be performed to the reasonable satisfaction of the COUNTY'S Director of Public Works or designee.

SECTION 12
RESOLUTION OF DISAGREEMENTS

12.1 The COUNTY shall reasonably decide all questions and disputes, of any nature whatsoever, that may arise in the execution and fulfillment of the services provided for under this Agreement.

12.2 The decision of the COUNTY upon all claims, questions, disputes and conflicts shall be final and conclusive, and shall be binding upon all parties to this Agreement, subject to judicial review.

SECTION 13
CONSULTANT'S ACCOUNTING RECORDS

13.1 Records of expenses pertaining to all services performed shall be kept in accordance with generally accepted accounting principles and procedures.

13.2 The CONSULTANT'S records shall be open to inspection and subject to examination, audit, and/or reproduction during normal working hours by the COUNTY'S agent or authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the CONSULTANT or any of his payees pursuant to the execution of the Agreement. These records shall include, but not be limited to, accounting records, written policies and procedures, subcontractor files (including proposals of successful and unsuccessful bidders), original estimates, estimating worksheets, correspondence, change order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to this Agreement. They shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this Agreement. The COUNTY shall not audit payroll and expense records on task assignments paid by lump sum fee.

13.3 For the purpose of such audits, inspections, examinations and evaluations, the COUNTY'S agent or authorized representative shall have access to said records from the effective date of the Agreement, for the duration of work, and until three (3) years after the date of final payment by the COUNTY to the CONSULTANT pursuant to this Agreement.

13.4 The COUNTY'S agent or authorized representative shall have access to the CONSULTANT'S facilities and all necessary records in order to conduct audits in compliance with this Section. The COUNTY'S agent or authorized representative shall give the CONSULTANT reasonable advance notice of intended inspections, examinations, and/or audits.

SECTION 14
OWNERSHIP OF PROJECT DOCUMENTS

Upon completion or termination of this Agreement, all records, documents, tracings, plans, specifications, maps, evaluations, reports and other technical data, other than working papers, prepared or developed by the CONSULTANT under this Agreement shall be delivered to and become the property of the COUNTY. The CONSULTANT, at its own expense, may retain copies for its files and internal use. The COUNTY shall not reuse any design plans or specifications to construct another project at the same or a different location without the CONSULTANT'S specific written verification, adaptation or approval.

SECTION 15
INSURANCE COVERAGE AND INDEMNIFICATION

15.1 The Contractor must maintain insurance in at least the amounts required in the Request for Proposal throughout the term of this contract. The contractor must provide a Certificate of Insurance in accordance with Insurance Requirements of the Request for Proposal, evidencing such coverage prior to issuance of a purchase order or commencement of any work under this Contract. See Section C Insurance Requirements – Attached

15.2 If the CONSULTANT is an individual or entity licensed by the state of Florida who holds a current certificate of registration under Chapter 481, Florida Statutes, to practice architecture or landscape architecture, under Chapter 472, Florida Statutes, to practice land surveying and mapping, or under Chapter 471, Florida Statutes, to practice engineering, and who enters into a written agreement with the COUNTY relating to the planning, design, construction, administration, study, evaluation, consulting, or other professional and technical support services furnished in connection with any actual or proposed construction, improvement, alteration, repair, maintenance, operation, management, relocation, demolition, excavation, or other facility, land, air, water, or utility development or improvement, the CONSULTANT will indemnify and hold harmless the COUNTY, and 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 the CONSULTANT and other persons employed or utilized by the CONSULTANT in the performance of the Agreement.

SECTION 16
EQUAL EMPLOYMENT OPPORTUNITY CLAUSE
FOR CONTRACTS NOT SUBJECT TO EXECUTIVE ORDER 11246

In carrying out the contract, the CONSULTANT shall not discriminate against employee or applicant for employment because of race, color, religion, sex or national origin.

SECTION 17
INDEPENDENT CONTRACTOR STATUS AND COMPLIANCE WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1986

CONSULTANT acknowledges that it is functioning as an independent contractor in performing under the terms of this Agreement, and it is not acting as an employee of COUNTY. CONSULTANT acknowledges that it is responsible for complying with the provisions of the Immigration Reform and Control Act of 1986, located at 8 U.S.C. Section 1324, et seq., and regulations relating thereto. Failure to comply with the above provisions of this contract shall be considered a material breach and shall be grounds for immediate termination of the contract.

SECTION 18
PROHIBITION AGAINST CONTINGENT FEE

The CONSULTANT warrants that he 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 Agreement, and that he 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 Agreement.

SECTION 19
TRUTH IN NEGOTIATIONS

By execution of this Agreement, the CONSULTANT certifies to truth-in-negotiations and that wage rates and other factual unit costs supporting the compensation are accurate, complete and current at the time of contracting. Further, the original contract amount and any additions thereto shall be adjusted to exclude any significant sums where the COUNTY determines the contract price was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. Such adjustments must be made within one (1) year following the end of the contract.

SECTION 20
SUCCESSORS AND ASSIGNS

The CONSULTANT shall not assign, sublet, or transfer his interest in this Agreement without the written consent of the COUNTY.

SECTION 21
INTEREST ON JUDGMENTS

In the event of any disputes between the parties to this Agreement, including without limitation thereto, their assignees and/or assigns, arising out of or relating in any way to this Agreement, which results in litigation and a subsequent judgment, award or decree against either party, it is agreed that any entitlement to post judgment interest, to either party and/or their attorneys, shall be fixed by the proper court at the rate of five percent (5%), per annum, simple interest. Under no circumstances shall either party be entitled to pre-judgment interest. The parties expressly acknowledge and, to the extent allowed by law, hereby opt out of any provision of federal or state statute not in agreement with this paragraph.

SECTION 22
TERMINATION OF AGREEMENT

22.1 The COUNTY reserves the right to cancel this Agreement, without cause, by giving thirty (30) days prior written notice to the CONSULTANT of the intention to cancel. Failure of the CONSULTANT to fulfill or abide by any of the terms or conditions specified shall be considered a material breach of contract and shall be cause for immediate termination of the contract at the discretion of COUNTY. Alternatively, at the COUNTY'S discretion, the COUNTY may provide to CONSULTANT thirty (30) days to cure the breach. Where notice of breach and opportunity to cure is given, and CONSULTANT fails to cure the breach within the time provided for cure, COUNTY reserves the right to treat the notice of breach as notice of intent to cancel the Agreement for convenience.

22.2 If COUNTY terminates the Agreement for convenience, other than where the CONSULTANT breaches the Agreement, the CONSULTANT'S recovery against the COUNTY shall be limited to that portion of the CONSULTANT'S compensation earned through date of termination, together with any costs reasonably incurred by the CONSULTANT that are directly attributable to the termination. The CONSULTANT shall not be entitled to any further recovery against the COUNTY, including but not limited to anticipated fees or profit on work not required to be performed.

22.3 Upon termination, the CONSULTANT shall deliver to the COUNTY all original papers, records, documents, drawings, models, and other material set forth and described in this Agreement.

22.4 In the event that conditions arise, such as lack of available funds, which in the COUNTY'S opinion make it advisable and in the public interest to terminate this Agreement, it may do so upon written notice.

SECTION 23
AGREEMENT TERM

This Agreement will become effective on the date of execution first written above and shall remain in effect for forty - eight **(48)** consecutive calendar months from the commencement date on the Notice to Proceed unless terminated at an earlier date under other provisions of this Agreement, or unless extended for a longer term by amendment.

SECTION 24
CONFLICT OF INTEREST

24.1 By accepting award of this Contract, the CONSULTANT, which shall include its directors, officers and employees, represents that it presently has no interest in and shall acquire no interest in any business or activity which would conflict in any manner with the performance of services required hereunder, including as described in the CONSULTANT'S own professional ethical requirements. An interest in a business or activity which shall be deemed a conflict includes but is not limited to direct financial interest in any of the material and equipment manufacturers suppliers, distributors, or contractors who will be eligible to supply material and equipment for the PROJECT for which the CONSULTANT is furnishing its services required hereunder.

24.2 If, in the sole discretion of the County Administrator or designee, a conflict of interest is deemed to exist or arise during the term of the contract, the County Administrator or designee may cancel this contract, effective upon the date so stated in the Written Notice of Cancellation, without penalty to the COUNTY.

SECTION 25
ENTIRE AGREEMENT

This Agreement represents, together with all Exhibits, Appendices, and Attachments the entire written Agreement between the COUNTY and the CONSULTANT and may be amended only by written instrument signed by both the COUNTY and the CONSULTANT.

SECTION 26
PUBLIC ENTITY CRIMES

CONSULTANT is directed to the Florida Public Entity Crime Act, Fla. Stat. 287.133, and Fla. Stat. 287.135 regarding Scrutinized Companies, and CONSULTANT agrees that its bid and, if awarded, its performance of the agreement will comply with all applicable laws including those referenced herein. CONSULTANT represents and certifies that CONSULTANT is and will at all times remain eligible to bid for and perform the services subject to the requirements of these, and other applicable, laws. CONSULTANT agrees that any contract awarded to CONSULTANT will be subject to termination by the County if CONSULTANT fails to comply or to maintain such compliance.

SECTION 27
PUBLIC RECORDS

Contractor acknowledges that information and data it manages as part of the services may be public records in accordance with Chapter 119, Florida Statutes and Pinellas County public records policies. Contractor agrees that prior to providing services it will implement policies and procedures to maintain, produce, secure, and retain public records in accordance with applicable laws, regulations, and County policies, including but not limited to the Section 119.0701, Florida Statutes. Notwithstanding any other provision of this Agreement relating to compensation, the Contractor agrees to charge the County, and/or any third parties requesting public records only such fees allowed by Section 119.07, Florida Statutes, and County policy for locating and producing public records during the term of this Agreement.

SECTION 28
GOVERNING LAW AND AGREEMENT EXECUTION

This Agreement shall be governed by the laws of the State of Florida.

IN WITNESS WHEREOF, the parties herein have executed this Agreement as of the day and year first written above.

Firm Name: Wood Environment & Infrastructure Solutions, Inc.

By: Thomas M Bucci
Print Name: THOMAS M Bucci
Title: REGION MANAGER Date: 2/28/19

ATTEST:

By: Brad Knight
Print Name: Brad Knight
Title: Chief Counsel Date: 2/28/2019

(CORPORATE SEAL)

PINELLAS COUNTY, by and through its Board of County Commissioners

By: Karen Seel
Name
Chairman Date: 4/9/19

ATTEST:

Ken Burke, clerk of the Circuit Court

By: Deputy Clerk Date: 4-9-19

APPROVED AS TO FORM

By:
Office of the County Attorney

ATTACHMENT A

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT GRANT REQUIREMENTS

This project is partially funded by the Southwest Florida Water Management District. The District is committed to supplier diversity in the performance of all contracts associated with District cooperatively funded projects. The contractor is encouraged to make good faith efforts to include participation of minority and women-owned and small business enterprises, as contractors and subcontractors.

Upon completion of **the** Lake Tarpon **and** Brooker Creek Watershed Management Plan**s**, the County will ask the contractor to provide a report titled "MINORITY/WOMEN OWNED AND SMALL BUSINESS UTILIZATION REPORT", which is on the page following this special notice, indicating all contractors and subcontractors who performed work on this project and the amount spent with each and whether each was a minority owned or women owned or small business enterprise. If no minority owned or woman owned or small business enterprises were utilized, the report shall so indicate. There is no minimum requirement or quota for utilization of these enterprises. When requested by the County, the contractor shall provide said report to the County within two weeks after it is requested.

PUBLIC ENTITY CRIMES. Pursuant to Subsections 287.133(2) and (3), F.S., a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor,
or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, F.S., for Category Two, for a period of 36 months following the date of being placed on the convicted vendor list.

DISCRIMINATION. Pursuant to Subsection 287.134(2)(a), F.S., an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity.

SCRUTINIZED COMPANIES. Pursuant to Section 287.135, F.S., a company that, at the time of bidding or submitting a proposal for a new contract or renewal of an existing contract, is on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473, F.S., is ineligible for, and may not bid on, submit a proposal for, or enter into or renew a contract with an agency or local governmental entity for goods or services of $1 million or more. Any contract with an agency or local governmental entity for goods or services of $1 million or more entered into or renewed on or after July 1, 2011, must contain a provision that allows for the termination of such contract at the option of the awarding body if the company is found to have submitted a false certification as provided under Subsection 287.135(5), F.S., or has been placed on either of the aforementioned lists.

Contractor has read and understood the foregoing paragraphs regarding Public Entity Crimes, Discrimination, and Scrutinized Companies, and Contractor agrees that its bid and, if awarded, its performance of the agreement will comply with all applicable laws including those referenced in the paragraphs above. Contractor represents that Contractor is and will at all times remain eligible to bid for and perform the services subject to the requirements these and other applicable, laws.

MINORITY/WOMEN OWNED AND SMALL BUSINESS UTILIZATION REPORT

Projects receiving $100,000 or more in cooperative funding from the Southwest Florida Water Management District require the submission of the following information within 30 days of any amendment increasing project funding and with the final invoice. Questions regarding use of this form should be directed to Contracts Administration, Phone (352) 796-7211 ext. 4132.

Cooperator: _____

Agreement No.: _____

Project Name: _____

Total Project Cost: _____

NAMES OF CONTRACTORS AND SUBCONTRACTORS UTILIZED	TOTAL AMOUNT PAID	INDICATE THE ONE CATEGORY THAT BEST DESCRIBES EACH ORGANIZATION LISTED*												
		BUSINESS CLASSIFICATION		CERTIFIED MBE					NON-CERTIFIED MBE					UNKNOWN
		NON-MINORITY	SMALL BUSINESS Section 288.703(1) F.S.	AFRICAN AMERICAN	HISPANIC AMERICAN	ASIAN/HAWAIIAN AMERICAN	NATIVE AMERICAN	AMERICAN WOMAN	AFRICAN AMERICAN	HISPANIC AMERICAN	ASIAN/HAWAIIAN AMERICAN	NATIVE AMERICAN	AMERICAN WOMAN	

* □ Our organization does not collect minority status data.

Signature Date Print Name and Title

Exhibit A

SCOPE OF SERVICES

ENGINEERING CONSULTING SERVICES
RFP No.: 178-0160-NC (SS)

Professional Engineering, Biological, Planning, and Environmental Services For
Lake Tarpon – Brooker Creek Watershed Management Plan

Prepared for:

Pinellas County
Public Works Department
22211 US Hwy 19 N Bldg. 1
Clearwater, FL 33765

Prepared by:

Wood Environment & Infrastructure Solutions, Inc.
1101 Channelside Drive, Suite 200
Tampa, Florida 33602

January 2019

Table of Contents

Scope of Services

I. PROJECT TITLE

Lake Tarpon – Brooker Creek Watershed Management Plan

II. OBJECTIVE/PROJECT DESCRIPTION

On behalf of the Pinellas County Board of County Commissioners, the Public Works Department is seeking the services of a consulting firm qualified to develop a Watershed Management Plan (WMP) for the Lake Tarpon and Brooker Creek watersheds in accordance with County, Southwest Florida Water Management District (SWFWMD or DISTRICT) and Federal Emergency Management Agency (FEMA) requirements. The water quality management plan for Lake Tarpon has already been completed, so only the flood management portion of the WMP for the Lake Tarpon watershed will be needed. A new WMP is needed for Brooker Creek.

III. BACKGROUND

Lake Tarpon
The Lake Tarpon watershed within Pinellas County has an area of roughly 19 square miles and is the largest lake in Pinellas County, with a surface area of roughly 4 square miles. Lake Tarpon receives runoff from adjacent watersheds, Brooker Creek and South Creek. Over the years the Lake Tarpon watershed has seen substantial increase of development and urbanization, which has resulted in increased runoff. Due to construction projects by both U.S. Army Corps of Engineers and SWFWMD, Lake Tarpon solely outfalls through the canal to the south.

Brooker Creek
The Brooker Creek watershed contains 37 named lakes, multiple wetlands and the watershed's namesake, Brooker Creek. Brooker Creek is the primary tributary to Lake Tarpon. The Brooker Creek watershed spans approximately 48 square miles (32 square miles in Hillsborough County and 16 square miles in Pinellas County), flowing from northwest Hillsborough County to the northeastern portion of Pinellas County. There is an existing SWMM model for the Hillsborough County portion of the watershed, that will be combined with a new detailed model for the Pinellas portion to provide a full watershed model that captures the complex boundary conditions between the two counties.

IV. PROJECT DESCRIPTION

This project involves the development of a comprehensive WMP for both watersheds with Lake Tarpon WMP study focused on flood control. The Brooker WMP will yield results and recommendations for water quality, flood control, and natural system improvement projects. Further, the WMPs will consider sea level rise (SLR), where appropriate, as part of the County's resiliency planning efforts. This project will be co-funded by SWFWMD. Therefore, in accordance with the areas of responsibility of SWFWMD, the WMPs will address flood protection, water quality and natural systems.

Both WMPs will be used as a tool in the planning, regulation, and management of the watersheds for future development and as a method for determining and prioritizing capital improvements projects.

These objectives will be met, in part by conducting an analysis of the watershed including evaluating the existing conditions and recommend improvements for flood protection, water quality and natural systems.

V. SCOPE OF WORK

The general scope of this project is to develop two (2) independent but linked WMPs for the Lake Tarpon and Brooker Creek Watersheds in accordance with the Guidelines and Specifications for:

- Flood Hazard Mapping Partners (available at https://www.fema.gov/media-library/assets/documents/13948)
- The nine elements listed in United States Environmental Protection Agency (USEPA) 319(h) Guidance Manual (http://water.epa.gov/polwaste/nps/cwact.cfm)
- SWFWMD Recommended Projection of Sea Level Rise in the Tampa Bay Region (http://www.tbrpc.org/recommended-projection-of-sea-level-rise-in-the-tampa-bay-region/)
- SWFWMD standards published in 2017 (rev 2018) ftp://ftp.swfwmd.state.fl.us/pub/GWIS/
  Username: Anonymous
  Password: (your email address)
- Pinellas County Comprehensive Plan (http://www.pinellascounty.org/plan/comprehensive_plan.htm), as applicable.

The general scope of work will include:

1. Development of a project management plan (PMP) that includes a list of deliverables, schedules, quality assurance/quality control (QA/QC) plan and a breakdown of resource allocation.
2. Development of a digital terrain model (DTM) based on the best available LiDAR as approved by Pinellas County.
3. An existing conditions watershed evaluation, which will include field evaluations of the stormwater asset inventory.
4. Floodplain analysis consistent with SWFWMD and FEMA guidelines.
5. An existing conditions water quality model (Brooker Creek Only).
6. Develop responses to peer reviews of the geodatabase construction and Interconnected Channel and Pond Routing (ICPR4) model.
7. Best management practices (BMP) alternatives analysis to reduce flooding, address SLR, improve water quality, and restore/create natural systems.
8. Develop a surface water resource assessment (SWRA) that is specific to the watershed. (Brooker Creek Only).

The WMPs will provide an evaluation of the watersheds, identify problems requiring management of resources, and recommend solutions to improve each respective watershed's hydrology. The WMPs shall identify and address localized flooding situations, erosion, sedimentation and SLR. The WMP will include, the evaluation of existing 2.33-year, 5-year, 10-year, 25-year, 50-year and 100-year flood elevations, the diagnostic evaluation of the watersheds using ICPR4, and the development of a WMP that provides recommendations for non-structural and site-specific structural improvements. Climate change scenarios such as SLR and changes in rainfall patterns will also be considered.

A pollutant-loading model will only be developed for the Brooker Creek watershed to estimate pollutant loads generated by sub-basins and quantify pollutant loads transferring between adjacent watersheds. The model will also estimate pollutant load reductions that may result through implementing BMPs.

The WMPs will include, as feasible, the conceptual design for recommended structural alternatives that will be necessary to evaluate permitting and construction feasibility, and cost effectiveness at the planning level. This project does not include preparing information for permit applications. The WMPs shall also address the Florida Department of Environmental Protection's (FDEP) Total Maximum Daily Load (TMDL) program.

A detailed scope of work for each watershed is provided in the following sections. In order to provide a cost savings, the CONSULTANT, COUNTY, and DISTRICT have agreed to hold project meetings simultaneously for both watersheds, including kickoff, peer, and public meetings. Unless specified, all deliverables will be digital files. No hardcopies will be provided.

1 Lake Tarpon Watershed Management Plan

The scope of work to develop the Lake Tarpon WMP is detailed in Tasks 1.1 through 1.4 below. The entire Lake Tarpon watershed falls within the County boundary, therefore, the WMP shall apply the extents of the delineated watershed, approximately 19 square miles. The CONSULTANT will use a "date certain" of December 2017. Per DISTRICT G&S, the date certain represents the accuracy of the best available data collected. It is assumed any data more recent than this date will not be incorporated or evaluated as part of this study.

1.1 Project Development

1.1.1 Kickoff Meeting

The CONSULTANT will organize and attend a project kickoff meeting to be held at Pinellas County. The CONSULTANT will provide an agenda and meeting minutes. The budget for this task assumes the meeting will be held in conjunction with the Brooker Creek WMP kickoff meeting (Task 2.1.1).

1.1.2 Data Collection and Initial Evaluation

Following the kickoff meeting, the CONSULTANT will collect and review relevant information for the Lake Tarpon Watershed Management Plan. The COUNTY will provide or direct the CONSULTANT to obtain the following relevant information:

- Topographic Information (COUNTY)
- Aerial Imagery
- Landuse and Soils Maps
- Potentiometric Surface Maps
- The DISTRICT Planning Units
- USGS National Hydrography Dataset (NHD)
- ERP Polygons (DISTRICT ftp)
- ERP digital datasets (DISTRICT)

- Historical Water Levels
- USGS Gage Locations
- DISTRICT/COUNTY Data Collection Site Locations
- Stormwater Inventory (COUNTY)
- Site-Specific Information, including known flooding problem areas
- Water Quality Data (COUNTY)
- Existing Studies and Models
- Adjacent Watershed Studies
- County Approved ICPR4 Model and latest GWIS geodatabase from WQ study

1.1.3 Draft Project Plan

The CONSULTANT will evaluate the available information and develop a project plan to execute tasks and identify outstanding project related issues. This is the initial effort; however, this document shall be revisited periodically to assess the actual progress, evaluate staff allocations, include deficiencies and the recovery actions completed and planned, if any.

The Project Plan shall include the following contents:

- Introduction
- Goals and Objectives
- Project Approach for the approved Scope of Work
- Staff Allocation
- Quality Assurance Plan
- Communication Plan
- Assumptions and Issues Management
- Attachments/Appendices
    - Project Schedule
    - Project Cost

1.1.4 Final Project Plan

The CONSULTANT will update the project plan based on comments provided by the COUNTY.

1.1.5 Project Management and Quality Assurance/Quality Control (QA/QC)

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.1 Deliverables

A. Kickoff Meeting Minutes
B. Draft Project Plan
C. Final Project Plan

1.2 Watershed Evaluation

1.2.1 Assembly and Evaluation of Watershed Data

1.2.1.1 Drainage Pattern and Watershed Boundary

The CONSULTANT shall examine drainage patterns and define the preliminary watershed boundary based on, but not limited to, the following:

- Watershed Boundary from the 2015 Lake Tarpon Water Quality Management Plan
- The DISTRICT Planning Units
- Topographic Information
- USGS National Hydrography Dataset (NHD)
- 2017 Aerial Imagery
- Stormwater Inventory, if any
- ERPs and Roadway Plans
- Existing Studies and Models, if any
- Adjacent Watershed Studies, if any

1.2.1.2 Areas of Development

The CONSULTANT shall identify ERPs and roadway plans to be incorporated into the watershed model based on, but not limited to, the following:

- Data Collection Cut-off Date (built conditions shown on the 2017 aerials)
- 2017 Aerial Imagery
- Latest Approved Topographic Information
- The DISTRICT Guidance Documents
- Public Interest

The CONSULTANT conducted a preliminary review of the ERPs in the watershed from the DISTRICT's ERP shapefile. The review identified:

- 380 ERPs total
- 329 approved ERPs
- 247 approved, non-duplicate ERPs with storage or pertinent data
- 78 ERPs flood prone areas / flood related work requests areas

Additionally, 146 ERPs are listed in the 2015 Lake Tarpon Water Quality Management Plan, which indicate they contained useful information. However, a summary of information available by ERP is not included in the report and georeferenced ERPs are not in the provided GWIS geodatabase. Therefore, the CONSULTANT will review ERPs provided by the DISTRICT.

The CONSULTANT shall compare the list of ERPs and roadway plans to be incorporated with the available scanned files provided by the DISTRICT. Additionally, the CONSULTANT will identify ERPs that may contain structure data but are not legible and will notify the COUNTY of additional collection efforts, if needed.

The CONSULTANT shall geo-reference, in GIS, pertinent construction plan sheets from ERPs which are to be incorporated into the watershed model. These georeferenced sheets will be used in subsequent tasks for catchment development, topographic refinement, and HydroNetwork and HEP Network development.

The level of detail captured during digitization of the ERPs will be based on flood prone areas and areas with flooding complaints provided by the COUNTY. The CONSULTANT shall digitize individual ponds and connected stormwater infrastructure for ERPs that fall within the flood prone areas or areas of flooding complaints. For other ERPs the level of detail captured via digitization will be limited to the primary stormwater pond in the ERP and associated outfall structure.

The budget for this task assumes that up to 380 ERPs will be reviewed and that 250 or fewer will be georeferenced.

1.2.1.3 Initial GIS Processing

The CONSULTANT shall perform initial GIS processing using the DISTRICT's Arc Hydro work flow to provide initial catchments based on the latest approved DEM. The CONSULTANT will place junctions to evaluate the effects of storage routing on hydrologically determined flow rates. The Lake Tarpon watershed is considered a developed area, therefore, the CONSULTANT will generally adhere to the following level of detail, as specified in the DISTRICT G&S:

- Man-made storage areas, such as a surface water attenuation pond that has a control device or is one acre or greater in size, shall have its contributing area delineated.
- Natural depressions, such as wetlands that are ½ acre or greater in size and have one-foot depth, shall have its contributing area delineated.
- Water bodies, such as lakes and ponds that are 5 acres or greater in size, shall be broken out from its contributing areas.
- Urban roadways classified as Minor Collectors and above shall have their own drainage system delineated where information is available.
- Local collection systems will be delineated based on reasonable representation with a target of 10 acres as the minimum delineation size.

The initial level of detail will be evaluated for its adequacy for BFE determination and BMP planning throughout the watershed.

During this task, the CONSULTANT shall manually update catchment boundaries in areas of development and elsewhere as-needed.

1.2.1.4 DEM Review and Topographic Void Update

The COUNTY will provide the CONSULTANT with a DEM from the best available LiDAR. The CONSULTANT will review the DEM for missing data or other issues relevant to watershed modeling.

The CONSULTANT will perform a desktop review of the DEM, breaklines, and accuracy report for suitability. Potential concerns include floating breaklines, topo errors, post spacing, and voids. Topographic errors will be corrected and reported to the COUNTY. Topographic errors will be documented in a polygon feature class.

The CONSULTANT shall conduct a topographic void evaluation. Using the 2017 DISTRICT aerial imagery the latest approved DEM, and the ERP layer, the CONSULTANT will identify areas where the DEM does not describe existing topography and will document them in a topographic void polygon feature class. The identified topovoids will be analyzed and designated as "minor impact" or "moderate and significant impact". The DEM will be modified to include storage areas (such as ponds) for topovoids considered "moderate and significant impact" based on the criteria listed in Section 1.2.1.3.

The CONSULTANT shall document the evaluation, revision methodology, and results in the technical report (Task 1.2.1.9).

1.2.1.5 Hydrologic Characteristics and Percolation

The CONSULTANT shall examine hydrologic characteristics of the watershed. When applicable, the CONSULTANT shall identify locations where percolation simulation is desired based on, but not limited to, the following:

- Soil Map
- Potentiometric Surface Map
- ERP and Roadway Plans
- Site-Specific Information, if any

It is anticipated that percolation data will be available from the water quality study, ERP files, or other sources. No Geotechnical investigation is included in this scope of work.

1.2.1.6 Historical Water Levels

The CONSULTANT shall assemble information on historical water levels, surveys, photos or videos of flooding, and any other available information including, but not limited to, the following:

- Seasonal High Water Level (SHWL)
- Lake levels
- Historic water levels
- Flood photos
- Flooding complaints
- Stream gage data
- Rain data

Field collection of high water mark data is not included in this scope of work but may be added as an additional task if the opportunity arises.

1.2.1.7 Data Acquisition Plan

Upon evaluation of available watershed data and initial GIS processing the CONSULTANT shall develop an approach for data acquisition, such as field reconnaissance and survey for structures not included or not legible on ERP plans. This watershed specific approach shall identify locations where collection will occur and detail the methods of collections.

1.2.1.8 Pre-field Reconnaissance Evaluation

HydroJunctions shall be placed where field work is required to parameterize a hydraulic feature and will be developed for use in the field data acquisition, the GWIS database, and for eventual documentation of the acquisition process. A preliminary HydroNetwork with HydroJunction and HydroEdge feature classes will be further developed upon completion of field data acquisition.

The CONSULTANT shall also document level of accuracy for acquisition of additional spatial information. It is anticipated that vertical referencing to LiDAR derived data points on hard surfaces will be acceptable. Field survey may also be performed for hydraulic structures, cross-sections, and other topographic information. Field survey may be accomplished with a combination of GPS and traditional survey techniques when sufficient information is not attainable from existing data sources (e.g. LiDAR, as-Built drawings). GPS surveying may involve Real-Time Kinematic (RTK) units or Differential GPS (DGPS) depending on the circumstances. The appropriate level of accuracy for the information to be gathered will be evaluated by the CONSULTANT in close consultation with the COUNTY and must be approved by the COUNTY and DISTRICT prior to field data acquisition.

1.2.1.9 Task Memorandum

The CONSULTANT shall document the efforts involved in Tasks 1.2.1.1 through 1.2.1.8. The document shall include, but not be limited to, the following:

- Watershed Boundary and Surroundings
- Major Conveyance Systems and Drainage Pattern
- List of ERP and Roadway Plans to Incorporate
- Initial GIS Processing
- Topographic Voids Locations
- Methodology to Eliminate Topographic Voids
- Landuse Distribution by Cut-off Date
- Hydrologic Soil Group Distribution
- Percolation Locations
- Historical Water Levels
- Potential Data Issues
- Data Acquisition Plan
- Field Data Acquisition Accuracy Approach

1.2.1.10 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.2.1 Deliverables

A. Task memorandum
B. Digital Elevation Model (DEM)
C. GWIS geodatabase containing the following feature classes:
    a. Topographic information (e.g., contours, breaklines)
    b. Preliminary watershed boundary
    c. Areas of development
    d. ERPs to be incorporated into the watershed model
    e. Initial GIS catchments
    f. Historical water levels
    g. Landuse map
    h. Soil map
    i. Data acquisition locations
    j. Identify data type and acquisition methodology
    k. Other feature classes and tables, if applicable
D. Project specific QA/QC document
E. Responses to comments geodatabase

1.2.2 Hydrologic and Hydraulic Feature Database

1.2.2.1 Acquisition of Data

The CONSULTANT shall perform data acquisition based on the approach developed in Task 1.2.1.7 for, but not limited to, the following:

- Field Reconnaissance and Survey
    - Drainage Feature
    - Topographic Information

The budget for this task assumes drainage features and structures are reasonable to access. The CONSULTANT will conduct up to 2 weeks (10 days) of field reconnaissance for two people to verify structure locations and hydraulic connectivity. The CONSULTANT conducted an initial review of hydraulic structures and streams in the watershed based on aerial imagery, the COUNTY's waterbody layer, and the COUNTY'S stormwater inventory to evaluate conveyance data needing to be collected for model parameterization. The budget was estimated to collect survey for up to 250 hydraulic structures and 12 cross-sections in accordance with COUNTY and DISTRICT guidelines. Additional field reconnaissance and survey can be provided for an additional fee with written concurrence from the COUNTY and DISTRICT if the need arises.

The CONSULTANT shall document any immediate maintenance needs and notify the COUNTY.

1.2.2.2 HydroNetwork Development

The HydroNetwork is used to establish connectivity between features to identify which direction water flows. The HydroNetwork is comprised of HydroEdge and HydroJunction feature classes, which are limited to modeled bridges, channel conveyances, and pipe and control structure conveyances. The CONSULTANT shall develop the HydroNetwork with information collected from Task 1.2.2.1.

The HEP Network is used to define subelements (culverts, weirs, etc.) from the Hydro Network, and to store specific structure data. The HEP Network is comprised of Hydraulic_Element_Point and HEP_Line feature classes, which are limited to modeled bridges, pipes, and control structure conveyances. The CONSULTANT will create HEP features using the SWFWMD – Connectivity Tools toolbar and the HydroNetwork, in a manner consistent with Appendix B4 of the District Guidelines and Specifications.

The level of detail provided in the networks will be based on flood prone areas and areas with flooding complaints provided by the COUNTY. The CONSULTANT shall digitize individual ponds and connected stormwater infrastructure for ERPs that fall within the flood prone areas or areas of flooding complaints. For other ERPs the level of detail captured via digitization will be limited to the primary stormwater pond in the ERP and associated outfall structure.

1.2.2.3 Topographic Information Refinement

The CONSULTANT shall refine the topographic information with data collected from Task 1.2.1, which may include additional ERP and roadway plans (e.g., computer aided drafting files) or field data acquisition (e.g., site-specific survey). Changes shall be annotated in the accompanying metadata. The budget for this task assumes topographic refinement will be limited to areas of significant storage, such as ponds and other features as indicated in Section 1.2.1.3. The incorporation of ambient elevations from ERP grading plans is not budgeted in this task.

1.2.2.4 Hydrologic Feature Database

The CONSULTANT shall review and update the land use and soils lookup tables provided in the Lake Tarpon Water Quality Management Plan geodatabase (Hydrology_Data.mdb (Atkins 2015)). The update will be based on, but not be limited to:

- Aerial Imagery
- ERPs and Roadway plans
- Site-Specific Information
- Latest NRCS Soils information

1.2.2.5 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be

required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.2.2 Deliverables

A. Refined topographic information
B. GWIS geodatabase containing feature classes from previous tasks and the following feature classes and tables:
    a. HydroNetwork
        i. HydroJunctions and HydroEdges
    b. HEPs
C. Updated landuse map and lookup table
D. Updated soils map and lookup table
E. Project specific QA/QC document
F. Responses to comments geodatabase

1.2.3 Preliminary Model Features

1.2.3.1 Additional GIS Processing

When deemed necessary, the CONSULTANT shall perform additional GIS processing to update the following:

- Catchments
- Surface Connectivity

1.2.3.2 Preliminary Model Schematic

The CONSULTANT shall refine the GIS-processed catchments and connectivity in conjunction with ERP and roadway plans and HydroNetwork developed in Task 1.2.2.2. This task should follow the DISTRICT Guidelines and Specifications to develop preliminary model features. The CONSULTANT shall identify the data source of each hydraulic feature to be included in the watershed model.

The CONSULTANT shall evaluate adjacent watershed models for boundary conditions. When applicable, the CONSULTANT will coordinate with the COUNTY or other agencies to obtain boundary information.

The CONSULTANT shall use Arc Hydro to generate the preliminary model schematic.

1.2.3.3 Model Parameterization Approach

The CONSULTANT shall develop and document the approach to parameterize model features developed in Task 1.2.3.2. It is anticipated that the approach will follow the methodology described in Section 2 of the District Guidelines and Specifications to develop and update the following hydrologic model parameters:

- Design, Multi-day, Calibration, and Verification Storms
- Rainfall Excess
- Time of Concentration

- Node Storage
- Initial Condition
- Boundary Condition
- Channel
- Bridge
- Pipe
- Weir
- Drop Structure
- Percolation

The proposed approach shall be included in Task 1.2.3.4.

1.2.3.4 Watershed Evaluation Report

The CONSULTANT shall document the efforts involved in Watershed Evaluation. This report will be an expansion of the memorandum developed in Task 1.2.1.9 with documentation of subsequent tasks up to this point.

1.2.3.5 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. One meeting will be held at the COUNTY offices to discuss the results of the watershed evaluation, and to kick-off the peer review process. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.2.3 Deliverables

A. Watershed evaluation report
B. Refined topographic information
C. GWIS geodatabase containing feature classes from previous tasks and the following feature classes and tables:
    a. Preliminary model features
    b. Other feature classes and tables, if applicable
D. Project specific QA/QC document

1.2.4 Peer Review of Watershed Evaluation

1.2.4.1 Peer Review Kick-off Meeting and Presentation

The CONSULTANT will conduct a PowerPoint presentation to the peer review consultant, the COUNTY, the DISTRICT, and other interested parties, by summarizing the work accomplished in the Watershed Evaluation with emphasis on approach, effort, and product. The full deliverables shall be transmitted to the peer review consultant prior to this meeting.

1.2.4.2 Peer Review Communication

During the peer review process, the peer review consultant may seek clarification and request additional information from the CONSULTANT. Responses and/or additional information requested from the CONSULTANT, if any, shall be transmitted to the peer review consultant and County PM within 5 business days.

The CONSULTANT may seek clarification from the peer review consultant after receiving comments. Clarification requested from the peer review consultant, if any, shall be provided to the CONSULTANT and County PM within 5 business days.

1.2.5 Final Approved Watershed Evaluation Deliverables

1.2.5.1 Revised Deliverables

Within sixty (60) days of receiving COUNTY/DISTRICT/PEER review comments, the CONSULTANT shall address and resubmit watershed evaluation deliverables to the COUNTY.

1.2.5.2 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

One meeting will be held at the COUNTY offices to discuss comments on the watershed evaluation and the modeling approach. The CONSULTANT and the COUNTY will evaluate the scope and budget for Tasks 1.3 and 1.4 and make adjustments, if needed.

Task 1.2.5 Deliverables

A. Attend peer review kick-off meeting
B. Revised Watershed Evaluation deliverables
C. Responses to comments geodatabase
D. Project specific QA/QC document

1.3 Watershed Management Plan – Floodplain Analysis

1.3.1 Watershed Model Parameterization

1.3.1.1 Acquisition of Additional Model Parameters

Additional information needed to fill the watershed parameter gaps, if any, shall be acquired. These parameter gaps may include, but not be limited to, the following:

- Drainage Feature

- Topographic Information

The budget for this task assumes a limited effort to complete this task (20 hours). In the event additional data collection and gap filling is anticipated to be significant, the CONSULTANT will notify the COUNTY and DISTRICT in writing to request use of contingency fees. When percolation information is desired but missing from existing data, the CONSULTANT shall identify and compile list of locations where percolation data will have to be collected and identify specific hydrologic information that will be required to be collected. The CONSULTANT shall then submit a scope to collect the dataset. The current scope of services does NOT include this additional geotechnical investigation and data collection.

1.3.1.2 Development of Model Specific Geodatabase

The CONSULTANT shall develop watershed model parameters per the approach defined in Task 1.2.3.3 of Watershed Evaluation. When deemed necessary, and upon consultation with the County, the CONSULTANT may use a revised approach for certain parameters. The revised approach shall be documented in a revised version of the Watershed Evaluation report. The CONSULTANT shall store the parameterization information within a GWIS geodatabase in a format that can be imported into the model framework.

1.3.1.3 Model Setup, Debug, and Stabilization

The CONSULTANT shall transfer model parameters from GWIS geodatabase into the model framework, set up, and debug the model. The following preliminary simulations shall be performed:

- 100-year/1-day Storm
- No Rainfall

The CONSULTANT shall also develop the level pool plots for the following:

- Initial Conditions
- 100-year/1-day Floodplain

1.3.1.4 Project Management and Quality Assurance/Control

The CONSULTANT will attend a meeting to discuss the results of the Watershed Parameterization and prepare for the upcoming Peer Review. The CONSULTANT will conduct QA/QC of the deliverable. The quality control review will be documented in the comments geodatabase and in the QA/QC document as appropriate.

Deliverables

A. Watershed Management Plan Report (Updated Watershed Evaluation Report)
B. Model Input/output Files
C. Project Specific QA/QC Document
D. GWIS Geodatabase

1.3.2 Final Approved Watershed Model Parameterization Deliverables

1.3.2.1 Revised Deliverables

Within sixty (60) days of receiving the COUNTY review comments, the CONSULTANT shall address the COUNTY's review comments, and resubmit watershed model parameterization deliverables to the COUNTY.

1.3.2.2 Project Management and Quality Assurance/Control

The CONSULTANT will attend a meeting (if required) to discuss the comments received on Task 1.3.1 deliverables. The CONSULTANT will conduct QA/QC of the deliverable. The quality control review will be documented in the comments geodatabase and in the QA/QC document as appropriate.

Deliverables

A. Revised Watershed Model Parameterization Deliverables
B. Response to Comments Geodatabase
C. Project Specific QA/QC Document
D. Updated GWIS Geodatabase (if needed)

1.3.3 Watershed Model Development and Floodplain Delineation

1.3.3.1 Model Calibration and Verification

The CONSULTANT will calibrate the ICPR model to a minimum of (1) of the rainfall events developed in the watershed evaluation task. If sufficient data is available, calibration will be performed for one high flow event and one low flow event. If necessary, the CONSULTANT will adjust model parameters and rerun the model to evaluate results against readily available and suitable observations. The CONSULTANT will evaluate the calibration using a second rainfall event.

Model calibration and verification shall consider rainfall spatial distribution. Calibration and verification rainfall will be based on the DISTRICT's NEXRAD rainfall data, which will be compared to rain gages in the watershed.

1.3.3.2 Model Validation

The model simulation results will be assessed for accuracy and reasonableness with historic water levels, if any, available in the study area corresponding to one of the existing, suitable simulations. The existing, suitable simulations include the calibration event, verification event, or design storm event with similar depth and duration.

1.3.3.3 Design Storm Simulations

The CONSULTANT shall simulate the following design storms:

- 2.33-year, 5-year, 10-year, 25-year, 50-year, 100-year, and 500-year, 1-day events using the Florida Modified Type II 24-hour distribution

- 100-year, 5-day events using the DISTRICT's 120-hour distribution.

This task includes work to run adjacent watershed models to obtain appropriate boundary conditions for the 1-day and 5-day storm events.

1.3.3.4 Multi-Day Event Simulations and Rainfall Justification to Project Floodplain

If directed by the COUNTY, the CONSULTANT shall simulate the following additional multi-day events:

- 100-year/3-day, 100-year/7-day, and 100-year/10-day events using FDOT rainfall distribution. This task includes work to run adjacent watershed models to obtain appropriate boundary conditions for multi-day storm events.

To delineate the 100-year floodplain, a rainfall event of duration longer than 1-day may be used if historic water levels developed in Task 1.2.1.6 provide evidence that longer durations better represent the 100-year flood risk.

The CONSULTANT shall also coordinate with adjacent watershed(s) when necessary.

1.3.3.5 Floodplain Delineation

The CONSULTANT shall delineate the floodplain based on digital topographic information and model predicted peak stages of the 100-year and 500-year storm event(s). The final product of this task shall be floodplain mapping that meets FEMA standards for updating the existing DFIRMs. Approach of mapping transition zones shall be documented in Task 1.3.3.6 – Floodplain Justification Report. Transition zones will be mapped for the 100-year storm as part of the final floodplain deliverables (Task 1.3.7.1), after draft submittal has been reviewed by COUNTY and comments addressed.

1.3.3.6 Floodplain Justification Report

The CONSULTANT shall document the efforts involved in Tasks 1.3.3.1 thru 1.3.3.5 and merge the discussion into the Watershed Evaluation report to develop this Floodplain Justification Report.

1.3.3.7 Sea-level Rise (SLR) Scenarios

The CONSULTANT shall model SLR scenarios based on Table 3 of the Comprehensive Conservation and Management Plan for Tampa Bay (CCMP, TBEP, 2017) or other projections as accepted in current state of practice. The SLR projections for year 2100 as indicated in CCMP (TBEP 2017) are: 0.93 feet, 1.97 feet, 4.26 feet, and 6.89 feet. The CONSULTANT shall evaluate the 100-year and 25-year 24-hours rainfall for these scenarios for both the near-term and far-term projections. Associated draft level-pool floodplains will be developed. SLR scenarios will be evaluated using the existing conditions model with updated boundary conditions and rainfall depths.

1.3.3.8 Project Management and Quality Assurance/Control

The CONSULTANT will perform routine project management activities, such as invoicing and routine

communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will attend a meeting at COUNTY office to discuss the watershed model development, floodplain delineation, and prepare for the upcoming Peer Review. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.3.3 Deliverables

A. Floodplain Justification Report
B. 100-Year Flood Depth Grid
C. Model Input / Output Files
D. Project Specific QA/QC Document
E. Updated GWIS Geodatabase

1.3.4 Peer Review of Watershed Model Development and Floodplain Delineation

1.3.4.1 Peer Review Meeting and Presentation

The CONSULTANT will conduct an in-person PowerPoint presentation to the peer review consultant, the COUNTY, the DISTRICT, and other interested parties, which summarizes the work accomplished in Watershed Model Development and Floodplain Delineation tasks with emphasis on approach, effort, and product. The full deliverables shall be transmitted to the peer review consultant before this meeting.

1.3.4.2 Peer Review Communication

During the peer review process, the peer review consultant may seek clarification and request additional information from the CONSULTANT. Responses and/or additional information requested from the CONSULTANT, if any, shall be transmitted to the peer review consultant and County PM within 5 business days.

The CONSULTANT may seek clarification from the peer review consultant after receiving comments. Clarification requested from the peer review consultant, if any, shall be provided to the CONSULTANT in and County PM within 5 business days.

1.3.5 Approved Floodplain Analysis Deliverables for Preliminary Floodplain Open House

1.3.5.1 Revised Deliverables

Within sixty (60) days of the meeting to present peer review comments (Task 1.3.4.1), the CONSULTANT shall address peer review comments, as well as any COUNTY review comments, and resubmit watershed model development and floodplain delineation deliverables to the COUNTY.

1.3.5.2 Project Management and Quality Assurance/Control

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the

project status and to get input from the COUNTY. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.3.5 Deliverables

A. Responses to Comments Geodatabase
B. Revised Deliverables
C. Project Specific QA/QC Document

1.3.6 Preliminary Floodplain Open House and Response to Public Comments

1.3.6.1 Preliminary Floodplain Open House

The CONSULTANT will assist the COUNTY with conducting a preliminary floodplain open house. The open house will be combined with the open house for Brooker Creek. Assistance consists of preparing meeting materials, such as pdfs of floodplain maps, and loading digital data onto laptops and attendance of up to four (4) professionals at one meeting, based on the number of impacted parcels and anticipated attendance of the public meeting. The CONSULTANT will assist citizens by responding to questions at the meeting; operate laptop computers that can display recent aerials, existing flood hazard zones, base map information, parcels, and the preliminary floodplains.

1.3.6.2 Response to Public Comments

Public comment period closes thirty (30) days after the open house, unless otherwise specified. Within fifteen (15) days of the public comment period closure, the COUNTY will provide public comments collected to the CONSULTANT. The CONSULTANT will compile the public comments in a comments geodatabase.

The CONSULTANT shall review and provide the COUNTY with responses to public comments and update Task 1.3.5 deliverables as necessary. Response to public comments will not include providing copies of floodplain maps.

After the CONSULTANT has provided the COUNTY with a compiled public response database, the CONSULTANT will conduct a meeting to discuss the approach to revising deliverables considering the public comments.

Task 1.3.6 Deliverables

A. Attendance at Public Open House
B. Response to Public Comments
C. Approach to revising deliverables meeting

1.3.7 Final Approved Floodplain Analysis Deliverables

1.3.7.1 Revised Deliverables

Within thirty (30) days after the public comments on draft deliverables are transmitted to the CONSULTANT, the CONSULTANT shall resubmit the full floodplain analysis deliverables to the COUNTY

in final format, including floodplain transition zones.

1.3.7.2 Project Management and Quality Assurance/Control

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.3.7 Deliverables

A. Sign and Sealed Floodplain Justification Report
B. PowerPoint Presentation
C. Revised Final Deliverables
D. Project Specific QA/QC Document.

1.4 Flood Protection Level of Service (FPLOS) Determination, Drainage Improvement Analysis and Recommendations

1.4.1 FPLOS Determination and Flood Damage Estimates

1.4.1.1 Methodology Meeting

A meeting will be conducted between the COUNTY, the CONSULTANT, and the DISTRICT, if needed, to discuss the methodology to be used to evaluate flood protection level-of-service and flood damage estimates for each basin. It is anticipated that the COUNTY's level-of-service, as defined in the Comprehensive Plan or elsewhere in County regulations, will be used as the basis for the FPLOS determination.

1.4.1.2 FPLOS Determination and Flood Damage Estimation

The CONSULTANT will designate the FPLOS throughout the watershed based on the methodology and criterion agreed upon during Task 1.4.1.1. The CONSULTANT will create a GWIS feature class documenting the results of the FPLOS analysis. The FPLOS documentation will also include an estimate of the number of habitable structures within floodplain areas by reviewing aerial photography.

After the FPLOS determination is complete, the CONSULTANT will analyze structure and roadway flood damages. Damage estimates for structure and roadway flooding will be analyzed independently. The CONSULTANT will work with the COUNTY to evaluate if the damage calculations in the DISTRICT BCA tool will be sufficient. If needed, updates to the spreadsheet tool will be made prior to completing the damage estimates.

1.4.1.3 FPLOS Analysis Report

The CONSULTANT shall document the efforts involved in Tasks 1.4.1.1 through 1.4.1.2 in the FPLOS Analysis Report.

1.4.1.4 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.4.1 Deliverables

A. FPLOS analysis report
B. Flood depth grids for LOS design storms
C. Model input/output files for design storms required by FPLOS determination methodology
D. Geodatabase containing:
    a. Model simulation results
    b. Inundation polygons
    c. FPLOS designations
E. Flood damage estimate spreadsheets
F. Project specific QA/QC document
G. Responses to comments geodatabase

1.4.2 BMP Alternatives Analysis and Recommendations

1.4.2.1 Alternatives Analysis and Project Ranking

A meeting will be conducted between the CONSULTANT and the COUNTY to select a priority list of locations where improvement alternatives analysis will be performed. The CONSULTANT shall prepare a preliminary list of locations prior to the meeting. The selection shall be based on, but not limited to, the following:

- FPLOS Designation
- Documented Flooding Problems and Complaints
- Drainage System Classification (Regional vs. Intermediate)
- Anticipated Flood Damage
- Logical Precedence (Downstream vs. Upstream)

At each selected site identified, the CONSULTANT shall perform simulations of two (2) or more drainage improvement scenarios. Model refinement may be necessary in the vicinity of the selected site. Simulated water elevations for proposed conditions must not significantly increase both upstream and downstream from the existing conditions. The CONSULTANT shall consider water quality recommendations from previous studies and shall provide recommendations for drainage, water quality, and natural systems improvements. Water quality modeling is not included in this scope of work. The CONSULTANT shall document each alternative with description of the proposed project as well as its advantages and disadvantages.

The CONSULTANT shall rank the alternatives using the COUNTY's ranking tool. Initial site selection will consider:

- Flood Control Benefit (e.g., FPLOS Improvement)
- Permitability
- Implementability
- Water Quality and Environmental Benefit
- Natural Systems Improvement
- Construction Cost
- Operation and Maintenance Cost
- Cost Benefit Analysis
- Public Acceptance
- Availability

For the purpose of budgetary planning, the CONSULTANT shall provide cost estimates at the present worth dollar value of each alternative project. The cost estimates shall be based on the conceptual design and subject to change pending of a more detailed design process.
The CONSULTANT shall provide documentation of conceptual design, including narrative design sketch and planning level cost estimate, for up to fifteen (15) project alternatives.

The CONSULTANT shall document the efforts in the Alternatives Analysis and Recommendations report.

1.4.2.2 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 1.4.2 Deliverables

A. Alternatives analysis and recommendations report
B. Model input/output files for proposed condition
C. Geodatabase containing:
    a. Site locations
    b. Locations of final recommended projects
    c. Model simulation results for proposed conditions
    d. Inundation polygons for proposed conditions
D. Project specific QA/QC document
E. Responses to comments geodatabase

2 Brooker Creek Watershed Management Plan

The scope of work to develop the Brooker Creek WMP is detailed in Tasks 2.1 through 2.4 below. Only a portion of the Brooker Creek watershed falls within the County boundary.

2.1 Project Development

2.1.1 Kickoff Meeting

The CONSULTANT will organize and attend a project kickoff meeting to be held at Pinellas County. The CONSULTANT will provide an agenda and meeting minutes. The budget for this task assumes the meeting will be held in conjunction with the Lake Tarpon WMP kickoff meeting (Task 1.1.1). The CONSULTANT will use a "date certain of December 2017. Per DISTRICT G&S, the date certain represents the accuracy of the best available data collected. It is assumed any data more recent than this date will not be incorporated or evaluated as part of this study.

2.1.2 Data Collection and Initial Evaluation

Following the kickoff meeting, the CONSULTANT will collect and review relevant information for the Brooker Creek Watershed Management Plan. The COUNTY will provide or direct the CONSULTANT to obtain the following relevant information:

- Topographic Information (COUNTY)
- Aerial Imagery
- Landuse and Soils Maps
- Potentiometric Surface Maps
- The DISTRICT Planning Units
- USGS National Hydrography Dataset (NHD)
- ERP Polygons (DISTRICT ftp)
- ERP digital datasets (DISTRICT)
- Historical Water Levels
- USGS Gage Locations
- DISTRICT/COUNTY Data Collection Site Locations
- Stormwater Inventory (COUNTY)
- Site-Specific Information, including known flooding problem areas
- Water Quality Data (COUNTY)
- Existing Studies and Models
- Adjacent Watershed Studies

2.1.3 Draft Project Plan

The CONSULTANT will evaluate the available information and develop a project plan to execute tasks and identify outstanding project related issues. This is the initial effort; however, this document shall be revisited periodically to assess the actual progress, evaluate staff allocations, include deficiencies and the recovery actions completed and planned, if any.
The Project Plan shall include the following contents:

- Introduction
- Goals and Objectives
- Project Approach for the approved Scope of Work

- Staff Allocation
- Quality Assurance Plan
- Communication Plan
- Assumptions and Issues Management
- Attachments/Appendices
    - Project Schedule
    - Project Cost

2.1.4 Final Project Plan

The CONSULTANT will update the project plan based on comments provided by the COUNTY.

2.1.5 Project Management and Quality Assurance/Quality Control (QA/QC)

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.1 Deliverables

A. Kickoff Meeting Minutes
B. Draft Project Plan
C. Final Project Plan

2.2 Watershed Evaluation

2.2.1 Assembly and Evaluation of Watershed Data

2.2.1.0 Hillsborough County Brooker Creek Model Conversion

The CONSULTANT shall convert the latest Hillsborough County Brooker Creek model from EPA Storm Water Management Model (SWMM) V5 to ICPR4. For the purpose of conversion, the CONSULTANT shall manually convert overland weirs and drop structures specified in the SWMM model to a setup that is consistent with ICPR4 model. The hydraulic structure dataset and interconnection between different sub-basins in the existing SWMM model will be kept as-is during the model conversion process. Subsequent to the model conversion, a 100-yr 24-hr design storm will be simulated with identical boundary conditions as used in SWMM model, and peak stages from the new ICPR4 model will be compared against the SWMM model to evaluate adequacy of conversion. Due to differences in the ICPR4 and SWMM solution algorithms some difference in computed stages and flow are expected.

The CONSULTANT shall also migrate available Hillsborough County GWIS GIS data into ICPR4 GWIS geodatabase. For the purpose of migration, no changes will be made to the existing SWMM HydroNetwork or HEP Network. The GIS dataset will be modified (in terms of HYDROID, tables setup etc.) to make compatible with the ICPR4 GWIS and allow addition of new data from the Pinellas County possible. All other work, such as floodplain delineations and BMPs, is excluded for the Hillsborough County portion of the watershed.

2.2.1.1 Drainage Pattern and Watershed Boundary

The CONSULTANT shall examine drainage patterns and define the preliminary watershed boundary based on, but not limited to, the following:

- The DISTRICT Planning Units
- Topographic Information
- USGS National Hydrography Dataset (NHD)
- 2017 Aerial Imagery
- Stormwater Inventory
- ERPs and Roadway Plans
- Existing Studies and Models
- Adjacent Watershed Studies

2.2.1.2 Areas of Development

The CONSULTANT shall identify ERPs and roadway plans to be incorporated into the watershed model based on, but not limited to, the following:

- 2017 Aerial Imagery
- Latest Approved Topographic Information
- The DISTRICT Guidance Documents
- Public Interest

The CONSULTANT conducted a preliminary review of the ERPs in the watershed from the DISTRICT's ERP shapefile. The review identified:

- 171 ERPs total
- 153 Approved ERPs
- 95 Approved, non-duplicate, ERPs with storage or pertinent data
- 43 ERPs flood prone areas / flood related work requests areas

The CONSULTANT shall compare the list of ERPs and roadway plans to be incorporated with the available scanned files provided by the DISTRICT. Additionally, the CONSULTANT will identify ERPs that may contain structure data but are not legible and will notify the COUNTY of additional collection efforts, if needed.

The CONSULTANT shall geo-reference, in GIS, pertinent construction plan sheets from ERPs which are to be incorporated into the watershed model. These georeferenced sheets will be used in subsequent tasks for catchment development, topographic refinement, and HydroNetwork and HEP Network development.

The level of detail captured during digitization of the ERPs will be based on flood prone areas and areas with flooding complaints provided by the COUNTY. The CONSULTANT shall digitize individual ponds and connected stormwater infrastructure for ERPs that fall within the flood prone areas or areas of

flooding complaints. For other ERPs the level of detail captured via digitization will be limited to the primary stormwater pond in the ERP and associated outfall structure.

The budget for this task assumes that up to 171 ERPs will be reviewed and that 95 or fewer will be georeferenced.

2.2.1.3 Initial GIS Processing

The CONSULTANT shall perform initial GIS processing using the DISTRICT's Arc Hydro work flow to provide initial catchments based on the latest approved DEM. The CONSULTANT will place junctions appropriately to evaluate the effects of storage routing on hydrologically determined flow rates. The CONSULTANT will generally adhere to the following level of detail, as specified in the DISTRICT G&S:

- Man-made storage areas, one acre or greater in size, shall have its contributing area delineated.
- Natural depressions, such as wetlands that are ½ acre or greater in size and have one-foot depth, shall have its contributing area delineated.
- Water bodies, such as lakes and ponds that are 5 acres or greater in size, shall be broken out from its contributing areas.
- Urban roadways classified as Minor Collectors and above shall have their own drainage system delineated where information is available.
- Local collection systems will be delineated based on reasonable representation with a target of 10 acres as the minimum delineation size.

The initial level of detail will be evaluated for its adequacy for Base Flood Elevation (BFE) determination and BMP planning throughout the watershed.

During this task, the CONSULTANT shall manually update catchment boundaries in areas of development and elsewhere as-needed.

2.2.1.4 DEM Review and Topographic Void Update

The COUNTY will provide the CONSULTANT with a DEM from the best available LiDAR. The CONSULTANT will review the DEM for missing data or other issues relevant to watershed modeling.

The CONSULTANT will perform a desktop review of the DEM, breaklines, and accuracy report for suitability. Potential concerns include floating breaklines, topo errors, post spacing, and voids. Topographic errors will be corrected and reported to the COUNTY. Topographic errors will be documented in a polygon feature class.

The CONSULTANT shall conduct a topographic void evaluation. Using the 2017 DISTRICT aerial imagery the latest approved DEM, and the ERP layer, the CONSULTANT will identify areas where the DEM does not describe existing topography and will document them in a topographic void polygon feature class. The identified topovoids will be analyzed and designated as "minor impact" or "moderate and significant impact". The DEM will be modified to include storage areas (such as ponds) for topovoids considered

"moderate and significant impact".

The CONSULTANT shall document the evaluation, revision methodology, and results in the technical report (Task 2.2.1.9).

2.2.1.5 Hydrologic Characteristics and Percolation

The CONSULTANT shall examine hydrologic characteristics of the watershed. When applicable, the CONSULTANT shall identify locations where percolation simulation is desired based on, but not limited to, the following:

- Soil Map
- Potentiometric Surface Map
- ERP and Roadway Plans
- Site-Specific Information, if any

It is anticipated that percolation data will be available from ERP files or other sources. No Geotechnical investigation is included in this scope of work

2.2.1.6 Historical Water Levels

The CONSULTANT shall assemble information on historic water levels, surveys, photos or videos of flooding, and any other available information including, but not limited to, the following:

- Seasonal High Water Level (SHWL)
- Lake levels
- Historic water levels
- Flood photos
- Flooding complaints
- Stream gage data
- Rain data

Field collection of high water mark data is not included in this scope of work but may be added as an additional task if the opportunity arises.

2.2.1.7 Data Acquisition Plan

Upon evaluation of available watershed data and initial GIS processing the CONSULTANT shall develop an approach for data acquisition, such as field reconnaissance and survey for structures not included or not legible on ERP plans. This watershed specific approach shall identify locations where collection will occur and detail the methods of collections.

2.2.1.8 Pre-field Reconnaissance Evaluation

HydroJunctions shall be placed where field work is required to parameterize a hydraulic feature and will be developed for use in the field data acquisition, the GWIS database, and for eventual documentation of the acquisition process. A preliminary HydroNetwork with HydroJunction and HydroEdge feature

classes will be further developed upon completion of field data acquisition.

The CONSULTANT shall also document level of accuracy for acquisition of additional spatial information. It is anticipated that vertical referencing to LiDAR derived data points on hard surfaces will be acceptable. Field survey may also be performed for hydraulic structures, cross-sections, and other topographic information. Field survey may be accomplished with a combination of GPS and traditional survey techniques when sufficient information is not attainable from existing data sources (e.g. LiDAR, as-Built drawings). GPS surveying may involve Real-Time Kinematic (RTK) units or Differential GPS (DGPS) depending on the circumstances. The appropriate level of accuracy for the information to be gathered will be evaluated by the CONSULTANT in close consultation with the COUNTY and must be approved by the COUNTY and DISTRICT prior to field data acquisition.

2.2.1.9 Task Memorandum

The CONSULTANT shall document the efforts involved in Tasks 2.2.1.1 through 2.2.1.8. The document shall include, but not be limited to, the following:

- Watershed Boundary and Surroundings
- Major Conveyance Systems and Drainage Pattern
- List of ERP and Roadway Plans to Incorporate
- Initial GIS Processing
- Topographic Voids Locations
- Methodology to Eliminate Topographic Voids
- Landuse Distribution by Cut-off Date
- Hydrologic Soil Group Distribution
- Percolation Locations
- Historical Water Levels
- Potential Data Issues
- Data Acquisition Plan
- Field Data Acquisition Accuracy Approach

2.2.1.10 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.2.1 Deliverables

A. Task memorandum
B. Digital Elevation Model (DEM)
C. GWIS geodatabase containing the following feature classes:
    a. Topographic information (e.g., contours, breaklines)
    b. Preliminary watershed boundary
    c. Areas of development
    d. ERPs to be incorporated into the watershed model
    e. Initial GIS catchments
    f. Historical water levels
    g. Landuse map
    h. Soil map
    i. Data acquisition locations
    j. Identify data type and acquisition methodology
    k. Other feature classes and tables, if applicable
    l. Hillsborough County model
D. Project specific QA/QC document
E. Responses to comments geodatabase

2.2.2 Hydrologic and Hydraulic Feature Database

2.2.2.1 Acquisition of Data

The CONSULTANT shall perform data acquisition based on the approach developed in Task 2.2.1.7 for, but not limited to, the following:

- Field Reconnaissance and Survey
    a. Drainage Feature
    b. Topographic Information

The budget for this task assumes drainage features and structures are reasonable to access. The CONSULTANT will conduct up to 2 weeks (10 days) of field reconnaissance for two people to verify structure locations and hydraulic connectivity. The CONSULTANT conducted an initial review of hydraulic structures and streams in the watershed based on aerial imagery, the COUNTY's waterbody layer, and the COUNTY'S stormwater inventory to evaluate conveyance data needing to be collected for model parameterization. The budget was estimated to collect survey for up to 285 hydraulic structures and 24 cross-sections in accordance with COUNTY and DISTRICT guidelines. The CONSULTANT estimated the number of cross-sections needed at 1000' intervals along Brooker Creek downstream of the surveyed cross-sections provided by the DISTRICT from the 2009 collection. Additional field reconnaissance and survey can be provided for an additional fee with written concurrence from the COUNTY and DISTRICT if the need arises.

The CONSULTANT shall document any immediate maintenance needs and notify the COUNTY.

2.2.2.2 HydroNetwork Development

The HydroNetwork is used to establish connectivity between features to identify which direction water flows. The HydroNetwork is comprised of HydroEdge and HydroJunction feature classes, which are limited to modeled bridges, channel conveyances, and pipe and control structure conveyances. The CONSULTANT shall develop the HydroNetwork with information collected from Task 2.2.2.1.

The HEP Network is used to define sub elements (culverts, weirs, etc.) from the Hydro Network, and to store specific structure data. The HEP Network is comprised of Hydraulic_Element_Point and HEP_Line feature classes, which are limited to modeled bridges, pipes, and control structure conveyances. The CONSULTANT will create HEP features using the SWFWMD – Connectivity Tools toolbar and the HydroNetwork, in a manner consistent with Appendix B4 of the District Guidelines and Specifications.

2.2.2.3 Topographic Information Refinement

The CONSULTANT shall refine the topographic information with data collected from Task 2.2.1 which may include additional ERP and roadway plans (e.g., computer aided drafting files) or field data acquisition (e.g., site-specific survey). Changes shall be annotated in the accompanying metadata. The budget for this task assumes topographic refinement will be limited to areas of significant storage, such as ponds. The incorporation of ambient elevations from ERP grading plans is not budgeted in this task.

2.2.2.4 Hydrologic Feature Database

The CONSULTANT shall review and update, if necessary, the latest landuse map based on, but not limited to, the following:

- Data Collection Cut-off Date
- Aerial Imagery
- ERPs and Roadway plans
- Site-Specific Information
- Latest NRCS soil information

The CONSULTANT shall develop a generic lookup table for the watershed to include landuse and soils parameters.

2.2.2.5 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.2.2 Deliverables

A. Refined topographic information
B. GWIS geodatabase containing feature classes from previous tasks and the following feature classes and tables:
    a. HydroNetwork
        i. HydroJunctions and HydroEdges
    b. HEPs
C. Updated landuse map and lookup table
D. Updated soils map and lookup table
E. Project specific QA/QC document
F. Responses to comments geodatabase

2.2.3 Preliminary Model Features

2.2.3.1 Additional GIS Processing

When deemed necessary, the CONSULTANT shall perform additional GIS processing to update the following:

- Catchment
- Surface Connectivity

2.2.3.2 Preliminary Model Schematic

The CONSULTANT shall refine the GIS-processed catchments and connectivity in conjunction with ERP and roadway plans and HydroNetwork developed in Task 2.2.2.2. This task should follow the DISTRICT Guidelines and Specifications to develop preliminary model features. The CONSULTANT shall identify the data source of each hydraulic feature to be included in the watershed model.

The CONSULTANT shall evaluate adjacent watershed models for boundary conditions. When applicable, the CONSULTANT will coordinate with the COUNTY or other agencies to obtain boundary information.

The CONSULTANT shall use Arc Hydro to generate the preliminary model schematic.

2.2.3.3 Model Parameterization Approach

The CONSULTANT shall develop and document the approach to parameterize model features developed in Task 2.2.3.2. It is anticipated that the approach will follow the methodology described in Section 2 of the District Guidelines and Specifications to develop and update the following hydrologic model parameters:

- Design, Multi-day, Calibration, and Verification Storms
- Rainfall Excess
- Time of Concentration
- Node Storage
- Initial Condition

- Boundary Condition
- Channel
- Bridge
- Pipe
- Weir
- Drop Structure
- Percolation

The proposed approach shall be included in Task 2.2.3.4.

2.2.3.4 Watershed Evaluation Report

The CONSULTANT shall document the efforts involved in Watershed Evaluation. This report will be an expansion of the memorandum developed in Task 2.2.1.9 with documentation of subsequent tasks up to this point.

2.2.3.5 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. One meeting will be held at the COUNTY offices to discuss the results of the watershed evaluation and to kick-off the peer review process. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.2.3 Deliverables

A. Watershed evaluation report
B. Refined topographic information
C. GWIS geodatabase containing feature classes from previous tasks and the following feature classes and tables:
    a. Preliminary model features
    b. Other feature classes and tables, if applicable
D. Project specific QA/QC document

2.2.4 Peer Review of Watershed Evaluation

2.2.4.1 Peer Review Kick-off Meeting and Presentation

The CONSULTANT will conduct a PowerPoint presentation to the peer review consultant, the COUNTY, the DISTRICT, and other interested parties, by summarizing the work accomplished in the Watershed Evaluation with emphasis on approach, effort, and product. The full deliverables shall be transmitted to the peer review consultant prior to this meeting.

2.2.4.2 Peer Review Communication

During the peer review process, the peer review consultant may seek clarification and request additional information from the CONSULTANT. Responses and/or additional information requested from the CONSULTANT, if any, shall be transmitted to the peer review consultant and County PM within 5 business days.

The CONSULTANT may seek clarification from the peer review consultant after receiving comments. Clarification requested from the peer review consultant, if any, shall be provided to the CONSULTANT and County PM within 5 business days.

2.2.5 Final Approved Watershed Evaluation Deliverables

2.2.5.1 Revised Deliverables

Within sixty (60) days of receiving COUNTY/DISTRICT/PEER review comments, the CONSULTANT shall address and resubmit watershed evaluation deliverables to the COUNTY.

2.2.5.2 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

One meeting will be held at the COUNTY offices to discuss comments on the watershed evaluation and the modeling approach. The CONSULTANT and the COUNTY will evaluate the scope and budget for Tasks 2.3 and 2.4 and make adjustments, if needed.

Task 2.2.5 Deliverables

A. Attend peer review kick-off meeting
B. Revised Watershed Evaluation deliverables
C. Responses to comments geodatabase
D. Project specific QA/QC document

2.3 Watershed Management Plan – Floodplain Analysis

2.3.1 Watershed Model Parameterization

2.3.1.1 Acquisition of Additional Model Parameters

Additional information needed to fill the watershed parameter gaps, if any, shall be acquired. These parameter gaps may include, but not limited to, the following:

- Drainage Feature

- Topographic Information

When percolation information is desired but missing from existing data, the CONSULTANT shall identify and compile list of locations where percolation data will have to be collected and identify specific hydrologic information that will be required to be collected. The CONSULTANT shall then submit a scope to collect the dataset. The current scope of services does NOT include this additional geotechnical investigation and data collection.

2.3.1.2 Development of Model Specific Geodatabase

The CONSULTANT shall develop watershed model parameters per the approach defined in Task 2.2.3.3 of Watershed Evaluation. When deemed necessary, and upon consultation with the County, the CONSULTANT may use a revised approach for certain parameters. The revised approach shall be documented in a revised version of the Watershed Evaluation report. The CONSULTANT shall store the parameterization information within a GWIS geodatabase in a format that can be imported into the model framework.

2.3.1.3 Model Setup, Debug, and Stabilization

The CONSULTANT shall transfer model parameters from GWIS geodatabase into the model framework, set up, and debug the model. The following preliminary simulations shall be performed:

- 100-year/1-day Storm
- No Rainfall

The CONSULTANT shall also develop the level pool plots for the following:

- Initial Conditions
- 100-year/1-day Floodplain

2.3.1.4 Project Management and Quality Assurance/Control

The CONSULTANT will attend a meeting to discuss the results of the Watershed Parameterization and prepare for the upcoming Peer Review. The CONSULTANT will conduct QA/QC of the deliverable. The quality control review will be documented in the comments geodatabase and in the QA/QC document as appropriate.

Task 2.3.1 Deliverables

A. Watershed Management Plan Report (Updated Watershed Evaluation Report)
B. Model Input/output Files
C. Project Specific QA/QC Document
D. GWIS Geodatabase

2.3.2 Final Approved Watershed Model Parameterization Deliverables

2.3.2.1 Revised Deliverables

Within sixty (60) days of receiving the COUNTY review comments, the CONSULTANT shall address the COUNTY's review comments, and resubmit watershed model parameterization deliverables to the COUNTY.

2.3.2.2 Project Management and Quality Assurance/Control

The CONSULTANT will attend a meeting (if required) to discuss the comments received on Task 2.3.1 deliverables. The CONSULTANT will conduct QA/QC of the deliverable. The quality control review will be documented in the comments geodatabase and in the QA/QC document as appropriate.

Task 2.3.2 Deliverables

A. Revised Watershed Model Parameterization Deliverables
B. Response to Comments Geodatabase
C. Project Specific QA/QC Document
D. Updated GWIS Geodatabase (if needed)

2.3.3 Watershed Model Development and Floodplain Delineation

2.3.3.1 Model Calibration and Verification

The CONSULTANT will calibrate the ICPR model to a minimum of one (1) of the rainfall events developed in the watershed evaluation task. If sufficient data is available, calibration will be performed for one high flow event and one low flow event. If necessary, the CONSULTANT will adjust model parameters and rerun the model to evaluate results against readily available and suitable observations. The CONSULTANT will evaluate the calibration using a second rainfall event.

Model calibration and verification shall consider rainfall spatial distribution. Calibration and verification rainfall will be based on the DISTRICT's NEXRAD rainfall data, which will be compared to rain gages in the watershed.

2.3.3.2 Model Validation

The model simulation results will be assessed for accuracy and reasonableness with historic water levels, if any, available in the study area corresponding to one of the existing, suitable simulations. The existing, suitable simulations include the calibration event, verification event, or design storm event with similar depth and duration.

2.3.3.3 Design Storm Simulations

The CONSULTANT shall simulate the following design storms:

- 2.33-year, 5-year, 10-year, 25-year, 50-year, 100-year, and 500-year, 1-day events using the

Florida Modified Type II 24-hour distribution

- 100-year, 5-day events using the DISTRICT's 120-hour distribution.

This task includes work to run adjacent watershed models to obtain appropriate boundary conditions for the 1-day and 5-day storm events

2.3.3.4 Multi-Day Event Simulations and Rainfall Justification to Project Floodplain

If directed by the COUNTY, the CONSULTANT shall simulate the following additional multi-day events:

- 100-year/3-day, 100-year/7-day, and 100-year/10-day events using FDOT rainfall distribution. This task includes work to run adjacent watershed models to obtain appropriate boundary conditions for multi-day storm events.

To delineate the 100-year floodplain, a rainfall event of duration longer than 1-day may be used if historic water levels developed in Task 2.2.1.6 provide evidence that longer durations better represent the 100-year flood risk.

The CONSULTANT shall also coordinate with adjacent watershed(s) when necessary.

2.3.3.5 Floodplain Delineation

The CONSULTANT shall delineate the floodplain based on digital topographic information and model predicted peak stages of 100-year and 500-year storm event(s). The final product of this task shall be floodplain mapping that meets FEMA standards for updating the existing DFIRMs. Approach of mapping transition zones shall be documented in Task 2.3.3.6 - Floodplain Justification Report. Transition zones will be mapped for the 100-year storm as part of the final floodplain deliverables (Task 2.3.7.1), after draft submittal has been reviewed by COUNTY and comments addressed.

2.3.3.6 Floodplain Justification Report

The CONSULTANT shall document the efforts involved in Tasks 2.3.3.1 thru 2.3.3.5, and merge with the discussion into the Watershed Evaluation report to develop this Floodplain Justification Report.

2.3.3.7 Sea-level Rise (SLR) Scenarios

The CONSULTANT shall model SLR scenarios based on Table 3 of the Comprehensive Conservation and Management Plan for Tampa Bay (CCMP, TBEP, 2017). The SLR projections for year 2100 as indicated in CCMP (TBEP 2017) are: 0.93 feet, 1.97 feet, 4.26 feet, and 6.89 feet. The CONSULTANT shall evaluate the 100-year and 25-year 24-hours rainfall for these scenarios for both the near-term and far-term projections. Associated draft level-pool floodplains will be developed. SLR scenarios will be evaluated using the existing conditions model with updated boundary conditions and rainfall depths.

2.3.3.8 Project Management and Quality Assurance/Control

The CONSULTANT will perform routine project management activities, such as invoicing and routine

communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will attend a meeting at COUNTY office to discuss the watershed model development, floodplain delineation, and prepare for the upcoming Peer Review. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.3.3 Deliverables

A. Floodplain Justification Report
B. 100-Year Flood Depth Grid
C. Model Input / Output Files
D. Project Specific QA/QC Document
E. Updated GWIS Geodatabase

2.3.4 Peer Review of Watershed Model Development and Floodplain Delineation

2.3.4.1 Peer Review Meeting and Presentation

The CONSULTANT will conduct an in-person PowerPoint presentation to the peer review consultant, the COUNTY, the DISTRICT, and other interested parties, which summarizes the work accomplished in Watershed Model Development and Floodplain Delineation tasks with emphasis on approach, effort, and product. The full deliverables shall be transmitted to the peer review consultant before this meeting.

2.3.4.2 Peer Review Communication

During the peer review process, the peer review consultant may seek clarification and request additional information from the CONSULTANT. Responses and/or additional information requested from the CONSULTANT, if any, shall be transmitted to the peer review consultant and County PM within 5 business days.

The CONSULTANT may seek clarification from the peer review consultant after receiving comments. Clarification requested from the peer review consultant, if any, shall be provided to the CONSULTANT and County PM within 5 business days.

2.3.5 Approved Floodplain Analysis Deliverables for Preliminary Floodplain Open House

2.3.5.1 Revised Deliverables

Within sixty (60) days of the meeting to present peer review comments (Task 2.3.4.2), the CONSULTANT shall address peer review comments, as well as any COUNTY review comments, and resubmit watershed model development and floodplain delineation deliverables to the COUNTY.

2.3.5.2 Project Management and Quality Assurance/Control

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the

project status and to get input from the COUNTY. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.3.5 Deliverables

A. Responses to Comments Geodatabase
B. Revised Deliverables
C. Project Specific QA/QC Document

2.3.6 Preliminary Floodplain Open House and Response to Public Comments

2.3.6.1 Preliminary Floodplain Open House

The CONSULTANT will assist the COUNTY with conducting a preliminary floodplain open house. The open house will be combined with the open house for Lake Tarpon. Assistance consists of preparing meeting materials, such as pdfs of floodplain maps, and loading digital data onto laptops and attendance of up to four (4) professionals at one meeting, based on the number of impacted parcels and anticipated attendance of the public meeting. The CONSULTANT will assist citizens by responding to questions at the meeting; operate laptop computers that can display recent aerials, existing flood hazard zones, base map information, parcels, and the preliminary floodplains.

2.3.6.2 Response to Public Comments

Public comment period closes thirty (30) days after the open house, unless otherwise specified. Within fifteen (15) days of the public comment period closure, the COUNTY will provide public comments collected to the CONSULTANT. The CONSULTANT will compile the public comments in a comments geodatabase.

The CONSULTANT shall review and provide the COUNTY with responses to public comments and update Task 2.3.5 deliverables as necessary. Response to public comments will not include providing copies of floodplain maps.

After the CONSULTANT has provided the COUNTY with a compiled public response database, the CONSULTANT will conduct a meeting to discuss the approach to revising deliverables considering the public comments.

Task 2.3.6 Deliverables

A. Attendance at Public Open House
B. Response to Public Comments
C. Approach to revising deliverables meeting

2.3.7 Final Approved Floodplain Analysis Deliverables

2.3.7.1 Revised Deliverables

Within thirty (30) days after the public comments on draft deliverables are transmitted to the

CONSULTANT, the CONSULTANT shall resubmit the full floodplain analysis deliverables to the COUNTY in final format, including floodplain transition zones.

2.3.7.2 Project Management and Quality Assurance/Control

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.3.7 Deliverables

A. Sign and Sealed Floodplain Justification Report
B. PowerPoint Presentation
C. Revised Final Deliverables
D. Project Specific QA/QC Document.

2.4 Flood Protection Level of Service (FPLOS) Determination, Drainage Improvement Analysis and Recommendations

2.4.1 FPLOS Determination and Flood Damage Estimation

2.4.1.1 Methodology Meeting

A meeting will be conducted between the COUNTY, the CONSULTANT, and the DISTRICT, if needed, to discuss the methodology to be used to evaluate flood protection level-of-service and flood damage estimates for each basin. It is anticipated that the COUNTY's level-of-service, as defined in the Comprehensive Plan or elsewhere in County regulations, will be used as the basis for the FPLOS determination.

2.4.1.2 FPLOS Determination

The CONSULTANT will designate the flood protection level-of-service (FPLOS) throughout the watershed based on the methodology and criterion agreed upon during Task 2.4.1.1. The CONSULTANT will create a GWIS feature class documenting the results of the FPLOS analysis. The FPLOS documentation will also include an estimate of the number of habitable structures within floodplain areas by reviewing aerial photography.

After the FPLOS determination is complete, the CONSULTANT will analyze structure and roadway flood damages. Damage estimates for structure and roadway flooding will be analyzed independently. The CONSULTANT will work with the COUNTY to evaluate if the damage calculations in the DISTRICT BCA tool will be sufficient. If needed, updates to the spreadsheet tool will be made prior to completing the damage estimates.

2.4.1.3 FPLOS Analysis Report

The CONSULTANT shall document the efforts involved in Tasks 2.4.1.1 through 2.4.1.2 in the FPLOS Analysis Report.

2.4.1.4 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.4.1 Deliverables

A. FPLOS analysis report
B. Flood depth grids for LOS design storms
C. Model input/output files for design storms required by FPLOS determination methodology
D. Geodatabase containing:
    a. Model simulation results
    b. Inundation polygons
    c. FPLOS designations
E. Flood damage estimate spreadsheets
F. Project specific QA/QC document
G. Responses to comments geodatabase

2.4.2 Surface Water Resource Assessment (SWRA) and Best Management Practices (BMPs) of Water Quality

2.4.2.1 Surface Water Resource Assessment Approach - Water Quality

The CONSULTANT will evaluate and adapt, as necessary, the approach to the surface water resource assessment developed for the 2015 Lake Tarpon Water Quality Management Plan. Concurrence with the Lake Tarpon approach or a revised approach will be submitted to the COUNTY for review and approval before conducting the water quality assessment. A meeting will be held at the COUNTY office between the CONSULTANT and the COUNTY, to discuss water quality data available, known issues, and the analytical approach of SWRA that is specific to the watershed. The methodology of pollutant loading analysis, if to be performed, shall also be evaluated.

The CONSULTANT shall discuss with the COUNTY the list of pollutants to be assessed. Pollutants to be assessed will include, but not be limited to the following:

- Nutrients
    - Total Nitrogen (TN)
    - Total Phosphorus (TP)
    - Dissolved Oxygen (DO)
    - Chlorophyll-a

- Total Suspended Solids (TSS)

The CONSULTANT will prepare a technical memorandum outlining the data compilation and data analysis methodology.

Task 2.4.2.1 Deliverables

A. Meeting Minutes
B. SWRA Approach Technical Memorandum

2.4.2.2 Water Quality Assessment

The CONSULTANT will collect and compile relevant digital datasets, including tabular data, databases, documents, reports, maps, and GIS data from Pinellas County. The CONSULTANT anticipates collecting data for the following sources from the COUNTY and listed regulatory agencies:

- Pinellas County rain and stream gages
- Pinellas County Phase-I NPDES-MS4 permit
- SWFWMD's Water Management Information System (WMIS)
- SWFWMD Potentiometric Elevation Data
- FDEP's Storage and Retrieval (STORET) Database
- FDEP's Watershed Information Network (WIN) Database
- FDEP's Waterbody Identification (WBID) basin shapefiles for WBIDs within the watershed
- FDEP's Impaired Water Rule (IWR) Database
- FDEP Wastewater Facility Regulation (WAFR)
- US Geological Survey (USGS) National Water Information System (NWIS)
- Florida Department of Health (FDOH) septic tank GIS Database

The CONSULTANT will assess water quality data to identify trends, potential impairment risks, and to document any noteworthy water quality issues that may be impacting the watershed. Additionally, water quality data will be assessed against numeric nutrient criteria (NNC) to evaluate any potential impairments. Exploratory data analyses will be conducted to get an understanding of the distribution of the data and to assess relationships between certain parameters. In addition to water quality data, the CONSULTANT will assess hydrology (surface and groundwater) and structural/point source issues that may influence water quality. Historical and recent water quality data will be reviewed and analyzed for trend analyses on available long-term data from monitoring stations within Brooker Creek watershed using a variation of temporal and spatial attributes from the overall period of record.

The CONSULTANT will conduct up to two days of field reconnaissance to identify potential sources of pollutant loads not readily available as part of the desk top assessment as well as to identify potential BMP locations.

2.4.2.3 Existing Conditions Pollutant Loading Analysis

A pollutant loading model will be developed to help assess nutrient loads by subbasin. An existing

conditions model will be developed. The budget for this task assumes:

- Drainage basin delineations are sufficiently detailed (outfall basis or small sub-area basis) that further delineation is not needed
- ERP coverages and high-resolution aerials allow us to quickly assign a standard BMP on those served areas
- Existing BMPs will be assumed as: None, Wet Detention with std. 14-day residence time, Dry Ret (1/2" treatment)

The model development methodology, results, and interpretation of results will be summarized in Task 2.4.2.4.

2.4.2.4 SWRA of Water Quality Report

The CONSULTANT shall document the efforts involved in Tasks 2.4.2.1 through 2.4.2.3 in a SWRA of Water Quality report.

Task 2.4.2.4 Deliverables

A. SWRA Report
B. Meeting minutes
C. Geodatabase/Water Quality Assessment Data
D. Pollutant Loading Model/GIS files
E. Project Specific QA/QC Document

2.4.2.5 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

2.4.3 Alternatives Analysis and Recommendations (FPLOS and SWRA)

2.4.3.1 Alternatives Analysis and Project Ranking

The CONSULTANT will develop best management practices (BMP) alternatives analysis for up to fifteen (15) BMPs in the watershed. The CONSULTANT shall recommend projects that address flooding and SLR, improve water quality, and restore/create natural systems, where possible. Although the watershed does not have any TMDLs, Brooker Creek is not meeting standards for dissolved oxygen and fecal coliform. Where applicable, the CONSULTANT will incorporate treatment alternatives into the design to help address these constituents.

A remote meeting, unless otherwise specified, will be conducted between the CONSULTANT, the COUNTY, and the DISTRICT to select a list of locations where alternatives analysis will be performed. The CONSULTANT shall prepare a preliminary list of locations prior to the meeting. The selection shall be based on, but not limited to, the following:

- FPLOS Designation
- Water Quality Impairments
- Natural Systems Restoration areas
- Documented Flooding Problems and Complaints
- Drainage System Classification (Regional vs. Intermediate)
- Anticipated Flood Damage
- Logical Precedence (Downstream vs. Upstream)
- Availability of property/Right of way

The CONSULTANT will model the selected BMPs using ICPR, if appropriate, and will estimate the pollutant load reductions for the BMPs. The gross cost to reduce the pollutant loads will be estimated using a single estimated dollars-per-pound removed per constituent. The CONSULTANT will rank the alternatives using the COUNTY's ranking tool. The ranking may also include an analysis of the proposed project for one of the SLR/Rainfall Depth scenarios in Task 2.3.3.7. The CONSULTANT will not provide construction plans or apply for conceptual ERP permits for the proposed BMPs. A draft alternative analysis and recommendations report will be prepared to summarize the findings of the BMP Analysis. Upon review and comment by the COUNTY, a final report will be issued.

2.4.3.2 Project Management and QA/QC

The CONSULTANT will perform routine project management activities, such as invoicing and routine communication. The CONSULTANT will remotely attend monthly progress meetings to discuss the project status and to get input from the COUNTY regarding additional data collection that may be required. The CONSULTANT will conduct quality assurance and quality control of the deliverable. Quality control reviews will be documented in the comments geodatabase and in the QA/QC document, as appropriate.

Task 2.4.3 Deliverables

A. Alternatives analysis and recommendations report
B. Model input/output files for proposed conditions
C. Pollutant load model GIS files
D. Geodatabase containing:
    a. Site locations
    b. Locations of final recommended projects
    c. Model simulation results for proposed conditions
    d. Inundation polygons for proposed conditions
E. Project specific QA/QC document
F. Responses to comments geodatabase

VI. COMPENSATION

6.1 BASIC SERVICES

The budget for each watershed is contingent upon both watersheds being approved simultaneously, and work being conducted in parallel.

For the BASIC SERVICES provided for in this Agreement, as defined in Section 6.1, the COUNTY agrees to pay the CONSULTANT One Million One Hundred Twenty-Eight Thousand Eight Hundred Forty-Eight dollars and Zero cents (**$1,128,848.00**) as follows:

A lump sum fee of Three Hundred Ninety-Four Thousand Three Hundred Sixty-Three dollars and Zero cents ($394,363.00) for:

Lake Tarpon Watershed Management Plan Tasks		Cost
1.1	Project Development	$6,870
1.2	Watershed Evaluation	$227,153
1.3	Floodplain Analysis	$122,802
1.4	FPLOS Determination, Drainage Improvement Alternatives Analysis and Recommendations	$37,538
	Total Lake Tarpon WMP	**$394,363**

A lump sum fee of Seven Hundred Thirty-Four Thousand Four Hundred Eighty-Five dollars and Zero cents ($734,485.00) for:

Brooker Creek Watershed Management Plan Tasks		Cost
2.1	Project Development	$12,222
2.2	Watershed Evaluation	$342,432
2.3	Floodplain Analysis	$210,560
2.4	FPLOS Determination, Drainage Improvement Alternatives Analysis and Recommendations	$169,271
	Total Brooker Creek WMP	**$734,485**

The above fees shall constitute the not to exceed amount of One Million One Hundred Twenty-Eight Thousand Eight Hundred Forty-Eight dollars and Zero cents ($1,128,848.00) to the CONSULTANT for the performance of Basic Services. All man hours are billed per the established and agreed hourly rates. The hourly rates are fully loaded and include all labor, overhead, expenses and profit of any nature including travel within the Tampa Bay Metropolitan Statistical area. Travel outside of that area will be reimbursed in accordance with Section 112.061 F.S.

6.2 CONTINGENCY SERVICES

For any CONTINGENCY SERVICES performed, the COUNTY agrees to pay the CONSULTANT, a negotiated fee based on the assignment, up to a maximum amount not to exceed One Hundred Twelve Thousand Eight Hundred Eighty-Five dollars and Zero cents ($112,885.00). Contingency services are subject to the

prior written approval the COUNTY.

Thirty-Nine Thousand Four Hundred Thirty-Six dollars and Zero cents ($39,436.00) for the Lake Tarpon Watershed Management Plan.

Seventy-Three Thousand Four Hundred Forty-Nine dollars and Zero cents ($73,449.00) for the Brooker Watershed Management Plan.

6.3 Total Agreement

Total agreement amount is One Million Two Hundred Forty-One Thousand Seven Hundred Thirty-Three dollars and Zero cents **($1,241,733.00).**

Lake Tarpon Watershed Management Plan Tasks	**Cost**
Lake Tarpon WMP Basic Services	$394,363
Lake Tarpon Contingency	$39,436
Total Lake Tarpon WMP	$433,799
Brooker Creek Watershed Management Plan Tasks	**Cost**
Total Brooker Creek WMP Basic Services	$734,485
Brooker Creek Contingency	$73,449
Total Brooker Creek WMP	$807,934
Total Basic Services	*$1,128,848*
Total Contingency	*$112,885*
Total Contract	***$1,241,733***

VII. PROJECT SCHEDULE

CONSULTANT shall commence professional services upon written receipt of Notice to Proceed (NTP) from COUNTY. The estimated time necessary to deliver this project is estimated at approximately **48 months** for both watershed management plans. A detailed project schedule in Microsoft Project format will be provided to the COUNTY within 30 days of the Notice to Proceed. The schedule assumes a 30-day turnaround for the COUNTY to review deliverables.

VIII. PROGRESS REPORTS

The CONSULTANT shall provide a progress report that accompanies the invoice at the end of each task. The progress report shall summarize the work completed during the invoice period as well as a schedule update. Progress reports will be provided electronically. The table of invoices is shown on the next page:

Lake Tarpon Watershed Management Plan Invoice Table		
#	Task Description	Amount
1	1.1.1 Kick-off Meeting	$1,240.00

Brooker Creek Watershed Management Plan Invoice Table		
#	Task Description	Amount
1	2.1.1 Kick-off Meeting	$1,240.00

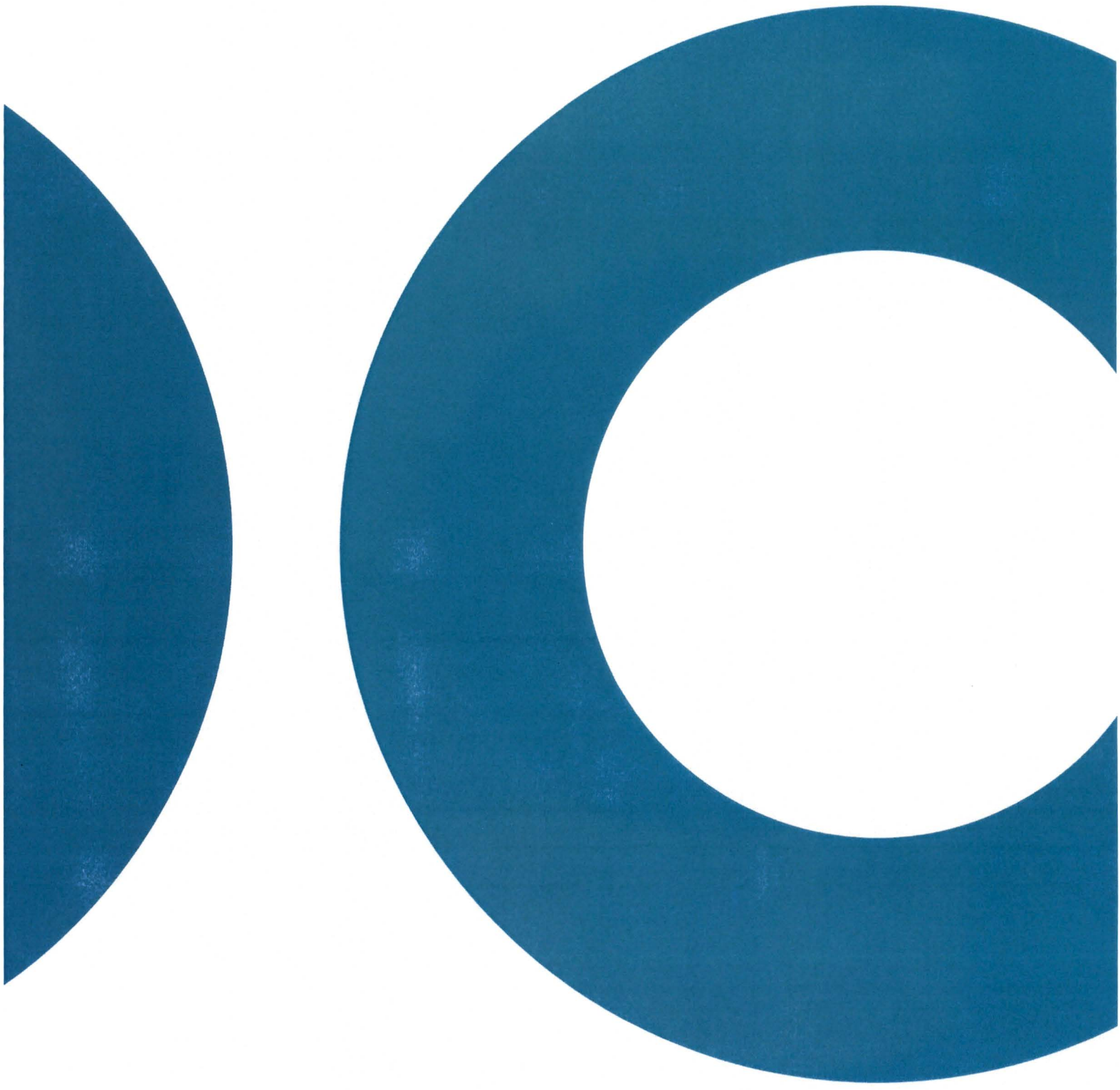
Lake Tarpon Watershed Management Plan Invoice Table		
#	Task Description	Amount
2	1.1.2 Data Collection and Initial Evaluation	$2,358.00
3	1.1.3 Draft Project Plan	$1,832.00
4	1.1.4 Final Project Plan	$740.00
5	1.1.5 Project Management and Quality Assurance/Control	$700.00
6	1.2.1.1 Drainage Pattern and Watershed Boundary	$1,492.00
7	1.2.1.2 Areas of Development	$25,686.00
8	1.2.1.3 Initial GIS Processing	$16,760.00
9	1.2.1.4 DEM Review and Topographic Void Update	$2,916.00
10	1.2.1.5 Hydrologic Characteristics and Percolation	$876.00
11	1.2.1.6 Historical Water Levels	$716.00
12	1.2.1.7 Data Acquisition Plan	$2,656.00
13	1.2.1.8 Pre-field Reconnaissance Evaluation	$4,880.00
14	1.2.1.9 Task Memorandum	$3,036.00
15	1.2.1.10 Project Management and Quality Assurance/Control	$1,970.00
16	1.2.2.1 Acquisition of Data	$28,516.00
17	1.2.2.1 Survey	$53,000.00
18	1.2.2.2 HydroNetwork Development	$51,516.00
19	1.2.2.3 Topographic Information Refinement	$3,396.00
20	1.2.2.4 Hydrologic Feature Database	$1,964.00
21	1.2.2.5 Project Management and Quality Assurance/Control	$1,090.00
22	1.2.3.1 Additional GIS Processing	$2,784.00
23	1.2.3.2 Preliminary Model Schematic	$5,160.00
24	1.2.3.3 Model Parameterization Approach	$1,992.00
25	1.2.3.4 Watershed Evaluation Report	$3,240.00
26	1.2.3.5 Project Management and Quality Assurance/Control	$1,415.00
27	1.2.4.1 Peer Review Kick-off Meeting and Presentation	$2,032.00
28	1.2.4.2 Peer Review Communication	$760.00
29	1.2.5.1 Revised Deliverables	$7,900.00
30	1.2.5.2 Project Management and Quality Assurance/Control	$1,400.00
31	1.3.1.1 Acquisition of Additional Model Parameters	$2,146.00
32	1.3.1.2 Development of Model Specific Geodatabase	$21,520.00
33	1.3.1.3 Model Setup, Debug, and Stabilization	$11,040.00
34	1.3.1.4 Project Management and QA/QC	$1,600.00
35	1.3.2.1 Revised Deliverables	$3,964.00
36	1.3.2.2 Project Management and QA/QC	$480.00
37	1.3.3.1 Model Calibration and Verification	$8,980.00

Brooker Creek Watershed Management Plan Invoice Table		
#	Task Description	Amount
2	2.1.2 Data Collection and Initial Evaluation	$5,682.00
3	2.1.3 Draft Project Plan	$2,360.00
4	2.1.4 Final Project Plan	$960.00
5	2.1.5 Project Management and Quality Assurance/Control	$1,980.00
6	2.2.1.10 Model Extension (HC MODEL conversion TO GWIS 2.0)	$25,440.00
7	2.2.1.1 Drainage Pattern and Watershed Boundary	$1,739.00
8	2.2.1.2 Areas of Development	$11,766.00
9	2.2.1.3 Initial GIS Processing	$20,848.00
10	2.2.1.4 DEM Review and Topographic Void Update	$5,512.00
11	2.2.1.5 Hydrologic Characteristics and Percolation	$7,192.00
12	2.2.1.6 Historical Water Levels	$2,476.00
13	2.2.1.7 Data Acquisition Plan	$4,328.00
14	2.2.1.8 Pre-field Reconnaissance Evaluation	$14,032.00
15	2.2.1.9 Task Memorandum	$3,828.00
16	2.2.1.10 Project Management and Quality Assurance/Control	$8,150.00
17	2.2.2.1 Acquisition of Data	$34,176.00
18	2.2.2.1 Survey	$63,000.00
19	2.2.2.2 HydroNetwork Development	$54,640.00
20	2.2.2.3 Topographic Information Refinement	$4,979.00
21	2.2.2.4 Hydrologic Feature Database	$6,120.00
22	2.2.2.5 Project Management and Quality Assurance/Control	$17,710.00
23	2.2.3.1 Additional GIS Processing	$6,659.00
24	2.2.3.2 Preliminary Model Schematic	$11,664.00
25	2.2.3.3 Model Parameterization Approach	$4,800.00
26	2.2.3.4 Watershed Evaluation Report	$9,120.00
27	2.2.3.5 Project Management and Quality Assurance/Control	$5,475.00
28	2.2.4.1 Peer Review Kick-off Meeting and Presentation	$2,732.00
29	2.2.4.2 Peer Review Communication	$1,140.00
30	2.2.5.1 Revised Deliverables	$10,816.00
31	2.2.5.2 Project Management and Quality Assurance/Control	$4,090.00
32	2.3.1.1 Acquisition of Additional Model Parameters	$13,280.00
33	2.3.1.2 Development of Model Specific Geodatabase	$47,460.00
34	2.3.1.3 Model Setup, Debug, and Stabilization	$17,248.00
35	2.3.1.4 Project Management and QA/QC	$6,740.00
36	2.3.2.1 Revised Deliverables	$5,672.00
37	2.3.2.2 Project Management and QA/QC	$2,460.00

Lake Tarpon Watershed Management Plan Invoice Table		
#	Task Description	Amount
38	1.3.3.2 Model Validation	$4,456.00
39	1.3.3.3 Design Storm Simulations	$4,880.00
40	1.3.3.4 Multi-Day Event Simulations and Rainfall Justification	$7,256.00
41	1.3.3.5 Floodplain Delineation	$10,960.00
42	1.3.3.6 Floodplain Justification Report	$5,640.00
43	1.3.3.7 Sea-Level Rise Scenarios	$12,176.00
44	1.3.3.8 Project Management and QA/QC	$1,600.00
45	1.3.4.1 Peer Review Meeting and Presentation	$2,032.00
46	1.3.4.2 Peer Review Communication	$380.00
47	1.3.5.1 Revised Deliverables	$4,048.00
48	1.3.5.2 Project Management and QA/QC	$960.00
49	1.3.6.1 Preliminary Floodplain Open House	$3,228.00
50	1.3.6.2 Response to Public Comments	$4,216.00
51	1.3.7.1 Revised Deliverables	$9,640.00
52	1.3.7.2 Project Management and QA/QC	$1,600.00
53	1.4.1.1 FPLOS Methodology Meeting	$430.00
54	1.4.1.2 FPLOS Determination	$8,680.00
55	1.4.1.3 FPLOS Analysis Report	$4,960.00
56	1.4.1.4 Project Management and QA/QC	$760.00
57	1.4.2.1 Alternatives Analysis and Project Ranking	$20,988.00
58	1.4.2.2 Project Management and QA/QC	$1,720.00
	Total Lake Tarpon WMP Invoices	$394,363.00

Brooker Creek Watershed Management Plan Invoice Table		
#	Task Description	Amount
38	2.3.3.1 Model Calibration and Verification	$13,096.00
39	2.3.3.2 Model Validation	$6,360.00
40	2.3.3.3 Design Storm Simulations	$4,560.00
41	2.3.3.4 Multi-Day Event Simulations and Rainfall Justification to	$7,200.00
42	2.3.3.5 Floodplain Delineation	$15,900.00
43	2.3.3.6 Floodplain Justification Report	$8,512.00
44	2.3.3.7 Sea-Level Rise Scenarios	$12,176.00
45	2.3.3.8 Project Management and QA/QC	$7,580.00
46	2.3.4.1 Peer Review Meeting and Presentation	$3,128.00
47	2.3.4.2 Peer Review Communication	$540.00
48	2.3.5.1 Revised Deliverables	$6,700.00
49	2.3.5.2 Project Management and QA/QC	$2,460.00
50	2.3.6.1 Preliminary Floodplain Open House	$3,624.00
51	2.3.6.2 Response to Public Comments	$6,144.00
52	2.3.7.1 Revised Deliverables	$14,700.00
53	2.3.7.2 Project Management and QA/QC	$5,020.00
54	2.4.1.1 FPLOS Methodology Meeting	$1,888.00
55	2.4.1.2 FPLOS Determination	$13,340.00
56	2.4.1.3 FPLOS Analysis Report	$5,691.00
57	2.4.1.4 Project Management and QA/QC	$2,680.00
58	2.4.2.1 Surface Water Resource Assessment Approach	$2,598.00
59	2.4.2.2 Water Quality Assessment	$36,958.00
60	2.4.2.3 Existing Conditions Pollutant Loading Analysis	$35,280.00
61	2.4.2.4 SWRA Report	$10,968.00
62	2.4.2.5 Project Management and QA/QC	$8,143.00
63	2.4.3.1 Alternatives Analysis and Project Ranking	$46,850.00
64	2.4.3.2 Project Management and QA/QC	$4,875.00
	Total Brooker Creek WMP Invoices	$734,485.00

LAKE TARPON WMP BUDGET



PROJECT BUDGET BY: Wood Environment & Infrastructure Sc Submitted: 1/7/2019 Revised: NA

PROJECT NAME: Lake Tarpon WMP

AGREEMENT NUMBER:

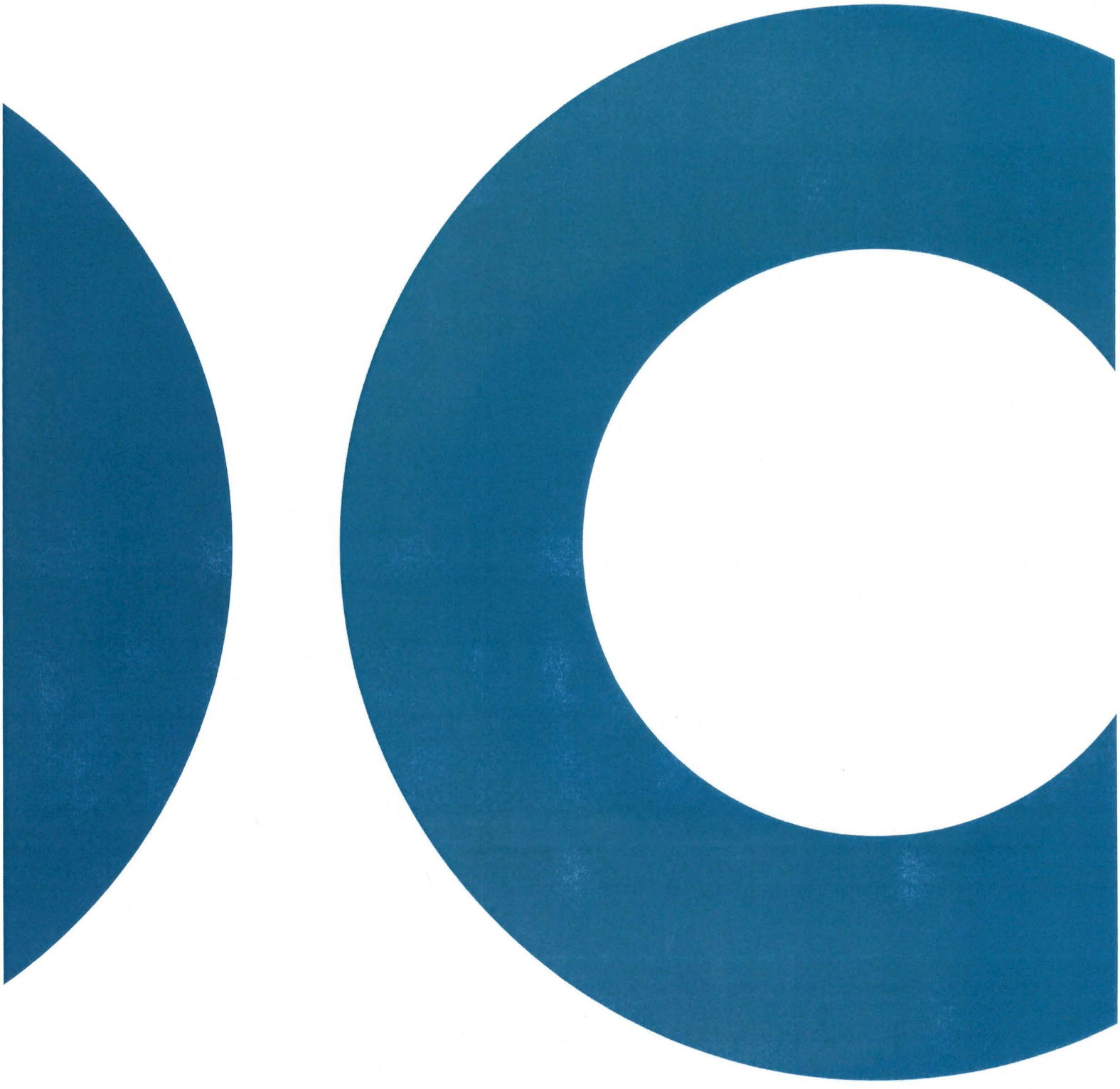
PROJECT METRIC (SQ MI): 19

Title/Job Description	Principal	Manager	Engineer	Engineer	Scientist	Scientist	GIS Analyst	Technician	Surveyor	Clerical	Hours	Direct Costs	Survey	Costs	Running Total	Costs Per sq.
Personnel Hourly Rate	$210.00	$160.00	$160.00	$110.00	$150.00	$107.00	$99.00	$75.00	$147.00	$60.00						
Name of Key Individuals																
Hunter Hicks	X															
Christine Mehle		X														
Nirjhar Shah			X													
Vibhava Srivastava				X												
Kyle Dollman				X												
Megan Long							X									
Aayushi Vagadia							X									
Monica Reyes							X									
Mary Szafraniec					X											
Kristen Nowak					X											
Aziza Baan							X									
Erik Oji						X										
Kyle Compton								X								
Mike Jones									X							
Janis Baldwin										X						
ELEMENT & TASK DESCRIPTIONS																
1.1 Project Development																
1.1.1 Kick-off Meeting	0.0	4.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	1.0	9.0	$0	$0	$1,240.00	$1,240.00	$65.26
1.1.2 Data Collection and Initial Evaluation	0.0	6.0	2.0	8.0	0.0	0.0	2.0	0.0	0.0	0.0	18.0	$0	$0	$2,358.00	$3,598.00	$124.11
1.1.3 Draft Project Plan	0.0	2.0	1.0	4.0	0.0	0.0	8.0	0.0	0.0	2.0	17.0	$0	$0	$1,832.00	$5,430.00	$96.42
1.1.4 Final Project Plan	0.0	1.0	0.5	4.0	0.0	0.0	0.0	0.0	0.0	1.0	6.5	$0	$0	$740.00	$6,170.00	$38.95
Assurance/Control	0.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.0	$0	$0	$700.00	$6,870.00	$36.84
Element 1 Hours	0.0	15.0	7.5	18.0	0.0	0.0	10.0	0.0	0.0	5.0	55.5				55.5	
Element 1 Days (8 Hour/Day)	0.0	1.9	0.9	2.3	0.0	0.0	1.3	0.0	0.0	0.6	6.9				6.9	
Element 1 Costs	$0	$2,400	$1,200	$1,980	$0	$0	$990	$0	$0	$300		$0	$0		$6,870	$361.58
1.2 Watershed Evaluation																
1.2.1 Assembly and Evaluation of Watershed Data																
1.2.1.1 Drainage Pattern and Watershed Boundary	0.0	1.0	2.0	2.0	0.0	0.0	8.0	0.0	0.0	0.0	13.0	$0	$0	$1,492.00	$1,492.00	$78.53
1.2.1.2 Areas of Development	0.0	1.0	1.0	2.0	0.0	0.0	254.0	0.0	0.0	0.0	258.0	$0	$0	$25,686.00	$27,178.00	$1,351.89
1.2.1.3 Initial GIS Processing	0.0	1.0	2.0	4.0	0.0	0.0	160.0	0.0	0.0	0.0	167.0	$0	$0	$16,760.00	$43,938.00	$882.11
1.2.1.4 DEM Review and Topographic Void Update	0.0	1.0	1.0	2.0	0.0	0.0	24.0	0.0	0.0	0.0	28.0	$0	$0	$2,916.00	$46,854.00	$153.47
1.2.1.5 Hydrologic Characteristics and Percolation	0.0	1.0	2.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	7.0	$0	$0	$876.00	$47,730.00	$46.11
1.2.1.6 Historical Water Levels	0.0	1.0	1.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	6.0	$0	$0	$716.00	$48,446.00	$37.68
1.2.1.7 Data Acquisition Plan	0.0	1.0	2.0	8.0	0.0	0.0	8.0	2.0	2.0	1.0	24.0	$0	$0	$2,656.00	$51,102.00	$139.79
1.2.1.8 Pre-field Reconnaissance Evaluation	0.0	1.0	2.0	4.0	0.0	0.0	40.0	0.0	0.0	0.0	47.0	$0	$0	$4,880.00	$55,982.00	$256.84
1.2.1.9 Task Memorandum	0.0	1.0	1.0	2.0	0.0	0.0	24.0	0.0	0.0	2.0	30.0	$0	$0	$3,036.00	$59,018.00	$159.79
1.2.1.10 Project Management and Quality Assurance/C	0.0	6.0	2.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	16.0	$10	$0	$1,970.00	$60,988.00	$103.68
1.2.2 Hydrologic and Hydraulic Feature Database																
1.2.2.1 Acquisition of Data	0.0	16.0	4.0	132.0	1.0	0.0	2.0	108.0	4.0	0.0	267.0	$1,760	$53,000	$81,516.00	$142,504.00	$4,290.32
1.2.2.2 HydroNetwork Development	0.0	2.0	4.0	24.0	0.0	0.0	484.0	0.0	0.0	0.0	514.0	$0	$0	$51,516.00	$194,020.00	$2,711.37
1.2.2.3 Topographic Information Refinement	0.0	1.0	4.0	2.0	0.0	0.0	24.0	0.0	0.0	0.0	31.0	$0	$0	$3,396.00	$197,416.00	$178.74
1.2.2.4 Hydrologic Feature Database	0.0	1.0	0.0	2.0	0.0	0.0	16.0	0.0	0.0	0.0	19.0	$0	$0	$1,964.00	$199,380.00	$103.37
1.2.2.5 Project Management and Quality Assurance/Co	0.0	4.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	8.0	$10	$0	$1,090.00	$200,470.00	$57.37
1.2.3 Preliminary Model Features																
1.2.3.1 Additional GIS Processing	0.0	1.0	1.0	8.0	0.0	0.0	16.0	0.0	0.0	0.0	26.0	$0	$0	$2,784.00	$203,254.00	$146.53
1.2.3.2 Preliminary Model Schematic	0.0	1.0	1.0	8.0	0.0	0.0	40.0	0.0	0.0	0.0	50.0	$0	$0	$5,160.00	$208,414.00	$271.58
1.2.3.3 Model Parameterization Approach	0.0	1.0	1.0	8.0	0.0	0.0	8.0	0.0	0.0	0.0	18.0	$0	$0	$1,992.00	$210,406.00	$104.84
1.2.3.4 Watershed Evaluation Report	0.0	2.0	1.0	24.0	0.0	0.0	0.0	0.0	0.0	2.0	29.0	$0	$0	$3,240.00	$213,646.00	$170.53
1.2.3.5 Project Management and Quality Assurance/Co	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	10.0	$15	$0	$1,415.00	$215,061.00	$74.47
1.2.4 Peer Review of Watershed Evaluation																
Presentation	0.0	4.0	1.0	4.0	0.0	0.0	8.0	0.0	0.0	0.0	17.0	$0	$0	$2,032.00	$217,093.00	$106.95
1.2.4.2 Peer Review Communication	0.0	2.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	$0	$0	$760.00	$217,853.00	$40.00
1.2.5 Final Approved Watershed Evaluation Deliverables																
1.2.5.1 Revised Deliverables	0.0	2.0	4.0	8.0	0.0	0.0	60.0	0.0	0.0	2.0	76.0	$0	$0	$7,900.00	$225,753.00	$415.79
Assurance/Control	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	10.0	$0	$0	$1,400.00	$227,153.00	$73.68
Element 2 Hours	0.0	60.0	47.0	252.0	1.0	0.0	1,184.0	110.0	6.0	17.0	1,677.0				1,677.0	
Element 2 Days (8 Hour/Day)	0.0	7.5	5.9	31.5	0.1	0.0	148.0	13.8	0.8	2.1	209.6				209.6	
Element 2 Costs	$0	$9,600	$7,520	$27,720	$150	$0	$117,216	$8,250	$882	$1,020		$1,795	$53,000		$227,153	$11,955.42
1.3 Watershed Management Plan - Floodplain Analysis																
1.3.1 Watershed Model Parameterization																
1.3.1.1 Acquisition of Additional Model Parameters	0.0	1.0	1.0	4.0	0.0	0.0	14.0	0.0	0.0	0.0	20.0	$0	$0	$2,146.00	$2,146.00	$112.95
1.3.1.2 Development of Model Specific Geodatabase	0.0	2.0	6.0	40.0	0.0	0.0	160.0	0.0	0.0	0.0	208.0	$0	$0	$21,520.00	$23,666.00	$1,132.63
1.3.1.3 Model Setup, Debug, and Stabilization	0.0	2.0	12.0	8.0	0.0	0.0	80.0	0.0	0.0	0.0	102.0	$0	$0	$11,040.00	$34,706.00	$581.05
1.3.1.4 Project Management and QA/QC	0.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	$0	$0	$1,600.00	$36,306.00	$84.21
1.3.2 Final Approved Watershed Model Parameterization Deliverables																
1.3.2.1 Revised Deliverables	0.0	1.0	2.0	0.0	0.0	32.0	0.0	0.0	0.0	1.0	36.0	$0	$0	$3,964.00	$40,270.00	$208.63
1.3.2.2 Project Management and QA/QC	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	$0	$0	$480.00	$40,750.00	$25.26

PROJECT BUDGET BY: Wood Environment & Infrastructure Sc Submitted: 1/7/2019 Revised: NA
PROJECT NAME: Lake Tarpon WMP
AGREEMENT NUMBER:
PROJECT METRIC (SQ MI): 19

Title/Job Description	Principal	Manager	Engineer	Engineer	Scientist	Scientist	GIS Analyst	Technician	Surveyor	Clerical	Hours	Direct Costs	Survey	Costs	Running Total	Costs Per sq.
Personnel Hourly Rate	$210.00	$160.00	$160.00	$110.00	$150.00	$107.00	$99.00	$75.00	$147.00	$60.00						
1.3.3 Watershed Model Development and Floodplain Delineation																$0.00
1.3.3.1 Model Calibration and Verification	0.0	0.0	8.0	16.0	0.0	0.0	60.0	0.0	0.0	0.0	84.0	$0	$0	$8,980.00	$49,730.00	$472.63
1.3.3.2 Model Validation	0.0	0.0	2.0	16.0	0.0	0.0	24.0	0.0	0.0	0.0	42.0	$0	$0	$4,456.00	$54,186.00	$234.53
1.3.3.3 Design Storm Simulations	0.0	1.0	2.0	4.0	0.0	0.0	40.0	0.0	0.0	0.0	47.0	$0	$0	$4,880.00	$59,066.00	$256.84
1.3.3.4 Multi-Day Event Simulations and Rainfall Justifi	0.0	1.0	2.0	4.0	0.0	0.0	64.0	0.0	0.0	0.0	71.0	$0	$0	$7,256.00	$66,322.00	$381.89
1.3.3.5 Floodplain Delineation	0.0	2.0	6.0	16.0	0.0	0.0	80.0	0.0	0.0	0.0	104.0	$0	$0	$10,960.00	$77,282.00	$576.84
1.3.3.6 Floodplain Justification Report	0.0	1.0	4.0	8.0	0.0	0.0	40.0	0.0	0.0	0.0	53.0	$0	$0	$5,640.00	$82,922.00	$296.84
1.3.3.7 Sea-Level Rise Scenarios	0.0	1.0	8.0	40.0	0.0	0.0	64.0	0.0	0.0	0.0	113.0	$0	$0	$12,176.00	$95,098.00	$640.84
1.3.3.8 Project Management and QA/QC	0.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	$0	$0	$1,600.00	$96,698.00	$84.21
1.3.4 Peer Review of Watershed Model Development and Floodplain Delineation																
1.3.4.1 Peer Review Meeting and Presentation	0.0	4.0	1.0	4.0	0.0	0.0	8.0	0.0	0.0	0.0	17.0	$0	$0	$2,032.00	$98,730.00	$106.95
1.3.4.2 Peer Review Communication	0.0	1.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	$0	$0	$380.00	$99,110.00	$20.00
Preliminary Floodplain Open House																$0.00
1.3.5.1 Revised Deliverables	0.0	1.0	1.0	4.0	0.0	0.0	32.0	0.0	0.0	2.0	40.0	$0	$0	$4,048.00	$103,158.00	$213.05
1.3.5.2 Project Management and QA/QC	0.0	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	$0	$0	$960.00	$104,118.00	$50.53
Response to Public Comments																
1.3.6.1 Preliminary Floodplain Open House	0.0	6.0	4.0	4.0	0.0	0.0	12.0	0.0	0.0	0.0	26.0	$0	$0	$3,228.00	$107,346.00	$169.89
1.3.6.2 Response to Public Comments	0.0	2.0	4.0	8.0	0.0	0.0	24.0	0.0	0.0	0.0	38.0	$0	$0	$4,216.00	$111,562.00	$221.89
1.3.7 Final Approved Floodplain Analysis Deliverables																$0.00
1.3.7.1 Revised Deliverables	0.0	2.0	6.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	88.0	$0	$0	$9,640.00	$121,202.00	$507.37
1.3.7.2 Project Management and QA/QC	0.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	$0	$0	$1,600.00	$122,802.00	$84.21
Element 3 Hours	0.0	43.0	93.0	218.0	0.0	32.0	742.0	0.0	0.0	3.0	1,131.0				**1,131.0**	
Element 3 Days (8 Hour/Day)	0.0	5.4	11.6	27.3	0.0	4.0	92.8	0.0	0.0	0.4	141.4				**141.4**	
Element 3 Costs	$0	$6,880	$14,880	$23,980	$0	$3,424	$73,458	$0	$0	$180		$0	$0		**$122,802**	$6,463
Drainage Improvement Alternatives Analysis and																
Estimates																
1.4.1.1 FPLOS Methodology Meeting	0.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	$0	$0	$430.00	$430.00	$22.63
1.4.1.2 FPLOS Determination	0.0	1.0	1.0	4.0	0.0	0.0	80.0	0.0	0.0	0.0	86.0	$0	$0	$8,680.00	$9,110.00	$456.84
1.4.1.3 FPLOS Analysis Report	0.0	1.0	1.0	4.0	0.0	0.0	40.0	0.0	0.0	4.0	50.0	$0	$0	$4,960.00	$14,070.00	$261.05
1.4.1.4 Project Management and QA/QC	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	6.0	$0	$0	$760.00	$14,830.00	$40.00
Recommendations																
1.4.2.1 Alternatives Analysis and Project Ranking	0.0	20.0	40.0	60.0	24.0	0.0	12.0	0.0	0.0	0.0	156.0	$0	$0	$20,988.00	$35,818.00	$1,104.63
1.4.2.2 Project Management and QA/QC	0.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	12.0	$0	$0	$1,720.00	$37,538.00	$90.53
Element 4 Hours	0.0	31.0	49.0	69.0	24.0	0.0	132.0	0.0	0.0	8.0	313.0				**313.0**	
Element 4 Days (8 Hour/Day)	0.0	3.9	6.1	8.6	3.0	0.0	16.5	0.0	0.0	1.0	39.1				**39.1**	
Element 4 Costs	$0	$4,960	$7,840	$7,590	$3,600	$0	$13,068	$0	$0	$480		$0	$0		**$37,538**	$1,976
Total Hours	0.0	149.0	196.5	557.0	25.0	32.0	2,068.0	110.0	6.0	33.0	3,176.5				**3,176.5**	
Total Days (8 Hour/Day)	0.0	18.6	24.6	69.6	3.1	4.0	258.5	13.8	0.8	4.1	397.1				**397.1**	
Total Costs	0.0	23,840.0	31,440.0	61,270.0	3,750.0	3,424.0	204,732.0	8,250.0	882.0	1,980.0		1,795.0	53,000.0		**$394,363**	$20,756

BROOKER CREEK WMP BUDGET



PROJECT BUDGET BY: Wood Environment & Infrastructure Sc Submitted: 1/7/2019 Revised: NA
PROJECT NAME: Brooker CreekWMP
AGREEMENT NUMBER:
PROJECT METRIC (SQ MI): 16

Title/Job Description	Principal	Manager	Engineer	Engineer	Scientist	Scientist	GIS Analyst	Technician	Surveyor	Clerical		Direct Costs	Survey	Costs	Running Total	Costs Per sq.
Personnel Hourly Rate	$210.00	$160.00	$160.00	$110.00	$150.00	$107.00	$99.00	$75.00	$147.00	$60.00						
Name of Key Individuals																
Hunter Hicks	X															
Christine Mehle		X														
Nirjhar Shah			X													
Tim Kelly			X													
Aayushi Vagadia				X												
John Cawthron				X												
Kyle Dollman				X												
Megan Long				X												
Mikhal Moberg				X												
Monica Reyes				X												
Vibhava Srivastava				X												
Mary Szafraniec					X											
Kristen Nowak					X											
Aziza Baan							X									
Erik Oij						X										
Kyle Compton								X								
Mike Jones									X							
Janis Baldwin										X						
ELEMENT & TASK DESCRIPTIONS																
2.1 Project Development																
2.1.1 Kick-off Meeting	0.0	4.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	1.0	9.0	$0	$0	$1,240.00	$1,240.00	$77.50
2.1.2 Data Collection and Initial Evaluation	0.0	8.0	4.0	18.0	0.0	0.0	18.0	0.0	0.0	0.0	48.0	$0	$0	$5,682.00	$6,922.00	$355.13
2.1.3 Draft Project Plan	0.0	2.0	1.0	16.0	0.0	0.0	0.0	0.0	0.0	2.0	21.0	$0	$0	$2,360.00	$9,282.00	$147.50
2.1.4 Final Project Plan	0.0	1.0	0.5	6.0	0.0	0.0	0.0	0.0	0.0	1.0	8.5	$0	$0	$960.00	$10,242.00	$60.00
2.1.5 Project Management and Quality Assurance/Control	2.0	4.0	4.0	2.0	0.0	0.0	0.0	0.0	0.0	1.0	13.0	$0	$0	$1,980.00	$12,222.00	$123.75
Element 1 Hours	2.0	19.0	11.5	44.0	0.0	0.0	18.0	0.0	0.0	5.0	99.5				**99.5**	
Element 1 Days (8 Hour/Day)	0.3	2.4	1.4	5.5	0.0	0.0	2.3	0.0	0.0	0.6					**12.4**	
Element 1 Costs	$420	$3,040	$1,840	$4,840	$0	$0	$1,782	$0	$0	$300		$0	$0		**$12,222**	**$764**
2.2 Watershed Evaluation																
2.2.1 Assembly and Evaluation of Watershed Data																
2.2.1.10Model Extension (HC MODEL conversion TO GWIS 2.0)	0.0	0.0	16.0	64.0	0.0	0.0	160.0	0.0	0.0	0.0	240.0	$0	$0	$25,440.00	$25,440.00	$1,590.00
2.2.1.1 Drainage Pattern and Watershed Boundary	0.0	1.0	1.0	12.0	0.0	0.0	1.0	0.0	0.0	0.0	15.0	$0	$0	$1,739.00	$27,179.00	$108.69
2.2.1.2 Areas of Development	0.0	1.0	2.0	99.0	0.0	0.0	4.0	0.0	0.0	0.0	106.0	$0	$0	$11,766.00	$38,945.00	$735.38
2.2.1.3 Initial GIS Processing	0.0	2.0	4.0	8.0	0.0	0.0	192.0	0.0	0.0	0.0	206.0	$0	$0	$20,848.00	$59,793.00	$1,303.00
2.2.1.4 DEM Review and Topographic Void Update	0.0	1.0	1.0	4.0	0.0	0.0	48.0	0.0	0.0	0.0	54.0	$0	$0	$5,512.00	$65,305.00	$344.50
2.2.1.5 Hydrologic Characteristics and Percolation	0.0	1.0	6.0	12.0	0.0	0.0	48.0	0.0	0.0	0.0	67.0	$0	$0	$7,192.00	$72,497.00	$449.50
2.2.1.6 Historical Water Levels	0.0	1.0	1.0	16.0	0.0	0.0	4.0	0.0	0.0	0.0	22.0	$0	$0	$2,476.00	$74,973.00	$154.75
2.2.1.7 Data Acquisition Plan	0.0	1.0	2.0	16.0	0.0	0.0	16.0	2.0	2.0	1.0	40.0	$0	$0	$4,328.00	$79,301.00	$270.50
2.2.1.8 Pre-field Reconnaissance Evaluation	0.0	1.0	2.0	80.0	0.0	0.0	48.0	0.0	0.0	0.0	131.0	$0	$0	$14,032.00	$93,333.00	$877.00
2.2.1.9 Task Memorandum	0.0	1.0	1.0	2.0	0.0	0.0	32.0	0.0	0.0	2.0	38.0	$0	$0	$3,828.00	$97,161.00	$239.25
2.2.1.10 Project Management and Quality Assurance/Control	2.0	24.0	20.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	54.0	$10	$0	$8,150.00	$105,311.00	$509.38
2.2.2 Hydrologic and Hydraulic Feature Database																
2.2.2.1 Acquisition of Data	0.0	16.0	8.0	164.0	1.0	0.0	2.0	128.0	4.0	0.0	323.0	$1,760	$63,000	$97,176.00	$202,487.00	$6,073.50
2.2.2.2 HydroNetwork Development	0.0	8.0	20.0	240.0	0.0	0.0	240.0	0.0	0.0	0.0	508.0	$0	$0	$54,640.00	$257,127.00	$3,415.00
2.2.2.3 Topographic Information Refinement	0.0	1.0	2.0	40.0	0.0	0.0	1.0	0.0	0.0	0.0	44.0	$0	$0	$4,979.00	$262,106.00	$311.19
2.2.2.4 Hydrologic Feature Database	0.0	4.0	4.0	8.0	0.0	0.0	40.0	0.0	0.0	0.0	56.0	$0	$0	$6,120.00	$268,226.00	$382.50
2.2.2.5 Project Management and Quality Assurance/Control	2.0	48.0	24.0	48.0	0.0	0.0	0.0	0.0	0.0	8.0	130.0	$10	$0	$17,710.00	$285,936.00	$1,106.88
2.2.3 Preliminary Model Features																
2.2.3.1 Additional GIS Processing	0.0	4.0	4.0	48.0	0.0	0.0	1.0	0.0	0.0	0.0	57.0	$0	$0	$6,659.00	$292,595.00	$416.19
2.2.3.2 Preliminary Model Schematic	0.0	4.0	4.0	80.0	0.0	0.0	16.0	0.0	0.0	0.0	104.0	$0	$0	$11,664.00	$304,259.00	$729.00
2.2.3.3 Model Parameterization Approach	0.0	4.0	4.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	$0	$0	$4,800.00	$309,059.00	$300.00
2.2.3.4 Watershed Evaluation Report	0.0	2.0	2.0	40.0	0.0	0.0	40.0	0.0	0.0	2.0	86.0	$0	$0	$9,120.00	$318,179.00	$570.00
2.2.3.5 Project Management and Quality Assurance/Control	2.0	16.0	12.0	4.0	0.0	0.0	0.0	0.0	0.0	2.0	36.0	$15	$0	$5,475.00	$323,654.00	$342.19
2.2.4 Peer Review of Watershed Evaluation																
2.2.4.1 Peer Review Kick-off Meeting and Presentation	0.0	6.0	2.0	6.0	0.0	0.0	8.0	0.0	0.0	0.0	22.0	$0	$0	$2,732.00	$326,386.00	$170.75
2.2.4.2 Peer Review Communication	0.0	2.0	1.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	$0	$0	$1,140.00	$327,526.00	$71.25
2.2.5 Final Approved Watershed Evaluation Deliverables																
2.2.5.1 Revised Deliverables	0.0	4.0	6.0	60.0	0.0	0.0	24.0	0.0	0.0	4.0	98.0	$0	$0	$10,816.00	$338,342.00	$676.00
2.2.5.2 Project Management and Quality Assurance/Control	1.0	8.0	12.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	29.0	$0	$0	$4,090.00	$342,432.00	$255.63
Element 2 Hours	7.0	161.0	161.0	1,097.0	1.0	0.0	925.0	130.0	6.0	27.0	2275.0				**2,515.0**	
Element 2 Days (8 Hour/Day)	0.9	20.1	20.1	137.1	0.1	0.0	115.6	16.3	0.8	3.4					**314.4**	
Element 2 Costs	$1,470	$25,760	$25,760	$120,670	$150	$0	$91,575	$9,750	$882	$1,620		$1,795	$63,000		**$342,432**	**$21,402.00**
2.3 Watershed Management Plan - Floodplain Analysis																
2.3.1 Watershed Model Parameterization																
2.3.1.1 Acquisition of Additional Model Parameters	0.0	2.0	4.0	40.0	0.0	0.0	80.0	0.0	0.0	0.0	126.0	$0	$0	$13,280.00	$13,280.00	$830.00
2.3.1.2 Development of Model Specific Geodatabase	2.0	2.0	6.0	200.0	0.0	0.0	240.0	0.0	0.0	0.0	450.0	$0	$0	$47,460.00	$60,740.00	$2,966.25
2.3.1.3 Model Setup, Debug, and Stabilization	4.0	2.0	12.0	100.0	0.0	0.0	32.0	0.0	0.0	0.0	150.0	$0	$0	$17,248.00	$77,988.00	$1,078.00
2.3.1.4 Project Management and QA/QC	2.0	20.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	44.0	$0	$0	$6,740.00	$84,728.00	$421.25
2.3.2 Final Approved Watershed Model Parameterization Deliverables																

PROJECT BUDGET BY: Wood Environment & Infrastructure Sc Submitted: 1/7/2019 Revised: NA
PROJECT NAME: Brooker CreekWMP
AGREEMENT NUMBER:
PROJECT METRIC (SQ MI): 16

Title/Job Description	Principal	Manager	Engineer	Engineer	Scientist	Scientist	GIS Analyst	Technician	Surveyor	Clerical		Direct Costs	Survey	Costs	Running Total	Costs Per sq.
Personnel Hourly Rate	$210.00	$160.00	$160.00	$110.00	$150.00	$107.00	$99.00	$75.00	$147.00	$60.00						
2.3.2.1 Revised Deliverables	0.0	1.0	2.0	4.0	0.0	0.0	48.0	0.0	0.0	0.0	55.0	$0	$0	$5,672.00	$90,400.00	$354.50
2.3.2.2 Project Management and QA/QC	2.0	4.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	16.0	$0	$0	$2,460.00	$92,860.00	$153.75
2.3.3 Watershed Model Development and Floodplain Delineation																
2.3.3.1 Model Calibration and Verification	0.0	0.0	12.0	80.0	0.0	0.0	24.0	0.0	0.0	0.0	116.0	$0	$0	$13,096.00	$105,956.00	$818.50
2.3.3.2 Model Validation	0.0	0.0	4.0	16.0	0.0	0.0	40.0	0.0	0.0	0.0	60.0	$0	$0	$6,360.00	$112,316.00	$397.50
2.3.3.3 Design Storm Simulations	0.0	0.0	1.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	$0	$0	$4,560.00	$116,876.00	$285.00
2.3.3.4 Multi-Day Event Simulations and Rainfall Justification to Proje	0.0	0.0	1.0	64.0	0.0	0.0	0.0	0.0	0.0	0.0	65.0	$0	$0	$7,200.00	$124,076.00	$450.00
2.3.3.5 Floodplain Delineation	0.0	2.0	8.0	40.0	0.0	0.0	100.0	0.0	0.0	0.0	150.0	$0	$0	$15,900.00	$139,976.00	$993.75
2.3.3.6 Floodplain Justification Report	0.0	1.0	6.0	24.0	0.0	0.0	48.0	0.0	0.0	0.0	79.0	$0	$0	$8,512.00	$148,488.00	$532.00
2.3.3.7 Sea-Level Rise Scenarios	0.0	1.0	8.0	40.0	0.0	0.0	64.0	0.0	0.0	0.0	113.0	$0	$0	$12,176.00	$160,664.00	$761.00
2.3.3.8 Project Management and QA/QC	2.0	24.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	48.0	$0	$0	$7,580.00	$168,244.00	$473.75
2.3.4 Peer Review of Watershed Model Development and Floodplain Delineation																
2.3.4.1 Peer Review Meeting and Presentation	0.0	6.0	2.0	6.0	0.0	0.0	12.0	0.0	0.0	0.0	26.0	$0	$0	$3,128.00	$171,372.00	$195.50
2.3.4.2 Peer Review Communication	0.0	1.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	$0	$0	$540.00	$171,912.00	$33.75
2.3.5 Approved Floodplain Analysis Deliverables for Preliminary Floodplain Open House																
2.3.5.1 Revised Deliverables	0.0	1.0	1.0	40.0	0.0	0.0	20.0	0.0	0.0	0.0	62.0	$0	$0	$6,700.00	$178,612.00	$418.75
2.3.5.2 Project Management and QA/QC	2.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	16.0	$0	$0	$2,460.00	$181,072.00	$153.75
2.3.6 Preliminary Floodplain Open House and Response to Public Comments																
2.3.6.1 Preliminary Floodplain Open House	0.0	6.0	4.0	4.0	0.0	0.0	16.0	0.0	0.0	0.0	30.0	$0	$0	$3,624.00	$184,696.00	$226.50
2.3.6.2 Response to Public Comments	0.0	8.0	4.0	24.0	0.0	0.0	16.0	0.0	0.0	0.0	52.0	$0	$0	$6,144.00	$190,840.00	$384.00
2.3.7 Final Approved Floodplain Analysis Deliverables																
2.3.7.1 Revised Deliverables	0.0	4.0	8.0	60.0	0.0	0.0	60.0	0.0	0.0	4.0	136.0	$0	$0	$14,700.00	$205,540.00	$918.75
2.3.7.2 Project Management and QA/QC	2.0	16.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	32.0	$0	$0	$5,020.00	$210,560.00	$313.75
Element 3 Hours	16.0	107.0	148.0	784.0	0.0	0.0	800.0	0.0	0.0	16.0	1871.0				**1,871.0**	
Element 3 Days (8 Hour/Day)	2.0	13.4	18.5	98.0	0.0	0.0	100.0	0.0	0.0	2.0					**233.9**	
Element 3 Costs	$3,360	$17,120	$23,680	$86,240	$0	$0	$79,200	$0	$0	$960		$0	$0		**$210,560**	**$13,160**
2.4 Watershed Management Plan - FPLOS Determination, Drainage Improvement Alternatives Analysis and Recommendations																
2.4.1 FPLOS Determination and Flood Damage Estimates																
2.4.1.1 FPLOS Methodology Meeting	0.0	2.0	1.0	2.0	0.0	0.0	12.0	0.0	0.0	0.0	17.0	$0	$0	$1,888.00	$1,888.00	$118.00
2.4.1.2 FPLOS Determination	0.0	1.0	4.0	24.0	0.0	0.0	100.0	0.0	0.0	0.0	129.0	$0	$0	$13,340.00	$15,228.00	$833.75
2.4.1.3 FPLOS Analysis Report	0.0	2.0	2.0	40.0	0.0	0.0	4.0	0.0	0.0	4.0	52.0	$15	$0	$5,691.00	$20,919.00	$355.69
2.4.1.4 Project Management and QA/QC	2.0	6.0	6.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	18.0	$0	$0	$2,680.00	$23,599.00	$167.50
2.4.2 Watershed Management Plan - Surface Water Resource Assessment (SWRA) and Best Management Practices (BMPs) of Water Quality																
2.4.2.1 Surface Water Resource Assessment Approach	0.0	3.0	1.0	4.0	8.0	0.0	2.0	0.0	0.0	2.0	20.0	$0	$0	$2,598.00	$26,197.00	$162.38
2.4.2.2 Water Quality Assessment	0.0	2.0	40.0	20.0	80.0	24.0	120.0	18.0	0.0	4.0	308.0	$0	$0	$36,958.00	$63,155.00	$2,309.88
2.4.2.3 Existing Conditions Pollutant Loading Analysis	0.0	24.0	24.0	96.0	8.0	0.0	160.0	0.0	0.0	0.0	312.0	$0	$0	$35,280.00	$98,435.00	$2,205.00
2.4.2.4 SWRA Report	0.0	8.0	8.0	4.0	8.0	24.0	40.0	0.0	0.0	4.0	96.0	$0	$0	$10,968.00	$109,403.00	$685.50
2.4.2.5 Project Management and QA/QC	2.0	16.0	12.0	8.0	12.0	4.0	0.0	0.0	0.0	2.0	56.0	$15	$0	$8,143.00	$117,546.00	$508.94
2.4.3 Alternatives Analysis and Recommendations (FPLOS & SWRA)																
2.4.3.1 Alternatives Analysis and Project Ranking	1.0	20.0	80.0	80.0	40.0	0.0	160.0	0.0	0.0	0.0	381.0	$0	$0	$46,850.00	$164,396.00	$2,928.13
2.4.3.2 Project Management and QA/QC	2.0	8.0	8.0	4.0	8.0	0.0	0.0	0.0	0.0	4.0	34.0	$15	$0	$4,875.00	$169,271.00	$304.69
Element 4 Hours	7.0	92.0	186.0	284.0	164.0	52.0	598.0	18.0	0.0	22.0	1423.0				**1,423.0**	
Element 4 Days (8 Hour/Day)	0.9	11.5	23.3	35.5	20.5	6.5	74.8	2.3	0.0	2.8					**177.9**	
Element 4 Costs	$1,470	$14,720	$29,760	$31,240	$24,600	$5,564	$59,202	$1,350	$0	$1,320		$45	$0		**$169,271**	**$10,579**
Total Hours	32.0	379.0	506.5	2,209.0	165.0	52.0	2,341.0	148.0	6.0	70.0	5668.5	5,908.5			**5,908.5**	
Total Days (8 Hour/Day)	4.0	47.4	63.3	276.1	20.6	6.5	292.6	18.5	0.8	8.8					**738.6**	
Total Costs	6,720.0	60,640.0	81,040.0	242,990.0	24,750.0	5,564.0	231,759.0	11,100.0	882.0	4,200.0		1,840.0	63,000.0		**$734,485**	**$45,905**

EXHIBIT B

Contract No. 178-0160-NC (SS)

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
(Formerly Amec Foster Wheeler)
FEE SCHEDULE FOR PROFESSIONAL SERVICES

Engineers, Geologists, Scientists, and Technical Specialists*	**Hourly Rate**
Principal	$210
Project Manager	$160
Senior Engineer	$160
Engineer	$110
Senior Planner	$185
Planner	$113
Senior Scientist	$150
Scientist	$107
GIS Analyst	$99
GIS Technician	$85
Senior CADD Technician	$110
CADD Technician	$85
Field Technician	$75
Licensed Surveyor	$147
Surveyor Technician	$75
3-Person Survey Crew	$160
2-Person Survey Crew	$120
Clerical	$60

Non-Customary Equipment Expenses	
Auto Sampler (ISCO3700 & 3710)/1 Week	$200 per week
Auto Sampler (ISCO3700 & 3710)/2-3 Week Duration	$175 per week
Auto Sampler (ISCO3700 & 3710)/4-11 Week Duration	$150 per week
Auto Sampler (ISCO3700 & 3710) > 3 Month Duration	$500 per month
Carolina Skiff (17') and Trailer	$200 per day
GPS Equipment $110 per day	$375 per week
Jon Boat 16' Motor and Trailer	$165 per day
Stream Flow Meter $110 per day	$298 per week
Turbidity Meter. Digital (Portable) Hack 2100P	$30 per day $100 per week

Wood Environment & Infrastructure Solutions, Inc.
1101 Channelside Drive, Suite 200
Tampa, Florida 33602
Tel (813) 289-0750
Fax (813) 289-5474
www.woodplc.com

HYATT SURVEY SERVICES, INC.
SCHEDULE OF RATE VALUES

Contract No. 178-0160-NC (SS)

5-10-18

Classification	**Hourly Rate**
Daily Rate(S): Field Surveying (Hyatt Survey Services, Inc.)	
One (1) Person Survey Team Includes: survey equipment/instruments, vehicles, personnel and all supplies/fuel	**$ 105.00**
Two (2) Person Survey Team includes: survey equipment/instruments, vehicles, personnel and all supplies/fuel	**$ 115.00**
Three (3) Person Survey Team includes: survey equipment/instruments, vehicles, personnel and all supplies/fuel	**$ 149.00**
Four (4) Person Survey Team includes: survey equipment/instruments, vehicles, personnel and all supplies/fuel	**$ 195.00**
Hydrographic Survey Team Includes Hydro Equipment, vessel, vehicles, personnel, all supplies and fuel	**$ 200.00**
Hourly Rate(S): Office Function/Management/Supervision	**Hourly Rate**
Senior Professional Surveyor and Mapper or Project Manager	**$ 155.00**
Professional Surveyor and Mapper	**$ 130.00**
Senior CADD/Survey Technician	**$ 95.00**
CADD/Survey Technician	**$ 85.00**
Other:	
Marsh Master (w/o Operator)	**$ 500/day**
Airboat (w/o Operator)	**$ 450/day**
4WD ATV	**$ 100/day**

SECTION C – LIMITATION ON LIABILITY, INDEMNIFICATION, AND INSURANCE REQUIREMENTS

1. INSURANCE:

a) Proposal submittals should include, the Proposers current Certificate(s) of Insurance in accordance with the insurance requirements listed below. If Proposer does not currently meet insurance requirements, proposer/bidder/quoter shall also include verification from their broker or agent that any required insurance not provided at that time of submittal will be in place within 10 days after award recommendation.

b) Within 10 days of **contract award** and prior to commencement of work, Proposer shall email certificate that is compliant with the insurance requirements to ssteele@pinellascounty.org. If certificate received with proposal was a compliant certificate no further action may be necessary. It is imperative that proposer include the unique identifier, which will be supplied by the County's Purchasing Department. The Certificate(s) of Insurance shall be signed by authorized representatives of the insurance companies shown on the Certificate(s). **A copy of the endorsement(s) referenced in paragraph 1.(d) for Additional Insured shall be attached to the certificate(s) referenced in this paragraph.**

c) No work shall commence at any project site unless and until the required Certificate(s) of Insurance are received and approved by the County. Approval by the County of any Certificate(s) of Insurance does not constitute verification by the County that the insurance requirements have been satisfied or that the insurance policy shown on the Certificate(s) of Insurance is in compliance with the requirements of the Agreement. County reserves the right to require a certified copy of the entire insurance policy, including endorsement(s), at any time during the RFP and/or contract period.

d) All policies providing liability coverage(s), other than professional liability and workers compensation policies, obtained by the Proposer and any subcontractors to meet the requirements of the Agreement shall be endorsed to include **Pinellas County a Political subdivision of the State of Florida** as an Additional Insured.

e) If any insurance provided pursuant to the Agreement expires prior to the completion of the Work, renewal Certificate(s) of Insurance and endorsement(s) shall be furnished by the Proposer to the County at least thirty (30) days prior to the expiration date.

(1) Proposer shall also notify County within twenty-four (24) hours after receipt, of any notices of expiration, cancellation, nonrenewal or adverse material change in coverage received by said Proposer from its insurer. Notice shall be given by certified mail to: **Pinellas County Risk Management 400 South Fort Harrison Ave Clearwater FL 33756**; be sure to include your organization's unique identifier, which will be provided upon notice of award. Nothing contained herein shall absolve Proposer of this requirement to provide notice.

(2) Should the Proposer, at any time, not maintain the insurance coverages required herein, the County may terminate the Agreement, or at its sole discretion may purchase such coverages necessary for the protection of the County and charge the Proposer for such purchase or offset the cost against amounts due to proposer for services completed. The County shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company or companies used. The decision of the County to purchase such insurance shall in no way be construed to be a waiver of any of its rights under the Agreement.

f) The County reserves the right, but not the duty, to review and request a copy of the Contractor's most recent annual report or audited financial statement when a self-insured retention (SIR) or deductible exceeds $50,000.

g) If subcontracting is allowed under this RFP, the Prime Proposer shall obtain and maintain, at all times during its performance of the Agreement, insurance of the types and in the amounts set forth; and require any subcontractors to obtain and maintain, at all times during its performance of the Agreement, insurance limits as it may apply to the portion of the Work performed by the subcontractor; *but in no event will the insurance limits be less than $500,000 for Workers' Compensation/Employers' Liability, and $1,000,000 for General Liability and Auto Liability if required below.*

SECTION C – LIMITATION ON LIABILITY, INDEMNIFICATION, AND INSURANCE REQUIREMENTS

(1) All subcontracts between Proposer and its subcontractors shall be in writing and may be subject to the County's prior written approval. Further, all subcontracts shall (1) require each subcontractor to be bound to Proposer to the same extent Proposer is bound to the County by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the subcontractor; (2) provide for the assignment of the subcontracts from Proposer to the County at the election of Owner upon termination of the Contract; (3) provide that County will be an additional indemnified party of the subcontract; (4) provide that the County will be an additional insured on all insurance policies required to be provided by the subcontractor except workers compensation and professional liability; (5) provide waiver of subrogation in favor of the County and other insurance terms and/or conditions as outlined below; (6) assign all warranties directly to the County; and (7) identify the County as an intended third-party beneficiary of the subcontract. Proposer shall make available to each proposed subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the subcontractor will be bound by this Section C and identify to the subcontractor any terms and conditions of the proposed subcontract which may be at variance with the Contract Documents.

h) Each insurance policy and/or certificate shall include the following terms and/or conditions:

(1) The Named Insured on the Certificate of Insurance and insurance policy must match the entity's name that responded to the solicitation and/or is signing the agreement with the County. If Proposer is a Joint Venture per Section A. titled Joint Venture of this RFP, Certificate of Insurance and Named Insured must show Joint Venture Legal Entity name and the Joint Venture must comply with the requirements of Section C with regard to limits, terms and conditions, including completed operations coverage.

(2) Companies issuing the insurance policy, or policies, shall have no recourse against County for payment of premiums or assessments for any deductibles which all are at the sole responsibility and risk of Contractor.

(3) The term "County" or "Pinellas County" shall include all Authorities, Boards, Bureaus, Commissions, Divisions, Departments and Constitutional offices of County and individual members, employees thereof in their official capacities, and/or while acting on behalf of Pinellas County.

(4) The policy clause "Other Insurance" shall not apply to any insurance coverage currently held by County or any such future coverage, or to County's Self-Insured Retentions of whatever nature.

(5) All policies shall be written on a primary, non-contributory basis.

(6) Any Certificate(s) of Insurance evidencing coverage provided by a leasing company for either workers compensation or commercial general liability shall have a list of covered employees certified by the leasing company attached to the Certificate(s) of Insurance. The County shall have the right, but not the obligation to determine that the Proposer is only using employees named on such list to perform work for the County. Should employees not named be utilized by Proposer, the County, at its option may stop work without penalty to the County until proof of coverage or removal of the employee by the contractor occurs, or alternatively find the Proposer to be in default and take such other protective measures as necessary.

(7) Insurance policies, other than Professional Liability, shall include waivers of subrogation in favor of Pinellas County from both the Proposer and subcontractor(s).

i) The minimum insurance requirements and limits for this Agreement, which shall remain in effect throughout its duration and for two (2) years beyond final acceptance for projects with a Completed Operations exposure, are as follows:

(1) <u>Workers' Compensation Insurance</u>

Limit	Florida Statutory
Employers' Liability Limits	
Per Employee	$ 500,000
Per Employee Disease	$ 500,000
Policy Limit Disease	$ 500,000

SECTION C – LIMITATION ON LIABILITY, INDEMNIFICATION, AND INSURANCE REQUIREMENTS

(2) Commercial General Liability Insurance including, but not limited to, Independent Contractor, Contractual Liability Premises/Operations, Products/Completed Operations, and Personal Injury.

Limits

Combined Single Limit Per Occurrence	$ 1,000,000
Products/Completed Operations Aggregate	$ 2,000,000
Personal Injury and Advertising Injury	$ 1,000,000
General Aggregate	$ 2,000,000

(3) Business Automobile or Trucker's/Garage Liability Insurance covering owned, hired, and non-owned vehicles. If the Proposer does not own any vehicles, then evidence of Hired and Non-owned coverage is sufficient. Coverage shall be on an "occurrence" basis, such insurance to include coverage for loading and unloading hazards, unless Proposer can show that this coverage exists under the Commercial General Liability policy.

Limit

Combined Single Limit Per Accident	$ 1,000,000

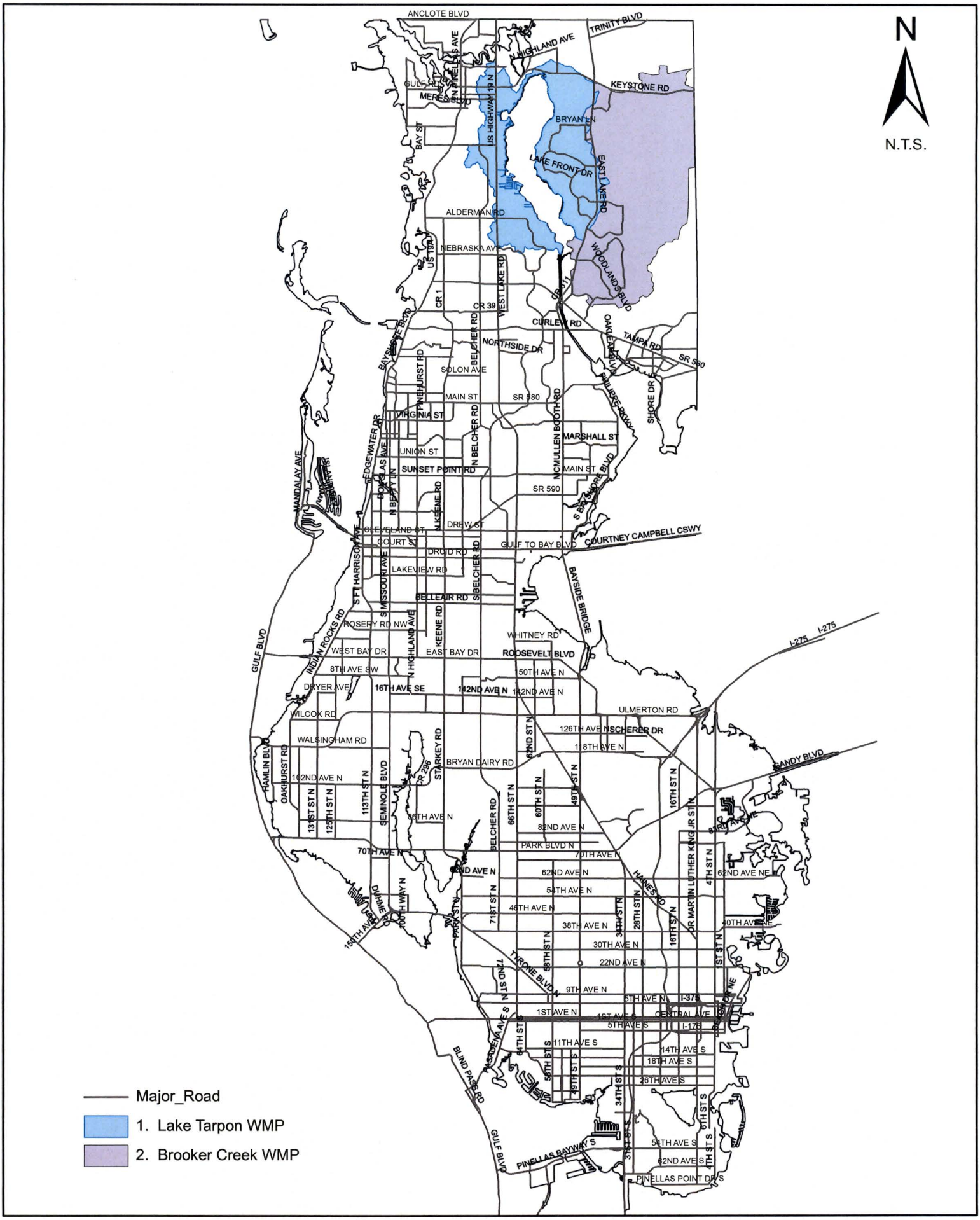
(4) Professional Liability (Errors and Omissions) Insurance with at least minimum limits as follows. If "claims made" coverage is provided, "tail coverage" extending three (3) years beyond completion and acceptance of the project with proof of "tail coverage" to be submitted with the invoice for final payment. In lieu of "tail coverage", Proposer may submit annually to the County, for a three (3) year period, a current certificate of insurance providing "claims made" insurance with prior acts coverage in force with a retroactive date no later than commencement date of this contract.

Limits

Each Occurrence or Claim	$ 1,000,000
General Aggregate	$ 1,000,000

For acceptance of Professional Liability coverage included within another policy required herein, a statement notifying the certificate holder must be included on the certificate of insurance and the total amount of said coverage per occurrence must be greater than or equal to the amount of Professional Liability and other coverage combined.

(5) Property Insurance Proposer will be responsible for all damage to its own property, equipment and/or materials.



LAKE TARPON / BROOKER CREEK WATERSHED MANAGEMENT PLAN STUDY

CREATED BY CUSTOMER AND TECHNICAL SERVICES