REQUEST FOR BOARD ACTION

ITEM NO. 9.

DATE OF MEETING: September 16, 2013

REQUESTED BY: Michael G. Mack, Utilities Director

SHORT TITLE: Resolution Authorizing Acceptance of the Professional Engineering Services Agreement of McKim & Creed for the Pender Commerce Park Wastewater Treatment Facilities and Issuance of a Purchase Order to McKim & Creed in the Amount of $1,500,000 for the Design, Permitting, Bid/Award, Construction Administration and Inspection Required for the Completion of the Project.

BACKGROUND: In concert with the construction of the Pender Commerce Park infrastructure designed and permitted by McKim & Creed for the County in 2009, a proposal/ agreement was requested for the design, permitting, bid/award, construction administration, and inspections required for the Wastewater Treatment Facility to be constructed within the Pender Commerce Park concurrent with the other infrastructure improvements.

The proposal/agreement Scope of Work includes the following elements: Pre-design phase, 30% Preliminary Design Phase, Final Design Phase, Bidder Pre-Qualification Phase, Bid & Award Phase, Construction Phase, Post-Construction Phase, Special Inspections Services, and a built in Unallocated Budget Allowance of $230,000 that will be set aside for any changes in the scope of work that are unforeseen at this time.

SPECIFIC ACTION REQUESTED: To consider a resolution authorizing acceptance of the Professional Engineering Services Agreement of McKim & Creed for the Pender Commerce Park Wastewater Treatment Facility, and issuance of a Purchase Order to McKim & Creed in the amount not to exceed $1,500,000 for the design, permitting, bid/award, and construction related activities required for completion of the project.

COUNTY MANAGER'S RECOMMENDATION

Respectfully recommend approval.

Initial

RESOLUTION

NOW, THEREFORE BE IT RESOLVED by the Pender County Board of Commissioners that:

the Professional Engineering Services Agreement of McKim & Creed for the Pender Commerce Park Wastewater Treatment Facility and issuance of a Purchase Order to McKim & Creed in the amount not to exceed $1,500,000 for the design, permitting, bid/award, and construction related activities required for completion of the project is hereby approved and authorized.

60-407409-6010	Industrial Infrastructure Development	$1,500,000

The Chairman/County Manager is authorized to execute any document necessary to implement this resolution.

AMENDMENTS:

MOVED_____ SECONDED_____

APPROVED_____ DENIED_____UNANIMOUS

YEA VOTES: Brown ___ McCoy ___ Tate ___ Ward ___ Williams ___

_____ 09/16/13
George R. Brown, Chairman Date

_____ 09/16/13
ATTEST Date

McKIM&CREED

ENGINEERS

SURVEYORS

PLANNERS

August 28, 2013 131767

Mr. Michael Mack, PE
Director
Pender County Utilities
PO Box 995
Burgaw, NC 28425

Re: Engineering Services Agreement
Pender County Wastewater Treatment Facilities
Design, Bid/Award, Permitting, Construction, Post-Construction and Special Services

Dear Mr. Mack:

McKim & Creed, Inc. (Engineer) is pleased to submit this proposal to provide technical engineering services for the design, permitting, bid/award, construction and post-construction phases for implementation of the new wastewater treatment plant with effluent discharge utilizing the existing Cape Fear Public Utility Authority (CFPUA) outfall 001 and diffuser per the NPDES Permit No. NC0081736 to be located in the Pender Commerce Park.

PROJECT UNDERSTANDING

Pender County (County) intends to design, construct, and operate a new 500,000 gallon wastewater treatment facility with effluent discharge via the CFPUA outfall 001 per the NPDES Permit No. NC0081736. The treatment process is based on the following parameters:

	Influent Characteristics	NPDES Permit
BOD	1500	≤ 5 mg/l
Ammonia		≤ 1 mg/l
TSS	165	≤ 10 mg/l
Fecal Coliform		≤ 200 per 100 ml monthly geo. mean,
pH		6-9

Venture IV Building
1730 Varsity Drive
Raleigh, NC 27606

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www.mckimcreed.com

Specifically, the scope of work will include the following components:

- Access drive approx. 1,500 LF
- Influent head works consisting of one (1) mechanical screening unit, 6 mm screening, with integral washer/compactor and a manual by-pass coarse manual bar screen
- Triplex Submersible Influent Pump Station
- 500,000 GPD with two 250,000-GPD rated treatment trains (sole-source Adaptive Eco System concept by Living Machine Systems and Entex Technologies), incorporating both fixed/attached and suspended growth mediums, and associated systems:
    - Moving Bed Bioreactor (MBBR)
    - Fixed Bed Biofilm Reactor (FBBR)
    - Tidal Wetlands polishing cells
    - Aeration and mixing systems
    - Clarification Unit
    - Self–Cleaning Filter
    - UV Disinfection
    - Liquid WAS storage with decanting
- Chemical Feed Systems (Alum/PAC, Caustic Soda and Chlorine)
- Duplex Submersible Effluent Pump Station with Effluent Force Main approx. 800 LF
- Electrical power supply and site distribution, including full standby power
- Plant supervisory control and data acquisition system (SCADA)
- Electrical/Mechanical Room within Greenhouse

SCOPE OF WORK

I. Pre-Design Phase

Preliminary NCDENR Assistance

McKim & Creed will assist the County with preliminary matters to include meetings and discussions with NCDENR, Pender County and

CFPUA on plant concept, amending previously approved Engineering Alternatives Analysis (EAA) and Environmental Assessment (EA) documents and modification to existing NPDES Permit.

Engineering Alternatives Analysis and /Environmental Assessment

1. McKim & Creed will amend the Engineering Alternatives Analysis (EAA) document titled "US 421 Corridor Wastewater Treatment Facility Pender County, NC" dated June 4, 2008 prepared by McKim & Creed, Inc. as follows:

    - Based on current understanding between Pender County and the CFPUA, the existing 4.0 MGD NPDES Permit No. NC0081736 will be utilized such that the discharge capacity will be split for the initial capacity of 0.5 MGD to be in Pender County's name. The remaining 3.5 MGD will remain in CFPUA's name.

2. McKim & Creed will amend the Environmental Assessment (EA) document titled "US 421 Wastewater Treatment and Conveyance System" dated September 2010 prepared by McKim & Creed, Inc. (FONSI issued on October 25, 2010) as follows:

    - To document that the existing 4.0 MGD NPDES Permit No. NC0081736 will be utilized such that the discharge capacity will be split for the initial capacity of 0.5 MGD to be in Pender County's name. The remaining 3.5 MGD will remain in CFPUA's name.

Limited Topographic Survey

McKim & Creed proposes to utilize conventional topographic surveys to augment previous topographic surveys performed by M&C for the Pender Commerce Park to develop base maps with sufficient accuracy to allow completion of engineered design drawings for the specific infrastructure designs described by this agreement. Following is a summary of conventional surveys included within this scope of work:

1. Set horizontal and vertical control at the one, 10acre, wastewater treatment facility site tied to NC grid coordinates.

2. Prepare base map for the one site area in 1) to be used for developing engineered designs and construction drawings. Develop elevation contours on each base map with 1-foot intervals and at a scale of less than or equal to 1"=40'.

Limited Geotechnical Evaluation

McKim & Creed will subcontract geotechnical services to ECS Carolinas to assist the County to augment the previous geotechnical evaluations provided for the Pender Commerce Park. This service will generally provide for the following:

1. Provide additional soil borings estimated to be ten (10) borings in the site area for the wastewater treatment facility.

2. Provide for field survey for locating the soil boring locations to determine horizontal location and vertical elevation estimated to be ten (10) borings.

3. Provide a written report to document the geotechnical evaluation.

Sole-Source Process Equipment Assistance

It is understood that due to the time constraints of the project and the uniqueness of the process technology that the County will sole-source the main process equipment. McKim & Creed will assist the County with a sole-source arrangement to include pre-approval of shop drawings prior to the bid/award phase for the main process equipment. It is intended that a pre-negotiated price will be established for the main process equipment and listed in the bid documents. The pre-approved shop

drawings will also be provided with the bid documents. The main process equipment includes the following:

1. Adaptive Eco System Concept by Living Machine Systems and Entex Technologies for the Moving Bed Bioreactor (MBBR), Fixed Bed Biofilm Reactor (FBBR), Tidal Wetlands polishing cells and Clarification Unit.

II. 30 % Preliminary Design Phase

1. Process Design Computations: Working with the sole–source equipment provider, develop process design computations for each unit treatment process.
2. Establish Final Equipment Sizing: Working with the sole-source equipment provider, develop process equipment sizing.
3. Select and Size Auxiliary Equipment: Develop preliminary SCADA and electrical systems.
4. Basis of Design: Prepare a brief basis for design document describing and documenting the key design aspects and calculations for each unit treatment process element.
5. Process Schematic, Hydraulic Profile, and Flow Diagrams: Prepare a system schematic, hydraulic profile and flow diagram for the proposed wastewater treatment facility.
6. Wastewater Treatment Facility Site Plan: Prepare a preliminary site plan showing major treatment units, tanks, structures and process piping on the proposed site.
7. Preliminary Engineer's Opinion of Probable Construction Cost: Prepare an updated preliminary construction cost estimate using the various preliminary design documents to improve the accuracy of the initial, conceptual construction cost estimate.
8. Submit Preliminary Design Documents for Review: Compile and submit the basis of design document, process schematics, hydraulic profile, preliminary site plan, and cost estimate to the County for review and approval as part of the 30% stage of design completion.
9. Review 30% Submittal with County: Meet with the County Staff to review, discuss and receive owner input on the 30% design submittal.

10. Revise & Address County Comments on 30% Submittal: Revise the appropriate preliminary design documents (as necessary within the original scope of the project) to address the County's 30% design review comments. The updated basis for design document will be finalized and included as part of the Authorization to Construct (ATC) application package.

III. Final Design Phase

Final Design Drawings & Specifications:

1. Prepare final design drawings and construction documents and issue this work under a **single** construction contract.
2. Complete final design and prepare bid and construction documents for a single construction contract. The final design documents will generally include the following:

    - Civil/Site for Plant
    - Plan/Profile/Section for Access Drive
    - Mechanical
    - Electrical
    - Plant I&C
    - Structural
    - HVAC
    - Plan/Profile for Effluent Force Main

3. Prepare and submit drawings @ 60%, and 90% completion stages for review by the County.
4. Prepare updated cost opinions for the project to be submitted at the 90% stage of design completion.
5. Prepare technical specifications for the construction contract. The document shall include a comprehensive table of contents followed by the 16-division technical specifications to be included in the Construction Documents.
6. Prepare bid and contract documents for the construction contract.
7. Review Meetings: McKim & Creed will attend regular meetings with the County staff as needed during the final design effort to provide project status updates, review project documents and receive comments. In

addition, we will schedule and participate in two formal Final Design review meetings with the County's project review team at the, 60%, and 90% stage of Final Design preparation.

8. Prepare "Released for Regulatory Review" drawings based upon County review comments from the 90% submission.
9. Engineer's Opinion of Probable Construction Cost: McKim & Creed will update the 90% Cost Opinion, if needed, to reflect the edits and/or comments from the County associated with the "Released for Regulatory Review" document set.
10. *Engineer's Design Computations Manual:* Design assumptions, computations, equipment selections, hydraulic capacity, required reactor sizes, motive equipment requirements and associated information will be prepared as part of the design and compiled into a three-ring binder titled "Design Manual" for submission to appropriate regulatory agencies during the permitting process.

Permitting:

At the final completion level and after receipt of the amended EAA, EA and the amended FONSI, prepare permit applications and submit final design documents for regulatory review for the project for the following permits:

1. NCDENR – NPDES permit modification
2. Pre-Construction Notification Form (NCDENR & US Army Corps of Engineers). Note: It is planned to provide for directional bores at all utility crossings to avoid wetland impacts. Therefore, it is not anticipated that a nationwide nor 404/401 permit will be required.
3. Authorization to Construct for the construction contract (NCDENR).
4. Erosion & Sediment Control (NCDENR Land Quality Section) for the construction contract.
5. Stormwater Permit (NCDENR Division of Water Quality Stormwater Permitting Unit) for the construction contract.

IV. Bidder Pre-qualification Phase

McKim & Creed will conduct a pre-qualification process for potential bidders in order to assist the County in developing a list of qualified

construction contractors for the project. Specific tasks include the following:

1. Develop a list of pre-qualification requirements required for evaluating prospective bidders.

2. Review the list of pre-qualification requirements with County staff and incorporate suggested revisions to the list.

3. Prepare the pre-qualification submittal package.

4. Place formal advertisement of the pre-qualification package in the agreed upon advertisement media. Note that the County shall be responsible for all fees associated with advertisement of the pre-qualification package.

5. Schedule and conduct a pre-submittal meeting, receive questions from prospective attendees, prepare and distribute minutes.

6. Issue pre-qualification documents to prospective bidders. Maintain a record of prospective bidders to whom documents have been issued

7. Respond to bidder inquiries and prepare Addenda as required. Addenda shall be submitted in reproducible format to the agreed upon media outlets and all bidders to whom the pre-qualification package have been issued.

8. Receive all bidder submittals on specified and appropriate closing date.

9. Review all bidder documentation and request clarifications to determine if bidder has met the requirements of the pre-qualification solicitation.

10. Review the list of proposed pre-qualified bidders with County staff and make any final edits and revisions to the pre-qualified list of bidders. McKim & Creed will work jointly with County staff to assist in developing the pre-qualified bidders list; however, the County shall be responsible for the final determination of which bidders will be deemed as pre-qualified.

11. Notify all bidders of the final approved list of pre-qualified bidders.

V. Bid & Award Phase

Our fee for Bid Phase services is premised on our understanding that McKim & Creed will be responsible for managing the bid and contracting process for one (1) construction contract.

Our role in the bid phase will include working with the County Staff to assist with the pre-bid conference, preparation of pre-bid meeting minutes for distribution to all bidders, responding to written questions from bidders, preparing written responses to bidder questions, assisting with bid evaluations, and working with County Staff to coordinate and conduct the bid opening. The documents for bidding will be issued and managed by McKim & Creed including the addendums.

Specifically Bid Phase tasks will include:

1. Provide necessary information to Pender County for the preparation of project bid advertisement.
2. Provide necessary information for the preparation of the bid package that will be utilized for bid solicitation.
3. Conduct the Pre-Bid meeting and issue minutes.
4. Assist in answering bidder's questions concerning elements designed by McKim & Creed and prepare technical information as necessary for inclusion in addenda if required.
5. Issue addendums.
6. Provide Pender County with one set of official, signed and sealed construction document sets for their file.
7. Conduct the bid opening.
8. Review bid packages and prepare the certified bid tabulations.
9. Provide written letter of recommendation of award.
10. Compile contract documents for execution.
11. Provide for five (5) sets of documents for execution.

The Bid Phase will conclude upon Pender County's issuance of a notice to proceed to the selected construction contractor.

VI. Construction Phase

Construction Administration

Our fee for Construction Administration services is premised on administering (1) construction contract over a 15 month-long construction period.

Our construction administration services will include:

1. Conduct pre-construction meeting and issue minutes.
2. Schedule and hold regular monthly construction meetings with the owner and contractor. Prepare and distribute construction meeting minutes to document discussions and responsibilities.
3. Receive, log, track and perform shop drawing reviews. Compare shop drawings to the plans and technical specifications, note deficiencies or compliance issues, and issue comments to the contractor.
4. Receive, log, track, & respond to contractor's written requests for information or clarification of the contract documents.
5. Provide clarification of requirements as indicated on the construction plans and specifications if/when questions arise during construction.
6. Receive, log, track, & respond to notifications from contractor of changes to work conditions and requests for change orders.
7. Review materials testing for conformance to the specifications.
8. Receive, log, track, & review contractor's monthly invoices and make recommendations for payment.
9. Conduct site visits with the Resident Construction Observer to review project status and to confirm that work is progressing in accordance with the approved construction documents.
10. Schedule and conduct the substantial completion evaluation. Prepare the substantial completion punchlist and work with the contractor to insure outstanding work is completed.
11. Upon satisfactory completion of the Substantial Completion punchlist and after reviewing test results from the Contractor, prepare the Engineer's Substantial Completion Certification.
12. Schedule and conduct the final completion evaluation. Prepare the final completion punchlist and work with the contractor to insure work is fully complete.

13. After the contractor has satisfactorily completed the final punchlist, submitted all test results, as-built redlined drawings, and release of waivers and claims, McKim & Creed will prepare the Engineer's Final Completion Certification.

Resident Construction Observation

1. McKim & Creed will provide a Resident who is well-qualified and experienced in constructing wastewater treatment facilities.
2. The Resident shall prepare reports for each day he is on-site and submit them to McKim & Creed's Project Engineer for review on a weekly basis.
3. The Resident will maintain a photographic record during construction to document aspects of the construction process.
4. The Resident will immediately call the Contractor's attention to work that is being completed that does not comply with the approved plans and specifications. Should the Contractor fail to remedy the situation, than the Resident will immediately contact the Engineer.
5. The Resident shall document field conditions and will maintain a record as to the weather, contractors personnel on-site, contractor's equipment on-site and the specific work completed since the last site visit.
6. The Resident shall confirm that Contractor As-Built Drawings are continuously being kept up-to-date and being completed to minimum standards of care.
7. The Resident shall review the Contractor's monthly pay requests to confirm that all quantities are accurate and shall recommend payment.
8. The Resident shall participate in monthly construction meetings and will represent the Engineer in responding to technical questions.

Our fee for Resident Construction Observation is based on the following assumptions:

a. We anticipate that the construction period for the wastewater treatment facility shall be 13 months to Substantial Completion with an additional 2 months for Final Completion/Plant Shake Down for 15 months of construction observation. The fee for Resident Construction Observation is based on an average of 40

hours per week for the 15 month period. We have therefore programmed a total of 2,600 hours of resident observer time into our fees for this effort.

VII. Post-Construction Phase

System Startup and Commissioning
Provide technical services to work with the Contractor, equipment representatives, electrical subcontractor, and the County Operators to systematically startup, test, and commission the new wastewater treatment facility.

Operator Training
Plan, coordinate and conduct two 8-hour formal Operator Training sessions following startup activities in association with the Living Machine Systems and Entex Technologies representatives. The session will include classroom PowerPoint presentations including a system overview, individual unit treatment process overview, normal operating procedures, reporting, alarm conditions, and standard maintenance requirements. Part of the session will be spent out in the facility and will consist of hands-on training for the operators.

One day of training in association with the Living Machine Systems and Entex Technologies representatives will be provided approximately 3 months after the initial training session as a refresher course and address additional questions that the operators may have.

One additional day of training in association with the Living Machine Systems and Entex Technologies representatives will be provided approximately 9 months after the initial training session to assist with optimization and address additional questions that the operators may have.

Record Drawings
Our effort for Record Drawing preparation services is premised on the understanding that the contractor will be responsible for continuously maintaining red-lined "as-built" markups on the approved construction

drawings. **Final as constructed surveys will not be made for final horizontal and vertical elevation verifications of the completed project.**

After review of the contractor's "as-built" documents by McKim & Creed's Resident Construction Observer to ensure completeness, we will prepare after construction "Record Drawings" reflecting the identified changes (as compared to the Released for Construction set of documents). Record Drawings will be submitted to the County project team upon completion. After County approval, digital (pdf copies) will be made of the full drawing set and delivered to the County on CD.

Operations and Maintenance Manual Preparation

McKim & Creed will prepare a limited O&M manual for the wastewater treatment system by compiling the vendor provided individual equipment O&M manuals and a written manual that will consist of the following sections:

1. Section 1- Introduction
    a. General Description of the Wastewater Treatment Facility
    b. Purpose & Scope of the Manual
    c. Operator and Managerial Responsibilities
    d. Safety Considerations
2. Section 2 – Wastewater Treatment System
    a. Overview
    b. Theory of Adaptive Eco System Concept Treatment
3. Section 3 – Unit Treatment Process Descriptions
    a. Influent Pump Station
    b. Influent Headworks
    c. Moving Bed Bioreactor (MBBR)
    d. Fixed Bed Biofilm Reactor (FBBR)
    e. Tidal Wetlands Polishing Cells
    f. Aeration and Mixing Systems
    g. Clarification
    h. Self-Cleaning Filter
    i. UV Disinfection
    j. Bulk Chemical Storage and Feed Systems
    k. Effluent Pumping Station

l. Process Monitoring
m. Plant-Wide Support Facilities

4. Section 4 - Systematic Plant Startup, Shutdown and Normal Operation
   a. Introduction
   b. Startup Procedures
   c. Shutdown Procedures
   d. Normal Operation
5. Section 5 – Vendor Supplied O&M Manuals
   a. List of vendor supplied manuals

One Year Assistance

M&C will assist the County with operational and warranty assistance on any hourly basis as may be needed. Generally the services will be as follow:

1. Provide for a mid-year warranty inspection with the Operators and the Contractor to develop a warranty punchlist and then review the completed work of the Contractor to verify items have been corrected.
2. Provide for final warranty inspection with the Operators and the Contractor at 11-1/2 months after substantial certification to develop a warranty punchlist and then review the completed work of the Contractor to verify items have been corrected.
3. Provide process support assistance and associated administrative support to assist with operational questions and optimization of the plant process.

VIII. Special Services

1. Special Inspections

McKim & Creed will provide for Special Inspections as will be required by the County's Inspection Department. As such, monthly summary reports will be reviewed and prepared summarizing the construction activities pertaining to special inspection requirements for the identified structures and buildings that address the following:

a. Soils and foundations
b. Cast-in-place concrete
c. Precast concrete
d. Structural steel

The monthly summary reports will be filed to the attention of the Inspections Department with a copy filed to the office of Michael Mack. It is anticipated that 8 months of reports will need to be filed.

If any special inspections are required for field welding and field bolted connections that require specialized testing like ultrasonic testing, bolt torque, etc. these will be provided as additional services with the assistance of ECS Carolinas.

IX. Unallocated Project Budget

An unallocated project budget will be set aside to provide for changes in the scope of work detailed in this document or additional services requested by Pender County. McKim & Creed will not utilize or expend effort from this budget without prior development of a scope of work, corresponding fee for the change(s) in scope, and written authorization to proceed from Pender County.

X. Additional Services

Additional professional services can be provided (within the qualifications of the Engineer and associate firms) upon request by the County, or upon authorization by the County following recommendation of the Engineer. These services shall include but not limited to the follow:

1. Expert witness or technical support concerning property surveying or engineering matters for which the Engineer has no direct liability.
2. Providing for Subsurface Utility Engineering (SUE Level A and Level B) for the locating of underground utilities for the project area.
3. Providing for additional soil borings or geotechnical analyses beyond the identified scope of work.
4. Providing for an environmental impact statement (EIS).

5. Coastal Area Management Act (CAMA) permit preparation and submittal
6. Providing for detailed investigations and/or surveys for archaeological sites, protected/threatened/endangered species of shellfish, fish, wildlife and natural vegetation.
7. Providing for Phase 1 or Phase 2 Environmental Site Assessment for the project area.
8. Providing for determining, evaluating and assistance with contaminated soils for the project area.
9. Providing for 404/401 permitting, nationwide permitting or individual permit for wetlands, including wetland delineation surveys/plats, for the project area.
10. Providing assistance for wetland mitigation.
11. Providing for assistance with easement acquisitions.
12. Preparing for, coordinating with, participating in and responding to structured independent review processes for construction management, cost estimating, value engineering and constructability reviews requested by the County and performing of furnishing services required to revise studies, reports, drawings, specifications, or other bidding documents as a result of such review processes.
13. Providing for SCADA integration for the new wastewater treatment facility to County's overall county-wide SCADA.
14. Providing for the design of an administration building or maintenance building for the wastewater treatment facilities.
15. Providing for design on the on-site wastewater collection system for the Pender Commerce Park.
16. Providing for the design of pile foundations for the project that may be required as a result of the Limited Geotechnical Evaluation.
17. Providing for design of any pretreatment or collection system for the Pender Commerce Park or for individual tenants of the Park.
18. Providing for any re-designs requested by the County after final design drawings have been approved.
19. Surveys to locate and delineate the 100 year flood plain.
20. Boundary or easement surveys for the wastewater plant site or high-rate infiltration site.
21. Construction survey and staking.
22. Preparing for multi-prime contracts and bidding.

23. All permit fees and associated application fees shall be either paid directly by the County or shall be a reimbursable expense billed to the County.
24. Providing for funding assistance for grant or loan applications that the County may decide to seek funding.
25. Providing for a more detailed Operation & Maintenance Manual than what is detailed and outlined in this proposal
26. Providing assistance for Pender County site plan submittal and approvals if required.
27. Providing for assistance for specialized special inspections services like ultrasonic weld testing.
28. Providing for a hydrogeological site evaluation for high-rate infiltration basins, hydrogeological construction observation and capacity testing of the high-rate infiltration basins for State certification.

XI. County Responsibilities

The following items shall be the responsibility of the County:

1. Provide Engineer with all criteria and full information as to County's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which County will require to be included in the Drawings and Specifications; and furnish copies of County's standard forms, conditions and related documents for Engineer to include in the Bidding Documents, when applicable.

2. The County shall obtain and make available to the Engineer a complete wastewater characterization from the industrial user locating in the Pender Commerce Park.

3. The timely provision of all available information, data, reports, records, and maps to which the County has access and which are needed by the Engineer for the performance of the services provided herein.

4. Providing assistance and cooperation for the Engineer in obtaining any other needed material which the County does not have in its possession.

5. Making available the services of the County as may be necessary to obtain information as needed to perform the work program set forth in the Scope of Services.

6. The designation of a single representative who will be authorized to make necessary decisions required on behalf of the County and will serve to provide the necessary direction and coordination for the project.

   County's Representative – Michael Mack, PE, Director
   Engineer's Representative – Tony Boahn, PE, Client Manager

7. Advise Engineer of the identity and scope of services of any independent consultants employed by County to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering and constructability review.

8. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings and Substantial Completion, Final Completion, and warranty inspections.

9. The County shall provide for mailing any required certified notification letters to the property owners, including the mailing costs, for notification for access to perform the scope of services.

10. The County shall pay all costs for permit fees and application fees.

11. The County shall pay for all costs of publishing the Advertisement for Bid.

12. The County shall provide for acquisition of all fee simple properties and easements for the project.

13. The County shall pay for all recording fees for fee simple properties and easements.

14. The County will provide a geotechnical subconsultant to provide for geotechnical services needed for material testing and geotechnical evaluations during construction.

15. The County will provide for the sole-sourcing of the Adaptive Eco System Concept by Living Machine Systems and Entex Technologies process equipment for the design of the wastewater treatment facility.

XII. Miscellaneous Provisions

1. Opinion of Probable Construction Costs: Engineer's opinion of probable construction costs is based on assumed labor costs and approximate quantities of material and equipment, and therefore is of a conditional character. Engineer cannot and does not guarantee the cost of work to be performed by others since market or bidding conditions can change at any time and changes in the scope or quality of the project may affect estimates. County waives and releases Engineer from any loss, liability, or claim arising out of or in any way related to Engineer's opinion of probable construction costs.

2. The attached McKim & Creed General Conditions 01-2011-1 shall be incorporated as part of this agreement.

3. The attached McKim & Creed hourly rate schedule shall be incorporated as part of this agreement. The hourly rate schedule is subject to change January 1st of each calendar year.

4. Fixed fee tasks are predicated on the project proceeding in accordance with the indicated schedule. Should delays or suspension of activity in excess of 90 days occur, the remaining fee balances will be subject to an equitable adjustment equivalent to the increase in the ENR Construction Cost Index over the period corresponding to the suspension of activity.

XIII. Compensation

Pre-Design Phase

Preliminary NCDENR Assistance	$20,000 Est
EAA/EA	$70,000 Est
Limited Topographic Survey/Geotechnical Evaluation	$15,000 Est
Sole-Source Process Equipment Assistance	$20,000 Est
30% Preliminary Design Phase	$65,000 LS
Final Design & Permitting Phase	$375,000 LS
Bidder Pre-qualification Phase	$20,000 LS
Bid & Award Phase	$35,000 LS
Construction Phase	
Construction Administration	$190,000 LS
Construction Observation	$325,000 Est

Post-Construction Phase

System Startup /Training/Record Drawings	$60,000 LS
Limited O&M Manual	$25,000 LS
One Year Assistance	$20,000 Est

Special Services

Special Inspections	$30,000 LS

Unallocated Project Budget

Unallocated Budget	$230,000 Est

Total Estimated Compensation **$1,500,000**

LS = Lump Sum, EST = Estimated fee but not guaranteed to be billed hourly

McKIM&CREED

Compensation for services outlined above shall be either lump sum fee or on an hourly time and expense basis, as indicated. Invoicing will be made monthly at the estimated completion percentage of the work.

For Estimated Fee (Est) scope items, postage, subconsultants, and printing to be billed as reimbursable expenses at a cost multiplier of 1.15. Personal vehicle mileage to be billed at current IRS allowance. Company owned vehicles shall be billed at the prevailing McKim & Creed rate, currently $0.85 per mile.

SCHEDULE

McKim & Creed understands the critical nature of this effort to the overall Wastewater Treatment Facility project. It should be noted that M&C's scope of work is based on the design phase being implemented concurrently with the Engineering Alternatives Analysis (EAA) and the Environmental Assessment (EA) scope of work prior to the issuance of the amended FONSI. It is also understood that the County will proceed immediately with the sole-sourcing of the Technology System Provider for the main process equipment so M&C can proceed with the design of the wastewater treatment facility.

M&C will assist the County in developing a project schedule once the specific details for the proposed industrial client locating in the Pender Commerce Park have been determined.

This proposal is valid for 60 days from the date of the proposal. If not accepted within that time, we would appreciate the opportunity to review the proposal for any revisions in scope, schedule, or fee that may be necessary.

If you have any questions or comments regarding this proposal or any other services we are providing for you, do not hesitate to call me.

Thank you for this opportunity to provide our proposal and we look forward to working with you on this project.

Sincerely,

Timothy Baldwin, PE
Executive Vice-President

Tony Boahn, PE
Vice-President

Attachments;
M&C General Conditions
M&C Hourly Rate Schedule

APPROVED BY: **PENDER COUNTY**

_____
Mickey Duvall, County Manager

_____
Date

McKIM&CREED

McKIM&CREED

2013 SCHEDULE OF HOURLY RATES

Employee Classification	Per Diem Rates (Fee/Hour)
Engineering	
Principal	$250.00
Engineering Manager	$230.00
Sr. Project Manager	$180.00
Project Manager	$150.00
Technical Specialist	$230.00
Project Engineer IV	$180.00
Project Engineer III	$160.00
Project Engineer II	$130.00
Project Engineer I	$120.00
Engineer Intern	$110.00
Designer III	$120.00
Designer II	$100.00
Designer I	$80.00
Sr. CAD Technician	$75.00
CAD Technician	$60.00
Sr. Project Administrator	$85.00
Project Administrator	$75.00
Administrative Assistant	$60.00
Construction	
Sr. Construction Administrator	$120.00
Construction Administrator	$100.00
Specialty Project Representative	$120.00
Sr. Project Representative	$100.00
Project Representative	$80.00
Field Services	
Field Technician I	$75.00
Field Technician II	$100.00
Field Services Manager	$120.00

Employee Classification	Per Diem Rates (Fee/Hour)
Surveying	
Sr. Surveyor/Project Manager III	$195.00
Sr. Surveyor/Project Manager II	$175.00
Sr. Surveyor/Project Manager I	$140.00
Project Surveyor	$110.00
Survey Intern	$100.00
Sr. Survey CAD Technician	$90.00
Survey CAD Technician	$75.00
Survey Technician	$70.00
Survey Field Supervisor	$85.00
Project Coordinator	$105.00
Field Survey Party (1 Person Crew)	$90.00
Field Survey Party (2 Person Crew)	$130.00
Field Survey Party (3 Person Crew)	$165.00
Photogrammetrist	$135.00
Photogrammetric Technician	$75.00
Subsurface Utility Engineering	
Utility Engineering Sr. Project Manager	$180.00
Utility Engineering Project Manager	$150.00
Utility Engineering Technician I	$65.00
Utility Engineering Technician II	$75.00
Utility Engineering Analyst	$85.00
Utility Engineering Specialist	$110.00
Utility Engineering Party (2 Person Crew)	$140.00
Utility Engineering Party (3 Person Crew)	$175.00
Geospatial Information Systems	
GIS Specialist	$100.00
LiDAR Field Technician	$80.00
LiDAR Technician I	$65.00
LiDAR Technician II	$85.00
LiDAR Technician III	$115.00
Hydrographic Surveying	
Hydrographic Specialist I	$80.00
Hydrographic Specialist II	$90.00

Rates are valid through December 31, 2013

Expenses

In addition to labor, McKim & Creed bills for the following project related costs at a contractually agreed markup: printing; conference calling charges; document review, permit or recording fees paid on behalf of the client; shipping; bid advertisement; specialty materials, software or equipment rental; sub-consultant fees; costs of project related employee travel including meals, lodging, airfare and miscellaneous travel costs such as tolls, parking etc.; mileage for all company-owned vehicles (trucks) will be billed at $0.85/mile; employee owned vehicles used for transportation related to the project will be charged at the prevailing federal mileage rate allowed by the IRS at the time the travel occurs.

McKim & Creed also bills for the cost of internal reproduction and the use of specialized equipment related to subsurface utility vacuum excavation, mobile scanning (LIDAR), and hydrographic surveying.