



REQUEST FOR BOARD ACTION

ITEM NO. 10.

DATE OF MEETING: March 1, 2010

REQUESTED BY: Michael G. Mack, PCU, Director

SHORT TITLE: Resolution Approving the Professional Services Agreement and Authorizing a Purchase Order to McKim & Creed for NPDES Effluent Modeling, Permitting, and Toxicity Testing to be Generated by the Pender County Water and Wastewater Treatment Facilities.

BACKGROUND: Pender County Utilities is currently in the final design and permit phase for a 2 MGD Water Treatment Plant to be constructed at the Pender Commerce Park. Concurrently, the County has also partnered with the Cape Fear Public Utilities Authority (CFPUA) to design and permit a new 0.5 MGD Regional Wastewater Treatment Facility (WWTF) also at the Commerce Park.

Each of these facilities will require an NPDES permit for discharge of effluent generated by each facility with the intent to utilize the existing 12-inch diameter outfall pipe that exists on the adjacent BASF property for effluent discharge to the Cape Fear River. In order to accomplish the combined effluent discharge into a single discharge point, the DENR Division of Water Quality (DWQ) will require specific mixing zone modeling for the combined outfall, toxicity testing for the effluent, and additional submittal data for approval of an NPDES permit to allow both discharges. Since Pender County plans to acquire the BASF outfall pipe initially for use by the Water Treatment Plant and subsequently for use by the Wastewater Treatment Facility, it provides an economy of scale and greatly shortens the permitting efforts for the proposed WWTF to prepare a phased NPDEA permit modification at this time in concert with the current WTP permitting application.

McKim & Creed has provided a Scope of Work and Agreement (attached) to complete these services for \$25,400. Funds for this permitting process are currently available in the Water Treatment Plant Capital Project fund (# 83-407490) and staff is recommending approval of this Agreement.

SPECIFIC ACTION REQUESTED: The Board of Commissioners is requested to approve the Agreement and authorize a Purchase Order to McKim & Creed in the amount of \$25,400 for the NPDES Effluent Modeling, Permitting, and Toxicity Testing of effluent generated by the Pender County Water Treatment Plant and proposed Wastewater Treatment Facility.

February 12, 2010

Mr. Michael Mack, Director
Pender County Utilities
Post Office Box 995
Burgaw, NC 28425

RE: Pender County 2 MGD Water Treatment Facility
US 421 Corridor 0.5 MGD Wastewater Treatment Facility
NPDES Effluent Modeling, Permitting, Toxicity Testing

Dear Mr. Mack:

McKim & Creed is pleased to submit this proposal for professional engineering services in connection with the US Highway 421 Corridor 0.5 MGD Regional Wastewater Facility and the County's 2 MGD Water Treatment Facility. The scope of this amendment entails engineering services to provide NPDES modeling, permitting, and toxicity testing for a combined effluent outfall for the referenced treatment facilities.

PROJECT UNDERSTANDING

Pender County is currently in the final design and permit phase for a 2 MGD Water Treatment Facility (2 MGD WTP) to be constructed at the Pender Commerce Park on US 421. Concurrently, the County has also partnered with the Cape Fear Public Utility Authority (CFPUA) to design and permit a new 0.5 MGD Regional Wastewater Facility (0.5 MGD WWTP). The proposed 0.5 MGD WWTP will also be located at the Pender Commerce Park adjacent to the 2 MGD WTP.

Each of these facilities will require an NPDES permit for discharge of effluent generated by the respective facilities, with the intent to utilize the existing 12" diameter outfall pipe that exists on the adjacent BASF property for effluent discharge to the Cape Fear River. After consultation with NCDENR Division of Water Quality (DWQ) and CPFUA, it was recommended that the effluent from each plant be combined into a single discharge point and utilize the existing 12" diameter outfall pipe as a common main. In order to accomplish this, DWQ will require specific mixing zone modeling for the combined outfall, toxicity testing for the effluent, and additional submittal data for approval of an NPDES permit. This proposal details the efforts required to provide this data specific to the 2 MGD WTP project.

DETAILED SCOPE OF SERVICES

Our detailed scope of services for this project is as follows:

1. McKim & Creed will obtain information on the anticipated effluent discharge volume and parameter-specific effluent water quality data from Pender County (or their surface water

treatment facility design consultant) as needed for development of additional modeling simulations to evaluate the combined water quality impact on the design of the proposed mixing zone downstream. In addition, we will (as part of our original scope with the CFPUA) collect "representative" effluent samples from the CFPUA Northside WWTF for the purpose of conducting combined whole effluent toxicity testing, benthic and macro-invertebrate testing as required for the NPDES permitting application in lieu of having actual plant effluent from the US 421 WRF. We propose to also collect "representative" effluent (i.e. settled filter backwash/sludge storage decant) from the CFPUA Sweeney Water Treatment Facility so that we can complete similar tests on this water. A third sample will need to be taken that would consist of a blend of the two effluent samples in the correct proportions to evaluate synergistic impacts on native fauna in the river. Since a specific protocol for a blended waste stream will require approval by NCDENR, we have proposed an additional fee allowance to cover the additional analytical work that will be required for toxicity testing.

2. Using the DWQ approved EFDC model, run one simulation to evaluate and establish specific parameters for a combined mixing zone immediately downstream of the existing BASF diffuser.
3. Using the initial EFDC model, run one simulation to evaluate and establish specific parameters for a combined mixing zone (based on the use of dual, parallel outfall/diffusers).
4. McKim & Creed's sub-consultant (TetraTech) will utilize NCDENR-approved EFDC modeling software to determine the resulting required length and width of the combined mixing zone under each of the two simulation scenarios.
5. Prepare a phased NPDES permit modification (based on using the existing 12" BASF outfall/diffuser for combined discharges).
6. Edit and prepare a more complex Environmental Assessment and CAMA permit application (to support construction and permitting of the proposed combined outfall and river diffuser adjacent to the existing BASF outfall).

BASIS FOR COMPENSATION

McKim & Creed will provide the services as detailed in this agreement for the fee amounts noted below:

Tasks	Fee	Fee Type
Additional EFDC Mixing Zone Model Simulations	\$2,100	Fixed Fee
Additional NPDES Permitting	\$7,500	Fixed Fee

Additional Complexity for EA and CAMA Permitting	\$5,800	Fixed Fee
ALLOWANCE to cover cost of additional whole effluent toxicity, benthic, vertebrate and invertebrate testing for Pender WTF Effluent	\$10,000	Allowance
Total Estimated Fee	\$25,400	

ADDITIONAL SERVICES

The following items are currently excluded from this Agreement, but may be included in separate agreements of may be performed or provided as Additional Services if desired and so authorized in writing. Additional services will be billed by separate agreement.

1. Design, Bid, or Construction Phase Services
2. Biological Surveys, Endangered Species Surveys, or other Agency requests from the SEPA requirements outside of typical clarifications and comments to the environmental assessment or engineering alternatives analysis documents.
3. Boundary surveys, wetland surveys or other surveys not specifically included by this agreement.
4. Subsurface utility locating services and subsurface utility engineering (SUE) services.
5. Preparation of easements or encroachment documents.
6. Off-site channelization or drainage improvements.
7. Local permitting through Town or County.
8. Permit Fees: All permit fees are to be paid by either CFPUA or Pender County. If, for Client convenience or due to time constraints for a submittal, McKim & Creed is required to pay permit fees, reimbursement for the permit fees will be billed to the Client as an additional reimbursable expense.
9. Construction staking.
10. Operation and maintenance manuals for operation of the new wastewater treatment works and associated appurtenances.

SCHEDULE OF SERVICES

We are available to commence work on the above immediately after receipt of your written authorization to proceed.

Mr. Michael Mack, Director
Pender County Utilities
February 12, 2010
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GENERAL CONDITIONS

The following attachments will be deemed as part of this proposal and agreement:

1. McKim & Creed, P.A. General Conditions (3/2002-1)

We appreciate the opportunity to provide these services and look forward to our continuing work with Pender County. If you have any questions, please do not hesitate to contact me.

Sincerely,



Tony Boahn, P.E.
Vice-President

I hereby authorize McKim & Creed, P.A. to proceed with the work described above.

PENDER COUNTY

By: _____ Date: _____

Title: _____

DRAFT