



CITY OF DURHAM | NORTH CAROLINA

Date: April 8, 2011

To: Thomas J. Bonfield, City Manager

Through: Theodore L. Voorhees, Deputy City Manager
Donald F. Greeley, Director, Water Management
Jerry Morrone, Engineering Supervisor, Water Management

From: Simon Lobdell, PE – CE III, Water Management

Subject: Amendment #1 for North Durham WRF 2009 Improvements

Executive Summary:

The Department of Water Management is under contract (Contract # 6658) with the TA Loving Company (the Contractor) for construction of upgrades and rehabilitation work at the North Durham Water Reclamation Facility (NDWRF). The original total contract amount including contingency for this project is \$9,712,500. This includes a contingency amount of \$462,500, which is 5% of the Contractor's bid price. Over the course of construction the City has approved and directed the Contractor to perform additional work addressing unforeseen conditions associated with aging wastewater treatment plant infrastructure.

This Amendment is to increase the contingency amount by \$190,000, for a total contingency of \$652,500. The new contingency amount corresponds to a total of 7% of the original Contractor's bid and addresses forthcoming change order work.

Recommendation:

The Department recommends that the City Council:

1. Authorize the City Manager to increase the contingency fund for the Contract 6658 with TA Loving to prepare for anticipated change order costs by the amount of \$190,000; and
2. Authorize the City Manager or his designee to negotiate change orders for the contract provided that the cost of all change orders does not exceed the revised contingency amount of \$652,500

Background:

The contract documents were originally developed under a design contract with Hazen and Sawyer which included both efforts to improve the Landfill Gas (LFG) utilization (CT #1005), Ultraviolet (UV) disinfection system and system expansions

and improvements at the NDWRF plant (Contract #3072). The Contractor, TA Loving, was selected through a competitive bid process and approved by the City Council on September 21, 2009. TA Loving began work in November of 2009 and has proceeded on schedule to complete their work.

The original scope of work included the construction of a new basin, modification to basins pumping and aeration trains within the plant, a new UV disinfection system and a limited repair of structures around the facility. Because of the age of the plant and the necessity of numerous field modifications, the originally proposed contingency has been depleted and significant efforts remain whose costs will exceed the remaining available contingency.

Some projects related to standard field modifications have been required to continue the project. The largest modifications have included

- 1) *Repair of the primary clarifier concrete* - \$178,937
- 2) *Installation of flow meters on the forcemains from Eno and Lick Creek Pump Stations* - \$30,905
- 3) *Gate and fencing modifications at the South truck entrance to the plant* - \$28,510
- 4) *Field modifications required to avoid unknown buried piping* - > \$30,000 in 5 different instances
- 5) *Replacement of failed foul air piping and valves* - \$62,721

The total contingency used to this point in the contract is \$391,468. Additional items that will impact the remaining contingency include required modifications to the grit chamber, recommended modifications to the Mixed Liquor Recycle (MLR) piping and the need to retain funds in contingency for the remaining scope of work as detailed below:

- 1) *Grit Chamber:* Recent field developments have indicated that there is additional work required to rehabilitate the grit removal tanks at \$105,000 in cost. The work is required to complete the existing contract. The nature of the tank is such that it was not possible to thoroughly inspect before the Contractor had prepared the surface. These costs were not foreseeable before this stage of the contract.
- 2) *MLR Piping Modification:* The City is considering a change to the process piping (pending review of this amendment) that will allow the plant to better manage solids handling and the resultant nutrient loading from taking tanks out of service. Staff and Hazen and Sawyer believe the Contractor's price is reasonable and in the best interest of the City. The proposed cost of this modification is \$72,346.
- 3) *Additional Contingency:* The contingency funds cannot support all proposed work at this time without the proposed contract amendment. Furthermore, there is over \$1.5 million of contract work remaining which may also require contingency funds to complete. For this reason, staff is requesting a 5% contingency on the remaining amount in the contract.

Issues and Analysis:

Some of the work being added to the project could potentially be pushed to another project. Staff believes the City would pay more for the work because of the following;

- 1) Another contract would have to be developed, advertised and negotiated to begin the work
- 2) The Contractor would have to mobilize a large and skilled work force of the same scale as is currently on site to perform the work
- 3) The City would need to hire another engineer and inspection team to review the work as opposed to operating within the existing contract.

Additionally, the Contactor is currently prepared with a proven staff that the Department recommends. The results of the work for TA Loving have been of high quality and performed in a timely manner with little disruption of Plant operations. For this reason, it is the most expedient and cost effective solution to increase the allocated contingency amount in the TA Loving contract.

Alternatives:

Alternative 1: Do not perform the work proposed. Much of the contract work is critical to the life span of the NDWRF plant and necessary to appropriately complete the original scope of work for the contract.

Alternative 2: Develop a new construction contract to complete identified work. This would require significant administration efforts and would expose the City to potential operational disruptions and possible increased costs. Furthermore, as a rule, the City does not take work away from an approved Contract and Contractor without significant cause. In this instance, the Contractor has performed well in all instances and their diligence has improved the overall project although that has entailed some increase in cost.

Financial Impacts:

There are currently funds available for this contract under the Water Reclamation Facilities rehabilitation Capital item accounts. Staff proposes to fund the project as below:

4100P766 – 731900 - P2510	\$101,469
4100P767 – 731900 - P2510	\$88, 531

SDBE Summary:

This is a contract amendment. It was not reviewed by the Department of Equal Opportunity/Equity Assurance for compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.