



# INTEROFFICE MEMORANDUM


FROM THE DEPARTMENT OF ENVIRONMENTAL AND ENGINEERING SERVICES

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**DATE:** December 5, 2018

**TO:** Samuel A. May, City Manager

**THRU:** Richard Nixon, Acting DEES Director

**FROM:** Sierra R. Marrero, Project Manager 

**RE:** **RFQ 017-017 East Wastewater Treatment Plant Upgrade Using IFAS Technology – Contract Amendment**

The City owns and operates two adjacent wastewater facilities with a combined permitted capacity of 10.1 million gallons per day (mgd). The East Wastewater Treatment Plant (WWTP) is a 2.2 mgd activated sludge plant, while the West WWTP is a 7.9 mgd facility that utilizes rotating biological contactors (RBCs). These facilities serve an estimated 65,000 customers.

During the initial scoping process for this project, there were several things that were not taken into consideration. Unfortunately, as our wastewater infrastructure continues to age, critical components are becoming obsolete and critical systems are beginning to fail where we are now faced with the reality that our current infrastructure will not be able to sustain itself in its current condition. Our City of Margate is continuing to grow and expand, thus it is imperative that we look at the future needs of the City; not just the current necessities.

The East WWTP was constructed in the 1960's and the West WWTP was constructed in the 1980's however neither plant has been upgraded since. The original scope of the project expanded the current 2.2 mgd East WWTP to 4 mgd by installing an integrated fixed-film activated sludge (IFAS) within the existing aeration basin tankage. The expanded scope of this project will increase the capacity of the East WWTP from 2.2 mgd to 6.0 mgd using the same IFAS technology as the original scope. With the proposed expansion of scope, this multiyear project will allow us to rehabilitate and expand our East WWTP in order to meet the future demands of the City and also meet future increasing FDEP permit requirements.

A critical component in the wastewater treatment process is the rotating biological contactors (RBCs) which were installed during the original construction of the West WWTP approximately 32 years ago. The RBCs are required as part of the secondary treatment process which ensures that the City is compliant with their FDEP Permit. The existing RBC units at the West WWTP are approaching the end of their useful life and are beginning to fail at a rapid rate. Due to the RBC technology being obsolete, it is becoming extremely difficult to find parts as they are no longer being manufactured. Over the past few years we were able to overcome this obstacle by purchasing parts from other municipalities as most have already replaced their RBCs with new technology. This option is no longer available as

most of the replacement parts have now been sold. Currently it costs the City an excess of \$60,000.00 per year in maintenance costs alone; this does not include emergencies.

In order to expand the capacity of the East WWTP, it will be necessary to construct a second clarifier adjacent to the current clarifier. Due to permit restrictions, and limited space, this would require us to remove and replace the existing WTP concentrator tank that is currently in this location. The new WTP concentrator tank, that provides polishing of supernatant from the existing lime sludge lagoon, will be located near the water treatment plant facilities.

In addition to the design of the two new tanks, the expanded design will also include a chemical feed system in the West WWTP. The chemical feed system is necessary to ensure that the City will be able to continue to meet FDEP Permit requirements while the East WWTP is under construction. While the construction of the East WWTP is underway it will not be able to receive or process any flow and all flow will be diverted to the West WWTP. This system will provide the West WWTP the ability to add additional chemicals into the process to offset the loss of secondary treatment abilities which is being created by the failing RBCs.

In an effort to better serve our residents and to also plan for future development within the City, it is imperative that we prepare and create a system that will sustain the growth of Margate and ensure that our residents get the best service possible. The goal of this project is to increase the capacity in the East WWTP to reduce the load on the West WWTP to allow the replacement of the existing RBC units. The RBC replacement project is scheduled to follow the completion of the East Wastewater Treatment Plant Upgrades.

Incorporating these design aspects into one project in lieu of multiple projects will save the City a substantial amount of time and money in both the design and construction phases. This approach will prevent us from paying for the same services on separate design contracts and multiple mobilizations on each construction contract. As time is of the essence due to the failing of critical systems within the wastewater treatment plants, we have also requested an expedited design schedule in order to begin construction this fiscal year.

I have received and attached an amended scope of work and corresponding costs from Carollo Engineers Inc. for a total of \$1,028,256.00. This additional work will consist of the design, bid and permitting services required to incorporate these vital aspects of the project. Due to the changes in scope, item 3.5 in the original scope for \$25,000 will be omitted. Since the cost of this amendment exceeds the contractual limits for change orders that can be approved at the Department level, I am requesting approval to process the amendment for Carollo Engineers Inc. Approval of this amendment will bring the total project design cost to \$1,499,880.00.

Attachments:

- Amendment No. 1 Scope of Work
- Amendment No. 1 Cost Breakdown