



Memorandum

To: City of Greensboro

From: CDM Smith

Date: February 2, 2015

*Subject: City of Greensboro
Water Reclamation Facility (WRF) 56 MGD Upgrade Project
Single-Provider Filter Equipment – Package 3*

Background

The City of Greensboro and the CDM Smith / Hazen and Sawyer Team are designing improvements at the North Buffalo Creek Water Reclamation Facility (NB WRF) and the T.Z. Osborne Water Reclamation Facility (TZO WRF) to consolidate all treatment at the TZO WRF and increase its capacity from 40 million gallons per day (mgd) to 56 mgd. The purpose of this memorandum is to provide a description of the filter equipment that will not be procured competitively as part of the bid Package 3 and as documentation that the single-provider (sole-source) pricing has been evaluated to verify it is consistent with other competitively bid projects.

Effluent Filters

The existing effluent filters consist of six traveling bridge filter cells that provide tertiary filtration of secondary clarifier effluent prior to disinfection. It is recommended that the existing traveling bridge filters be replaced by retrofitting and re-using the existing filter basin structure with new high-rate filtration technology. Various technology options were evaluated, however, the lowest cost alternative that meets the design criteria is the diamond cloth filter system manufactured by Aqua Aerobic Systems. One reason for this is the diamond cloth equipment can reuse the existing filter structure channels, thus increasing the capacity and performance without the need to increase the footprint of the filter facility.

The diamond cloth filter system is recommended to be sole sourced from Aqua Aerobic Systems due to the following reasons:

- Aqua Aerobics is the only reputable manufacturer of the diamond cloth technology
- Aqua Aerobics has extensive experience with projects of similar or greater capacity than the Greensboro WRF 56MGD Upgrade Project
- Lowest cost alternative that meets the project's design criteria
- Aqua Aerobics offers solid product and technical support

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The price for six filter cells is \$5,766,728. The price compares favorably with similar filters designed by CDM Smith that were installed at the Brockton WWTP (City of Brockton, MA). The Brockton filters were the same model as proposed for TZO, except the lengths were longer, and were provided at a cost of \$891,426 per filter in 2009. The Brockton price, when adjusted proportionally to match the shorter length of the filters proposed for Greensboro, multiplied by 6 filters, and escalated for inflation at 3% per year is \$5.6 million. The Greensboro price is approximately 3% higher than the Brockton cost, due in part to TZO WRF requirements to provide GE controls and startup one filter at a time which equates to approximately \$130,000. Factoring in these additional costs, the prices for the two projects are virtually the same.