

Client
City of Boca Raton

Scope of Services
Preparation of preliminary and final design, permitting, bidding and services during construction.

Contact
Ms. Lauren Burack, P.E.
Capital Improvement Project Manager
City of Boca Raton
1401 Glades Road
Boca Raton, Florida 33487
561.338.7329
lburack@myboca.us

Start Date
04/2016

Completion Date
08/2019

Construction Cost
\$2.78 million

Key MBC Staff
Frank A. Brinson, P.E.
Andrew Barba, P.E.
Robert Landrum, E.I.

Key Features
Project included replacement of filter valves and actuators, and miscellaneous improvements of the City's 40 mgd membrane softening water treatment facility. During the construction phase, the City added rehabilitation of several multimedia gravity filters to the scope of the project.

Rehabilitation of the Membrane Pretreatment Pressure Filters Design and Construction Boca Raton, Florida



Background

The City of Boca Raton owns and operates a 40-million gallon per day (mgd) membrane softening water treatment facility, which includes a granular media pressure filtration system upstream of the membrane process pretreatment cartridge filter system. The filters provide a cost-effective physical pretreatment of the raw water, as well as a reduction in the loading of suspended particulate contaminants that enter the membrane system, thus extending the normal service lives of the pretreatment cartridge filters.

The pretreatment pressure filter system was constructed in 2004 and has been in service since that date. The pressure filter process includes a system of automatic control valves and electric actuators that automatically controls the flow of water through the various operating sequences for each filter (e.g., normal filter mode, filter backwash, air backwash, filter-to-waste, etc.). Due to the age and condition of the existing valve actuators, the City planned to replace them with new, upgraded units. The scope of the project also included removal of the filter media, inspection of the underdrains, air lateral system, washwater troughs and other internal filter components, repair and refurbishment of the internal filter equipment, re-coating of the interior of the steel pressure vessels, and replacement of the filter media.

The Project

The City contracted with MBC for professional engineering design and construction. MBC's scope of services included reviewing record documents and drawings, preparing construction contract documents including drawings and technical specifications, permitting, bidding services, shop drawing review, general construction administration, and on-site resident project representative (RPR) services.

Design was completed in 2017. The construction contract was awarded to Florida Design Contractors. During the construction phase, the City added to the scope of the project by means of a change order the rehabilitation and media replacement for three of the City's six multimedia gravity filters, which are an integral component of the City's conventional lime softening process at the water treatment plant. The project was completed in August 2019.