

**Client**

City of Pompano Beach

**Scope of Services**

Evaluation and development of a conceptual phasing plan for expansion of the city's existing 10.0 mgd nanofiltration process to an ultimate capacity of 30 mgd, including phasing out the existing lime softening process.

**Contact**

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**Start Date**

11/2020

**Completion Date**

09/2021

**Engineering Fee**

\$75,000

**Construction Cost**

N/A

**Key MBC Staff**

Frank A. Brinson, P.E.  
Andrew H. Barba, P.E.

**Key Features**

- Evaluation of capacities of existing treatment process components.
- Development of conceptual expansion phasing plan.
- Development of preliminary opinion of probable construction costs.

## Nanofiltration Process Expansion Study

### Pompano Beach, Florida



## Background

The City of Pompano Beach (City) owns and operates a 50 million gallon per day (mgd) capacity water treatment plant which utilizes a combination of conventional lime softening (LS) (40 mgd) and nanofiltration (NF) membrane treatment (10 mgd). The NF treatment system consists of four pre-treatment cartridge filters, five 2.0 mgd permeate capacity membrane units, three post-treatment degasifiers and associated piping, valves, controls, electrical gear, concentrate disposal, and support infrastructure.

The NF plant was originally designed to accommodate future expansion to a total capacity of 20 mgd through the addition of five membrane units and associated equipment within the existing building. The City was interested in evaluating the existing process systems and plant infrastructure to develop a detailed plan for completing a cost-effective expansion of the NF process to the maximum capacity that can be supported by the existing major infrastructure (e.g., within the existing building) in a phased manner.

## The Project

MBC's scope of services for the project included the following:

- Development of a phased expansion plan, schedule, and preliminary opinion of probable construction cost for the build-out of City's NF Process.
- Preparation of conceptual level drawings, schematics, and figures to illustrate proposed phasing plan.
- Evaluation of the feasibility of constructing a new NF process building that provides an additional 10.0 mgd of treatment capacity.

The final report was delivered to the City in September 2021 and provided treatment and cost analyses associated expanding the nanofiltration process.

