

## City of Ormond Beach - Water Supply System Evaluation

The coastal City of Ormond Beach operates a water supply system consisting of an 8 MGD lime softening water treatment plant and five well fields (42 supply wells). As a result of increasing water needs and chloride concentrations at their coastal well fields, the City wanted to evaluate their water supply systems for future reliability of infrastructure and aquifer resources. The City also wanted to determine the feasibility of system improvements that would extend the useful life of their three coastal wellfields in regard to the limiting conditions of their Consumptive Use Permit. Barnes, Ferland and Associates, Inc. (BFA) and Camp, Dresser and McKee, Inc. (CDM) were contracted by the City to provide a detailed evaluation of the following:

- Existing utilities data and studies including hydrogeology, historical and projected water use, raw water distribution system and water treatment, water quality, well construction and mechanical pump records;
- A field program was conducted to determine the physical conditions of wells including TV video and geophysical logging, well pump inspection and numerous repairs, specific capacity testing and water quality analysis;
- Hydraulic analysis of the raw water transmission system (Cybernet Model) to determine the pressure-flow pipe distribution of the City's system;
- Three water treatment process alternatives (ultrafiltration, nanofiltration and lime softening) and their associated costs were evaluated; and
- Analysis and recommendations for system improvements as related to water quantity and quality, regulations, treatment options and their associated costs.

A report was prepared and numerous analysis, conclusions and recommendations were made to cost effectively maximize the existing system and minimize impacts to the water resources. The most cost effective recommendations made were to increase the treatment plant capacity by 2 MGD using lime softening combined with an additional withdrawal of 2.4 MGD from their inland well fields. References

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Project Cost: \$120,000

Completion Date: February, 1998