



# CENTRAL REGIONAL UTILITY SERVICE AREA (CRUSA) WATER PRODUCTION FACILITY AND SYSTEM IMPROVEMENTS POLK COUNTY UTILITIES, FL

## Data Points

- **Size:** 4-mgd
- **Scope:** Feasibility study, design, permitting, bidding, and construction services
- **Duration:** 32 months

## Project Components

- Pilot study
- Advanced water treatment technologies
- Regulatory compliance
- Regional water supply

## Key Benefits

- Efficient operation and maintenance
- Improved water quality
- Cost savings

## Background

As part of the Water Use Permit (WUP) renewal through the Southwest Florida Water Management District (SWFWMD), Polk County proposed a consolidation of their five water production facilities into one regional water production facility capable of treating 4-mgd on a maximum daily basis to supply customers within the CRUSA. This regional water production facility incorporates advanced water treatment technologies to ensure continued delivery of high quality and regulatory compliant potable water. An analysis of the feasibility of installing an upper Floridan Aquifer (UFA) and a lower Floridan Aquifer (LFA) potable water production well to allow for cooperative funding through SWFWMD was conducted.

The detailed design of the plant included two emergency power generators to improve reliability, high service pumping, and GAC units were designed with redundant facilities to meet the projected demands and increase safety. The design accelerated the ozonation specifications to allow for early purchase of the ozone equipment to save the County from paying state sales tax and allow for efficiencies during construction. To provide further flexibility and reduced operating cost, the GAC system was designed to allow an adjustment of flow rate so a certain portion of the ozonated water can bypass the GAC and be blended directly with the GAC water to meet strict water quality limits without undo cost. Reiss reviewed, revised and completed the calibration of the CRUSA potable water hydraulic model in support of the design efforts. Services included preliminary design, final design, permitting, bidding, construction phase and start-up.

The completed facility includes three Upper Floridan Aquifer raw water wells, LOX storage and feed systems, ozone generation, side stream ozone injection system, ozone dissipation chambers, transfer pumping, GAC units, chlorine feed systems, corrosion inhibitor, 1-MG ground storage reservoir and high service pumping. The wells are outfitted with vertical turbine pumps and emergency power with engine generators. The high service pumping station is equipped with horizontal, split case centrifugal pumps with variable frequency drives and has a capacity of 8-mgd. The project was delivered via CMAR delivery method.

