

St. Johns Forest Desalting Master Plan

HIGHLIGHTS

Master planning to meet rapidly growing capacity needs.

Evaluation of desalting technologies to treat a brackish deep well supply.

Phased implementation plan for cost-effective, energy-efficient, low-pressure RO treatment.

Evaluation of RO concentrate disposal alternatives.

Carollo was selected by United Water Florida (UWF) to develop a water treatment master plan for their St. Johns Forest service area. Currently, UWF pumps from deep and shallow wells and blends water to meet total dissolved solids (TDS) and sulfate standards. UWF anticipates that their capacity needs will quadruple over the next 10 years. Extended use of their shallow well supply is not feasible as it may impact local wetlands and consumptive use permits are more difficult to obtain.

Carollo evaluated various desalting technologies to treat UWF's brackish deep well supply. It is anticipated that energy-efficient, low-pressure RO will provide the most cost-effective solution. Carollo conducted modeling and pilot tests to develop design criteria for future desalting facilities. Site selection, preliminary layouts, and costs for implementing RO in stages over the next 20 years were developed.



Carollo evaluated installation of RO treatment, as shown.

An evaluation of RO concentrate disposal alternatives was also conducted in concert with the Florida Department of Environmental Protection. Viable disposal alternatives included: golf course irrigation, disposal to a wastewater treatment plant, and surface water disposal to a tributary of the St. Johns River.