

Charlotte County is located in coastal southwest Florida. Much of the county's water supply needs are met by water delivered from the Peace River/Manasota Regional Water Supply Authority. The Authority's single water supply is the Peace River. Withdrawals from the river are increasingly stressing the natural system and being limited due to drought. To accommodate the growing population served by Charlotte County Utilities (CCU) with a more sustainable and diverse portfolio of water sources, CCU has conducted water resource investigations focusing on alternative water supply sources, including local surface water, stormwater, brackish groundwater, reclaimed water, aquifer storage and recovery (ASR), and conservation/demand management. The goal will be to increase reliability, and improve water quality.

All assessments were conducted using a GIS tool specific to Charlotte County. This included a series of GIS-based queries and a site analysis which considered approximately 30 spatial criteria and weighted them on the basis of importance. Criteria were grouped into the categories of Hydrogeology, Infrastructure and Population, and Natural Resources/Conservation. Results provided a site overlay, which identified the areas most suitable for water supply development.

Management of fresh surface water and stormwater was analyzed comparing the use of ASR technology and surface reservoir storage. Work included the development of conceptual costs for a seawater desalination plant and a brackish surface water plant.

Water reuse data were developed, with an emphasis on irrigation applications, added to the Reuse Master Plan. A new ASR facility for storing reuse water is currently in design, with the ultimate build-out of 20 mgd.

A goal-based water conservation plan was developed using the Conserve Florida web-based tool and BMP optimization. The program includes staff planning and training, conservation program implementation oversight, results tracking, and integration of planning and actual costs and savings into the County's Water Supply Master Planning efforts.