



## CASE STUDY: THE CLAYTON COUNTY CONSTRUCTED WETLANDS

Clayton County Water Authority's (CCWA) constructed wetland project is one of numerous successful implementations of constructed wetlands in a municipal wastewater treatment system.

The CCWA's wetlands are located just south of Atlanta, Georgia, and serve the largely suburban community of Clayton County, Georgia. CCWA provides wastewater treatment services for a population of over a quarter of a million people and can produce up to 42 million gallons per day (MGD) of potable water. The Authority converted from spray irrigation-land application to constructed wetlands because constructed wetland treatment had been "proven to require much less land, energy, and maintenance than the irrigation systems" (Clayton County Water Authority (<http://www.ccwa.us/water-use>)). The CCWA estimates the cost to build wastewater facilities using constructed wetlands at \$4.73 a gallon, compared to nearly \$10 a gallon using the more conventional methods.



The Huie Constructed Wetlands in Clayton County, GA. Source: American Academy of Environmental Engineers & Scientists (<http://www.aees.org/e3competition-winners-2011gp-environmentalsustainability.php>).

The CCWA website further elaborates on the savings they have realized from the change:

“The transition from irrigation to wetlands has also resulted in significant energy savings due to the reduced need for pumping and maintenance. CCWA has reduced maintenance staff along with reductions in equipment and materials. Rather than maintaining miles of irrigation pipes and numerous valves and pumps, routine maintenance consists primarily of vegetation management. The operation used to require 100 to 150 acres of land for one MGD of treatment by irrigation, but now only needs 20 to 25 acres for wetlands treatment” (Clayton County Water Authority (<http://www.ccwa.us/water-use>)).

Another major reason for the construction of the CCWA wetlands was to address water scarcity. During Georgia’s second worst drought on record in 2007, Clayton County’s raw water reserves remained at 77% of capacity and they were in a position to provide a significant amount of water to the City of Atlanta.

Though the CCWA wetlands themselves are not open to the general public, birdwatching events sponsored by the Audubon Society are permitted and members regularly access the area around the wetlands, which has become known as one of the best birding sites in the Southeast. The enhancement of green space is certainly another value measured by CCWA in an assessment of the worth of their wetlands: “This aquatic eco-system offers sanctuary for a wide array of life forms. Wildlife abounds in these areas providing nesting areas for untold numbers of songbirds.

Coastal and wading birds such as the Great Egret, Ibis and Rails can be seen on occasion wading the shallow marsh zones. Plus, waterfowl such as Canada Geese, Mallards and Gadwall frequently stop over during their migration in the winter” (Clayton County Water Authority (<http://www.ccwa.us/water-use>)).

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Source for the above text is the Clayton County Water Authority. More information can be found here (<http://www.ccwa.us>) and here (<http://www.ccwa.us/water-use>).

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