



The Droplet

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Focus on Funding: A Primer and Update on the Clean Water and Drinking Water State Revolving Fund Programs

Since the late 1980s, the Florida Department of Environmental Protection has managed financial assistance programs that provide low interest loans to local governments for water related infrastructure improvements: starting with the Clean Water State Revolving Fund (CWSRF) Program, and later adding the Drinking Water State Revolving Fund (DWSRF) Program. Both programs are capitalized through federal grants and state matching funds and both now rely primarily on repayments of existing loans to fund new projects. Eligibility for these programs is generally limited to local governments but, in some cases, private drinking water systems qualify as well. The standard term for these loans is 20-years, though extended terms are available to financially disadvantaged systems.

The CWSRF Program assists wastewater and stormwater systems through low interest loans and, in limited cases for small wastewater systems, grants. Typical wastewater projects include new wastewater treatment and collection facilities and the rehabilitation or upgrade of existing facilities. Stormwater projects can be widely varied but all must result in an improvement to the existing water quality. Such projects include detention and retention ponds, roadside swales, and exfiltration trenches. The financing rate is based on a percentage of the market rate at the time the agreement is drafted. The percentage is calculated using an affordability index model that incorporates the median household income, the poverty rate and the unemployment rate in the area to be served. Financing rates vary from a low of approximately 25 percent up to 80 percent of the market rate averaging just over 50 percent of the market rate. So far in FY 2013, the financing rate has averaged just over 2 percent. Annual funding for the CWSRF Program is roughly \$250 to \$350 million with approximately \$200 million still available in the current fiscal year. In FY 2013, the maximum amount available to any one project sponsor is \$40 million. Since its inception in 1989, the CWSRF program has provided approximately \$3.5 billion in financial assistance to local governments. To qualify for the annual priority list, all readiness-to-proceed information must be submitted by June 1st.

The Small Community Wastewater Construction Grants Program, which is capitalized through an assessment on CWSRF loans, is limited to wastewater projects sponsored by municipalities that have a population of 10,000 or fewer, according to the latest

(See *State Revolving Fund Programs*, page 4)

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SRF-Funded Integrated Water Resources Project: City of Winter Springs Lake Jesup Reclaimed Water Augmentation Facility

The City of Winter Springs owns and operates two water reclamation facilities (WRF), the East WRF and the West WRF. The facilities supply reclaimed water meeting public access criteria to two local golf courses, residential irrigation and public areas (such as parks and roadway medians) for irrigation. However, seasonally, the City has too much or too little reclaimed water for its customers because of the large variation in usage between the wet and dry seasons in Florida. The City authorized CPH Engineers to produce the "Reclaimed Water Augmentation Study" to analyze the wastewater treatment facilities' capacities, flows and variations as well as the seasonal and diurnal variations in reclaimed water demand with projections through the year 2020. The study analyzed possible sources of water to augment the peak reclaimed water demands and recommended surface water from Lake Jesup that borders the City to the north. The City owned a mostly vacant property that is lakefront on Lake Jesup, adjacent to its Central Winds Park. Lake Jesup is categorized as an "impaired water" by the St Johns River Water Management District (SJRWMD) because of the high levels of nutrients in runoff influent to the lake.

The City of Winter Springs applied for and was issued a Consumptive Use Permit from the SJRWMD to use 2.23 million gallons per day (MGD) of combined surface water from Lake Jesup (2.0 MGD) and a nearby artesian well water (0.23 MGD average) for irrigation use. The well is currently flowing at an estimated rate of approximately 350 gallons per minute (gpm), or 0.50 MGD, directly into Lake Jesup and providing no beneficial use. The artesian well water is not proposed for use at this time, although provisions were made for a future connection.

Because this project provides an alternative irrigation water source by using water from an impaired lake, reducing groundwater withdrawals, the City was able to obtain a grant from the SJRWMD for 30% of the construction cost, up to a maximum of \$1,280,000. The City also requested and received a low interest loan from the Florida Department of Environmental Protection's (FDEP) Clean Water State Revolving loan Fund (CWSRF) to assist in funding this project. The loan amount approved by FDEP was \$2,831,985. The construction contract amount at this time is approximately \$2.5 million. Thus, the SJRWMD grant will pay for 30% of this amount, with the CWSRF loan paying the remainder.

Finished water from the Lake Jesup Reclaimed Water Augmentation Facility (RWAFF) must meet the same criteria as reclaimed water, as defined within Chapter 62-610, Florida Administrative Code (F.A.C.). Nutrient removal would not be required to utilize the surface water for public access irrigation purposes, thus nutrients will be beneficially removed from the lake. It is required that the water be safe from a bacteriological standpoint and as such, the suspended solids would have to be reduced from an average concentration of 80 milligrams per liter (mg/l) to less than 5mg/l (or parts per million) of Total Suspended Solids (TSS) to meet reclaimed water standards, so that the chlorination processes can properly remove ("kill") the bacteria that may exist in the surface water. Pilot testing was performed on filtration equipment with a history of treating surface waters for irrigation use and resulted in a recommendation for a two-phase system with pre-filters and final filters.



(See *Lake Jesup RWAFF*, page 3)



Lake Jesup RWAF (Continued from page 2)

A pier with an observation platform at the end of the dock was constructed from the shore into Lake Jesup. The intake structure was constructed beneath the observation platform to allow for cleaning and maintenance of the intake. For its protection, the intake piping runs under the pier to the shore. At the shoreline, an influent pump station with two alternating 700 gpm variable speed submersible pumps will pump the water to the treatment units. Treatment consists of a two-stage filtration process using automatic backwashing 80 micron mesh stainless steel pre-filter followed by a 7 micron microfiber filter. The Lake Jesup RWAF is sized for a future capacity of 2.0 MGD, but equipped at this time for 1.0 MGD. As such, two Amiad EBS 10000 pre-filter units were installed, with provisions for two additional units. One Amiad AMF 370K unit was installed, with provisions for two additional units. The water will be disinfected with a sodium hypochlorite solution prior to entry to the storage tank.



The reclaimed water storage tank is designed as a poured-in-place structure that is constructed partially below grade for aesthetic purposes. The tank working volume is approximately 237,000 gallons to meet peak hour demands. In order to reduce the impervious area of the facility for stormwater management purposes, the top was constructed to slope to each side, collect the rainwater in perimeter gutters, and direct the stormwater into the storage tank.

High service pumps supply augmentation water directly into the reclaimed water distribution system. The pumps are vertical turbine can pumps, two at 1,500 gpm each (with provisions for one more) and a 500 gpm jockey pump. The pumps are designed for pumping against 228 feet TDH to provide 80 psi at its point of connection with the existing reclaimed water distribution system near the entrance to Central Winds Park. All pumps are equipped with variable speed drive units to better meet the range of reclaimed water demands. A turbidimeter and chlorine residual analyzer will ensure that the water leaving the facility to the distribution system meets reclaimed water TSS and chlorine residual standards, respectively. A post-chlorination system is provided in case it is needed to ensure meeting the required 1.0 mg/l chlorine residual prior to leaving the facility.



AUTHOR: William C. Goucher, P.E. is an environmental engineer in the Orlando office of CPH Engineers, Inc., a Sanford, Florida based consulting firm with branch offices in Florida, Connecticut, Maryland and Puerto Rico. Email: wgoucher@cphengineers.com.



State Revolving Fund Programs

(Continued from page 1)

decennial census and a per capita annual income which is less than the state per capita annual income as determined by the United States Department of Commerce. The grant percentage is determined by using the affordability criteria described above and based on the need for the project. Grant percentages have varied from just under 20 percent to over 90 percent. Approximately \$8 to \$10 million is available annually and over \$235 million has been obligated to small municipalities since the program's inception. Typically, these grants are used to subsidize the repayments of CWSRF loan projects. To qualify for the annual priority list, all readiness-to-proceed information must be submitted by June 30th.

Loans from the DWSRF Program are available to local governments and private drinking water systems with 1,500 service connections or less. Larger private systems can also qualify if the project is for the consolidation of two or more systems. The interest rate for the DWSRF is 60 percent of the market rate. In the second quarter of FY 2013, the market rate was 3.73 percent and the interest rate on DWSRF loans was 2.24 percent. Projects include new water treatment facilities, new distribution and transmission systems, and the rehabilitation of existing facilities. Grants are available for systems that are financially disadvantaged and have a public health risk problem that will be corrected by the project. Approximately \$100 million is available through this program each year, and \$60 million is currently available in this fiscal year. In FY 2013, the maximum amount available to any one project sponsor is \$20 million. Grant funding is limited to approximately \$7 million annually. Since its inception in 1999, the DWSRF program has provided over \$731 million in financial assistance to local governments and qualifying private utilities.

Both programs are federally funded and therefore include some additional requirements. Planning documents that include a description of existing conditions, the need for the project, the proposed solution, and how the system will repay the loan are generally submitted.

Funding for wastewater construction began in 1957 with the federal construction grants program and accelerated with the passage of the Clean Water Act in 1972. During the next 16 years Florida received an average of \$125 million grant dollars per year. Amendments to the Clean Water Act in 1987 replaced the federal construction grants program with the Clean Water State Revolving Fund program. The Safe Drinking Water Act of 1996 established a Drinking Water State Revolving Fund program to protect the safety of drinking water.

For more information on the Clean Water State Revolving Fund, contact Tim Banks at 850-245-8360 or timothy.banks@dep.state.fl.us. For more information on the Drinking Water State Revolving Fund, contact Paul Brandl at 850-245-8373 or paul.brandl@dep.state.fl.us.

AUTHOR: Tim Banks is a PE Administrator in FDEP's State Revolving Fund Program. Further information about the State Revolving Fund Programs is available at www.dep.state.fl.us/water/wff/index.htm.

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IWRC Membership

If you would like further information about the IWRC or are interested in becoming a member, feel free to email any of our officers (see contact information in left margin) or visit our website at http://www.fwea.org/integrated_water_resources.com.php.

IWRC Goals and Focus

The goals of the IWRC are:

- To further the dialogue between water professionals throughout Florida to meet our growing needs in all areas of water resources.
- To provide timely, high-quality information and education on water as a valuable resource that can be used to meet current and future water resources and water supply challenges throughout Florida.
- To provide rewarding leadership opportunities to water professionals at all levels of experience.

The focus of the IWRC encompasses the following areas of water resources practice:

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| <ul style="list-style-type: none"> • water quality • watershed and stormwater management • water supply • water conservation and reuse • ecological and hydrologic restoration | <ul style="list-style-type: none"> • groundwater recharge • hydrologic and hydraulic modeling • funding and grant opportunities • regulations and policies |
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Officer Contact Information

Chair Leslie Gowdish
leslie.gowdish@atkinsglobal.com

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IWRC Calendar of Events

<i>Date</i>	<i>Description</i>
March 5, 2013	IWRC Monthly Teleconference
April 2, 2013	IWRC Monthly Teleconference
January, 2014	Integrated Water Resources Conference (details TBA)