POLK COUNTY SOUTHEAST WELLFIELD

(Water Supply Options project number 28)

DESCRIPTION OF PROJECT

The proposed Polk County Southeast Wellfield project includes the construction of a new water treatment plant and associated infrastructure. This project is a collaborative effort among 13 municipalities in the Polk County Utilities service area. The 13 municipal service areas are: the cities of Auburndale, Davenport, Eagle Lake, Frostproof, Haines City, Lake Alfred, Lake Wales, Winter Haven, the Town of Dundee, the Town of Lake Hamilton, the Polk County East Regional Utility Service Area (ERUSA), the Polk County Northeast Regional Utility Service Area (NERUSA), and the Polk County Southeast Regional Utility Service Area (SERUSA).

The proposed project will develop a Lower Floridan aquifer brackish water public supply wellfield in southeast Polk County. The project includes the construction of a new water treatment plant (WTP), wellfield and raw water transmission systems, concentrate disposal well(s), the construction of distribution water mains to the project partners, and internal system upgrades by individual project partners. A groundwater withdrawal of 37.5 million gallons per day (mgd) has been authorized for this project by the South Florida Water Management District (SFWMD) under Water Use Permit No. 53-00293-W, a 40-year water use permit (WUP) issued to Polk County Utilities on April 28, 2014. The project is proposed to be built in three phases, with 10 mgd, 20 mgd, and 30 mgd finished water construction phases.

The Project Partners will take the water from this Project to meet their current demands, up to the quantities indicated in the Potential Partners and Project Governance section below. This water will be used in lieu of the withdrawals from the Upper Floridan aquifer. This will provide a benefit to potential surface water and wetland impacts as it will result in a reduction in withdrawals from the Upper Floridan.

PLANNING LEVEL PROJECT DETAILS

Components for the project include the following systems and components: production wells, WTP, concentrate disposal wells, raw water pipelines, finished water pipelines to project partners, and individual project partner internal system upgrades.

WELLFIELD

A total of 15 Lower Floridan production wells are planned for this project including 1 existing and 14 proposed wells (Exhibit A). The wellfield infrastructure will be completed in three phases, with five wells constructed per phase. The existing well (Well-1) is 18-inches in diameter and has a total depth of 2,140 feet. The casing depth is set at 1,400 feet below land surface (bls). The remaining 14 proposed wells are planned to be 18-inches in diameter at a total depth of 1,875 feet, with the casing depth around 1,530 feet bls.

PROJECT SEQUENCING

The project is proposed to be constructed in three distinct phases. The Phase 1 portion will be capable of producing a minimum of 10 mgd of treated water (12.5 mgd of raw water withdrawn). Phase 1 construction includes the installation of five production wells, one standby well, a raw water pipeline from the production wells to a regional treatment facility, treatment facilities, and transmission pipelines to deliver the treated water. Also included in this phase will be the construction of one deep injection well and one standby injection well (construction details are to be determined). Phase 2 construction includes the installation of an additional five wells, additional raw water pipeline from the wells to the existing raw water pipeline constructed in Phase 1, and treatment facilities to provide a total treated water capacity of 20 mgd (25 mgd of raw water withdrawn). A second deep injection well will be constructed during Phase 2 of the Project. Phase 3 construction includes the installation of an additional four wells, completion of all raw water pipelines from the wells to the existing raw water pipeline constructed under Phase 2, and completion of treatment facilities to provide a total treated water capacity of 30 mgd (37.5 mgd raw water withdrawn).

WATER TREATMENT PLANT

Based on water quality sampling from aquifer performance tests conducted on Well-1 (PBS&J Construction and Testing Report, Southeast Deep Exploratory Well, April 2010), the chloride concentration has been routinely found to be less than 100 mg/L. However, sulfate concentrations were found to exceed 500 mg/L and total dissolved solid levels exceed 1,000 mg/L. Therefore, the water from the Lower Floridan at this project location will be considered “brackish” and will require specialized treatment. Polk County has indicated that the raw water withdrawn will be conveyed to a regional treatment facility (with 1 or more WTPs) for advanced treatment using an anti-scalent system as well as a membrane reverse osmosis (RO) system. The locations of the WTPs are yet to be determined. This project is intended to serves as a “base load” water supply project that provides a constant water supply (no substantive peaking capability). Property for the wellfield facilities, water

treatment plant(s), and piping still needs to be acquired by Polk County Utilities. They plan to do this either by purchase or by using eminent domain authority.

DEEP INJECTION WELLS

At full project build-out, there will be two active deep injection wells and one standby injection well which will be used for disposal of brine concentrate and other by-products following the water treatment process. The location and other details of the injection wells are still in the process of being determined.

RAW WATER MAINS

It is anticipated that as much of the transmission piping as possible will be installed in public rights of way. Estimated quantities of piping for each Project phase is shown below.

- Phase 1: 20,400 linear feet (lf)
- Phase 2: 19,000 lf
- Phase 3: 18100 lf

FINISHED WATER MAINS

The treated (finished) water mains will be located in public right-of-ways whenever practical. The transmission pipelines will connect to each of the project partners via a series of interconnects. All finished water mains will be completed during Phase 1. An estimated 172,100 linear feet of finished water trunk lines and an estimated 212,700 linear feet of finished water submains will be installed.

ESTIMATED PLANNING-LEVEL COSTS

Planning level costs for each phase of the project were made using the cost estimation (CE) tool developed for the CFWI Solutions team process. The table below summarizes the estimated planning-level costs. The total estimated cost for this Project is $285,612,637.

Planning Level Estimate	
Construction Costs	$233,853,864
Non-construction costs	$46,770,773
Land Costs	$4,988,000
Total Capital Costs	$285,612,637
Equivalent Annual Costs (over 30 yrs)	$14,678,201/yr

Annual Operation and Maintenance	$14,630,853/yr
Total Annual Costs	$29,309,054/yr
Unit Cost of Production	$2.59/1,000 gal

ESTIMATED IMPLEMENTATION SCHEDULE

The Project implementation is anticipated on the following schedule:

Phase 1: 10 MGD Finished Water (2014-2023)

- Construct wells 2-5; conduct aquifer performance tests;
- Construct raw water pipeline from wells to a regional water treatment plant (WTP)
- Construction of regional WTP (production capacity 10 mgd finished);
- Construction of transmission pipelines to deliver the treated water;
- Permitting and construction of Class V injection well (details TBD)

Phase 2: 20 MGD Finished Water (2023-2032)

- Construct Wells 6-10; conduct aquifer performance tests;
- Construct additional raw water pipelines between Phase 1 and Phase 2 wells;
- Construct additional treatment facilities, expanding capacity to 20 mgd finished
- Permitting and construction of Class V injection well (details TBD)

Phase 3: 30 MGD Finished Water (2032-2048)

- Construct Wells 11-15; conduct aquifer performance tests;
- Completion of all raw water pipelines
- Construct additional treatment facilities, expanding capacity to 30 mgd finished

WATER RESOURCE CONSTRAINTS

A detailed impact assessment with groundwater flow modeling was performed as part of the Water Use Permit application process completed with SFWMD. Based on this analysis, local impacts to wetlands and lakes near the wellfield are expected to be minimal due to extensive confining units above the Upper Floridan and Lower Floridan aquifers.

The nearest existing MFL water body is Crooked Lake, located approximately 7 miles west of the wellfield. This lake is within the jurisdiction of SWFWMD. A Project-specific impact assessment was performed as part of the permitting process. Based on the results of the groundwater modeling, the potential for harm to occur to wetlands as a result of the Project withdrawals is considered minimal.

The results of the site-specific groundwater modeling predicted 0.1 feet of drawdown in the surficial aquifer and approximately 1.5 feet in the Upper Floridan aquifer beneath Crooked Lake, an MFL water body located in the jurisdiction of SWFWMD. As an overabundance of caution, the Permit conditions have built-in safety factors, such an extensive environmental monitoring program, an environmental harm contingency plan, and annual project status verification reports.

PROJECT FEASIBILITY

The permit for this Project has been issued by SFWMD (WUP No. 53-00293-W). There is a possibility that this WUP could be modified to decrease the withdrawals, based on the actual water demands agreed upon by each project partner. This will be known upon execution of Project Partner Agreements, anticipated in mid-2015.

The property needed for the 14 proposed wells, WTP's, and infrastructure still needs to be acquired by Polk County Utilities. This may be accomplished through purchase or through eminent domain authority.

PERMITTABILITY

This project is already permitted by SFWMD (WUP No. 53-00293-W). The permit expires in 2054.

COST BENEFIT ANALYSIS OF YIELD

As an alternative water supply (AWS) project, this project is intended to provide a new sustainable source of water supply to meet the growing demands in Polk County and numerous municipalities within Polk County that currently meet those demands using traditional fresh groundwater from the Upper Floridan aquifer. To meet the future water demands, Polk County Utilities intends to construct an interconnected treatment and water delivery system throughout Polk County by using water from the Lower Floridan aquifer.

Polk County and numerous municipalities within Polk County currently provide public water supplies through a network of water supply systems utilizing groundwater from the Upper Floridan aquifer. This existing system will not provide sufficient water to meet future demands and lacks the economies of scale associated with regional, multijurisdictional water supply development. To meet the future water demands of this

rapidly growing region, Polk County Utilities intends to construct an interconnected treatment and water delivery system throughout Polk County by using water from the Lower Floridan aquifer. SWFWMD and Polk County are in the process of finalizing an agreement regarding Central Florida Water Resource Development, including this wellfield Project. The agreement will specifically address funding for this wellfield Project and formation of a multijurisdictional entity responsible for its development. The partnership to be formed through this agreement represents a substantial State commitment to assuring sustainable, certain water supplies for this region of Florida. Regionalization of water supply development will have significant benefits for Polk County by providing certainty and availability of supply for the individual partners through regional treatment and distribution infrastructure. The regional infrastructure is complimented by remote location and proposed use of the Lower Floridan aquifer.

POTENTIAL PARTNERS AND PROJECT GOVERNANCE

The Permittee is Polk County Utilities. However, 10 municipalities have been designated as "project partners" and have signed letters of intent to participate in the project and ultimately these municipalities, along with Polk County Utilities and 3 of its regional utility service areas (East Regional Utility Service Area, Northeast Regional Utility Service Area, and Southeast Regional Utility Service Area), will form a regional water supply entity. Polk County indicated that once the regional water supply entity is formed, they will submit a request to modify the permit to reflect the entity as the Permittee.

The project partners and the estimated portion of the total finished water they may receive for their respective service areas are listed below:

1. Polk County ERUSA up to 0.06 mgd
2. Polk County NERUSA up to 10.84 mgd
3. Polk County SERUSA up to 0.18 mgd
4. City of Winter Haven up to 10.00 mgd
5. Haines City up to 4.00 mgd
6. City of Auburndale up to 1.00 mgd
7. City of Lake Wales up to 2.37 mgd
8. Town of Frostproof up to 0.15 mgd
9. City of Lake Alfred up to 0.40 mgd
10. City of Davenport up to 1.00 mgd

Polk County and SWFWMD are in the process of finalizing an agreement referred to as the Central Florida Development Agreement, which includes this project. That agreement is the foundation for the partial funding of this project and addresses the formation of the

regional water supply entity between Polk County Utilities and their municipal project partners identified above.

The Polk County Southeast Wellfield WTP, wellfield, raw and finished water transmission mains are currently in preliminary design,

FUNDING SOURCES

Proposed funding sources include a $160 million grant from SWFWMD, contingent upon execution of a Central Florida Water Resource Development Agreement and formation of a regional water supply entity with the Project partners listed herein. Additional funding may be secured through the offering of municipal bonds and impact fees.

OTHER CONSIDERATIONS

The WUP for this Project has been issued by SFWMD (WUP No. 53-00293-W) and requires a series of agreements and partnerships to be executed for the Project to move forward. These agreements and partnerships are the foundation for Polk County to secure a portion of the funding from SWFWMD for this Project. The first steps in this process involve the execution of "participation agreements" and the formation of a regional water supply entity. The WUP conditions set forth requirements and a schedule for the execution of the necessary agreements between the proposed project partners, the formation or a regional water supply entity, and the securing of funding to construct the project. By mid-2015, Participation Agreements are supposed to be executed between Polk County and the regional Project Partners. By December 31, 2016, the Permittee is required to provide a fully-executed "Central Florida Partnership Agreement" between the regional water supply entity and SWFWMD. Without completion of these steps, funding of the Project could be compromised and the WUP conditions indicate the Permit may either need to be modified to reduce the allocated water use or the Permit could be revoked.

EXHIBIT A: AREA LOCATION MAP SHOWING POLK COUNTY SOUTHEAST WELLFIELD PROJECT