

February 2023



**POLK REGIONAL  
WATER COOPERATIVE**

**SOUTHEAST WELLFIELD AND WATER  
SUPPLY FACILITY PROJECT SUMMARY**







# TABLE OF CONTENTS

<b>WHO IS THE POLK REGIONAL WATER COOPERATIVE .....</b>	<b>2</b>
Who We Are .....	2
Why was the PRWC Formed? .....	2
Participation .....	3
<b>WHAT IS THE PROJECT .....</b>	<b>3</b>
Project Overview .....	3
Project Location .....	3
The SELFA Water Production Facility .....	3
The Lower Floridan Aquifer Wellfield .....	4
The Southeast Transmission Main .....	4
<b>WHY IS THE PROJECT NEEDED .....</b>	<b>5</b>
Future Water Supply Needs .....	5
<b>PRODUCING HIGH-QUALITY WATER .....</b>	<b>5</b>
Water Quality .....	5
About Reverse Osmosis Water Treatment .....	5
<b>DESIGN AND CONSTRUCTION .....</b>	<b>6</b>
Expected Schedule .....	6
Land Acquisition .....	6
Pre-Construction Activities .....	7
Construction Activities .....	7
<b>PROJECT COSTS .....</b>	<b>7</b>
State Grants and Funding .....	7



# WHO IS THE POLK REGIONAL WATER COOPERATIVE

## Who We Are

The Polk Regional Water Cooperative (PRWC), formed in 2017, is a non-profit, special district of the State of Florida tasked with the planning for Polk County’s future water supply needs. The PRWC consists of 16 representatives and officials from:



Auburndale



Bartow



Davenport



Dundee



Eagle Lake



Fort Meade



Frostproof



Haines City



Lake Alfred



Lake Hamilton



Lake Wales



Lakeland



Mulberry



Polk City



Polk County



Winter Haven

## Why was the PRWC Formed?

The PRWC was formed to provide unified representation on our regional water supply needs and lead the planning process to develop future water supply solutions. Our role is to proactively identify alternative water resources and projects to address long-term water demands and provide future sustainability of our regional water supply. We are developing strategies that will meet the long-term water demands of the county, determine needed infrastructure, and facilitate a regional water conservation program which encourages the responsible use of Polk County’s water resources. The formation of the PRWC provided a unified regional voice to represent Polk County interests after the state of Florida identified sustainable water resources as a top environmental and legislative priority.



## Participation

The PRWC Board of Directors meetings are open to the public and participation is encouraged. Please check our website ([prwcwater.org](http://prwcwater.org)) for future Board of Directors meeting dates and other opportunities for community engagement.



## WHAT IS THE PROJECT

### Project Overview

The Southeast Lower Floridan Aquifer (SELFA) Wellfield and Water Production Facility Project is a comprehensive planning, engineering, and construction initiative to develop an alternative potable water supply facility that will provide up to 12.5 million gallons per day of high quality and great tasting drinking water to the Polk County region.

The project includes three components: The SELFA Water Production Facility (WPF), the Lower Floridan Aquifer (LFA) Wellfield, and the Southeast Transmission Main (SETM).

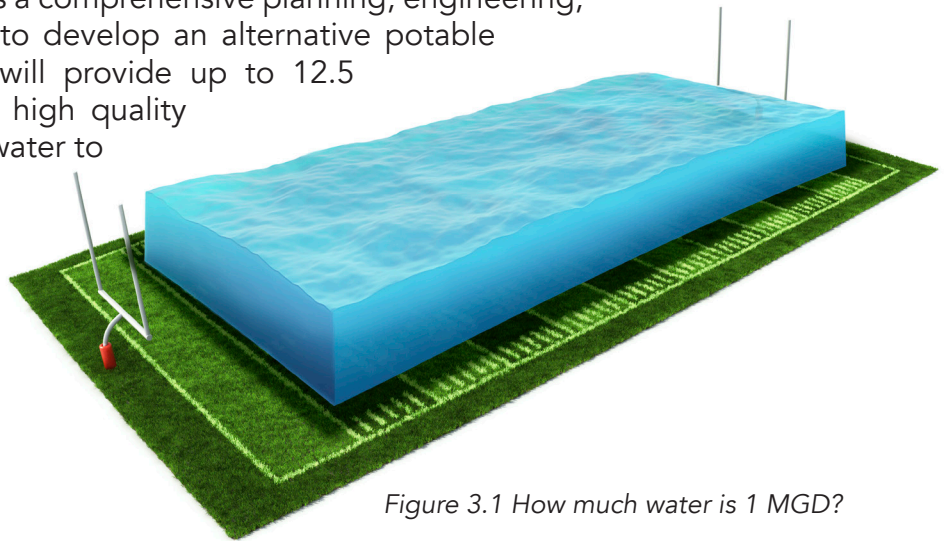


Figure 3.1 How much water is 1 MGD?

### Project Location

The SELFA WPF will be located on a 30-acre parcel in Polk County, Florida, east of Boy Scout Camp Road, north of SR 60 and Lake Weohyakapka. The LFA Wellfield and 10-mile raw water pipeline are south of the WPF, on Walk in Water Road, south of Lake Weohyakapka. The 66-mile Southeast Transmission Main will extend through southeast Polk County, running west from the WPF to Bartow, and north to Davenport and Haines City.



Figure 2.1 SELFA WPF Model

### The SELFA Water Production Facility

The SELFA WPF is a reverse osmosis (RO) water treatment facility currently under design. It will eventually generate 12.5 million gallons per day (MGD) of high quality, great tasting drinking water for Polk County and the PRWC member service areas. Phase 1 of the project is planned to produce 7.5 MGD.

## The Lower Floridan Aquifer Wellfield

Polk County has traditionally relied on fresh groundwater from the Upper Floridan Aquifer (UFA) as a primary water source of water for residential, agricultural, and industrial uses. Recent central Florida water supply planning studies have determined that the rate of UFA groundwater withdrawal in certain areas of Polk County is rapidly approaching or has surpassed the maximum rate that can be sustained without causing harm to the aquifer and related natural water systems. To avoid future adverse environmental impacts and meet Polk County’s future drinking water needs, groundwater from the Lower Floridan Aquifer (LFA) has been identified as an alternative water supply (AWS) source.

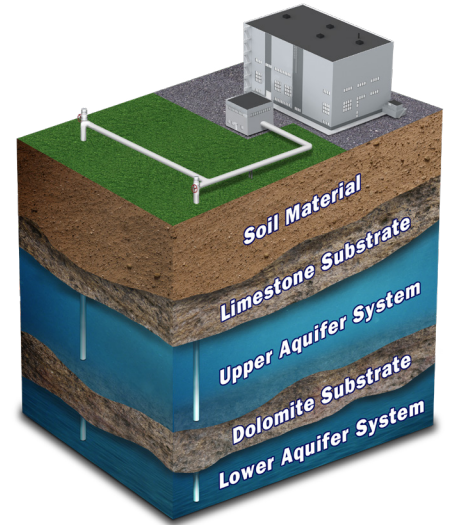


Figure 2.2 Conceptual image of Floridan Aquifer System with surface wells

As shown in Figure 2.2, the UFA and LFA are each confined by a layer of clay, limestone, and other various rock types, which restricts the movement of water between the UFA and LFA. Raw water from the LFA will be withdrawn via multiple wells to provide water to the SELFA WPF for treatment.

The Lower Floridan Aquifer (LFA) Wellfield will consist of up to five wells that extend approximately 2,000 feet underground into the LFA. Each well will be able to draw 2.5 MGD of raw, untreated water from the LFA which will be sent through a new 10-mile raw water pipeline to the SELFA WPF for treatment. The wellfield and new raw water pipeline will be constructed along Walk in Water Road, west of Lake Weohyakapka, as shown in Figure 2.3.

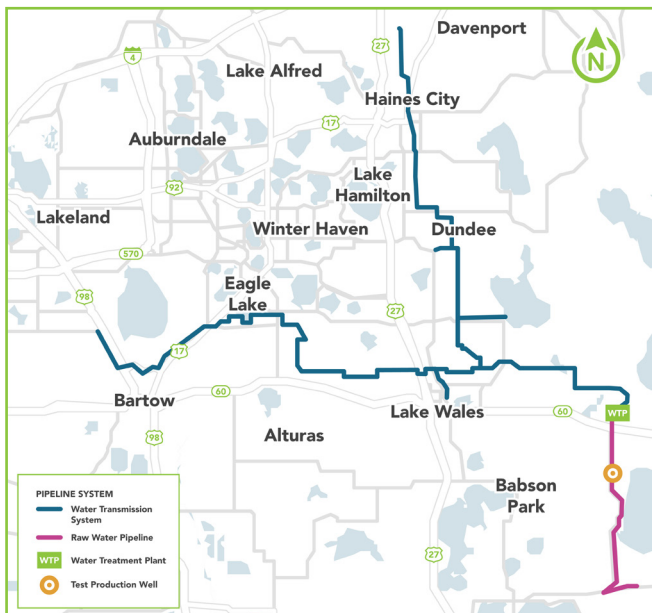


Figure 2.3 Southeast Transmission Main

## The Southeast Transmission Main

The Southeast Transmission Main (SETM) consists of approximately 66-miles of new potable water transmission pipe that will deliver high quality drinking water from the SELFA WPF to PRWC member utilities

The specific water supply needs of each PRWC member and the Polk County region were considered during SETM development. To provide members with alternative water supply (AWS), several options were identified and evaluated. Water from the SELFA WPF can be piped directly to members; or it can be supplied first to some members, who then supply the water to adjacent members through their local water distribution systems.

The transmission main corridors were initially chosen and refined through modeling and analysis to arrive at the current SETM alignment. Alternative analysis and route optimization is currently ongoing and is expected to be finalized in the spring of 2023.



## WHY IS THE PROJECT NEEDED

### Future Water Supply Needs

The 2020 Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP) estimated that an increase in water supply must be developed to meet demand in Polk County between 2015 and 2040 due to an increase in population. Each PRWC member's water supply needs were analyzed and projected out to 2045. The analysis results identified a water supply deficit beginning in 2025. With a planning horizon out to 2045, models and estimates show a total water deficit of 12.36 million gallons per day (MGD) by 2045. The need for an alternative water supply (AWS) source led to the development of the Southeast LFA Wellfield, Water Production Facility, and Transmission Main project.

**Table 3.1 Projected PRWC Member Water Supply Needs (MGD)**

PRWC Member	PRWC AWS 2025 Deficit	PRWC AWS 2030 Deficit	PRWC AWS 2035 Deficit	PRWC AWS 2040 Deficit	PRWC AWS 2045 Deficit
SUM DEFICIT SELFA	1.32	5.30	7.62	9.95	12.36



## PRODUCING HIGH-QUALITY WATER

### Water Quality

The new water supply provided by PRWC will be high-quality, safe drinking water blended with your utilities' existing water supply.

A water quality study was conducted in 2020 to assess the impacts of blending the water supply treated by reverse osmosis with water in the existing PRWC members' distribution systems. Using PRWC members' existing water quality data, a blending analysis was conducted to test the following parameters:

- Alkalinity
- Calcium concentration
- Chloride concentration
- Total hardness
- pH
- Sulfate concentration
- Total Dissolved Solids
- Temperature



The study included modeling efforts using Blue Plan-it® modeling software to evaluate the impacts for various conditions and scenarios between 2023 and 2040. Also assessed was the need for any compatibility adjustments required for each utilities' water system. This included considerations for any chemical additions, mixing, flushing, disinfection methods, hydraulic conditions, and fluoride concentrations. Overall, the study showed improved water quality for each utilities' water supply system with the additional blending of the RO-treated water supply. Water quality at each utility will continue to be sampled throughout the duration of the project, as well as after the new LFA WPF becomes operational.

### About Reverse Osmosis Water Treatment

Reverse osmosis (RO) is widely regarded as the leading water purification technology in the water treatment industry. RO is often used in the bottled water industry. It removes unwanted

sediments and salts by filtering water through “semi-permeable membranes” and capturing them at the molecular level, leaving behind high quality, great tasting drinking water.

A water treatment study was conducted to determine the best water purification technology for use with the new alternative water source (AWS). The raw water quality of the source water was analyzed and the following treatment objectives were developed:

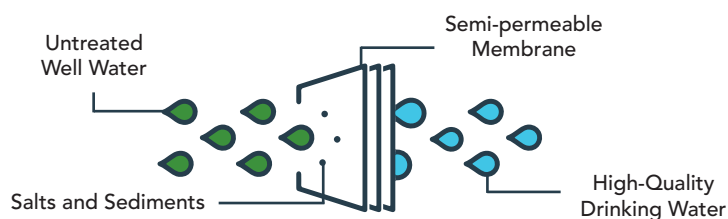


Figure 4.1 Reverse Osmosis

- Total dissolved solids
- Hardness removal
- Specific ion removal, such as sulfate, sodium, and chloride
- Hydrogen sulfide removal
- Stabilization and disinfection
- Iron and manganese control and/or removal

After shortlisting the available technologies to three, an analysis was conducted to compare the footprint, capital cost, energy usage, and maintenance cost of these three options. RO was the only technology to consistently reach the necessary treatment levels and operational efficiencies.



## DESIGN AND CONSTRUCTION

### Expected Schedule

The project design is ongoing and expected to be 60% complete by spring 2023. Final design completion is scheduled for summer 2024 and construction of the first phase of the water production facility and transmission line is expected to start in the fall of 2024. Construction and commissioning are expected to be complete by spring 2027 at which time the SELFA WPF will begin to provide supplemental drinking water supplies to the PRWC member utilities. As the plant is expanded from its Phase 1 capacity of 7.5 MGD to its 20-year capacity of 12.5 MGD, additional wells along the Walk in Water Road wellfield will be added.

### Land Acquisition

Land has been acquired for the water production facility. Easements, which involve use of an owner’s land for the specific purpose of installing the pipeline, will be needed by the PRWC to construct the raw water and transmission mains. The required area for the easements will vary, but is generally anticipated to be between 30-50’ wide and mostly along property frontages. The easement location acquisition process is determined by the identification and selection of pipeline routes that offer a balance of cost and minimal impacts to the environment and property owners. After those factors are considered, the easement acquisition process will begin - including compensation discussions with property owners. It is anticipated that property owners who may be impacted by the project will be contacted during summer 2023 or as specific route sections are finalized.



## Pre-Construction Activities

In July 2022, surveyors and field technicians began working along the proposed pipeline route to gather information needed to design, permit, and construct the SELFA WPF and water transmission main. They will continue to survey and mark project work areas, utilities, and other areas that may require special care during construction. These pre-construction activities will continue through summer 2023.

## Construction Activities

Construction is expected to begin in the fall of 2024. During construction, property owners and residents may see various activities including:

- Equipment and materials being staged roadside in planned work zones
- Trench excavation and backfilling
- Pipeline placement and testing
- Roadway and storm drainage restoration
- Removal of vegetation and topsoil along the path of the transmission main

Construction will primarily take place Monday through Friday, 7 a.m. to 5:30 p.m., with occasional night and weekend work as necessary to minimize traffic disruptions. Property owners will be notified in advance of all scheduled night and weekend work through a variety of communications media, such as door hangers, emails, social media, and roadway signage.

Answers to commonly asked questions about the project are available online: [prwcwater.org/faqs/](http://prwcwater.org/faqs/). Property owners, residents, and other interested parties may also register to receive email notification of future project events and activities at: [prwcwater.org/contact/](http://prwcwater.org/contact/).



## PROJECT COSTS

### State Grants and Funding

Any new water supply project is costly, especially those designed to be protective of existing natural systems. But the PRWC has come together to share those costs and has worked diligently to identify grants and low-interest loans to minimize the burden on its customers.

The first phase of the SELFA water supply project will deliver 7.5 MGD of drinking water to:

- Auburndale
- Bartow
- Davenport
- Dundee
- Eagle Lake
- Haines City
- Lake Alfred
- Lake Hamilton
- Lakeland
- Polk County
- Winter Haven

This phase, including the water production facility, wellfield, and transmission main, is currently estimated to cost \$406 million.



The Southwest Florida Water Management District (SWFWMD) is the project's largest funding partner, having committed over \$200 million for the project so far. The PRWC has also been successful in securing over \$10 million in state funding grants for this regional project. Low-interest state revolving funds and federal WIFIA loans will also be used to help finance the project and give members time to generate future revenue for repayment of the project loans.