

ORDINANCE 2017-01

AN ORDINANCE OF THE CITY OF POLK CITY, FLORIDA, AMENDING THE POLK CITY COMPREHENSIVE PLAN, REVISING THE INFRASTRUCTURE, CONSERVATION, INTERGOVERNMENTAL COORDINATION AND CAPITAL IMPROVEMENTS ELEMENTS BASED ON THE CITY'S TEN-YEAR WATER SUPPLY FACILITIES WORK PLAN INCORPORATED HEREIN; PROVIDING FOR TRANSMISSION TO THE FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY FOR REVIEW AND COMPLIANCE; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICT; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Sections 163.3161 through 163.3215, Florida Statutes, the Community Planning Act, empowers and mandates the City of Polk City, Florida to plan for future development and growth and to adopt and amend comprehensive plans, or elements or portions thereof, to guide the future growth and development of the City; and

WHEREAS, Section 163.3177(6)(c), Florida Statutes, requires local governments, except where specifically exempted, to identify alternative water supply projects and traditional water supply projects and conservation and reuse necessary to meet the water needs within the local government's jurisdiction, and include a work plan, covering at least a 10-year planning period, for building public, private, and regional water supply facilities, including development of alternative water supplies, necessary to serve existing and new development; and

WHEREAS, the City Commission of the City of Polk City has determined that it would be in the best interest of the public health, safety and general welfare of the residents and non-residential water customers of the City to amend the Comprehensive Plan consistent with the requirements of Section 163.3177(6)(c), Florida Statutes; and

WHEREAS, in exercise of its authority the City Commission has determined it necessary to adopt amendments to the City's Comprehensive Plan, which are attached hereto as **Exhibit "A"** and by this reference made a part hereof, to ensure that the Comprehensive Plan is in full compliance with the laws of the State of Florida; and

WHEREAS, in exercise of its authority the City Commission has determined that for the basis of adopting the said amendments in Exhibit "A," the City shall adopt its Ten-Year Water Supply Facilities Work Plan, incorporated herein as **Exhibit "B"**, and by this reference made a part hereof, to be included as Data and Analysis to support the Polk City Comprehensive Plan; and

WHEREAS, pursuant to Section 163.3184, Florida Statutes, the City Commission held public hearings on Ordinance 2017-01, with due public notice having been provided, to obtain public comment, and considered all written and oral comments received during public hearings, including support documents.

BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF POLK CITY, FLORIDA:

Section 1. The provisions set forth in the recitals to this Ordinance (whereas clauses) are hereby adopted by the City Commission as the legislative findings and intent pertaining to this Ordinance.

Section 2. The City of Polk City hereby amends the following Elements of its Comprehensive Plan: Infrastructure Element, Conservation Element; Intergovernmental Coordination Element; and Capital Improvements Element. Said amendments are set forth in **Exhibit "A"** attached hereto and by this reference made a part hereof.

Section 3. The basis for adopting the said amendments is the City of Polk City Ten-Year Water Supply Facilities Work Plan, incorporated herein as **Exhibit "B"**, which is attached hereto and by this reference made a part hereof, said document to be included as Data and Analysis to support the Polk City Comprehensive Plan.

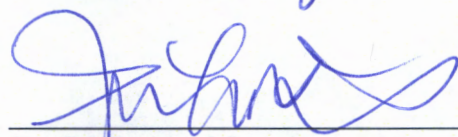
Section 4. This Ordinance shall be codified in the Code of Ordinances of the City of Polk City, Florida. A certified copy of this enacting ordinance shall be located in the Office of the City Clerk of Polk City. The City Clerk shall also make copies available to the public for a reasonable publication charge.

Section 5. If any provision of this Ordinance is for any reason held to be invalid or unconstitutional by any court of competent jurisdiction, such provision and such holding shall not affect the validity of any other provision, and to that end the provisions of this Ordinance are hereby declared severable.

Section 6. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict.

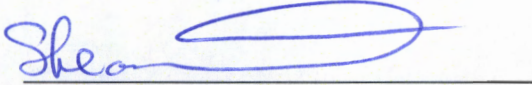
Section 7. The effective date of these amendments, if the amendments are not timely challenged, shall be 31 days after the State Land Planning Agency notifies the local government that the plan amendment package is complete. If timely challenged, the amendments shall become effective on the date the State Land Planning Agency or the Administration Commission enters a final order determining the adopted amendments to be in compliance. No development orders, development permits, or land uses dependent on these amendments may be issued or commence before it has become effective. If a final order of noncompliance is issued by the Administration Council, the amendments may nevertheless be made effective by adoption of a resolution affirming the effective status, a copy of which resolution shall be sent to the State Land Planning Agency.

INTRODUCED, PASSED on FIRST READING, this 15th day of May, 2017.



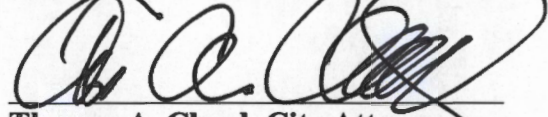
Joe LaCascia, Mayor

ATTEST:



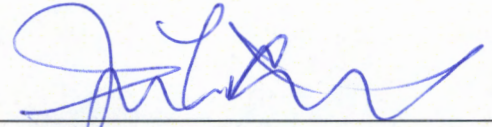
Sheandolen Dunn, Deputy City Clerk

Approved as to form and correctness



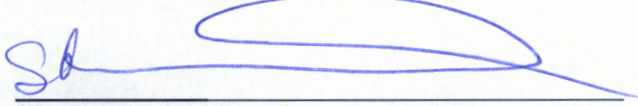
Thomas A. Cloud, City Attorney

PASSED AND DULY ADOPTED ON SECOND READING, with a quorum present and voting by the City Commission of the City of Polk City, Florida meeting in Regular Session this 2nd day of August, 2017.



Joe LaCascia, Mayor

ATTEST:



Sheandolen Dunn, Deputy City Clerk

**ORDINANCE 2017-01
EXHIBIT "A"**

PROPOSED AMENDMENTS

**CITY OF POLK CITY COMPREHENSIVE PLAN
GOALS, OBJECTIVES, AND POLICIES**

TO PROVIDE POLICIES SPECIFIC TO WATER SUPPLY PLANNING

- The following amendments to the Polk City Comprehensive Plan are proposed consistent with the update to the City of Polk City Ten-Year Water Supply Facilities Work Plan.
 - Text shown in gray shading as underlined is text to be added and text shown as ~~strikeout~~ is text to be removed. Amended text is based on the update to the City's Ten-Year Water Supply Facilities Work Plan.
-

I. INFRASTRUCTURE ELEMENT AMENDMENTS:

The following amendments are proposed to the Infrastructure Element of the City of Polk City Comprehensive Plan based on the Ten-Year Water Supply Facilities Work Plan.

OBJECTIVE 4: CONSERVATION OF POTABLE WATER RESOURCES

THE CITY OF POLK CITY SHALL CONSERVE WATER RESOURCES.

~~*Measurable Targets: Number of gallons of water saved per capita per year; lowering of the LOS for potable water.*~~

Policy 4.4: The City will encourage use of native vegetation in landscaping, which requires minimal watering. Xeriscaping Florida-friendly landscaping practices, including the use of Florida native plants and the use of irrigation systems that conserve water shall be encouraged within the Green Swamp ACSC for all landscaped areas including residential and non-residential development, golf courses and publicly owned spaces.

OBJECTIVE 11.1: MAINTAIN A POTABLE WATER SYSTEM TO PROVIDE FOR THE POTABLE WATER NEEDS OF THE CITY AND ITS CITIZENS.

Policy 11.1: The City of Polk City shall continue to maintain and update a water supply facilities plan covering at least a ten (10) year planning period, for construction of public, private, and regional water supply facilities, including development of alternative water supplies, which are identified as being necessary to serve existing and new development.

Policy 11.2: The City of Polk City shall ensure that within 18 months after the board of the Southwest Florida Water Management District has approved an updated regional water supply plan, the Infrastructure Element, in the City's Comprehensive Plan, will incorporate any alternative water supply project or projects selected by the local government from those identified in the regional water supply plan.

Policy 11.3: The City hereby incorporates its Ten-Year Water Supply Facilities Work Plan as a technical support document into this Element, as required following adoption of the Southwest Florida Water Management District (SWFWMD) Regional Water Supply Plan, adopted November 2015. The adopted Ten-Year Water Supply Facilities Work Plan and all future amendments thereto, represent an update to the Polk City Comprehensive Plan. In implementing this Policy, the City shall annually assess the performance and effectiveness of its Ten-Year Water Supply Plan and update the status of project development and potential funding sources, consistent with the corresponding SWFWMD Regional Water Supply Plan and the policies of this Comprehensive Plan in order to maximize the use of existing facilities and provide for future needs.

II. CONSERVATION ELEMENT AMENDMENTS:

The following amendments are proposed to the Conservation Element of the City of Polk City Comprehensive Plan based on the Ten-Year Water Supply Facilities Work Plan.

OBJECTIVE 8: **TO CONSERVE AND PROTECT THE CITY'S POTABLE WATER SOURCES AND NATURAL AQUIFER RECHARGE AREAS FROM ADVERSE IMPACTS THROUGH IMPLEMENTATION OF LAND DEVELOPMENT REGULATIONS AND INTERGOVERNMENTAL COORDINATION MECHANISMS.**

Policy 8.3: The City will actively participate in water conservation programs of the City of Lakeland and Southwest Florida Water Management District. The City shall continue to conduct audits of the municipal water system to determine areas that may be in need of repair and may be contributing to increased water consumption through leaking pipes, and prioritize accordingly.

Policy 8.12: The City shall encourage participation in the Florida Water StarSM certification program as new development and redevelopment activities occur.

III. INTERGOVERNMENTAL COORDINATION ELEMENT AMENDMENTS:

The following amendments are proposed to the Intergovernmental Coordination Element of the City of Polk City Comprehensive Plan based on the Ten-Year Water Supply Facilities Work Plan.

OBJECTIVE 9:

THE CITY OF POLK CITY SHALL WORK WITH SURROUNDING GOVERNMENTS AND OTHER AGENCIES TO ENSURE THAT MEETING FUTURE POTABLE WATER NEEDS ARE COORDINATED ON A REGIONAL BASIS.

Policy 9.1

The City of Polk City shall continue to maintain and update a water supply facilities plan covering at least a ten (10) year planning period, for construction of public, private, and regional water supply facilities, including development of alternative water supplies, which are identified as being necessary to serve existing and new development.

Policy 9.2:

The City hereby incorporates its Ten-Year Water Supply Facilities Work Plan as a technical support document into this Element, as required following adoption of the Southwest Florida Water Management District (SWFWMD) Regional Water Supply Plan, adopted November 2015. The adopted Ten-Year Water Supply Facilities Work Plan and all future amendments thereto, represent an update to the Polk City Comprehensive Plan. In implementing this Policy, the City shall annually assess the performance and effectiveness of its Ten-Year Water Supply Plan and update the status of project development and potential funding sources, consistent with the corresponding SWFWMD Regional Water Supply Plan and the policies of this Comprehensive Plan in order to maximize the use of existing facilities and provide for future needs.

Policy 9.3:

The City shall continue coordination with Polk County and adjacent municipalities regarding cooperative water supply planning and joint-projects which may collectively conserve groundwater, enhance use of reclaimed water and explore opportunities for alternative sources of water. Coordination shall also include entities such as the Central Florida Water Initiative (CFWI), the Polk Regional Water Cooperative (PRWC) and the Heartland Water Alliance (HWA) which are parties reviewing and planning alternative water supply projects within Polk County.

IV. CAPITAL IMPROVEMENTS ELEMENT AMENDMENTS:

The following amendments are proposed to the Capital Improvements Element of the City of Polk City Comprehensive Plan based on the Ten-Year Water Supply Facilities Work Plan.

OBJECTIVE 2:

LAND USE DECISIONS SHALL BE COORDINATED WITH THE AVAILABILITY OF FISCAL RESOURCES TO ENSURE THE SCHEDULE OF CAPITAL IMPROVEMENTS CAN MEET EXISTING AND FUTURE FACILITY NEEDS WHICH MAINTAIN ADOPTED LEVEL OF SERVICE STANDARDS.

Policy 2.1:

The City of Polk City shall continue to maintain and update a water supply facilities plan covering at least a ten (10) year planning period, for construction of public, private, and regional water supply facilities,

including development of alternative water supplies, which are identified as being necessary to serve existing and new development.

Policy 2.2:

The City of Polk City shall ensure that within 18 months after the board of the Southwest Florida Water Management District has approved an updated regional water supply plan, the Infrastructure Element, in the City's Comprehensive Plan, will incorporate any alternative water supply project or projects selected by the local government from those identified in the regional water supply plan.

Policy 2.3:

The City hereby incorporates its Ten-Year Water Supply Facilities Work Plan as a technical support document into this Element, as required following adoption of the Southwest Florida Water Management District (SWFWMD) Regional Water Supply Plan, adopted November 2015. The adopted Ten-Year Water Supply Facilities Work Plan and all future amendments thereto, represent an update to the Polk City Comprehensive Plan. In implementing this Policy, the City shall annually assess the performance and effectiveness of its Ten-Year Water Supply Plan and update the status of project development and potential funding sources, consistent with the corresponding SWFWMD Regional Water Supply Plan and the policies of this Comprehensive Plan in order to maximize the use of existing facilities and provide for future needs.

**ORDINANCE 2017-01
EXHIBIT "B"**



**Polk City
Ten-Year Water Supply Plan
FACILITIES WORK PLAN**

**Prepared by the Central Florida Regional Planning Council for the City of Polk City
April 2017**

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SECTION 1: INTRODUCTION

1.1 PURPOSE OF 2017 POLK CITY WATER SUPPLY PLAN

The City of Polk City (City) 2017 Water Supply Plan (WSP) has been developed in accordance with the requirements and guidelines contained in the Regional Water Supply Plan approved by the Southwest Florida Water Management District (SWFWMD) Governing Board in November 2015. The City has developed this 2017 WSP not only to meet regulatory requirements (cited in Chapter 163, Part II, Florida Statutes, whereby local governments are required to adopt Work Plans into their comprehensive plans after their Water Management District approves a regional water supply plan or its update); but also, to serve as a water resources planning document for the City's residents, businesses, interest groups, and public officials.

This plan provides information on the City's current and future water demands and supplies, discusses the water resources challenges that the City faces, and summarizes the major water resources initiatives that the City has taken to ensure a safe reliable water supply for its water customers. The 2017 Polk City WSP uses projected population estimates to determine potential impacts on future potable water demand. The projections explore growth over a 20-year period through the year 2035, with an emphasis placed on the immediate 10-year planning period. Specifically, the 2017 WSP details the City's water system, water demands, sources of water supplies, water quality, capital improvement projects, and potential multi-jurisdictional planning initiatives.

1.2 STATUTORY REQUIREMENTS (REVISED BY SWFWMD ON SEPTEMBER 12, 2014)

The City of Polk City has considered the following statutory provisions as put of the WSP update:

1. Coordinate appropriate aspects of its comprehensive plan with SWFWMD Regional Water Supply Plan [163.3177(4) (a), F.S.].
2. Ensure the Future Land Use plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177 (6) (a), F.S.]. Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted for review.

3. Ensure that adequate water supplies and potable water facilities are available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent and consult with the applicable water supplier to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy [s.163.3180 (2), F.S.].
4. For local governments subject to a regional water supply plan, revise the General Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element (the "Infrastructure Element"), within 18 months after the water management district approves an updated regional water supply plan to:
 - a. Identify and incorporate the alternative water supply project(s) selected by the local government from projects identified in the SWFWMD Regional Water Supply Plan, or alternative project(s) proposed by the local government under s. 373.709(8)(b), F.S. [s. 163.3177(6)(c), F.S.];
 - b. Identify the traditional and alternative water supply projects and the conservation and reuse programs necessary to meet water needs identified in the SWFWMD Regional Water Supply Plan [s. 163.3177(6)(c)3, F.S.]; and
 - c. Update the Work Plan for at least a 10-year planning period for constructing the public, private, and regional water supply facilities identified in the element as necessary to serve existing and new development [s. 163.3177(6) (c) 3, F.S.].
5. Revise the Five-Year Schedule of Capital Improvements to include water supply, reuse, and conservation projects and programs to be implemented during the five-year period [s. 163.3177(3)(a)4, F.S.].
6. To the extent necessary to maintain internal consistency after making changes described in Paragraph 1 through 5 above, revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period, considering the SWFWMD Water Supply Plan, as well as applicable consumptive use permit(s) [s.163.3177 (6) (d), F.S.]. The plan must address the water supply sources necessary to meet and 5 achieve the existing and projected water use demand for the established planning period, considering the applicable regional water supply plan [s.163.3167(9), F.S.].
7. To the extent necessary to maintain internal consistency after making changes described in Paragraphs 1 through 5 above, revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with the SWFWMD Regional Water Supply Plan [s.163.3177 (6) (h) 1, F.S.].

8. While an Evaluation and Appraisal Report is not required, local governments are encouraged to comprehensively evaluate, and as necessary, update comprehensive plans to reflect changes in local conditions. The evaluation could address the extent to which the local government has implemented the need to update their Work Plan, including the development of alternative water supplies, and determine whether the identified alternative water supply projects, traditional water supply projects, and conservation and reuse programs are meeting local water use demands [s.163.3191 (3), F.S.].

1.3 BACKGROUND INFORMATION OVERVIEW

Geography and Growth Patterns

The City of Polk City is located in north central Polk County, Florida, generally centered around the intersection of SR 33 (Commonwealth Blvd) and SR 655 (Berkley Rd.). The utility service area of Polk City borders the utility service areas of the City of Lakeland to the west, the City of Auburndale to the south, and the City of Lake Alfred to the southeast. The City is also located within the Green Swamp Area of Critical State Concern. The popular National Recreation trail, General James A. Van Fleet State Trail, is located within the City boundaries. Polk City is one of 17 incorporated municipalities in Polk County. The City’s 2016 population estimate is 1,670 persons, according to estimates provided by the University of Florida Bureau of Economic and Business Research



Relevant Regional Issues

According to the 2015 Florida Department of Environmental Protection Regional Water Supply Planning Report, the total water use this year, in the SWFWMD was about 1,240 mgd (Figure 1). By 2035, the SWFWMD expects water use to increase to about 1,460 mgd, which is nearly 18 percent more than 2015 water use. The SWFWMD estimated that public supply and agricultural irrigation will remain the two largest use sectors, even though agricultural irrigation is projected to grow about 4 percent. The Report identified approximately 838 mgd of water available from the following sources: surface water, reclaimed water, desalination, fresh

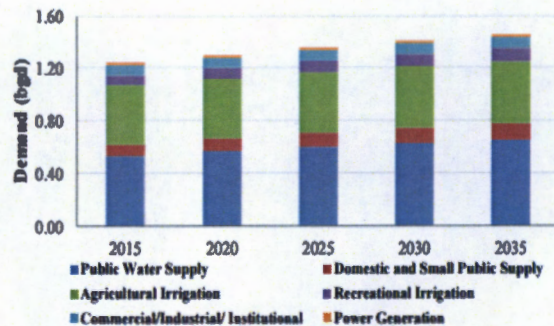


Figure 1: SWFWMD Districtwide Projected Demand

groundwater, and water conservation. Approximately 108 mgd of that total is expected to be provided through implementation of water conservation measures.

1.4 CENTRAL FLORIDA WATER INITIATIVE (CFWI)

The Central Florida Water Initiative (CFWI) is a collaborative water supply planning effort among the state's three largest water management districts, the Florida Department of Environmental Protection (DEP), the Florida Department of Agriculture and Consumer Services (DACS), water utilities, environmental groups, business organizations, agricultural communities and other stakeholders.

The CFWI Planning Area covers five counties, including Orange, Osceola, Polk, Seminole and southern Lake (See Map 1 for CFWI Boundary). The boundaries of the three water management districts – St. Johns River Water Management District, South Florida Water Management District and Southwest Florida Water Management District – meet in an area known as the Central Florida Coordination Area (CFCA), which includes Polk County and within it, portions of the City of Polk City.

The purpose of the CFWI is to implement effective and consistent water resource planning through the Central Florida region. As part of the initiative, in 2015, the CFWI adopted a multi-district Regional Water Supply Plan to ensure the protection of water resources and related natural systems and identify sustainable water supplies for all water uses in the coordination area through 2035. In April of 2016, the CFWI adopted the 2020 Guiding Principles to:

- Review and update the 2015 CFWI Regional Water Supply Plan (RWSP), as well as the sustainable quantities of traditional groundwater sources available in the CFWI area that can be used without causing unacceptable harm to the water resources and associated natural systems.
- Monitor progress of regional strategies and solutions identified in the 2015 CFWI Plan; review and update strategies to meet water demands that are in excess of the sustainable yield of existing traditional groundwater sources.
- Establish consistent rules and regulations for the three water management districts that meet the Collaborative Process Goals and implement the results of this Central Florida Water Initiative.
- Encourage funding for regional strategies necessary to achieve the objectives of the CFWI.

The adoption of the City's WSP must be consistent with the CFWI Regional Water Supply Plan, be financially feasible and it must include the necessary provisions to ensure that potable water LOS standards are maintained for expected population growth.

1.5 POLK COUNTY REGIONAL WATER COOPERATIVE (PRWC)

The City of Polk City is part of the Polk Regional Water Cooperative (PRWC). This county-wide effort was established to bring the local governments of Polk County together to work in tandem to qualify for state and water management district funding to help pay for water resource projects that will be developed over the next decade to ensure an adequate water supply in the future. As a planning effort with a broad-based approach, the PRWC focuses on analyzing where alternative supplies are available and where demand is located. The priority projects identified by the cooperative correspond to those prioritized through the efforts of the CFWI. These include withdrawals from the lower Floridan aquifer at well complexes east of Lake Wales and northwest of Lakeland, and increasing aquifer recharge in the Peace Creek Basin in the Winter Haven area to get groundwater credits to allow increased withdrawals from existing wells.

Phase I of the effort is underway with a Water Supply Assessment being finalized. Phase II will be the development of implementation agreements to further prioritize and identify funding options for the chosen projects.

1.6 HEARTLAND WATER ALLIANCE (HWA)

In June of 2002, the Heartland Water Alliance (HWA), which consists of Polk, Hardee, Highlands, and DeSoto Counties, was formed to address water supply concerns identified in the Heartland region. A three-phased work plan was developed to identify existing and proposed water demands through 2025 and potential water supply projects to meet the goals of the plan. The goal of the HWA work plan is to ensure that adequate water resources are planned for and available to meet the water needs of the four-county HWA area through the year 2025. The City of Polk City will continue to work with the HWA and other agencies to ensure adequate water supplies are available.

1.7 DESCRIPTION OF THE CITY'S WATER SYSTEM

Water Sources

The primary source of water extraction for City is fresh groundwater from the Upper Floridan Aquifer (UFA). Although water utilities in the region are increasingly implementing conservation measures and exploring alternative sources for public supply, Polk City's water source is still obtained exclusively from the UFA. SWFWMD's 2015 Regional Water Supply Plan indicated that approximately 97 percent of water used in the region was from groundwater sources. Limited options for alternative water supply exist within the Central Florida Heartland region. As a non-coastal area, desalination of water is currently not an option.

Water Use

The City's potable water distribution system is operated by the City's Public Work-Water Department, which operates and maintains the City's water and sewer systems in compliance with all state and federal requirements. Annually, the City presents a water quality report to inform all residents and businesses about the quality of water and services that are delivered every day and is regulated by the Florida Department of Environmental Protection (FDEP) and U.S. Department of Environmental Protection.

Not unlike many communities throughout the state, the City's primary source of for potable water comes from groundwater extraction in the Upper Floridan Aquifer (UFA). As with many communities, the City's dependency on groundwater use has increased over the past several decades. Although water utilities throughout the region are proactively exploring conservation methods and alternative water supply sources, Polk City's water, at this time, is still obtained exclusively from the UFA. The City will continue to coordinate with the CFWI and the PRWC on additional water resource issues, including options for alternative water resources.

As will be presented in more detail in Section 2, the City is projected to see considerable population growth over the next ten- and twenty-year planning periods. Polk City has installed 1,981 water meters with size ranging from $\frac{3}{4}$ - inch to 4-inch within the service area. There are also two fire protection meters; one located in the Lelynn RV resort mobile home park and one at the Fantasy of Flight attraction grounds.

Design Capacity of Production Facilities

The City has continually and proactively invested in its water supply system to maintain a reliable water supply for all uses. The City's public water supply area (22 acres) provide water for approximately 7,676 customers (See Map 2 for Service Area Boundary).

Additionally, the City of Polk City and the City of Auburndale have a 10-year Emergency Water Service Agreement in which to share water resources through an interconnection system. The interconnect is established to ensure the transfer of water between the two utilities as needed for use in emergencies or times of extraordinary water demand. The City of Polk City has a similar agreement with the City of Lakeland, which also establishes an emergency interconnection and sharing of water resources.

Potable Water System

The City of Polk City public water supply system is regulated by FDEP while water use (water consumption) is permitted by the SWFWMD. The City’s FDEP Public Water System facility identification number is 6531424. The SWFWMD Water Use Permit (WUP) number is 8468.005. See *Section 2.1, Water Service Area* for additional information on the City’s permit conditions.

The potable water system includes components to pump and treat raw water extracted from the Floridan Aquifer. The treated, “finished” water is stored and re-pumped into the distribution system for potable consumption by the City’s end users. In addition, the water system provides fire protection for the City.

The system includes a total of four (4) public supply wells and two (2) water treatment plants. Each water plant has a groundwater storage tank (GST). There are four (4) high service pumps at the Polk City Plant. Tables 1 and 2 provide detailed information of the City’s production facilities. See Map 3 for facilities locations. Storage and high-service pumping facilities are utilized at the City’s water treatment plants.

Table 1: Inventory of Wells

Service Area	Well District ID# (Name)	Well Diameter (inches)	Well Pump Capacity (GPD)*	Well Depth TTL/ CSD FT (feet bls)*	Pump Motor (Horse Power)
City of Polk City	Well #2 Commonwealth	10	276,600	600/156	40 HP
	Well #3 Matt William	12	286,000	680/168	50 HP
	Well #5 Mount Olive 2	12	99,000	583/UNK	50 HP
	Well #6 Mount Olive 1	12	99,00	800/130	75 HP

**Based on 2014 City of Polk City Water Use Permit*

Table 2: Inventory of Water Treatment /Storage Facilities

Storage	Location	Type	Total Design Capacity (MGD)
Commonwealth (#2)	Intersection of SR 33 and Berkley Road	N/A	576,000
Matt Williams (#3)	N. Bougainvillea Blvd	Hydro-pneumatic tank	936,000
Well #5 Mount Olive 2	Mount Olive Rd	Hydro-pneumatic tank	10,000
Well #6 Mount Olive 1	Mount Olive Rd	Hydro-pneumatic tank	10,000

Water Treatment Practices

A sodium hypochlorite system provides disinfection for all water production facilities. The hydro-pneumatic tank provides a pressure range used to manage flow to the water distribution system at the Matt William water facility. The Commonwealth water facility in addition to the sodium hypochlorite disinfection system also uses a chlorine contact tank to ensure proper contact time for disinfection. According to the City's 2011 Water and Wastewater Optimization Plan, the Commonwealth water facility is used as a back-up plant.

Reuse Facilities

The City's wastewater system is also regulated through FDEP under permit number FLA013011. The City of Polk City wastewater system consists of a collection system, lift stations and transmission mains, as well as two wastewater treatment facilities (WWTF), which provides treated wastewater effluent for reuse. The Polk City WWTFs dispose of treated wastewater effluent through a sprayfield and use of rapid infiltration basins (RIBs). Effluent disposal capacities include: 0.12 MGD via the sprayfield and 0.10 MGD through the RIBs.

SECTION 2: DATA AND ANALYSIS

2.1 WATER SERVICE AREA

Potable water is administered through a metered system serving both residential and non-residential users with an adopted LOS standard of 110 gallons per person per day (gpcd). The system is regulated and permitted by the FDEP and the SWFWMD. The City’s permitted maximum flow (design capacity) for water extraction (as regulated through FDEP) is 1,512,000 gallons per day (gpd). The City’s current permitted capacity for water use by the SWFWMD is 760,600 gpd. In 2014, the City renewed its water use permit and a new 20-year permit was issued with an expiration date of May 15, 2034.

Table 3 outlines the City’s permitted capacity and current metered connections under the active WUP.

Table 3: Existing City Potable Water Customers

FDEP Public Water System (PWS)	WUP Permit No.	Permittee	Provider Type	WUP Permitted Capacity	Number of Residential Meters *	Number of Commercial/ Industrial/ Recreational Meters *
6531424	8468.005	City of Polk City	Potable Water	760,600 GPD	2,263	78

**Data Source: Polk City 2015 Public Supply Annual Report*

2.2 POPULATION INFORMATION AND WATER DEMAND PROJECTION

Historic Water Use by Sector

Planning for future water supply requires an understanding of past water use and the factors that influence future use over time. This section presents historical water use based on the 2011 and 2015 City of Polk City’s Public Supply Annual Reports (PSARs). Figure 2 illustrates the City’s annual average potable water use (in gallons per day) broken down into the following sectors: (1) single-family residential; (2) multifamily residential; (3) mobile home, (4) residential irrigation, (5) industrial/ commercial; (6) agricultural; (7) recreational/aesthetics; (8) golf course irrigation, and (9) fire and other accounted uses.

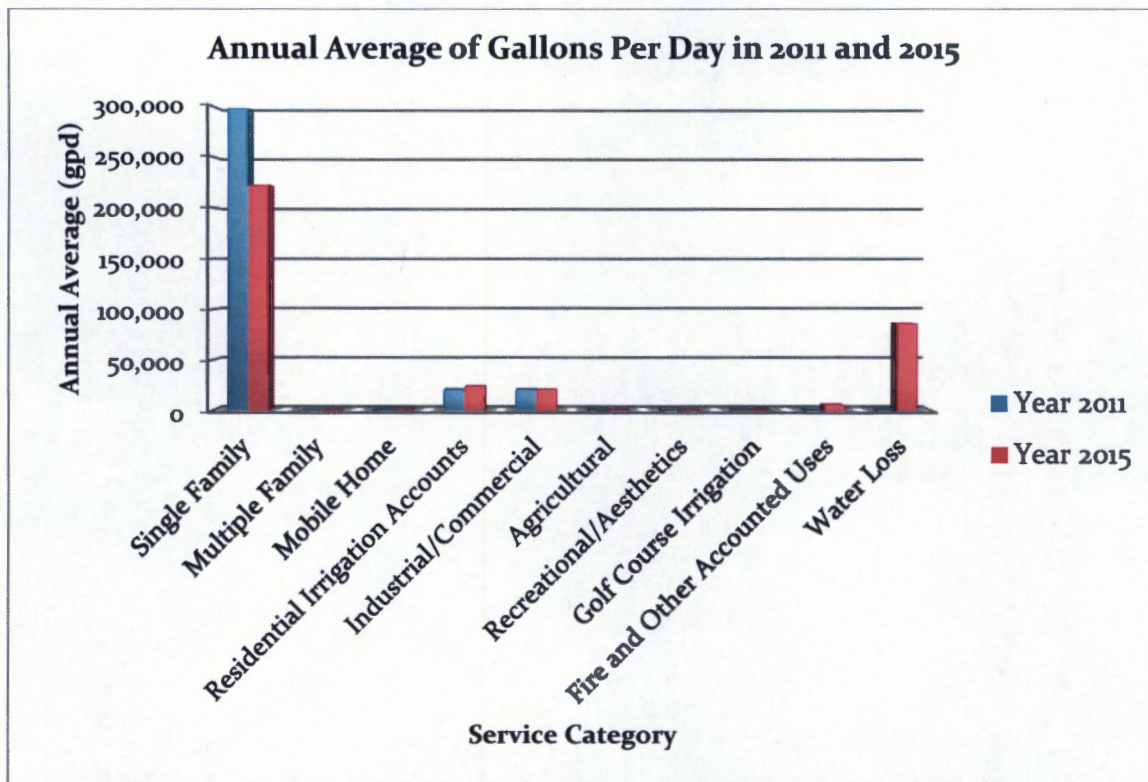


Figure 2: Annual Average of Gallons Per Day in 2011 and 2015

It is important to note the amount of documented water loss in the City’s system since 2011. In the 2011, 2012, and 2013 PSARs, the City reported a water loss of less than 700 gpd. However, in 2014 and 2015, the City reported between 24 to 29 percent water loss (approximately 87,000 gpd). The SWFWMD is aware of the situation and completed an audit of the City’s system in September of 2016. The audit confirmed that a large portion of the water loss was due to illegal connections at the Mt. Olive RV park. The findings in audit revealed that an estimated 13,000,000 gal/year were being used by the Mt. Olive RV park. Immediate actions were recommended by the SWFWMD to measure future unbilled water use (Additional information provided in Section 3: Goals, Objectives, and Policies. The City recognizes there may be other contributors to water loss (*i.e.*, aging infrastructure) and will continue working to reduce impacts on water resources through continual monitoring and infrastructure improvements.

Figures 3 and 4 reflect the City’s overall percentage use of potable water for residential and non-residential users for 2011 and 2015. As shown, the vast majority of water consumers in the City are residential customers. However, residential water use, overall, has decreased slightly over the last 5 years, while non-residential use has increased.

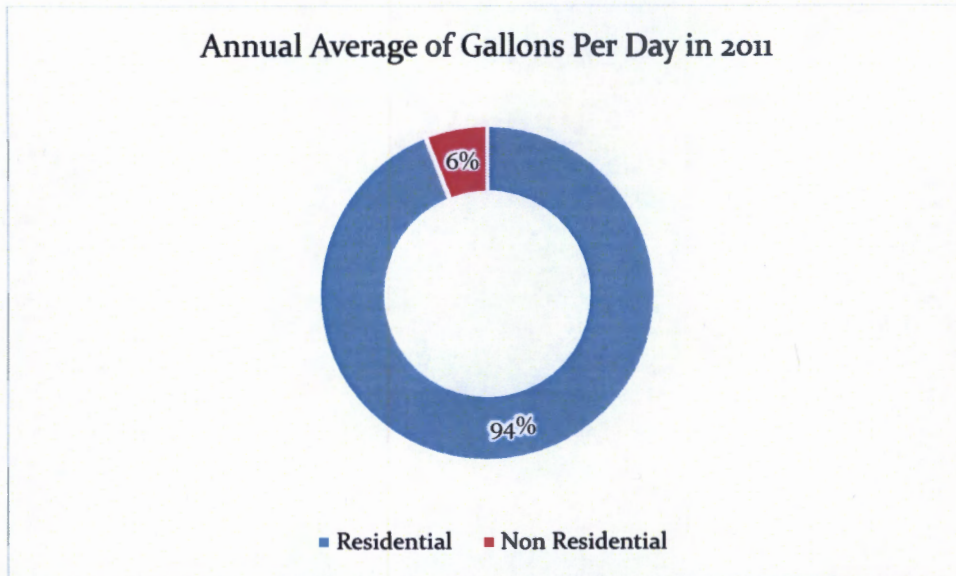


Figure 3: Historic Potable Water Use in 2011

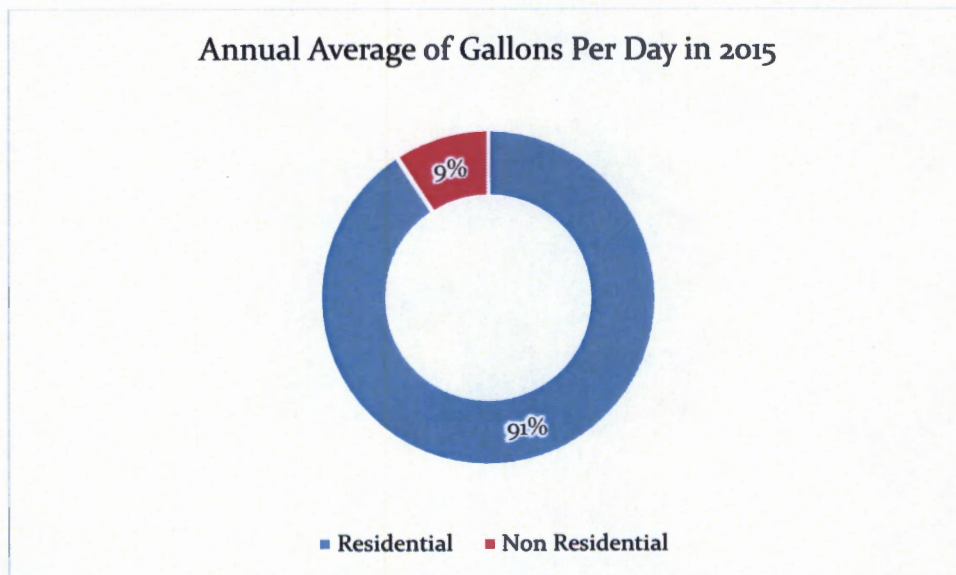


Figure 4: Historic Potable Water Use in 2015

5-year per Capita Demand

A calculation of the average per capita demand for potable water is necessary to monitor potential negative impacts on water resources and to ensure consumption rates do not exceed the City’s adopted LOS standards of 110 gpcd. The average per capita demand is calculated based on the reported average daily water demand and the total consumption as measured by the City’s functional population. The functional population is defined as

the total consuming end user, which includes permanent residents, seasonal residents, tourists, and net commuters as established by the SWFWMD. Table 4 outlines the 5-year per capita water demand. As shown in Table 4, the 5-year average demand is 58.7 gpcd which is below the City’s adopted LOS standard.

Table 4: 5-Year Per Capita Water Demand

Service Area	Year	Adjusted Per Capita Demand (GPCD)*
City of Polk City	2011	57
	2012	64.3
	2013	61
	2014	55.4
	2015	56
5-year average per capita demand		58.7

**Data source: City of Polk City Public Supply Annual Report*

Population Projection

Population projections used in this document are based on a methodology developed by the SWFWMD. The SWFWMD uses medium projections disaggregated to land parcel level using a GIS methodology. The functional population figures are used to reasonably estimate the potential impacts on future potable water demands. A 20-year projection of the functional population, using the SWFWMD figures is provided in Table 5. 2015 is considered the base year consistent with the SWFWMD 2015 RWSP.

Table 5: Functional Population Projections of Polk City (2015-2035)

Year	Functional Population*
2015	7,676
2020	8,305
2025	9,024
2030	9,791
2035	10,577

** Data source: 2015 SWFWMD RWSP*

2.3 FUTURE NEED

The projected service area water demand from 2015 to 2035 for the City of Polk City is shown in Table 6 and Figure 5. In the immediate 10-year period from 2015-2025, the functional population is projected to increase from 7,676 to 9,024, reflecting an annual growth rate of 1.5 percent. Over the 20-year period (2015-2035), the functional population is projected to increase from 7,676 to 10,577, reflecting an annual growth rate of 1.1 percent. The projected growth rates shown here, which do not include any future land acquisitions (i.e., City annexations), reflect a moderately-high growth rate over the 10- and 20-year planning periods, which are comparable to the ten- and twenty-year rates of other municipalities within Polk County (see Table 7 with annual average growth rates of other municipalities in Polk County).

Table 6: Projected Functional Population Annual Growth Rates

City of Polk City Projected Annual Growth Rates									
Year				2015-2020		2015-2025		2015-2035	
2015	2020	2025	2035	%Change	Annual Growth Rate	%Change	Annual Growth Rate	%Change	Annual Growth Rate
7,676	8,305	9,024	10,577	7.60	1.52	14.9	1.49	22.1	1.11

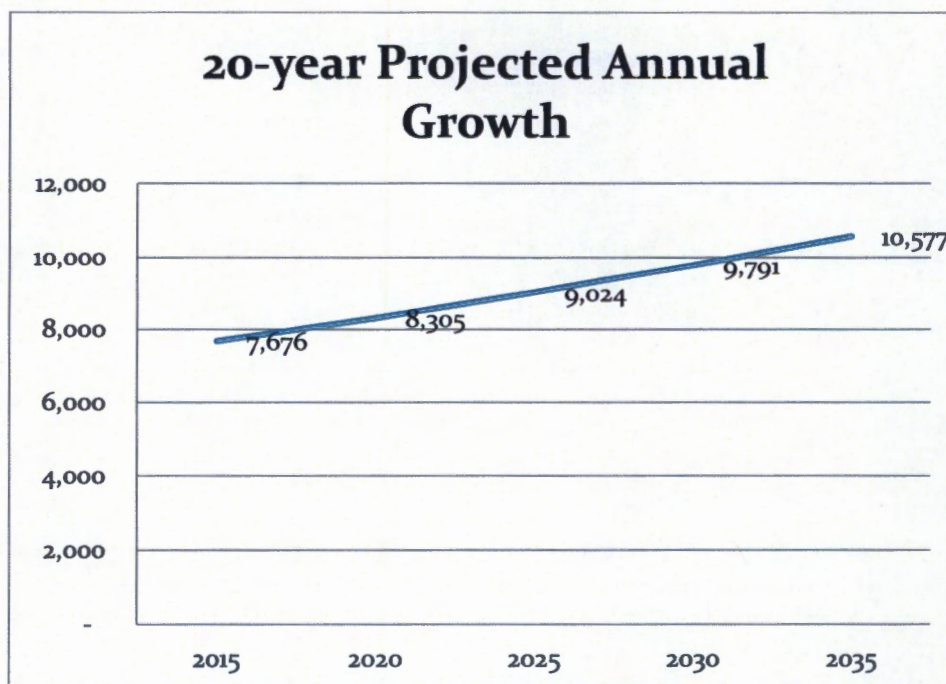


Figure 5: Projected Annual Growth

Table 7: Projected Annual Growth Rates for Municipalities in Polk County

Polk County Municipalities - Projected Annual Growth Rates										
Municipality	Years				2015-2020		2015-2025		2015-2035	
	2015	2020	2025	2035	% Change	Annual Growth Rate	% Change	Annual Growth Rate	% Change	Annual Growth Rate
Auburndale	33,507	35,388	37,614	41,472	5.32	1.06	10.92	1.09	19.21	0.96
Bartow	25,734	27,722	30,219	35,850	7.17	1.43	14.84	1.48	28.22	1.41
Davenport	5,900	6,667	7,485	9,141	11.50	2.30	21.18	2.12	35.46	1.77
Dundee	5,200	5,620	6,085	7,067	7.47	1.49	14.54	1.45	26.42	1.32
Eagle Lake	6,610	7,078	7,620	8,794	6.61	1.32	13.25	1.33	24.84	1.24
Frostproof	4,538	4,578	4,648	4,852	0.87	0.17	2.37	0.24	6.47	0.32
Haines City	29,462	32,952	36,624	43,153	10.59	2.12	19.56	1.96	31.73	1.59
Lake Alfred	8,746	9,382	10,008	11,230	6.78	1.36	12.61	1.26	22.12	1.11
Lake Hamilton	1,261	1,266	1,281	1,331	0.25	0.05	1.56	0.16	5.26	0.26
Lake Wales	25,310	27,431	29,653	34,162	7.73	1.55	14.65	1.46	25.91	1.30
Lakeland	166,521	175,480	184,846	203,345	5.11	1.02	9.91	0.99	18.11	0.91
Mulberry	4,528	4,528	4,528	4,528	0.00	0.00	0.00	0.00	0.00	0.00
Polk City	7,676	8,305	9,024	10,577	7.60	1.52	14.90	1.49	22.10	1.11
Winter Haven	72,542	78,444	84,566	95,203	7.52	1.50	14.22	1.42	23.80	1.19

Table 8 outlines projected water demand to permitted water supply based on functional population projections using the City's 5-year average consumption rate of 58.7 gpcd.

Table 8: Projected Water Demand – 5-Year Average Consumption Rate (2015-2035)

	2015	2020	2025	2030	2035
Functional Population	7,676	8,305	9,024	9,791	10,577
Average Per Capita Demand (GPCD)*	58.7	58.7	58.7	58.7	58.7
Projected Average Demand (GPD)	450,581	487,504	529,709	574,732	620,870
WUP Permitted Capacity (GPD)**	760,600	760,600	760,600	760,600	760,600
Surplus (Deficit) Demand (GPD)	310,019	273,097	230,891	185,868	139,730
Demand % of Permitted Capacity	59.24	64.09	69.64	75.56	81.63

The projections in Table 8 reveal a daily demand of 529,709 gpd by 2025 (10-year period) and 620,870 gpd by 2035 (20-year period). Considering the City's permitted capacity of 760,600 gpd (effective through 2034), the City is projected to maintain a water surplus within the ten-year and twenty-year planning periods. Based on the 5-year average demand, the City is expected to be able to serve projected growth.

SECTION 3: GOALS, OBJECTIVES, AND POLICIES

3.1. WATER CONSERVATION AND WATER REUSE

To promote long-term water resource planning and assure that adequate supplies are available to meet future water demands, the City recommends goals, objectives and policies, which are included in the Infrastructure, Conservation, Intergovernmental Coordination and Capital Improvements Elements of the City's Comprehensive Plan.

The City of Polk City will continue to promote water conservation and reuse in the service area. To date, the City has implemented a number of water conservation regulations and initiatives consistent with SWFWMD's requirement for implementation of a water conservation plan. Polk City will continue conservation effort through the following:

- Conduct audits of the municipal water system to determine areas that may be in need of repairs or contributing to increased water consumption through leaking pipes, and prioritize accordingly.
- Require the use of low volume plumbing fixtures for all new construction, to be enforced as part of the City's building code and other appropriate permitting regulations.
- Require the use of Florida Friendly landscaping techniques for all new development and continuous promotion of all new automatic landscape irrigation systems to be fitted with properly installed automatic shutoff devices.
- Participate in the Florida Water Star program which is entirely funded by SWFWMD to provide funding in rebates to builders who participate in a voluntary certification program.
- Maintain the water conserving rate structure.
- Educate residents in water conservation and best practices through outreach programs.

The SWFWMD recommended specific and tangible actions to address the City's significant water loss following the completion of the water audit in September 2016. These immediate tasks include:

- Replace thin wall poly service line on Citrus Grove by September 31, 2017
- Install a master meters at suspected problem subdivision to directly measure unbilled water use and address losses due to potential theft by December 31, 2017.
- Work with SWFWMD to conduct a leak detection survey of the South service area.
- Physically read and inspect each customer service meter to verify that the AMR system is operating correctly.

Additionally, the City will continue to coordinate water conservation efforts with the SWFWMD, the CFWI, the PRWC and the HWA to ensure that proper strategies are being utilized. The City will also continue to support and expand existing goals, objectives and policies in the comprehensive plan that promote water conservation in a cost-effective and environmentally-sensitive manner.

3.2. INTERGOVERNMENTAL COORDINATION

The City continues to coordinate with Polk County regarding water resource issues, including coordination on water supply plans. The City also recognizes its partnership and intergovernmental coordination with the CFWI, the PRWC and the HWA.

As part of the PRWC, Polk City is part of an inter municipal effort to seek state funding for projects to take care of public supply needs in the next twenty years. The estimated cost of the projects is \$620 million and would produce at least 42 million gallons per day. Polk City is part of a group of municipalities that is currently working to reduce water consumption through a variety of conservation programs, which include toilet rebates and financial assistance with installation costs, rebates for landscaping of new development projects to reduce water use and information on improved irrigation projects.

The provision of emergency water supply involves collaboration and partnership between various levels of government. Polk City's current emergency water service agreements with the City of Auburndale and the City of Lakeland is a proactive measure as a response plan to lessen the impacts of any emergency such as natural disasters, terrorist attacks or other intentional actions.

3.3. CAPITAL IMPROVEMENTS

The City's Ten-Year Capital Improvements Plan (FY 16/17 – FY 26/27, adopted in December of 2016, identifies a total of \$1,850,000 in improvements to the City's potable water system. The improvements, as follows, are scheduled projects planned through FY 22/23:

- Water Line Extension Phase II - Barfield Road Loop (\$350,000)
- Water Line Extension Phase III - Tavares Rd., Rachel Cherie Dr., Steven Dr., Quinn Rd. 165 Lots (\$1,500,000)
- Water Line Extension Phase IV - Berkley Road South, Rosewood to I-4 (*Developer initiated/funded*)

The City has also identified \$1,500,000 in wastewater projects and two (2) additional developer initiated/funded projects scheduled through FY 21/22.

SECTION 4: CONCLUSION

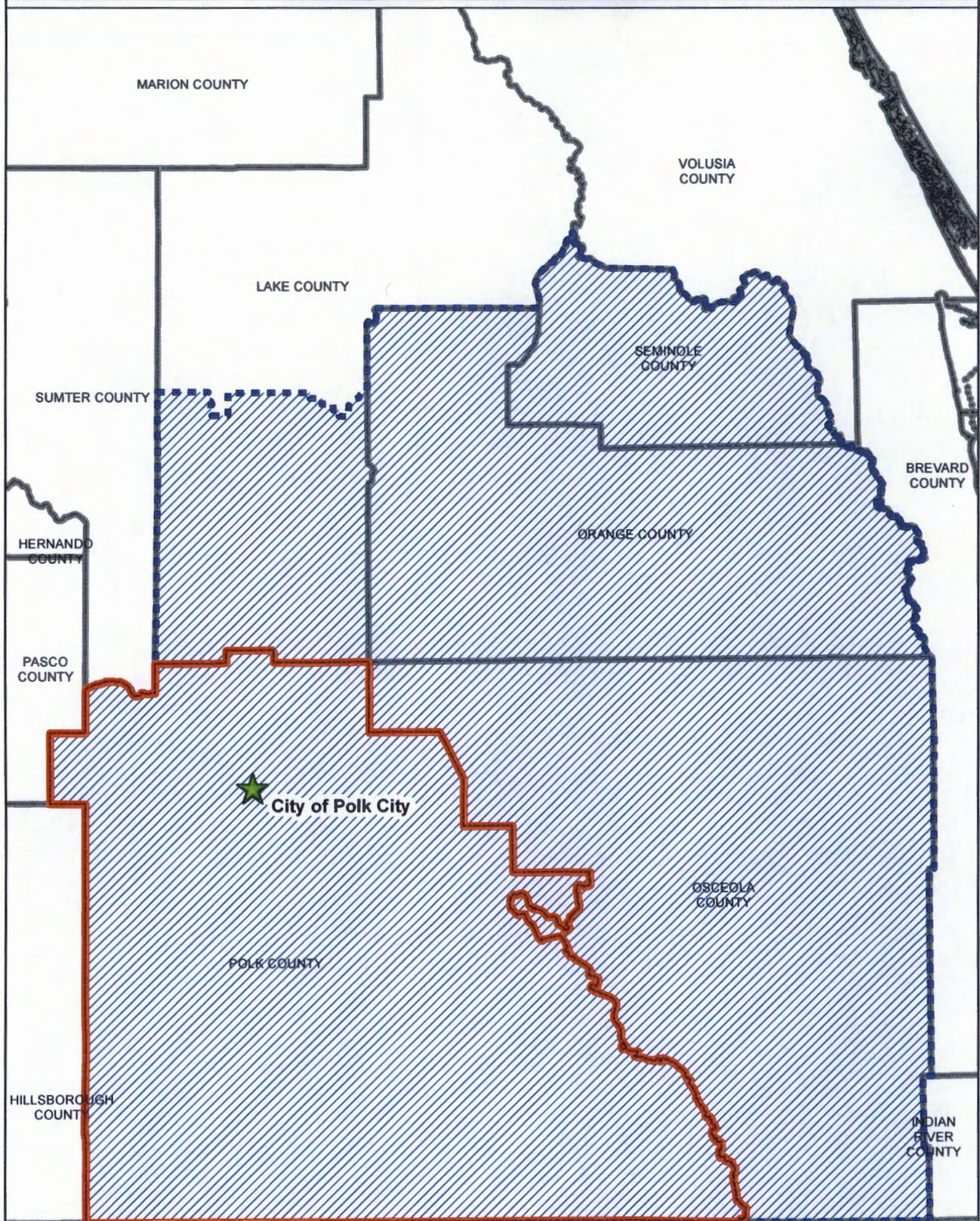
4.1. CONCLUSION

The City of Polk City maintains and operates a potable water (utility) system serving users both inside and outside of the corporate City limits. The City's adopted LOS for water consumption is 110 gpcd. Based on the 5-year average consumption rate (between 2011 to 2015), the City's average demand is 58.7 gpcd, which is within the adopted LOS standard of 110 gpcd.




Based on the demand projections using the City's 5-year average consumption rate of 58.7 gpcd (Table 8), the projections reveal a daily demand of 529,709 gpd by 2025 (ten-year period) and 620,870 gpd by 2035 (twenty-year period). Considering the City's permitted capacity of 760,600 gpd (based on current WUP, effective through 2034) the City is anticipated to meet projected growth through 2025 (10-year period) and 2035 (20-year period).


The City will continue its monitoring of existing facilities to help reduce or eliminate future water loss, continue its conservation efforts through all available resources, continue to upgrade facilities and necessary infrastructure when and where improvements are needed, and continue to explore opportunities for alternative water supply resources and cooperate with the SWFWMD to implement tangible actions that will address the City's water loss identified in the 2016 water audit.

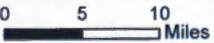
MAP 1 Central Florida Water Initiative (CFWI)



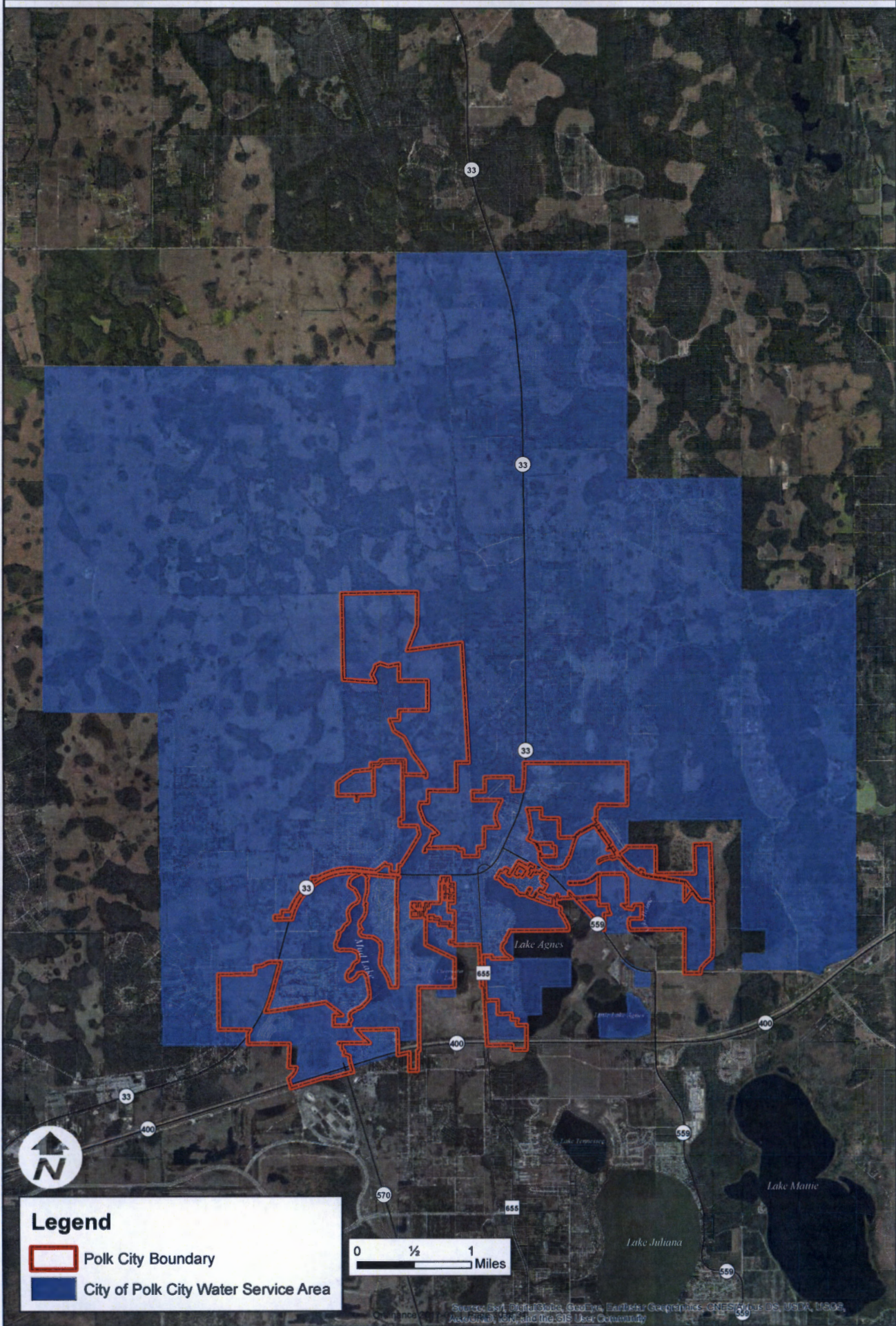
Legend

-  Central Florida Water Initiative Boundary
-  Polk County Boundary
-  County Boundaries



 HIGHLANDS COUNTY

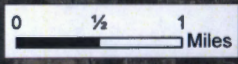


MAP 2 City of Polk City Public Water Supply Service Area



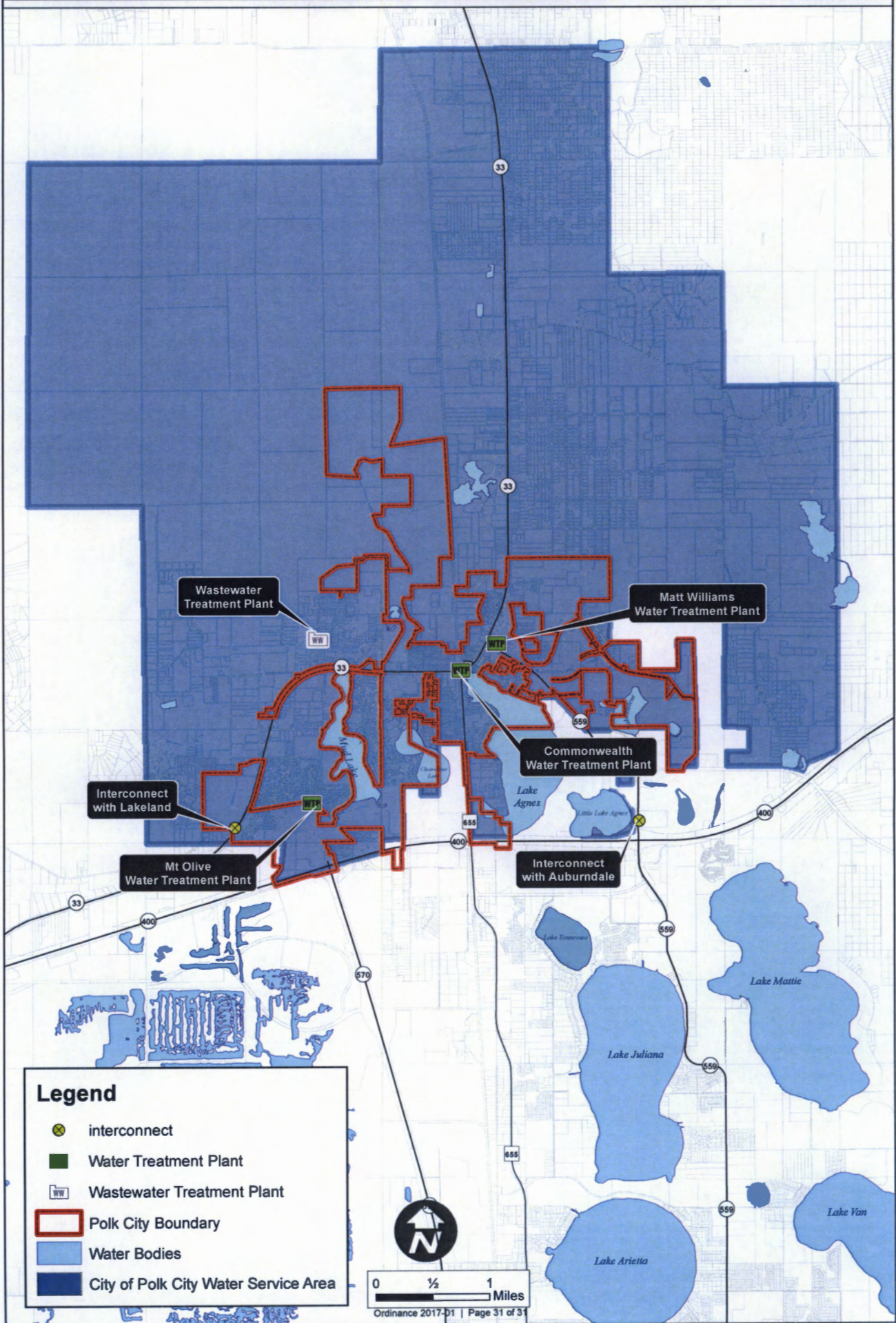
Legend

-  Polk City Boundary
-  City of Polk City Water Service Area









Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

MAP 3 City of Polk City Facilities Location



Legend

-  interconnect
-  Water Treatment Plant
-  Wastewater Treatment Plant
-  Polk City Boundary
-  Water Bodies
-  City of Polk City Water Service Area

0 1/2 1 Miles