CHAPTER FIVE

INFRASTRUCTURE ELEMENT

POTABLE WATER SUBELEMENT

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CHAPTER FIVE
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I. BACKGROUND

A. Terms and Concepts

A potable water supply system consists of a water supply source, a treatment plant, and a distribution and storage network. Either surface water, stored in natural lakes or man-made reservoirs, or ground water, or some combination of the two constitute the supply source for a system. The selection of a source considers the type and quality of sources available and the cost of developing the source for use. Before being used for public consumption, water must be treated. Treatment removes impurities from the raw water in order to improve its quality for public health, aesthetic reasons, or both. The treatment process adds to the cost of supplying water, but expands the range of raw water sources that can be utilized.

Many private residences are served by private wells. These wells are constructed to Southwest Florida Water Management District (SWFWMD) standards. Potable water quality monitoring and maintenance are the owners' responsibility; however, the Citrus County Public Health Unit will investigate wells located near known pollution sources or on a compliant basis.

After treatment, the water is supplied to individual users in a community by way of a network of pipes and storage reservoirs. Large transmission lines, called distribution mains, carry water to major demand areas and interconnect with a network of smaller lines, which supply individual establishments. Both the distribution mains and distribution network should be connected to form flow loops to allow water to circulate from various portions of the system to areas of highest momentary demand.

Water is delivered under pressure within the distribution system in order to ensure adequate flow to meet demands. Demand fluctuates during each day, usually exhibiting peaks during the morning and evening, corresponding to periods of highest residential use.

Citrus County contains ten types of potable water supply facilities. These are shown in Table 5-9.

B. Regulatory Framework

1. Federal

The federal government has established quality standards for the protection of water for public use, including operating standards and quality controls for public water systems. These regulations are provided in the Safe Drinking Water Act, which was updated in 1996. This law directed the EPA to establish minimum drinking water standards. The 1996 amendment included new prevention approaches and revisions to the regulatory program.

2. State and Regional

In accordance with federal requirements, the Florida Legislature has adopted the Florida Safe Drinking Water Act (Sections 403.850 - 403.864, F.S.). The FDEP is the state agency responsible for implementing this Act. In this regard, FDEP has promulgated rules classifying and regulating public water systems under Chapter 62-550, 555, and 560 of the F.A.C. The standards of the Federal Safe Drinking Water Act are mandatory in Florida.

TABLE 5-9
TYPES OF POTABLE WATER FACILITIES IN CITRUS COUNTY

Type of Facility	Criteria
Large	Serves over 50,000 people
Medium	Serves greater than 3,300 and less than or equal to 50,000 people
Non-Community	Public water system that is not a community system
Community	Serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents
Transient Non-Community	Non-community system that does not serve at least 25 of the same persons over 6 months per year
Non-transient Non-Community	Public water system that is not a community system and regularly serves at least 25 of the same persons over 6 months per year
Seasonal System	Non-community system that is not operated as a public water system on a year round basis and starts up and shuts down at the beginning and end of each operating season
Public	Has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year
Small	Serves 3,300 people or less
Consecutive System	Public water system that receives some or all of its finished water from one or more wholesale systems

Source: Florida Administrative Code, 62-550.200
Prepared by: Citrus County Land Development Division, 2017

Due to the vast amount of potable water facilities in Citrus County, only large community facilities will be discussed at length. Large community facilities have been categorized as either regional systems or systems which serve a small geographic area. The regional facilities are defined as systems that are operated by the Citrus County Department of Water Resources or the four potable water utilities throughout the unincorporated areas of the County. The remaining large community facilities are categorized as package plants.

Smaller systems and private wells are regulated by the Department of Health's local public health units. These systems are subject to the rule in Chapter 64E-6, F.A.C.

The SWFWMD is responsible for managing water supplies to meet existing and future demands. Regulation of consumptive use is achieved through a permitting system, through which water resources are allocated among the permitted consumers. The SWFWMD also oversees the permitting and construction of wells, both public and private.

3. Local

Similar to the operation of sanitary sewer facilities, Citrus County has adopted design standards and review procedures to ensure that all connections to the water system are comparable with the system design and in accordance with current acceptable design standards. In 2004, a fully updated and revised set of design and construction standards for both sanitary sewer and potable water utilities was approved by the BCC.

II. EXISTING CONDITIONS

A. Background Studies

Previous plans for Citrus County did not evaluate the possibility and/or need for a County-run water system. At that time, there did not appear to be a need for such public facilities. Instead, the problem of major water withdrawals and transfer of water to the Tampa Bay Area was the concern. The transfer issue is still important; however, because of continued rapid growth, Citrus County has focused on expansion of the County-operated systems for water supply and distribution of water. This has become necessary because of continued growth in areas unserved with water supply or distribution systems and also because of the continuation of saltwater intrusion into many areas along the west coast of the County.

Numerous studies have been prepared regarding water resources in Citrus County. These studies provide a background of water supply concerns from several viewpoints. Each of these is described briefly:

1. Coastal Water Resources Projects

A report was prepared in 1980 by Coastal Water Resources for the Withlacoochee Regional Planning Council (WRPC). The intent of the study was to analyze water supplies in the coastal areas of Levy, Citrus, and Hernando Counties to ascertain problems and solutions to water supply in the coastal area.

The magnitude of the problems encountered with public water supply in these coastal areas was found to be significant. Because of the lack of governmental participation in water supply and distribution systems in the coastal area, the recommendations of the Coastal Water Resources Project were very general. The recommendations are presented in priority order and are described below:

- Priority 1 – Prepare County water budgets
- Priority 2 – Halt saltwater intrusion
- Priority 3 – Continue water distribution research, including revised demographic data and improved water system data
- Priority 4 – Promote legislation on mandatory metering of public water systems
- Priority 5 – Promote increased funding and resources for land use mapping

Of particular interest to Citrus County was priority items 1 and 2. The need to establish water budgets related to the fact that more water was projected to be extracted, based on projected water demand in the coastal area, than can safely be removed. The study estimated that no more than five percent of the available water supply should be consumed to remain within safe "environmental quality" bounds. However, it was projected that west of US-19 to CR-491 will consume six percent of the available water crop.

All of the figures used above were somewhat theoretical, but pointed to the need to determine, especially in sensitive coastal areas, how much water could safely be extracted from groundwater, as well as from surface sources. If this was not considered, it would not have been possible to accomplish priority item 2, halting saltwater intrusion. In Citrus County, problems with saltwater intrusion have occurred in Chassahowitzka, in the Homosassa Special Water District, and in the Ozello Water Association, as well as among other water systems near the coast. The only feasible solution to these problems appeared to be to secure a potable water source(s) of water further inland towards the Ridge Area of Citrus County.

2. Withlacoochee Regional Water Supply Study-Phases I and II

The 1980 Withlacoochee Regional Water Supply Study was a two-phase study prepared over the period of October 1979 through November 1982. The Withlacoochee Regional Water Supply Authority (WRWSA) acted as the local sponsor to these studies prepared by the US Army Corps of Engineers (ACOE). The first phase of the study provided a detailed analysis by the U.S. Geological

Service of the water resources available in the Withlacoochee Region. This phase also included a detailed analysis of growth trends and water demand projections to the year 2030 prepared by the WRPC.

Phase II of the project analyzed the characteristics of the Floridan aquifer and what effects drawdowns would have on the aquifer through the year 2030. In addition, various alternative regional system configurations were analyzed to determine what arrangements were most beneficial environmentally and most cost effective. Although the Withlacoochee Regional Water Supply Study contained numerous recommendations and conclusions, the following conclusions were those deemed most pertinent to existing conditions in Citrus County:

- In developing wellfield systems, small separate wellfields were preferred over massive wellfields to serve the entire County. This would apply to wellfields developed for Citrus County's consumption, as well as wellfields developed by outside entities such as the WRWSA and, more importantly, the West Coast Regional Water Supply Authority (Tampa Bay Area)
- Additional research was needed to identify the productivity of the aquifer, plus identifying the saltwater/freshwater interface. These items were needed in order to adequately protect water resources in the County
- Before massive withdrawals of surface water or groundwater were made, research into the effect that reduced freshwater inflow into the estuaries would have on those areas would need to be conducted. Decreased flow could harm the productivity of the estuaries for shell fishing, sport fishing, and habitats for wildlife
- The study also identified the generalized areas of the County with the best hydrologic characteristics for groundwater production. This study was used to locate wellfields within the County, but for site-specific application, more detailed hydrologic studies were needed

3. Feasibility Study - Regional Water Supply No. 1

A study was prepared jointly by the WRWSA and BCC in 1983. The purpose of the study was to develop the feasibility of serving the central coastal area of Citrus County from a regional water supply facility. The necessity of doing so resulted from the continual problem of saltwater intrusion into the area because of drawdowns from numerous wells, both public and private, throughout the vicinity of the coast. This study specifically sought to determine the feasibility of supplying water to the Homosassa Special Water District, the Ozello Water Association, and the City of Crystal River. In addition, the study analyzed the economic feasibility of supplying portions of the unserved unincorporated County area between SR-44 and CR-490.

Conclusions of the study were as follows:

- The central coastal area of Citrus County was experiencing rapid growth. Projections indicated that the population of this area would increase just over 100 percent by the year 2000
- There were approximately 43 water systems in the area, which were classified as public water systems. Of these, three were relatively large systems; the remainder served small subdivisions, single commercial enterprises, and public parks. A large portion of the area was without a central system
- Saltwater intrusion into the water supply aquifer had become a serious problem due to rapid growth and subsequent water withdrawals near the coast
- The three major water systems in the area were supplied by 10 wells, of which only five could be considered reliable sources reasonably safe from the saltwater intrusion
- The reliable permitted well capacity of the Homosassa Special Water District was expected to be inadequate by 1985; Ozello Water Association by 1995; and Crystal River by 1991. Inherent uncertainties in projections of growth and saltwater intrusion, and time requirements for project planning, made it necessary to initiate action as soon as possible
- Citrus County was considering action which may lead to creation of a County-owned water system or systems in this area in the near future. Such systems would also require a reliable source of water supply
- A regional water supply system was feasible in this area. In comparison to proliferation of individual supplies, the regional system would offer better economy, quality of service, reliability, and safeguards against degradation of the environment

4. 1986 Water Master Plan

In September 1986, a Water Master Plan was prepared by Glace and Radcliffe, Inc. professional consultants for required water facilities to meet the 20-year needs of County residents. Conceptual designs were developed for water facilities in those areas where land use, environmental factors, or other consideration indicated a need for utility service. Cost estimates were prepared and a determination was made on which systems were the most cost effective to implement.

The study covered the entire limits of Citrus County, however certain sectors were eliminated:

- Existing water service which could not, for political, legal or other reasons, be integrated into a County-wide water system. These areas included the Cities of Inverness and Crystal River, Floral City Water Association, Homosassa Special Water District, Ozello Water Association, Inc., and Rolling Oaks Utilities

- Those areas of the County depicted as low density on the Generalized Land Use Map, and areas not feasible to produce utility service

5. 1996 WRWSA Master Plan for Water Supply

The Withlacoochee Regional Water Supply Authority (WRWSA), recognizing the impact uncontrolled water export can have on the Withlacoochee Region's environment and existing and future local water needs, commissioned a Master Plan for Water Supply Study for Citrus, Hernando, and Sumter Counties, and their associated municipalities.

The purpose of the Master Plan for Water Supply was to provide a framework under which the WRWSA could move forward in accomplishing its goals. Equal emphasis was placed on the WRWSA's two priorities of identifying and developing water supplies and protecting the natural resources from which those supplies are withdrawn. The Master Plan included:

- A perspective on water issues
- A description of the hydrology and hydrogeology of the region
- A description of the utilities supplying potable water in each County
- A summary of the water resource studies prepared during the past 15 years
- A review of how the local government comprehensive plans address water supply and protection
- A projection of growth and potable water usage in the region
- A description of the legal issues related to the protection, development, and permitting of water supplies

From the above analyses, a set of recommendations and water supply scenarios were developed, addressing the following:

- Identification of areas where groundwater quality and quantity are conductive to wellfield development
- The possible location of future wellfields and major distribution lines to serve the regions' growth
- A simulation of the drawdown on the water table that might result from the projected wellfields
- Identification of wellhead protection areas for the projected wellfields
- A description of the role of the WRWSA in assisting its member governments in the development of water supplies
- A set of recommendations that would further the goals of the WRWSA in the areas of potable water development and natural resource protection

The Master Plan has established a strong case for large wellfields in high production zones, as opposed to the previous concept of smaller separate wellfields.

The water quality and quantity analyses and the water budget analyses are discussed in greater detail within the Conservation Element. This study will serve as a foundation for water supply expansion and development within the region.

6. 2000 Water Master Plan

At the request of the Citrus County Board of County Commissioners, C & D Engineering, Inc. prepared an updated water master plan (March 1998) to establish facility needs through the year 2020. The purpose was to assess existing facilities and the ability to meet future needs and to establish an orderly expansion of the County potable water supply system. The study documented population trends, service areas, sources of supply, water demands, and existing facilities. It modeled the existing system and simulated future system requirements to develop and evaluate expansion alternatives. The primary emphasis of the study concerned unincorporated areas presently served by the County, unincorporated areas within the County's service area but not currently served, and communities served by interconnection to the central water system.

The study developed a list of general recommendations as well as specific projects. The general recommendations include:

- Eliminating dead end lines through looping
- Replacing undersized piping throughout the systems
- Replacing substandard components
- Extending the existing system into infill areas
- Extending the system to serve new growth and to interconnect isolated water systems and customers
- Expanding fire protection capabilities in conjunction with improving deficient portions of the distribution system
- Establishing and enforcing design standards for all new utility construction that had the potential to become a part of the County's system
- Developing effective conservation measures to reduce water consumption (C & D Engineering, Inc., 2000)

7. 2005 Water Master Plan

In 2005, the County hired Hoyle, Tanner & Associates (with subcontractors Governmental Services Group and Professional Resources Management Group) to:

- Update the County's Master Plans for potable water, wastewater and reuse water
- Identify capital project requirements in support of the Master Plans
- Develop a County Utilities 20-year Business Plan
- Develop rate structure recommendations in support of the Plans

Because the County needed to secure bond funding in 2006 for several large capital projects, a preliminary rate structure study was prepared first and presented to the BCC in July, 2005. Formal adoption occurred on September 13, 2005 and for the first time included a water conservation rate structure. The primary objectives of these efforts were to effectively plan and provide for the utility needs of Citrus County through 2025.

8. Citrus County Water Resources Department / Wastewater / Reuse Master Plan Update

In March 2011, the Citrus County Board of County Commissioners (BCC) and Citrus County Water Resources Department (CCWRD) engaged the firm of C & D Engineering, Inc., to prepare an update of the water facilities plan for the expansion of CCWRD's Central Water System through the year 2020. The emphasis was on the integration of the Citrus Springs, Pine Ridge, and Sugarmill Woods systems, which were acquired by Citrus County. A major purpose of the plan was to integrate the above referenced additional systems, evaluate expansion of traditional service areas, changes in historical flow patterns, regulatory issues, facility performance, and system upgrades, etc.

In June 2013, the Draft Master Plan was presented to the BCC for the purpose of endorsing the Draft Master Plan for purposes of preparing a Utility Rate Study. The Utility Rate Study was completed in September 2015, and the BCC approved a new rate structure on October 20, 2015.

B. Current Situation

Historically, most Citrus County residents received potable water from private wells, drawing groundwater from either the shallow surficial aquifer or the underlying Floridan aquifer. As population has increased, so has the demand for water, prompting several communities to develop water service utilities. The Withlacoochee Regional Water Supply Authority (WRWSA) was created in 1977 in response to this situation for the purpose of developing, recovering, storing, and supplying water for municipal purposes. Current members of the WRWSA include Citrus, Hernando, Marion, and Sumter Counties and the Cities of Belleview, Brooksville, Bushnell, and Crystal River.

The WRWSA recognized the need to update their Master Plan and in 2005 completed the Master Regional Water Supply Plan Update (Phase 1). In 2010 the Feasibility Analysis of Proposed Water Supply Projects, Reclaimed Water Optimization and Water Conservation (Phase II) was completed. The WRWSA in July 2014 completed an update of the Regional Water Supply Plan.

In the 1980's, the County began a coordinated effort to develop a public water supply system by acquiring and developing private water systems and constructing distribution lines. Prompted, in part, by increasing saltwater intrusion into coastal

groundwater supplies, the County enacted various ordinances to promote the establishment of centralized County water services, required that all new potable water facilities be dedicated to the County, encouraged removal of all potable wells in areas of saltwater intrusion, and required that all new developments connect to the County's water system as soon as service is available.

The Water Resources Department (CCWRD) role as a water service provider has grown steadily and the County operates three major interconnected water treatment and distribution facilities, as well as a number of small isolated systems. The largest plant of these facilities, the Charles A. Black-No. 1 Water Plant (CAB-1) located in Hampton Hills, was developed with funding support from the WRWSA in 1988 and includes a regional wellfield, water treatment, storage, and pumping facilities. The second largest facility is the Charles A. Black-No. 2 (CAB-2) in the Meadowcrest area. CAB-1 is currently permitted peak monthly withdrawals of up to 6.574 mgd and CAB-2 is permitted for 0.86 mgd with the permitted annual average for the interconnected system less than half that amount (3.24 mgd). The permitted CAB facilities serve 9,634 metered connections with an active functional population of 26,001. The cumulative functional population served by the larger CCWRD facilities total 54,814.

The regional and community water systems are listed in Figures 5-9 and 5-10. The 2001-2020 Water Master Plan, (C & D Engineering, Inc.), December 2000 represents the most current comprehensive guide for decision making concerning potable water facilities. This Subelement contains a synopsis of the report's conclusions and is referenced throughout. The formulation of goals, objectives, and policies were based on this study.

The northern region of SWFWMD has always been noted as a "water rich" area and has not been included in previous comprehensive plans of the Water Management District. In 2004, during a presentation to the BCC, the Water Management District stated that ground water resources are sufficient for anticipated growth for at least the next twenty years.

1. Protection of Aquifer Recharge Areas

As indicated in the Future Land Use Element, the Central Ridge Area of the County will bear the largest burden of new growth. This will result from a combination of factors, with the two most predominant being:

- The Coastal Area, the Tsala Apopka Chain of Lakes Area, and the flood plain of the Withlacoochee River are all environmentally sensitive and are presently regulated by federal, state, regional, and local agencies. Environmental controls will continue to become increasingly significant as the resources in these areas will require additional protection from urbanization

- The Central Ridge Area has fewer natural resource constraints to development. In fact, most of the new large-scale developments are located in this portion of the County. Therefore, more development pressure will naturally occur in the Ridge Area

However, the Central Ridge area of the County sits on one of the most productive portions of the Floridan aquifer which should be protected for future water supply. In addition, the soils of this area have a high rate of permeability. In some cases, this permeability extends to the unconfined aquifer. This condition represents a potential hazard to the underground water supply from pollution sources such as underground gasoline tanks, landfill operations, septic tanks, and stormwater runoff.

Protection of both the quantity of rainfall recharging the aquifer, as well as its quality, is critical to protecting the County's water supply and to maintain the springs and spring run creeks. Stormwater systems in areas of high recharge or karst geology need to use best management practices and be designed to remove nutrients and other contaminants prior to recharging the aquifer. Fertilizer use needs to be limited in areas of high recharge and in karst sensitive areas. The intent is that post-development recharge rates and water quality equal pre-development conditions.

2. Reduction of Saltwater Intrusion

In the 1980's Coastal Water Resource Project, the 1980's Withlacoochee Regional Water Supply Study-Phases I and II, and the 1983 Feasibility Study for the WRWSA Regional Water Supply Well # 1, ample evidence was presented to point out the continuing problem of saltwater intrusion into fresh water aquifers. The major occurrences of this were along the west coast of the County. The consequences of continued inattention to the problem were exemplified by the situation in 1981-1982 in Ozello. With little warning, wellfields began pumping water with chloride concentrations far in excess of the safe drinking water standard of 250 parts per million (ppm). The Ozello Water Association was forced to lay emergency pipes to Crystal River for water supply until new wells could be constructed and transmission lines laid to the system.

The only viable solution to this problem was to phase out large-scale freshwater withdrawals along the coast, and construct wellfields further inland in productive aquifer areas, and transport water back to users along the coast. The construction of the inland wellfields of the Homosassa Special Water District (HSWD), connection of the Ozello system to the County/WRWSA Charles A. Black system, and connection to other smaller communities to the HSWD, Ozello Water Association and the City of Crystal River has largely eliminated occurrences of high chloride levels in public supply systems within Citrus County.

3. Arsenic in Private Wells

Water system extensions have been proposed in the northwest quadrant of Citrus County due to arsenic levels in some private wells. The FDEP identified private wells in the affected area that have levels of arsenic in their drinking water from private wells that exceed the Primary Drinking Water Standards.

III. FACILITIES INVENTORY

A. Regional Facilities

Citrus County is presently served by seven regional potable water facilities (see Figure 5-9). Citrus County Water Resources Department operates and maintains the largest of these supply facilities. The remaining four regional facilities are owned, operated, and maintained by private and semi-public utilities. These include Floral City Water Association, Homosassa Special Water District, Ozello Water Association, and Rolling Oaks Utilities. In addition, the Cities of Crystal River and Inverness operate regional facilities.

The service areas for these facilities are shown in Figure 5-9. The service areas are subject to change according to subsequent development activity. Many service areas overlap with areas served by package plants, non-community water systems, or private wells. The regional facilities serve predominately single family homes. The capacity analysis, general performance, and planned improvements for each facility are outlined in Table 5-10, and contain a database for each of the facilities. The components for this database are outlined above.

Level of Service indicates the extent or degree of service provided by or proposed to be provided by a facility based on and related to the operational characteristics of the facility. The level of service is adequate for all the regional potable water facilities.

Current demand includes the number of service connections, the average daily output of water, and an estimate of the number of persons served.

Design capacity is determined by the storage and pump capacities. The design capacity is also expressed as the pumping capacity of the water facilities.

An overview of the major findings for each facility is outlined below.

1. Citrus County Utility Division System

a. The Charles A. Black - No. 1 Water Plant (CAB-No.1)

Formerly known as Hampton Hills plant is the major Citrus County potable water supply facility within the WRWSA system development plan. The current facility, permitted by SWFWMD permit No. 20007121.006, is served by five wells and has a permitted well pumping (withdrawal) capacity of

4.1373 mgd Annual Average and a storage capacity of eight million gallons. Other regional and package water systems have linked or are projected to link to the CCWRD system; the former Celina Hills, Hilltop, and Meadowcrest water systems have linked to the Hampton Hills system as well as the Ozello Water Association and the City of Crystal River via the Meadowcrest distribution system. The entire system was rededicated as the Charles A. Black system in honor of Mr. Black's long service with SWFWMD.

The predominant land uses served by the facility are single-family developments with some infill commercial.

b. The Charles A. Black - No. 2 Water Plan (formerly Meadowcrest)

Facility service area has been incorporated within the Charles A. Black service area. Initially, the Meadowcrest Water Plant served the Meadowcrest and surrounding areas and portions of the City of Crystal River. The system was interconnected to the Hampton Hills system. The current facility, permitted by SWFWMD permit No. 20007121.006, is served by two wells with a permitted pumping capacity of 0.4597 mgd Annual Average and has a storage capacity of one million gallons.

The predominant land use served by the facility is single-family residential. Office and light industrial, as well as low density multifamily residential land uses, are also served by the system.

The facility is not planned for any additional capacity in the future. The Charles A. Black Facility is projected to serve all future portions of the Meadowcrest service area.

c. Citrus Springs and Pine Ridge Utilities

These facilities have been acquired by Citrus County and are currently operated by the Citrus County Utility Division. The area currently serviced by this utility includes the Citrus Springs and Pine Ridge developments in the northern half of the County, which includes single family housing. The current facility, permitted by SWFWMD permit No. 20002842.011, is served by eight wells with a permitted pumping capacity of 4.780 mgd Annual Average and has a storage capacity of 309,000 gallons.

Many of the system's pipelines in Citrus Springs have not been installed yet and added capacity is anticipated to accommodate projected growth.

The general condition of these facilities is satisfactory. The only treatment to the raw water is required chlorination. These facilities, as well as many other potable water facilities, are located on the Brooksville Ridge, which contains one of the best water sources in the state.

d. Sugarmill Woods Utilities

The Sugarmill Woods Utility system was acquired by Citrus County and is currently operated by the Citrus County Utility Division. The area currently serviced by this utility includes the Sugarmill Woods and Chassahowitzka developments in the southern portion of the County. The current facility, permitted by SWFWMD permit No. 20009791.010, is served by eight wells with a permitted pumping capacity of 2.3621 mgd Annual Average and has a storage capacity of 1.5 million gallons.

The predominant land use served by the facility is single family residential although some commercial and multifamily developments also are served.

2. Other Regional Potable Water Systems

a. Floral City Water Association

The Floral City Water Association service was extended south and west along CR-480 for the construction of the Stagecoach Trail Facility. A service area was defined through an Interlocal Agreement with Citrus County in July 2013.

Approximately 94 percent of the land uses served by the water system are single family developments. Approximately six percent of the connections serve general commercial land uses.

Since the construction of the Stagecoach Trail treatment facility, issues of TriHaloMethanes, iron and sulfate have been reduced significantly. The Plant #1 facility continues to produce water that is moderate in iron content. This facility is only used during emergency conditions. The treatment of the water at the Plant #1 facility includes sand filters to reduce the iron content. Also, an aeration process takes out the small amount of sulfate, as well as reduces the iron content. The Plant #2 treatment facility was taken offline in 2005 due to high organic content in the source water.

This system also has a circulation problem with dead end lines due to the lakes within the service area. Because of the dead end lines, there have been resident complaints about stale water. The Water Association is required to blow off the stagnant water quarterly.

In 2015, the Stagecoach Trail Facility was constructed to improve functionality. Because of this, the system is in satisfactory condition.

Floral City Water Association does not have its own conservation plan policies and instead “refer” its residents to the County’s Water Conservation Plan.

The current facility, permitted by SWFWMD permit No. 20001118, is served by four wells with a permitted pumping capacity of 654,000 mgd peak month and has a storage capacity of 755,000 gallons.

b. Homosassa Special Water District

The Homosassa Special Water District service area is not projected to expand greatly. Expansion may occur along US-19, as needed for commercial development, and adjacent to the west of the northern most service area as needed for residential development.

Approximately 88 percent of the connections serve single family developments and 12 percent of the connections serve general and strip commercial land uses, principally along US-19.

This facility is planned for additional capacity. Since this is one of the oldest systems in the County, there is an ongoing program to replace the old galvanized metal piping with Polyvinyl chloride (PVC) piping.

In 1988, the facility expanded by developing a new wellfield on a new site. A one million gallon storage tank was placed on the same site.

Homosassa Special Water District has had a water conservation rate structure as part of its conservation efforts since 1995 and is part of its SWFWMD permit. Additionally, the utility makes use of informative customer billing, a leak detection program, a meter reading program, and customer leak notification.

The current facility, permitted by SWFWMD permit No. 20004406, is served by four wells with a permitted pumping capacity of 1,180,000 mgd peak month and has a storage capacity of 1,150,000 gallons.

TABLE 5-10
CITRUS COUNTY REGIONAL POTABLE WATER FACILITIES AND ANALYSIS, 2017

CITRUS COUNTY WATER RESOURCES DEPARTMENT SYSTEMS				
Name of Facility	**Charles A Black I & II WTP**	**Citrus Springs & Pine Ridge**	**Sugarmill Woods**	
Entity Having Operational Responsibility	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461 Gary Loggins	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461 Gary Loggins	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461 Gary Loggins	
Number of Connections	9,139	7,362	5,243	
Average Daily Output (gpd)	4,652,284	2,496,172	2,386,000	
Predominant Land Use	Residential	Residential	Residential	
Storage Capacity	9,000,000	309,000	1,500,000	
Other	Combination of former Meadowcrest and Hampton Hills Entries	Formerly owned by FGUA	Formerly owned by FGUA	
OTHER REGIONAL POTABLE WATER SYSTEMS				
Name of Facility	**Floral City Water Assoc.**	**Homosassa Special Water District**	**Ozello Water Assoc.**	**Rolling Oaks Utilities**
Entity Having Operational Responsibility	PO Box 597 Floral City, FL 34436 Gary Judd	PO Box 195 Homosassa, FL 34487 David Purnell	PO Box 1285 Crystal River, FL 34429 Gary Bibeau	P.O. Box 641030 Beverly Hills, FL 34464 Kyle Johnson
Number of Connections	2,206	2,500	2,054	5,895
Average Output (gpd)	307,954	712,840	375,000	1,405,000
Predominant Land Use	Residential	Residential/Commercial	Residential	Residential/Commercial
Storage Capacity	755,000	1,150,000	200,000	6,000,000
Other			Receives Bulk Water Service from County.	

Source: Citrus County Water Resources Department, 2017
Prepared by: Land Development Division, 2017

c. Ozello Waster Association

The Ozello Water Association service area is shown in Figure 5-9. The expansion of the service area is projected to be minimal. Additional customers are expected within the existing service area. The Ozello Water Association serves approximately 450 commercial establishments.

Approximately 28 percent of the connections serve general commercial and strip commercial land uses while the remaining connections serve single family development.

The Ozello facility, permitted by SWFWMD permit No. 20000230, purchases water from Citrus County Water Resources Department. The source is the Charles A. Black Facility. The Ozello facility has a storage capacity of 200,000 gallons.

d. Rolling Oaks Utilities

The service area, as shown, is not expected to change although extensive infilling is to occur.

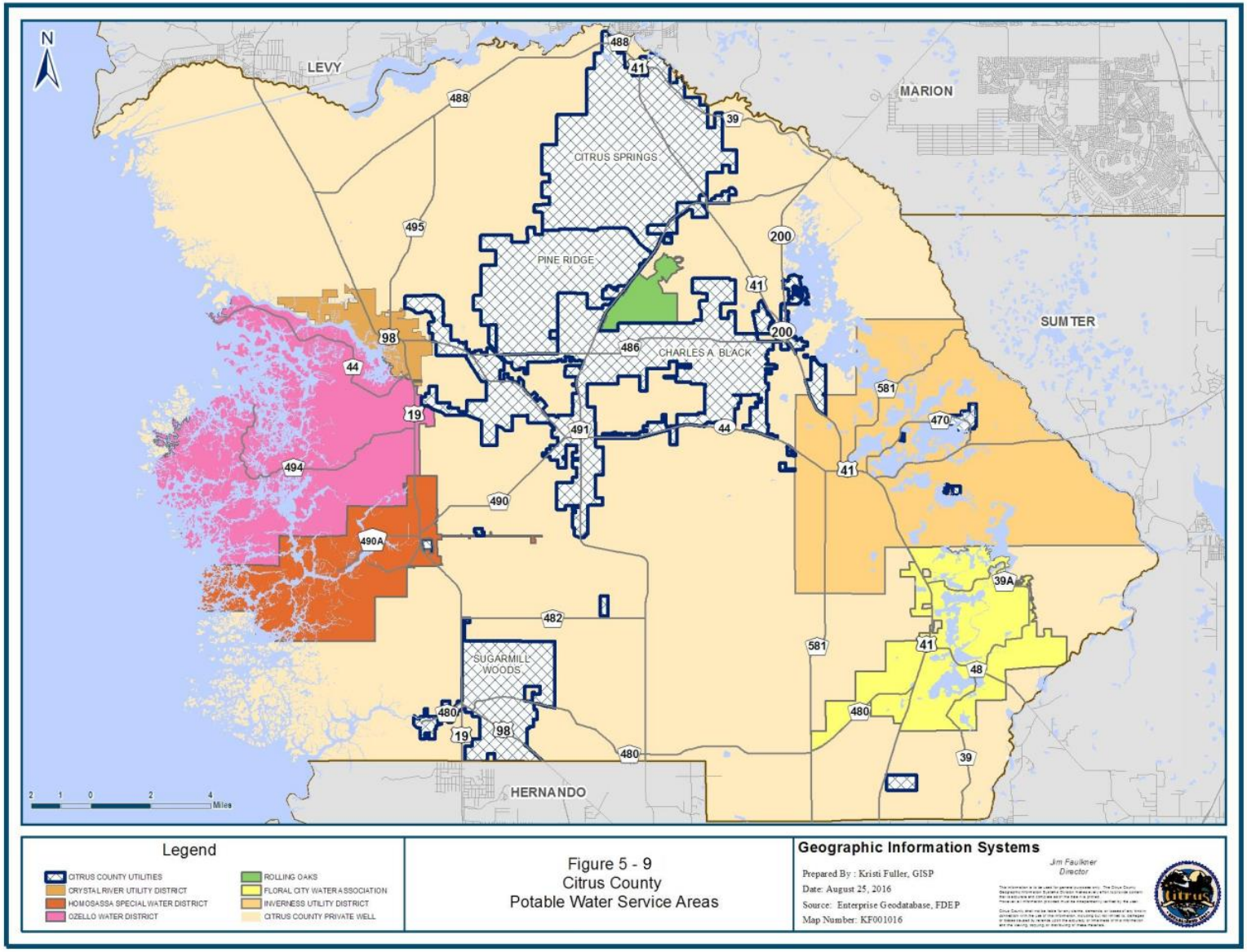
The predominant land use served by the Rolling Oaks Utilities potable water system is single family residential. However, future phases of the Beverly Hills Development, which is served by Rolling Oaks Utilities, include multifamily land uses. This facility has had a history of pressure problems associated with it due to the amount of irrigation and domestic use during the summer. The facility's past expansions include a new well and an additional storage tank. Should the facility need additional expansion the service area contains areas set aside for utility use.

It is anticipated that County water facilities will be servicing the area west of CR-491 across from the Beverly Hills Community and expansion of the Rolling Oaks Utilities system to this area is not expected. This, however, should not preclude the establishment of additional wells needed within the service area to serve Beverly Hills.

Rolling Oaks Utilities has several conservation policies in place, many of which duplicate the County policies. They include leak detection, customer leak notification (after no response from homeowner their water is shut off), meter replacement (300 per year), signs throughout the community warning residents to look out for leaks and broken sprinkler heads, and a publication that discusses water issues and conservation.

The current facility, permitted by SWFWMD permit No. 20004153, is served by nine wells with a permitted pumping capacity of 4.250 mgd peak month and has a storage capacity of 6 million gallons.

Figure 5 – 9 Citrus County Potable Water Service Areas



B. Community Water Systems

Citrus County has a large number of community water systems located throughout the county. The predominant land uses served by the community water systems are single-family residential subdivisions, recreational vehicle parks, and mobile home parks. The number of community water systems has decreased as Citrus County Utilities has connected many of these systems to the regional water system. In 2012 there were approximately 58 community wells in Citrus County, as compared to 43 community wells in 2017.

The name and location of the community water systems are represented in Figure 5-10 and the various components of each system are outlined in Table 5-11. Because the areas are small in size, they are represented as a point on a map, where the size and color of the dot indicates the population served. As Citrus County Utilities continues to connect these community water systems to the regional water system, Table 5-11, and Figure 5-10 will continue to be updated accordingly.

Usually package potable water facilities have enough capacity for the current number of persons served. There are facilities; however, that may not be capable of adequately serving their respective service area needs in the short and long term. These facilities may require expansion or linkage to a regional facility to meet the future demand.

Most problems associated with the general condition of small systems include the overabundance of impurities in the water produced. Iron and chlorides contamination is the most frequent problem with water produced by the package plants. The iron and chloride problem occurs most frequently in low-lying facilities near the gulf and the Lake Tsala Apopka Chain. Other impurities include the presence of color, turbidity, bacteria, and manganese. Over the past few years a number of systems experiencing this problem have connected to regional water systems.

Another problem associated with the condition of some facilities is that they may not be in compliance with FDEP requirements. In many cases the operator of a system neglects to issue a periodic report to the FDEP on the quality of the water produced. There are also problems with inadequate maintenance, or with the need for replacement of a component within the system.

Most systems have an expected life of approximately 10 to 20 years. It is expected that in the current planning period several of these systems will link to the regional water system.

TABLE 5-11
CITRUS COUNTY COMMUNITY WATER SYSTEMS INVENTORY AND ANALYSIS, 2017

CITRUS COUNTY WATER RESOURCES DEPARTMENT SYSTEMS				
Name of Facility	**El Dorado Estates**	**Gospel Island Estates**	**Oak Forest**	**Point O' Woods**
Entity Having Operational Responsibility	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461
Number of Connections		24	123	350
Population Served	188	62	420	878
Predominant Land Use	Subdivision	Single-Family	Single-Family	Single-Family
Other				

Name of Facility	**Spring Gardens**	**The Meadows**	**Water Oaks**	
Entity Having Operational Responsibility	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461	CCWRD 3600 West Sovereign Path, Suite 291, Lecanto, FL 34461	
Number of Connections	130	46	75	
Population Served	290	112	_____	
Predominant Land Use	Single-Family	Single-Family	Single-Family	
Other				
OTHER COMMUNITY POTABLE WATER SYSTEMS				
Name of Facility	**Aurora Acres**	**Backwater Heights**	**Big Pine Acres**	**Castle Lake Park**
Facility Address or Entity Responsible for Operation	Aurora Acres 11240 N. Northwood Drive Inglis, FL 34449	Sunshine Utilities 10230 SE Hwy 25 Belleview, FL 34420	Big Pine Acres 3290 W. Parkville St. Lecanto, FL 34460	Castle Lake Park 5254 S. Castle Lake Ave. Floral City, FL 34436
Number of Connections	39	126	34	72
Population Served	170	267	70	196
Predominant Land Use	Mobile Home Park	Single-Family	Mobile Home Park	Residential
Other	**Formerly known as Northwood Estates**			

TABLE 5-11 (Continued)
CITRUS COUNTY COMMUNITY WATER SYSTEMS INVENTORY AND ANALYSIS, 2017

OTHER COMMUNITY POTABLE WATER SYSTEMS				
Name of Facility	**Cedar Lake Estates**	**Cinnamon Ridge Utilities**	**Croft Bay Village**	**Crystal Acres MHP**
Facility Address or Entity Responsible for Operation	5890 N. Brookgreen Dr. Crystal River FL 34428	Gulf Hwy. Land Corp. 6909 Beach Blvd. Hudson, FL 34467	Croft Bay Village 4409 E. Lucy St. Hernando, FL 32650	Crystal Acres MHP 2850 N. Crede Ave. Crystal River, FL 34429
Number of Connections		192	25	46
Population Served	85	505	48	75
Predominant Land Use	Single-Family	Single-Family	Mobile Home Park	Mobile Home Park
Other				

Name of Facility	**Crystal Pointe LTD**	**Dunnellon Hills**	**Ellsworth Pointe**	**Evanridge Mobile Home Park**
Facility Address or Entity Responsible for Operation	Crystal Pointe 7820 W. Summertree Dr. Dunnellon, FL 34433	Hash Utilities P.O. Box 4 Inglis, FL 34449-0004	Sunshine Utilities 10230 SE Hwy 25 Belleview, FL 34420	Evanridge MHP 5662 S. Oakridge Dr. Homosassa, FL 34448
Number of Connections	158	43	24	61
Population Served	94	100	84	125
Predominant Land Use	Single-Family	Subdivision	Single-Family	Mobile Home Park
Other			Previously known as Ellisworth Pointe S/D	
Name of Facility	**Fort Cooper Mobile Home Community**	**Greenbriar I & II**	**Harbor Lights Mobile Resort**	**Hills of Avalon**
Facility Address or Entity Responsible for Operation	Fort Cooper MHP 4318 S. Florida Ave. Inverness, FL 34450	Greenbriar I & II 2450 N. Citrus Hills Blvd. Hernando, FL 32642	Harbor Lights Mobile Resort 8618 E. Gospel Island Rd. #35 Inverness, FL 34450	Constate Utilities 311 S. Missouri Ave Clearwater, FL 33516
Number of Connections	85			
Population Served	200	300	63	800
Predominant Land Use	Mobile Home Park	Subdivision	Mobile Home Park	Single-Family
Other				

TABLE 5-11 (Continued)
CITRUS COUNTY COMMUNITY WATER SYSTEMS INVENTORY AND ANALYSIS, 2017

OTHER COMMUNITY POTABLE WATER SYSTEMS (Continued)				
Name of Facility	**Inverness Park**	**Inverness Village**	**Kenwood North**	**Lucky Hills**
Facility Address or Entity Responsible for Operation	James/David Cook 1826 S. Main St. Akron, OH 44301	Inverness Village Condo Assoc., 2400 Forest Dr. Inverness, FL 34450	West Grover Cleveland Blvd Homosassa, FL 34447	Hash Utilities P.O. Box 4 Inglis, FL 34449-0004
Number of Connections	109	210	43	48
Population Served	200	250	172	80
Predominant Land Use	Mobile Home Park	Multifamily	Single-Family	Subdivision
Other		Within city limits of City of Inverness		

Name of Facility	**Meadow Drive South**	**Meadowood**	**Oak Pond Mobile Home Estates**	**Pinewood Mobile Home**
Facility Address or Entity Responsible for Operation	Aqua America PO Box 520247 Longwood, FL 32752	Meadowood 1820 N. Cherry Terrace Crystal River, FL 34429	Oak Pond 8587 E. Gulf to Lake Hwy. Inverness, FL 34450	Pinewood 3140 N. Turkey Oak Dr. Crystal River, FL 34429
Number of Connections	52	38	61	40
Population Served	159	86	70	100
Predominant Land Use	Single-Family	Single-Family	Mobile Home Park	Subdivision
Other				
Name of Facility	**Pine Valley Unit I**	**Royal Oaks Manor, Inc.**	**Sandy Oaks Mobile Home Park**	**South Dunnellon Water Assoc.**
Facility Address or Entity Responsible for Operation	Demetree Builders 3348 Edgewater Drive Orlando, FL 33804	Rolling Oaks General Partnership 6825 E. Downing St. Inverness, FL 34451	Sandy Oaks 6760 N. Lecanto Hwy Beverly Hills, FL 34465	S. Dunnellon Water Assoc. PO Box 608 Dunnellon, FL 34434
Number of Connections	50	12	80	169
Population Served	164	340	90	300
Predominant Land Use	Single-Family	Multifamily	Mobile Home Park	Single-Family
Other				

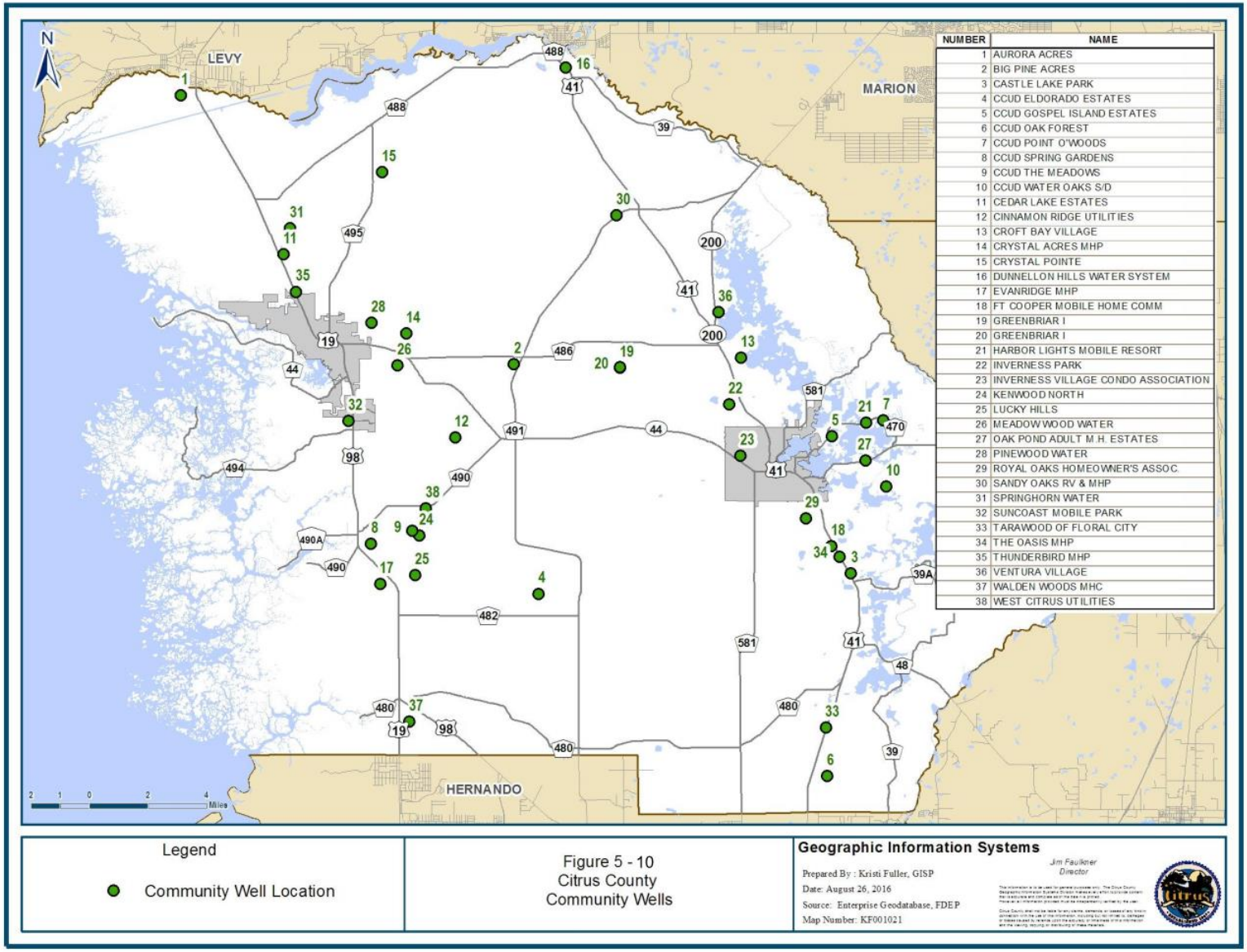
TABLE 5-11 (Continued)
CITRUS COUNTY COMMUNITY WATER SYSTEMS INVENTORY AND ANALYSIS, 2017

OTHER COMMUNITY POTABLE WATER SYSTEMS (Continued)				
Name of Facility	**Springhorn WS**	**Suncoast MHP**	**Tarawood of Floral City**	**The Oasis Mobile Home Park**
Facility Address or Entity Responsible for Operation	Hash Utilities P.O. Box 4 Inglis, FL 34449-0004	Suncoast MHP 130 S. Suncoast Blvd. Crystal River, FL 34428	Tarawood of FC 7358 E. Tarawood Blvd. Floral City, FL 34436	4624 S. Florida Avenue Inverness, FL 34450
Number of Connections	23	52	67	100
Population Served	25	80	140	100
Predominant Land Use	Single-Family	Mobile Home Park	Subdivision	Mobile Home Park
Other				Previously known as Ensigns Oasis

Name of Facility	**Thunderbird MHP**	**Ventura Village**	**Walden Woods MHC**	**West Citrus Utilities**
Facility Address or Entity Responsible for Operation	4401 N. Suncoast Blvd #62 Crystal River, FL 34428	Davis Property Management 20721 SW 46th Ave. Newberry, FL 32669	10455 S. Suncoast Blvd. Homosassa Springs, FL 34446	USA Utilities 6608 Watson Way Tampa, FL 33610
Number of Connections	55	35	87	56
Population Served	46	100	650	192
Predominant Land Use	Mobile Home Park	Multifamily	Mobile Home Park	Single-Family
Other				

Source: Citrus County Water Resources Department, 2017
Prepared by: Land Development Division, 2017

Figure 5 – 10 Citrus County Community Wells



IV. NEEDS ASSESSMENT

The needs assessment addresses both the 10-year water supply plan and the County's master plan.

As indicated in the existing conditions report and facilities inventory, there is a need to provide potable water through regional facilities to certain areas in the County. The Water Master Plan (Citrus County Utilities, C & D Engineering, Inc., 2000) contains strategies and programs to improve and upgrade existing systems. Citrus County has examined various alternatives to provide potable water to those areas not currently serviced. The Water Master Plan is shown in Figure 5-11.

The Water Master Plan (C & D Engineering, Inc., 2000) evaluated Citrus County's existing CCWRD water treatment and distribution facilities and population growth trends. The Water Supply Master Plan did not address needed additional sources of potable water. The study area generally consisted of CCWRD's service area and excluded areas served by municipal or private regional utilities and community systems (Figure 5-9). The planning period for the study extends through the year 2020.

Citrus County's major water production facilities, CAB-1 and CAB-2, are interconnected and combined, having seven wells permitted by the Southwest Florida Water Management District. The wells at CAB-1 tap the highly productive Floridan Aquifer at depths varying from about 300-420 feet deep and the two wells at CAB-2 tap the Floridan at depths of 143 and 173 feet. These wells have the potential to provide up to 16 mgd which is sufficient capacity to serve the projected future potable water needs of the population living within the CCWRD service area.

Future water use estimates show system wide demand rising to 13.25 mgd by 2035. This represents 82,003 people or about 44 percent of the County's projected 2035 population of 187,322. The estimates assume that all future population growth in the service area will be served by the County's water system and that all existing persons not currently connected to the system would remain disconnected from the system. It is the County's intent to encourage infill and new development to concentrate in those areas served by CCWRD by expanding the water distribution system throughout the service area.

Citrus County's potable water needs will be met through the establishment of this Plan which is outlined below.

V. FACILITIES PLAN

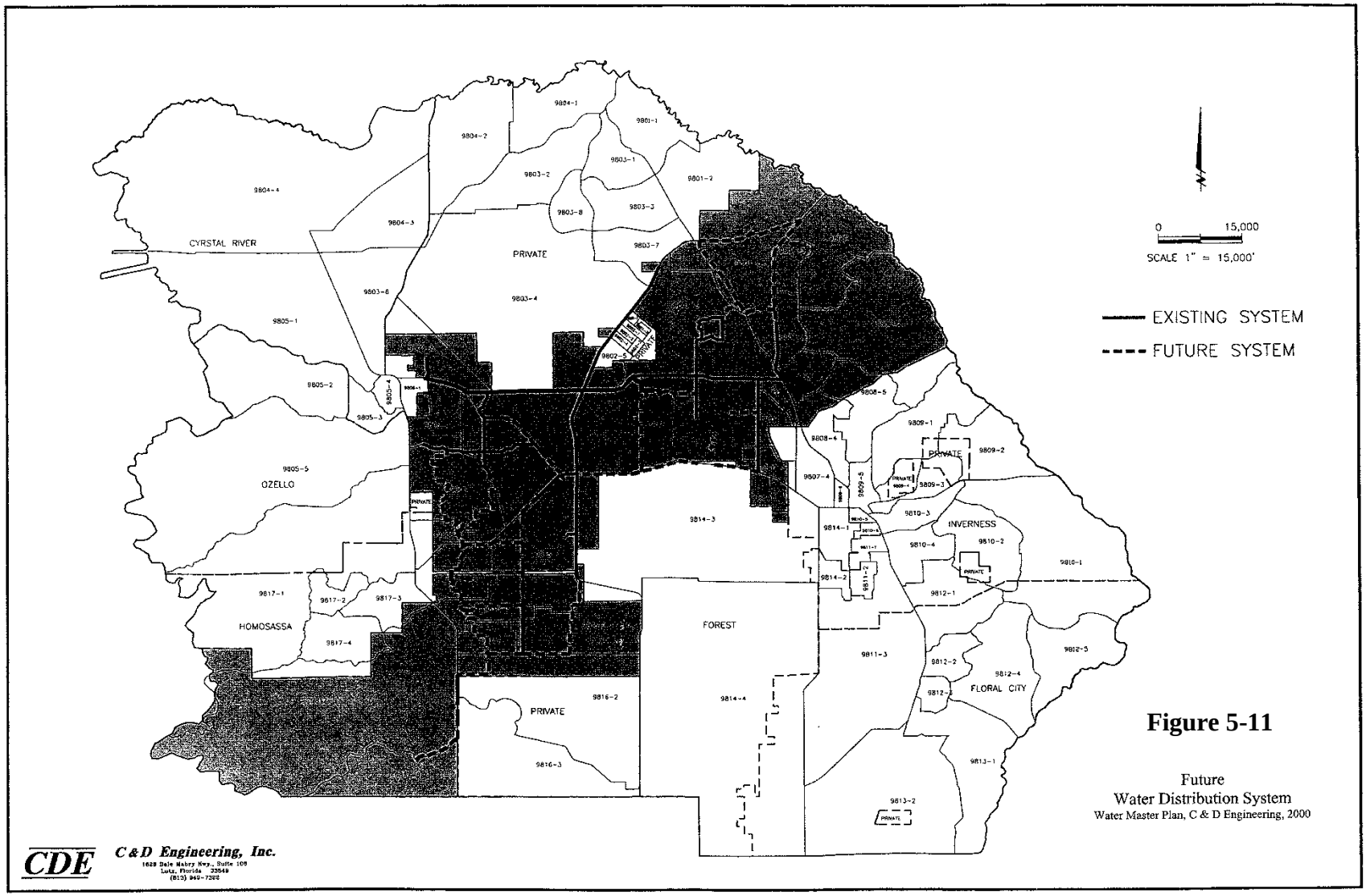
A. Water Supply Master Plan for Citrus County Utilities, 2000

The Water Supply Master Plan for Citrus County Utilities (C & D Engineering, Inc., 2000) was approved by the Citrus County Board of County Commissioners on January 9, 2001. The report examined existing facilities and projected demand and used computer modeling to estimate future system requirements. The report concluded that the current system had some existing deficiencies and would need to be expanded to accommodate future population as well. General recommendations included improving deficient portions of the existing distribution system by looping to eliminate dead end lines; replacing undersized piping throughout the system; replacing substandard system components, extending the existing system into infill and new growth areas; interconnecting isolated water systems where practical, and expanding fire protection capabilities in conjunction with improving deficient portions of the distribution system.

In addition to the capital improvement needed to accommodate future water demand, the County will need to seek a modification of its SWFWMD Water Use Permit to increase groundwater withdrawals to serve short-term population growth. Additional sources of potable water should not be needed as the existing system of wells has the potential to serve future growth. Alternative water sources such as increased conservation, desalination, and stormwater reuse where appropriate, should be investigated to help limit the need for increased use of ground water in order to protect ground water aquifer levels, spring and river base flows, and salinity regimes in the County's estuarine areas. Maintaining future fresh water flows to estuaries is critical to maintaining healthy, productive regional fisheries and native habitats for all manner of wildlife, from birds to manatees, from silver king tarpon to black mullet, as well as maintaining the regional economy and quality of life.

The system improvements required to provide adequate levels of potable water service through 2035 are outlined in Capital Improvements Element. Other projects required to properly implement system expansion are an increased water use permit allocation, control system upgrades at CAB-1 and CAB-2, and various improvements to pumping systems, valves, piping, emergency power systems, and other system components.

Figure 5 – 11 Water Master Plan



B. 10-Year Water Supply Facilities Work Plan

The Florida Legislature enacted bills in the 2002, 2004, 2005, 2013, 2014, and 2016 sessions to address the state's water supply needs. These bills, especially Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapter 163 and 373 Florida Statutes (F.S.) by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, Senate Bill 948 (2013 legislative session), added coordination efforts with the Department of Agriculture and Consumer Services regarding agricultural demand projections. In addition, these bills established the basis for improving coordination between the local land use planning and water supply planning.

The purpose of the Citrus County 10-Year Water Supply Facilities Work Plan (Work Plan) is to identify and plan for the water supply sources and facilities needed to serve existing and new development within the local government's jurisdiction. The Regional Water Supply Plan (RWSP) was approved by the Southwest Florida Water Management District (SWFWMD) on November 17, 2015. The RWSP covers Hernando, Citrus and Sumter Counties, as well as portions of Lake, Levy, and Marion Counties. Therefore, the deadline for local governments within the regional water supply planning area to amend their comprehensive plans to adopt a Work Plan is May 17, 2017.

According to state guidelines, the Work Plan and the comprehensive plan amendment must address the development of traditional and alternative water supplies, bulk sales agreements and conservation programs, agricultural demand, and reuse programs that are necessary to serve existing and new development for at least a 10-year planning period.

1. Relevant Regional Issues

The transfer of surface or groundwater from Citrus County to other areas, including the Tampa Bay Area, can have potentially negative environmental impacts. Tampa Bay Water, formerly known as the West Coast Regional Water Supply Authority, identified both ground and surface waters within the Withlacoochee Region as possible future sources. This would affect residents in surrounding counties, including Citrus, as claims on the most productive and desirable aquifer areas are exerted.

The Florida Supreme Court ruled in 1979, that in order to own water, an owner must capture, control, and possess the water beneath his/her property (Village of Tequesta v. Jupiter Inlet Corporation, May 1979, 371 So. 2d. 663). The court further ruled that if an owner were using the water for a beneficial use, subsequent property owners who begin competing for the same water cannot destroy the original beneficial use. Thus, the conclusion is that unless a property owner

actually uses the water beneath the site, it does not belong to him/her; the water belongs to the person that first drills for, and uses it.

This concept of establishing prior rights to groundwater through actual use has been a long-range goal of the WRWSA. Their efforts have been directed toward working with the four counties of the Authority (Hernando, Citrus, Sumter, and Marion) to regionalize water supply facilities in each County and place the larger wellfields in the most productive and desirable aquifer areas to begin establishing prior rights to the groundwater. Citrus County has implemented this venture. Portions of the Central Ridge area of the County have been identified and developed as the most hydrologically favorable areas for wellfields.

Additional regional issues include a bulk service agreement with the Ozello Water Association, and Memorandums of Understanding (MOU) with City of Crystal River, City of Inverness, and Rolling Oaks Utilities.

2. Potable Water Level of Service Standard

The level of service standard is established as 150 gpd/p. The basis for the standard is in accordance with the permits for the Citrus County Utility regional systems (Charles A. Black No. 1, Charles A. Black No. 2, Citrus Springs and Pine Ridge, and Sugarmill Woods) which are operated by the Citrus County Department of Water Resources.

The source of supply potable water level of service standard for Citrus County's various utility systems is mandated by the Southwest Florida Water Management District and incorporated into the County's various water use permits. The current mandate limits the County to a "Compliance Per Capita" use rate of 150 gallons per day per functional population equivalent. This use rate is a formula driven value calculated by dividing water withdrawals, as adjusted by various losses and credits, by a total functional population served. Functional population is a formula driven value representing a population equivalency taking into consideration items such as permanent residential population, seasonal population, and transient population. As a practical matter, this mandated use rate rations water use within Citrus County's major water systems (Charles A. Black No. 1, Charles A. Black No. 2, Citrus Springs, Pine Ridge, and Sugarmill Woods) to amounts less than those needed to support historical irrigation demands.

3. Population Information

The countywide population projections provided by Bureau of Economic Research (BEBR) do not account for seasonal populations. This information is important to consider when planning for water supplies, as it helps identify where growth is occurring and determine the peak demands on public facilities and services. The University of Florida Shimberg Center for Housing Studies provides population projections at the municipal level. In 2015, only 6.77% of

the total population of Citrus County resided in the Cities of Inverness and Crystal River. The Shimberg Center projects the unincorporated areas to grow at a faster rate than the municipal centers of Inverness and Crystal River, so that by year 2035, the municipal population will only account for 5.83% of the County's population.

Seasonal population is an important factor for Florida communities. While Citrus County is not considered a major tourist area as compared to other areas of the state, there are people that spend the winter months in the County. A significant amount of Citrus' seasonal population is comprised of retirees.

Table 5-11A provides population projections for the County through 2035. These population projections are for the Cities of Inverness and Crystal River, and the unincorporated areas of the County, including an estimated seasonal population. Total population is represented in Table 5-11A as opposed to the population served by utility agencies as shown in Table 5-11B. Population served is less than total population for several of the service areas.

For the purposes of this Work Plan, the unincorporated seasonal population was estimated as a proportion (8.5%) of the total population.

4. Current and Future Geographic Areas Served

Figure 5-10 depicts current and potential future boundaries of County owned utilities and other public or private water providers.

TABLE 5-11A
CITRUS COUNTY POPULATION PROJECTIONS
2010 - 2035

Jurisdiction	2010 Base	2015	2020	2025	2030	2035
City of Inverness[1]	7,210	7,226	7,360	7,462	7,535	7,673
City of Crystal River[1]	3,108	3,113	3,023	2,934	2,845	2,781
Unincorporated Citrus County[2]	130,918	131,162	138,917	145,804	151,720	157,046
Unincorporated Citrus County Seasonal*	12,005	12,028	11,808	12,394	12,897	13,349
TOTAL	**153,241**	**153,529**	**161,108**	**168,594**	**174,997**	**180,849**

Sources:
[1] University of Florida Shimberg Center for Housing Studies, Florida Housing Data Clearinghouse
[2] Bureau of Economic and Business Research(BEBR) 2016
*Seasonal projections by Land Development Division using U.S. Census Bureau American Fact Finder
Population projections may differ from projections in other elements due to accounting for the population of the Cities of Inverness and Crystal River, as well as accounting for the unincorporated county's seasonal population. Additionally, each element is updated separately with the most recent and relevant data and analysis available at the time of the update.
Prepared by: Citrus County Land Development Division, 2017

5. Population and Potable Water Demand Projections by Each Local Government or Utility

Table 5-11B shows the population and potable water demand projections for the potable water service areas and future service areas within Citrus County. A list of Community Water Systems which are small utilities associated with single-family residential subdivisions, recreational vehicle parks, mobile home parks, and other small communities in Citrus County is contained in Table 5-11, Citrus County Community Water Systems Inventory and Analysis, 2017.

a. Citrus County Utility System

The Citrus County Utility system includes the Charles A. Black No.1, Charles A. Black No.2, Citrus Springs, Pine Ridge, and Sugarmill Woods systems. In addition, the Ozello Water Association purchases water from Citrus County Utilities, where the source is the Charles A. Black Facility.

The combined Citrus County Utility system will have a projected 2035 demand of 13.25 mgd as identified in Table 5-11B. The permits for Charles A Black, Citrus Springs-Pine Ridge, Sugarmill Woods, and the Ozello Water Association expire in 2022, 2015, 2019, and 2021, respectively. Citrus County also holds permits for a number of smaller systems which have varying permit expiration dates. Citrus County is working to interconnect these smaller systems and transfer the demand to the larger systems that it operates. In order to meet demand, the permits for each of the facilities will need to be renewed in sufficient time to meet demand.

b. Crystal River Utility System

The City of Crystal River has about 17 residents in the southern portion of the city that receive potable water from CCRWD. In this area of the County/City the potable water utility provider is Ozello Water Association. The Ozello Water Assn. purchases water from CCWRD and provides water to City residents. The City of Crystal River bills the City residents for their potable water use. Citrus County has a MOU with the City of Crystal River and an interconnect for potable water.

The projected 2035 demand for the Crystal River residents on CCWRD systems is 0.762 mgd. In order to meet demand, the permits for each of the CCWRD facilities will need to be renewed in sufficient time to meet demand.

c. Inverness Utility System

The City of Inverness has about 5,077 residents in the city that receive potable water from CCWRD. The City of Inverness' primary source of water for potable, agricultural, and industrial use is groundwater from the Floridan aquifer. Presently, 100 percent of water used for these purposes is withdrawn from the Floridan aquifer. Citrus County has a MOU with the City of Inverness for potable water and an interconnect for that purpose.

The City of Inverness is projected to have a 2035 demand of 1.342 mgd. Their permit will expire in 2021. In order to meet demand, the utility will need to implement conservation measures along with renewing the permit within the planning period.

d. Floral City Water Association

The Floral City Water Association is projected to have a 2035 demand of 0.297 mgd. Their permit will expire in 2018. In order to meet demand, the utility will need to implement conservation measures along with renewing the permit within the planning period.

e. Homosassa Special Water District

The Homosassa Special Water District is projected to have a 2035 demand of 0.817 mgd. Their permit will expire in 2022. In order to meet demand the utility will need to implement conservation measures along with renewing the permit within the planning period.

f. Rolling Oaks Utilities

Rolling Oaks Utilities is projected to have a 2035 demand of 1.644 mgd. Their permit will expire in 2018. In order to meet demand, the utility will need to implement conservation measures along with renewing the permit within the planning period. Citrus County has a MOU with the Rolling Oaks Utilities and an interconnect for potable water to be utilized in emergency situations only.

TABLE 5-11B
POPULATION AND POTABLE WATER DEMAND PROJECTIONS
2015 - 2035

Utility Name	2015	2020	2025	2030	2035
Citrus County Utilities					
County Population Served	58,406	65,260	71,532	77,087	82,003
Demand (mgd)	9.43	10.54	11.555	12.455	13.25
Total Utility Service Area Pop.	58,406	65,260	71,532	77,087	82,003
Demand (mgd)	9.43	10.54	11.555	12.455	13.25
City of Inverness					
County Population Served	5,770	5,952	6,119	6,267	6,397
Demand (mgd)	0.761	0.785	0.806	0.826	0.843
Total Utility Service Area Pop.	9,194	9,480	9,742	9,975	10,181
Demand (mgd)	1.121	1.250	1.284	1.315	1.342
City of Crystal River					
County Population Served	17	17	17	17	17
Demand (mgd)	0.002	0.002	0.002	0.002	0.002
Total Utility Service Area Pop.	6,186	6,196	6,205	6,213	6,235
Demand (mgd)	0.756	0.757	0.758	0.759	0.762
Floral City Water Association					
County Population Served	4,685	4,795	4,895	4,984	5,063
Demand (mgd)	0.275	0.281	0.287	0.292	0.297
Total Utility Service Area Pop.	4,685	4,795	4,895	4,985	5,063
Demand (mgd)	0.275	0.281	0.287	0.292	0.297
Homosassa Special Water District					
County Population Served	5,558	5,665	5,763	5,850	5,935
Demand (mgd)	0.765	0.779	0.793	0.805	0.817
Total Utility Service Area Pop.	5,558	5,665	5,763	5,850	5,935
Demand (mgd)	0.765	0.779	0.793	0.805	0.817
Rolling Oaks Utilities, Inc.					
County Population Served	11,356	11,519	11,666	11,793	11,904
Demand (mgd)	1.568	1.590	1.611	1.628	1.644
Total Utility Service Area Pop.	11,356	11,519	11,666	11,793	11,904
Demand (mgd)	1.568	1.590	1.611	1.628	1.644
Small Utilities (Community Water Systems)					
County Population Served	4,182	4,235	4,284	4,327	4,364
Demand (mgd)	0.619	0.629	0.636	0.644	0.651
Total Utility Service Area Pop.	4,182	4,235	4,284	4,327	4,364
Demand (mgd)	0.619	0.629	0.636	0.644	0.651
Domestic Self Supply					
Population Served	55,077	58,755	62,126	65,122	67,776
Demand (mgd)	6.301	6.722	7.107	7.450	7.754
Totals					
Total County Population Served	148,866	160,028	170,242	179,298	187,322
Total Demand (County)	20.167	21.776	23.248	24.552	25.708
Total Demand (Utilities)	15.100	16.303	17.403	18.377	19.242

Source: SWFWMD 2016 Regional Water Supply Plan Community Sheets
Prepared by: Citrus County Land Development Division, 2017

g. Ozello Water Association

Ozello Water Association is projected to have a 2035 demand of 0.482 mgd. Their permit will expire in 2021. Citrus County has a MOU with the Ozello Water Association to provide bulk water and an interconnect for that purpose. Refer to Table 5-11C.

TABLE 5-11C
OUTSIDE JURISDICTION SERVICE & BULK PURCHASE AGREEMENTS
2015 - 2035

Utility Name	2015	2020	2025	2030	2035
Ozello Water Association					
County Population Served	3,016	3,829	3,840	3,851	3,863
Demand (mgd)	0.446	0.448	0.449	0.451	0.452
Total Utility Service Area Pop.	4,064	4,076	4,088	4,098	4,116
Demand (mgd)	0.475	0.477	0.478	0.478	0.482

Source: SWFWMD 2016 Regional Water Supply Plan Community Sheets
Prepared by: Citrus County Land Development Division, 2017

h. Small Private Water Utilities

The nature of development in Citrus County has resulted in a large number of privately-owned community water systems. Several of the community water systems are now owned and maintained by CCWRD. The community water systems are discussed on page 5-104 and in Table 5-11.

i. Self Supply

A significant number of individual water users within unincorporated areas of the County are self supplied through domestic wells.

6. Future Water Supply Development Options

By 2035, the water system service area is projected to have a functional population of 180,849 resulting in an annual average daily demand of 25.708 mgd. Future water supply demands can be met using either traditional or alternative water supply projects. Options available to provide future water supply demand includes fresh groundwater, water conservation efforts, reclaimed water, surface water / stormwater, brackish water, and seawater desalination.

a. Fresh Ground Water – The Charles A. Black Wellfield Expansion is an option that would expand the production of the system to 6.94 mgd annual average and 9.9 mgd peak capacity. Infrastructure improvements are not required. The cost associated with the project would be for permit modifications to increase groundwater production. Refer to Table 5-11D.

b. Surface Water/Stormwater – The Withlacoochee River has the potential to provide 50 mgd of water supply through the development of two surface water supply facilities. The use of this surface water would extend the availability of groundwater by reducing the frequency and duration of groundwater withdrawals. The Withlacoochee River near Holder, FL., could potentially serve customers in northwest Citrus County. The Withlacoochee River at Lake Rousseau could potentially serve customers in northwest Citrus County. Refer to Table 5-11D.

c. Brackish Water – The use of brackish groundwater is an option used in other regions where potable water options are limited. Brackish groundwater would be a costly option in Citrus County given the availability of fresh ground water.

d. Seawater Desalination – A seawater desalination plant could be co-located at the Duke Energy's Crystal River Power plant and generate up to 15 mgd. Withdrawal would be from the Cross Florida Barge Canal and would include construction of intake, pumping, piping, treatment, and storage facilities. Refer to Table 5-11D.

e. Reclaimed Water – Beneficial uses of reclaimed water include golf course irrigation, industrial uses and new residential developments. Water supply development options for reclaimed water are provided in Table 5-11E.

TABLE 5-11D
WATER SUPPLY DEVELOPMENT OPTIONS

Source	Project[1]	Quantity Produced, mgd	Capital Cost, Dollars	Capital Cost per mgd	Total Cost per 1,000 Gallons	Operation and Maintenance Costs
Fresh Groundwater	Charles A. Black Wellfield Expansion	2.34	$ 65,000	$ 27,800	$ 0.04	$ 217,000
Surface Water /stormwater Options	Withlacoochee River Surface Water Supply near Holder	25	$ 406,409,000	$ 16,256,000	$ 3.74	$ 11,250,000
	Withlacoochee River Surface Water Treatment Facility at Lake Rousseau	25	$ 306,530,000	$ 12,261,000,000	$ 3.12	$ 11,300,000
Seawater Desalination Options	Seawater Desalination Crystal River Power Station	15	$ 221,804,000	$ 14,800,000	$ 5.68	$ 18,684,000

[1] Entity responsible for implementation is the WRWSA
Source: Southwest Florida Water Management District, 2015 Regional Water Supply Plan, Northern Planning Region, Chapter 5, Water Supply Development Options, Tables 5-1, 5-13, 5-14, and 5-15
Prepared by: Land Development Division, 2017

TABLE 5-11E
WATER SUPPLY DEVELOPMENT OPTIONS FOR RECLAIMED WATER

Reuse System Expansion	Supply, mgd	Offset, mgd	Capital Cost, Dollars	Cost / Benefit	Operation and Maintenance Costs
Rolling Oaks WWTP	0.35	0.24	$ 2,821,000	$ 2.31	$ 0.30
Brentwood WWTP	0.42	0.29	$ 3,385,200	$ 2.30	$ 0.30
Meadowcrest WWTP	0.20	0.15	$ 1,612,000	$ 2.12	$ 0.30
Sugarmill Woods WWTP	0.44	0.33	$ 3,546,400	$ 2.12	$ 0.30
Citrus Springs WWTP	1.04	0.73	$ 8,382,400	$ 2.26	$ 0.30
City of Crystal River WWTP	0.05	0.05	$ 0	$ 0.00	$ 0.30
Point-O-Woods WWTP	0.02	0.015	$ 161,200	$ 2.12	$ 0.30
City of Inverness WWTP	0.13	0.09	$ 1,047,800	$ 2.29	$ 0.30

Source: Southwest Florida Water Management District, 2015 Regional Water Supply Plan, Northern Planning Region, Chapter 5, Water Supply Development Options, Table 5-11
Prepared by: Land Development Division, 2017

7. Non-Potable Water Supply Demand

Non-potable water is a broad category that includes water for agricultural, industrial/commercial, mining/dewatering, power generation, landscape/ recreational, and environmental restoration. Agricultural water supply is used to irrigate crops as well as other miscellaneous uses associated with agricultural commodity production. Irrigated crops include citrus, row crops, grasses, nurseries, and pasture. The miscellaneous supply demands include aquaculture, dairy, poultry, and swine. Agriculture water supply demands are expected to remain at or below the current demand levels through the 10 year projected planning period. A change in the methodology used to permit water use in mining operations could help mitigate the projected increase to the projected demand in water.

Commercial potable and non-potable water supply is used in various types of commercial and industrial uses including manufacturing, food processing, mining, dewatering, and power generation. Water used for power generation is primarily used for cooling or other purposes associated with the generation of electricity. Commercial water supply demands are expected to increase in Citrus County through the 10 year projected planning period.

Some alternative sources of non-potable water for agricultural and commercial use are rainwater harvesting and reclaimed water. Rainwater harvesting could offset the amount of water used by collecting surface water runoff and then pumping the collected runoff to be utilized. The use of reclaimed water is dependent on the location of the reclaimed water facilities in relation to sites that could benefit from it.

TABLE 5-11F
CITRUS COUNTY NON-POTABLE WATER DEMAND PROJECTIONS, MGD
2010 – 2035

Water Use Category	Planning Period						Total Increase	
	2010 Base	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	mgd	%
Agriculture	1.82	1.77	1.76	1.80	1.86	1.94	0.12	6.8
I/C, M/D	0.75	0.76	0.79	0.81	0.83	0.85	0.10	13.2
Power Generation	2.33	2.36	2.43	2.50	2.56	2.64	0.31	13.2
Landscape/ Recreation	4.55	4.56	5.11	5.66	6.21	6.76	2.20	48.3

Note: I/C = Industrial/Commercial, M/D = Mining/Dewatering
Source: SWFWMD 2016 Regional Water Supply Plan, Northern Planning Region
Prepared by: Citrus County Land Development Division, 2017

8. Conservation and Reuse

a. Citrus County Department of Water Resources has enacted a Water Conservation Plan as part of their water use permits. The Water Conservation Plan includes measures to reduce demand on both the supply side and demand side.

The following water conservation measures are identified in the conservation plan:

- Informative Customer Billing
- Leak Detection Program
- Meter Replacement Program
- Customer Leak Notification
- Water Conservation Rate Structure
- Toilet and High Efficiency Washer Rebate Program
- Free Indoor Retrofit Kits
- Irrigation System Audits
- Water Restriction Enforcement
- Bill Inserts
- Florida Friendly Landscape Program

As a result of these measures the Citrus County Water Resources Department has conserved approximately 17.262 million gallons of water in 2015. These water conservation measures will have a substantial impact on the amount of water available for future needs. Table 5-11G shows the quantified amount of water that is saved by some of these programs and projects what those savings will be through to 2035.

TABLE 5-11G
QUANTIFIED WATER CONSERVATION SAVINGS PROJECTED THROUGH 2035

Conservation Measure	2015 Water Savings (gallons)[1]	Projected Savings (million gallons)*
WaterSense Toilet Rebate	2,742,647	13,482
Energy Star Clothes Washer Rebate	684,728	2,937
Phase III Irrigation Evaluations	1,642,500	Varies
Rain Sensor Device Rebate	5,511,500	39,967
Bathroom Faucet Aerator and Low Flow Shower Heads	6,514,092	36,969
Irrigation Audit w/ Rain Sensor Device Installation	167,203	1,284
Total	**17,262,670**	**94,642**

Source:
[1] Citrus County Department of Water Resources conservation projections, 2016
* Projected savings by Land Development Division, 2017
Prepared by: Citrus County Land Development Division, 2017

Seawater desalination at the Duke Energy power plant and expansion of existing wastewater treatment facilities and collection systems to increase reuse within the county are all viable options for increasing the amount of reclaimed water available, lessening the need for potable water.

Recreational and aesthetic water supply is used for golf courses, parks, medians, landscaping, and other large green areas. Golf courses historically have a high demand for irrigation. Growth in golf courses is projected for Citrus County, which in turn increases the demand for water supply. Landscaping and aesthetic water supply demand has increased along with the population of the County. As the population is projected to increase, aesthetic water supply demand is also projected to increase. These water supply demands increase for recreational and aesthetic use can be significantly reduced with extensive development of reclaimed water sources.

Citrus County produces reuse water at the Meadowcrest WWTP, which is sent to the Black Diamond Golf Course. Projections for 2035 estimate that 2,044 million gallons per year could be used for golf course irrigation.

A reclaimed water line is proposed to be installed at the Sugarmill Woods WWTP in 2020. Sugarmill Woods WWTP currently produces approximately 500,000 gallons of waste water per day that could potentially be used to irrigate nearby golf courses.

b. City of Inverness has adopted a Water Conservation Plan which was developed by the City Public Works Department. Conservation measures include a water conservation rate structure, customer billing and meter reading procedures, water loss detection, and Land Development Code standards regarding landscaping and irrigation.

c. City of Crystal River's primary conservation policy is the use of a water conservation rate structure which charges a higher rate with higher consumption by the resident. The City also makes use of educational pamphlets available to customers in the Utility Billing department as well as in the form of billing inserts and notations on customer statements. Additionally, the City's water utility contractor conducts meter audits and repairs and calibration of large meters, spot checking residential meters, and making repairs, replacements and new installations as necessary. Finally, partnering with the Southwest Florida Water Management District, the city administers a leak detection program.

The water conservation efforts of the Floral City Water Association, Homosassa Special Water District, and the Rolling Oaks Utilities are discussed in Section III, Facilities Inventory.

9. Capital Improvement Projects

A listing of the traditional capital improvement projects identified for the first five years of the work plan can be found in Chapter 12 - Capital Improvements Element (CIE) in Table 12-1.Utilities. The CIE is updated annually pursuant to Florida Statutes following adoption of the budget. The Five-Year Capital Improvements Schedule is an inventory containing those needed improvements which are of relatively large scale, are generally non-recurring high cost, and which may require multi-funding. The projects included in the Capital Improvements Schedule are consistent with the Work Plan's planning period and are necessary to maintain adopted level of service standards.

C. Interlocal Agreements

In accordance with previous studies and proposals, the County and the City of Inverness have entered into an Interlocal Agreement to protect the health, safety, and welfare of its citizenry and discourage the proliferation of package plants in environmentally sensitive areas and promote compact orderly growth. The Agreement allows the City to provide water service to a specified area of unincorporated Citrus County within the Inverness area. Additional agreements with other regional utility operators may be considered at a future date.

D. Community Water Systems

All community water systems, particularly in the Coastal and Lakes Areas, should link, whenever possible, to a regional potable water system. This recommendation is based on the fact that there is a high incidence of chloride, iron, and other contaminants in many of the community water wells, particularly in the Coastal and Lakes Areas. The regional systems generally do not have problems with contamination. If contamination does occur, the regional systems have the water resources to overcome the problem.

A second reason is regional facilities have the capacities and electrical generating units capable of supplying water during electric outages often associated with hurricanes, tornadoes, and other natural disasters or power plant disabilities.

Since initial adoption of this Plan, many coastal systems have connected to regional systems. Additional connections are anticipated in the future.

E. Wellhead Protection

As the County continues to experience development, the dependence on regional water supplies increases along with the investment in infrastructure for treatment and distribution. The need for more defined wellhead protection standards based on actual conditions and systems is needed. The wellhead protection plan conducted by the Homosassa Special Water District provides a framework by which other regional wellheads can be studied and protection standards established. The County should investigate funding sources and assistance to conduct these more detailed analyses.

F. Resource Protection and Planning

Current Florida law provides limited protection to export local water resources outside the region by out of County water consumers. The damage that can occur is clearly exemplified by the loss of wetlands and lakes within Pasco County since development of regional wellfields by Tampa Bay Water (TBW), formerly known as the West Coast Regional Water Supply Authority (WCRWSA), to serve the highly developed areas within the Tampa Bay Area.

TBW identified both ground and surface water sources within the Withlacoochee Region as future sources to meet their anticipated demand. It is imperative that the County in partnership with the WRWSA and other jurisdictions within the Region develop the ability through the Comprehensive Plan and land development regulations to prevent or at least limit export of water to levels that do not have environmental, cultural, or economic impacts. The County should also encourage the State and the SWFWMD to adopt regulations that encourage urban areas to utilize "local sources" first or provide potable water through reuse, reverse osmosis, or desalinization.

REFERENCES

Water Master Plan for Citrus County Utilities, C & D Engineering, Inc., Lutz, FL, December 2000.

Florida Statutes, http://www.leg.state.fl.us/Welcome/index.cfm

Florida Administrative Code, http://fac.dos.state.fl.us

Water and Wastewater Rate Study, Public Resources Management Group, September, 2015.

http://www.citrusbocc.com/waterres/conservation/conservation.htm/progress-report-2015

Please note that website addresses may change fairly frequently, however, the content will be available through a redirect or can be located via a search engine.

VI. GOALS, OBJECTIVES, AND POLICIES

Goal # 8 - To provide a reliable, efficient and cost-effective water supply system which delivers adequate quantity and quality of water to satisfy domestic, industrial, commercial, and agricultural purposes without compromising the sustainability of the County's water resources, while promoting compact urban growth, and economic development.

Level of Service

Objective 8.1
The County shall assure that adequate Levels of Service are provided by water facilities within their Water Service Area for existing and future populations through the year 2035.

Policy 8.1.1
The Level of Service standards of 150 gallons per capita per day has been established for the County and shall be used in determining the availability of facility capacity and demand created by new development.

Policy 8.1.2
Potable Water Concurrency shall be met at time of development order approval.

Policy 8.1.3
The County shall update facility demand and capacity information with Comprehensive Plan amendment process.

Existing Deficiencies and Future Needs

Objective 8.2
Citrus County will provide potable water facilities to meet existing and projected demands throughout the planning period by maximizing use of existing facilities and discouraging sprawl development. This will be accomplished by supporting the implementation of WRWSA's Wellfield and Water Supply System Development Project and the Water Master Plan for Citrus County Utilities (C & D Engineering, 2000), and by requiring development to hookup to regional potable water systems when available.

Policy 8.2.1
Connection to County potable water facilities shall be conducted to meet private and public needs.

Policy 8.2.2
The provision of potable water facilities in the service territory of other public or private utility systems shall be coordinated with the appropriate utility provider and, via the Interlocal Agreement where applicable. In the absence of an Interlocal Agreement, the County reserves the right to serve these areas.

Policy 8.2.3
No permits shall be issued for new development which would result in an increase in demand in deficient facilities beyond the plants permitted capacity.

Policy 8.2.4
All developments must be served by a regional potable water facility as soon as the service is available.

Policy 8.2.5
Encourage proposed developments to hook up to existing regional potable water facilities, if available, and discourage construction of additional package facilities.

Policy 8.2.6
Citrus County will support water system acquisition, construction, and maintenance through, but not limited to, user fees, construction charges, and grants and not ad valorem taxes.

Policy 8.2.7
Proposed capital improvement projects will be evaluated and ranked according to the following level guidelines:

Level One - whether the project is needed to protect public health and safety, to fulfill the County's legal commitment to provide facilities and service, to preserve or achieve full use of existing facilities, or if permitted capacity has been reached.

Level Two - whether the project increases efficiency of use of existing facilities, prevents or reduces future improvement costs, provides service to developed areas lacking full service or promotes infill development.

Level Three - whether the project represents a logical extension of facilities and services within a designated service area.

Policy 8.2.8
The County with the assistance of the Withlacoochee Regional Water Supply Authority and the Southwest Florida Water Management District (SWFWMD) will identify future water needs and supplies, conceptually for a 20-year horizon, and will rely on the SWFWMD's District Water Management Plan and appropriate ground water technical studies, and the Regional Water Supply Plan, to identify potable water sources sufficient to meet estimated demand.

Policy 8.2.9
In order to protect aquifer recharge to maintain long term water supplies, the County shall require that post-development recharge volumes shall equal or improve historical pre-development conditions as provided by the standards used by the SWFWMD, FDEP and the rules and regulations adopted or implemented by the Citrus County Board of County Commissioners. All recharge water shall be treated, as needed, to prevent nutrients and other contaminants from entering the aquifer.

10 Year Water Supply Plan

Objective 8.3:
To appropriately plan for the County's Water Facilities to address current and future demands.

Policy 8.3.1
The County shall identify, evaluate, and select the most cost-effective means of ensuring an adequate water supply including surface water supply, reuse of treated wastewater, demand reduction, conservation, and peak saving through system integration.

Policy 8.3.2:
Ensure that the County's Water Facilities are planned in a consistent manner with the County's Comprehensive Plan, especially with the Future Land Use Element and other infrastructure elements.

Policy 8.3.3:
Ensure that the County's Water Facilities are planned with the actions defined within the Regional Water Supply Plan prepared by the Southwest Florida Water Management District (SWFWMD).

Objective 8.4:
To ensure that the Potable Water System has adequate facilities maintenance and capacity to satisfy the existing and projected demand.

Policy 8.4.1:
Continue to provide regular inspection and preventative maintenance for all the water facilities as required.

Policy 8.4.2:
The water treatment facilities within the County shall supply water which meets all applicable federal, state, regional, and local standards.

Policy 8.4.3:
The County shall develop and maintain a rehabilitation and replacement program directed at the older portions of the County's existing utility systems.

Policy 8.4.4:
The County will continue to monitor current and future developments and will determine required improvements to accommodate these developments.

Policy 8.4.5:
Provide treated water to the water distribution system at adequate volume with sufficient pressure to satisfy the demands for potable water.

Objective 8.5:
To expand and improve the efficiency of the County's water conservation and demand reduction programs in order to reduce per capita consumption of potable water.

Policy 8.5.1:
The County shall continue its program to research, develop and promote efficient, economically feasible and environmentally sensitive water use and conservation techniques and promote implementation.

Policy 8.5.2:
The County shall continue to reduce potable water consumption through water conservation rates, operational measures, rebate programs, landscape and irrigation efficiency programs, educational initiatives, research and evaluation, and re-use alternatives.

Policy 8.5.3:
The County shall encourage the use of non-potable water, when potable water is not required, in order to reduce the unnecessary use of potable water.

Objective 8.6:
To maintain equitable and financially sound fees and rate structures to support fiscal and capital programs necessary to sustain and develop adequate potable water system facilities.

Policy 8.6.1:
The potable water fees, rates, and charges shall be based on sound economic and engineering practices.

Policy 8.6.2:
The fees, rates, and charges shall cover system operating costs, programmed projects in the CIP, and estimated funds for emergency repairs.

Policy 8.6.3:
Charges for potable water system usage shall reflect all operation costs consistent with the amount of water demand by each system consumer.

Policy 8.6.4:
Explore local, state and federal grants to help finance water programs.

Policy 8.6.5:
To annually monitor whether the costs of acquiring, interconnecting, and upgrading the facilities to current standards will be offset by the existing and projected rate base of the utility.

Objective 8.7:
To coordinate and cooperate with all federal, state, regional and local agencies to insure a safe and sufficient water supply to be provided at a cost-effective rate.

Policy 8.7.1:
Coordinate with other County departments on planning capital improvements projects in order to reduce costs and promote efficient use of resources.

Policy 8.7.2:
The County shall continue to participate and assist the Withlacoochee Regional Water Supply Authority, the Southwest Florida Water Management District, and the United States Environmental Protection Agency in developing innovative techniques to augment existing water supplies to provide for future demands.

Policy 8.7.3:
The County shall ensure that their 10-year Water Supply Facilities Work Plan is updated within 18 months of the Southwest Florida Water Management District updating their plan.

Saltwater Intrusion

Objective 8.8
Continue a monitoring system in conjunction with the Citrus County Public Health Unit, the Florida Department of Environmental Protection and the Southwest Florida Water Management District to allow the County to evaluate progress toward reducing saltwater intrusion.

Policy 8.8.1
Coordinate with applicable federal, state, regional, and local agencies to establish baseline studies on the saltwater/freshwater interface.

Policy 8.8.2
Establish reporting procedures from the Citrus County Public Health Unit and/or Florida Department of Environmental Protection to the Water Resources Department on water tests that exceed 250 parts per million in chloride concentration.

Policy 8.8.3
Remove to the maximum extent feasible all potable water wells from use in the saltwater interface area.

Policy 8.8.4
Coordinate with private and public utilities to establish water supply facilities in hydrologically safe areas from saltwater intrusion.

Policy 8.8.5
Aquifer recharge areas shall be protected from point sources of sewage effluent, septic tank effluent pollution, and saltwater intrusion.

Resource Protection

Objective 8.9
Citrus County will minimize environmental and community impacts from water withdrawals by keeping water pumpage below levels that would cause significant harm to native communities, spring flow, private well dependence, and/or water quality.

Policy 8.9.1
The County will support the SWFWMD in adopting and implementing a "local sources first" policy.

Policy 8.9.2
The County will support the development of local water sources, first, prior to any import of water from outside the region.

Policy 8.9.3
Monitoring the issuance of water use permits by the Southwest Florida Water Management District (SWFWMD) and intervening as necessary to ensure that:

Any applicant proposing to import water from Citrus County has assessed all locally available sources, including water conservation, wastewater reuse, and desalination; and the withdrawal and transport of water from Citrus County will cause no unacceptable environmental impacts in the County.

Participating in the development and updating of the Withlacoochee Regional Water Supply Authority's Master Water Supply Plan and the SWFWMD's Regional Water Supply Plan for the Northern Region.

Policy 8.9.4
Transfers of water from the County to locations outside the WRWSA region shall only be considered if the following measures have been undertaken before Development Order approval as provided within Chapter 163, F.S.:

The receiving community has exhausted all available local sources including, but not limited to, alternative sources such as desalinization, reuse of reclaimed water, and aquifer storage and recovery. In addition, all other possible conservation and demand management measures should have been implemented.

A comprehensive study of the source area has demonstrated that the proposed withdrawals will cause no adverse economic, ecological, or environmental impacts.