



DESOTO COUNTY
COMPREHENSIVE PLAN
POTABLE WATER ELEMENT

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DeSoto County
201 East Oak Street
Arcadia, Florida 34266

TABLE OF CONTENTS

A. INTRODUCTION..... 1

B. POTABLE WATER EXISTING CONDITIONS DATA..... 1

1. Governmental Potable Water Utilities 1

 a. DeSotio County 2

 b. Service Area and Predominant Users 2

 c. Private Potable Water Facilities Inventory..... 3

C. POTABLE WATER FACILITY NEEDS ANALYSIS 5

1. Potable Water Capacity Surpluses and Deficiencies 5

 a. Existing Demand Surpluses and Deficiencies..... 5

 b. Future Demand Capacity 6

 c. Fire Protection 7

2. Performance and Condition of Existing Facilities 7

3. Potable Water Facility Replacement, Expansion and New Facility Siting..... 8

 a. Water Supply 8

 b. Water Storage..... 9

 c. High Service Pumping..... 9

 d. Distribution System Improvements 10

 e. Future System Improvements Summary..... 10

D. GOALS, OBJECTIVES AND POLICIES 18

LIST OF TABLES

Table PWE - 1: DeSoto County’s Central Water System Customer Summary11
Table PWE - 2: FDEP Permitted Public Water Treatment Facilities Which Are Not Part of DeSoto
County’s Central Water System11
Table PWE - 3: FDEP Permitted Private Water Treatment Facilities12
Table PWE - 4: DeSoto County Potable Water Demand Projections13
Table PWE - 5: Comparison of DeSoto County Potable Water Demand Projections and System
Capacities14
Table PWE - 6: DeSoto County Needed Potable Water System Capital Improvements Summary..15

LIST OF MAPS

Map PWE - 1: DeSoto County Existing Public Potable Water Treatment Facilities16
Map PWE - 2: Private Water Treatment Facilities Locations17

POTABLE WATER ELEMENT

A. INTRODUCTION

DeSoto County receives its potable water, in its distribution system, from the Peace River Manasota Regional Water Authority through a 30 year regional agreement. The County is one of four members of the Regional Authority (Members – DeSoto, Charlotte, Sarasota, and Manatee) that owns, operates, and maintains a potable water supply, treatment, and transmission system. The Authority provides the potable water necessary to serve its existing customers and the requested amounts of water for the projected future growth of its members. The County is an “Exclusive” customer of the Regional water Authority which has contractual obligation to meet all water needs of the County. In addition, DeSoto County currently leases, operates, and maintains two isolated potable water supply, treatment, and distribution systems to provide potable water to a limited area and population contained within State facilities. The County’s potable water system provides water for both residential and non-residential purposes.

B. POTABLE WATER EXISTING CONDITIONS DATA

This section will identify both public and private potable water facilities within the County’s utility service area.

1. Governmental Potable Water Utilities

Governmental potable water facilities are provided by DeSoto County and the City of Arcadia. DeSoto County currently provides central water service in a large area in the southern portion of the County (south of Hwy 70), with expansion planned through the Utility Master Plan and additional areas as necessary when extended by development to meet their needs. The City of Arcadia provides potable water service for most of the urban areas located within the incorporated City limits of Arcadia and some isolated pockets in the County, immediately adjoining the City. A brief description of these publicly owned facilities is provided in the paragraphs below:

a. DeSoto County

As previously stated, DeSoto County is an “Exclusive” customer to the Peace River Manasota Regional Water Authority. The Authority is strictly a water supplier and can only provide water within each county through its’ agreement with county members. The County has a direct connection to the Authority’s transmission line, which supplies water to the County distribution system. The County’s central water system consists of approximately 23 miles of water mains ranging in size from 6-inches through 16-inches in diameter. The County’s potable water system also includes two self-contained water treatment plants, storage tanks, and onsite distribution systems that serve State facilities. The location of the County’s water treatment plants and the Regional Water Authority Plan are illustrated in **Map PWE - 1**. **Table PWE - 2** shows the address and current permitted capacity of the plant.

(1) Operational Responsibility

The DeSoto County Utilities Department is responsible for the operations and maintenance of the central public water system within the County’s

service area. The County operates and maintains the system such that all state regulations and requirements are met.

(2) Service Area and Predominant Users

DeSoto County's potable water service areas are the entirety of the unincorporated area of DeSoto County less any area that is currently served by the City of Arcadia and Aqua Utilities. The various types of service (Rural and Urban) and potable water treatment within the service area are illustrated in **Map V-1**. The "Urban service Area" shown on the map encompasses all the future land uses shown on the FLUM other than the Rural/Agricultural Land Use. For the majority of land area in the "Urban Service Area" it represents lands that can be served off an existing backbone, with sanitary sewer line extensions from development as needed or that will be served over time, as needed, and as financial resources are available, through the utility CIP, in accordance with the Utilities Master Plan. The small amount of area that is not shown in the current Utilities Master Plan (cross hatched) will be added to the Plan by 2009.

The "Rural Service Area" shown on the map is anticipated to be primarily served by wells. Proposed developments in this area that exceeded a density of 1 unit per acre shall be required to amend the Utility master Plan to incorporate their project into the DeSoto County Utility System and to have entered into a utility conveyance and service agreement for the provision of such facilities. Developments for this purpose may include, but shall not be limited to DRP's, proposed FLUM Amendments, and Industrial Developments. The provisions of facilities may include line upgrades and extensions, construction of potable water storage, pumping improvements, contributions for additional potable water supply and improvements. The County does not provide water service to any areas within any city boundaries or any areas outside the County.

Currently, the DeSoto County central water system is servicing 27 water customers, which includes master meters and bulk user meters (see **Table PWE - 1**). The predominant type of water customer and use within the County is non-residential, but this is expected to significantly change in the near future with the onset of residential growth, primarily in the southwest and south-central part of the County.

(3) Potable Water Facility Design and Capacity

The County's central water treatment facility is the Peace River Manasota Regional Water Authority plant located in the SW corner of DeSoto County on Kings Highway (CR 769) which utilizes the basic process for water treatment and includes raw water supply from surface water (Peace River) followed by purification using disinfection. The following are descriptions of each system component (see Table V-3) followed by purification using

reverse-osmosis and disinfection. The following are descriptions of each system component (see **Table PWE - 3**).

(a) Central Water Treatment Plant and Storage Facilities

The Peace River Manasota Regional Water Authority main plant is located in DeSoto County on Kings Highway (CR 769). The plant is currently 24MGD facility with a 635 million gallon reservoir and ASR wells for the storage of treated water. The Authority also has main transmission lines and the appropriate pumping and storage capacity to meet peak demand requirements. In 2005, DeSoto County completed its connection to the PRMRWSA system and began purchasing water from PRMRWSA. DeSoto County has a 0.760 mgd allocation from PRMRWSA for 2007, which will escalate to 2.119 mgd by 2015. Since the PRMRWSA allocation is based on annual average day use, the equivalent maximum day allocation is estimated to be 1.064 mgd in 2007 and escalates to 2.966 mgd by 2015.

(b) Water Distribution System

The County's central water distribution system consists of water mains ranging in size from 6 inches to 16 inches in diameter. The majority of the County's water system, consisting of a 16-inch linear backbone water main, was recently constructed in late 2005, therefore, the major portion of the County's water distribution system is new and is in good condition. In addition, the Peace River Manasota Regional Water Supply Authority just completed the construction of a 20-inch water main, which connects to the County's system and provides bulk water supply to DeSoto County.

(4) Public Level of Service

In 2006, the DCU central water system supplied an average of 0.310 mgd of potable water to its customers. Most of this water was supplied to correctional institutions, commercial facilities or bulk water users; therefore, it is difficult to establish a customary level of service. The County has been in the water utility business for only a few years (1990's), and until the system matures and grows a more typical customer base, establishing a level of service based on the current population will be difficult. Currently, for planning purposes the County has defined a level of service of 255 gpd per equivalent residential connection. This level of service is typical for a rural system such as the County's system. In addition, 255 gpd per connection is consistent to using a per capita use of 95 gpd per person (2.7 per household) which is normal for a small system. Based on this, a level of service of 95 gpd per capita will be used for the analysis portions of this element.

b. Other Public Potable Water Facilities not Part of the DeSoto County's Central Water System

In addition to the County's facilities that are considered to be part of the DeSoto County central water supply and treatment facilities, there are a seven (7) other existing public potable water treatment facilities, two of which the County operates and maintains. These facilities are owned and operated by various public utilities, agencies, or institutions. Except for the City of Arcadia facilities and the PRMRWSA facility, these additional public facilities are limited to serving a particular facility (i.e. school, prison, public building, etc.); and as such, are not intended to provide service beyond those facilities.

The City of Arcadia potable water system is the only additional public water system that is designed to service a public water service area and can be used to meet the demands of modest growth within the City's service area. For the most part, the City of Arcadia water service area is limited to its corporate city boundaries; however, there are several isolated areas within the County and adjacent to the city limits where the City provides water service

The DeSoto Correctional Institution Water Treatment Plant (DCI WTP) is located at the correctional facility along S.R. 70 east of the City of Arcadia. This facility is permitted by FDEP as PWS #6140451 and has a permitted maximum day capacity of 0.500 mgd. Based on available data, the current average daily demand on this facility is approximately 0.300 mgd. This plant is served by four wells (with a current consumptive use permit for .349 gpd), a 175,000 gallon ground storage tank, three 400 gpm service pumps, and one 100,000 gallon elevated water storage tank. DeSoto County Utilities (DCU) operates and maintains this facility for the State of Florida.

The G.P. Wood Water Treatment Plant (GPW WTP) is located at the G.P. Wood Juvenile Justice facility along S.R. 31 south of Arcadia. This facility is permitted by FDEP as PWS #6140630 and has a permitted maximum day capacity of 0.155 mgd. Based on available data, the current average daily demand on the plant is approximately 0.070 mgd. The plant is served by two existing wells with a pumping capacity of approximately 0.155 mgd (0.0775 mgd each). The plant is also equipped with one 50,000-gallon storage tank, three (3) 200 gpm service pumps, and a 100,000 gallon elevated water storage tank.

A summary of the permitted public water facilities that are not part of the County's central potable water system is provided in **Table PWE - 2**. The two largest facilities are the City of Arcadia facility, with a estimated permitted capacity of 1.2 mgd and the PRMRWSA facility with a permitted capacity of 32.7 mgd. The remaining systems are small dedicated systems and do not have permitted capacities greater than 50,000 gpd. The locations of these facilities are shown in **Map PWE - 1**.

c. Private Potable Water Facilities Inventory

There are 46 existing FDEP permitted private potable water treatment and supply facilities in DeSoto County. A summary of these facilities is provided in **Table PWE - 3**. Each facility is a small package type facility dedicated to providing service

to a defined small population or service area. The facilities are private and are not connected to the County's central potable water system. It is assumed that each of these private facilities will continue to serve its particular water users, and its water demand has not been integrated with the future water use projections for the DeSoto County. The locations of these private water facilities are shown in **Map PWE - 2**.

Numerous individual wells, drilled to serve individual single-family residential units or non-residential facilities also exist within the County. These facilities are owned and operated by the respective individual property owners and are intended to serve the property owners' needs only. Therefore, these facilities are considered to be private facilities. The actual number of private wells in existence is uncertain; however, it is estimated that there are more than 4,800 private wells in use within the County. For purposes of completing this comprehensive plan, it is assumed that the individual properties on private wells will continue to use the private wells.

C. POTABLE WATER FACILITY NEEDS ANALYSIS

This section analyzes the performance of the County's central potable water system and projected capacity needs.

1. Potable Water Capacity Surpluses and Deficiencies

a. Existing Demand Surpluses and Deficiencies

The evaluation of necessary facilities to meet domestic and commercial consumptive demand is based upon the entire system's ability to meet peak demands. Presently, the County's maximum permitted pumping capacity and consumption is limited by the County's Water Use Permits from the Southwest Florida Water Management District (SWFWMD) and their supply provided from the Peace River Manasota Regional Water Supply Authority (PRMRWSA). The current total permitted water capacity for the DCI and GP Wood sites cannot be used for the County's central system. The County's current allocated capacity from the PRMRWSA system is 0.760 mgd, based on an annual average daily basis. The County's capacity of its central system, will be limited primarily to their "Exclusive" Customer basis via the Master Water Sales Agreement.

DeSoto County's central water system in 2005 was providing approximately 0.235 mgd, based on average daily demand, with an estimated maximum day demand of 0.329 mgd. The current capacity of the system can be rated in terms of water supply capacity and finished water high service pumping capacity. Because the County's water requirements are met only from the PRMRWSA system, only that source is considered for evaluation of the County's supply capacity. The DCI and GP Wood wells are not permitted for supplying water to the County's central system. The PRMRWSA 2005 allocation to the County was 0.535 mgd (on an annual average basis), which is currently rated at a .749 mgd maximum day supply capacity. Therefore, the County's total existing water supply capacity is .749 mgd. This capacity exceeds the County's 2005 maximum daily demand of 0.329 mgd. Therefore, the County's central potable water system has adequate supply capacity to serve all of the existing residential and non-residential customers that are currently connected. With respect to storage volume, it is standard practice to be able to

provide a storage volume equivalent to at least 25 percent of the maximum daily demand. For DeSoto County's system, the storage requirement is being met by the PRMRWSA. However, the County does have 200,000 gallons of storage capacity at the Project Prairie site and will continue to use this storage volume to meet peak demands. The 200,000 gallons (.2 mgd) of storage capacity will remain on-line and supplement peak demands. Since the County will not have any permitted wells to fill the storage volume, the water used to fill this storage will be supplied from the PRMRWSA system.

Per FDEP requirements, high service pumping must have the capability to meet whichever is the largest flow between the peak hourly demand or maximum day demand plus fire flow. When system elevated storage is available, the combination of elevated storage and high service pumping must meet the most stringent peak water demand requirement. For the County's existing demand conditions, the existing peak hour flow is estimated to be approximately 1,400 gpm based on the existing average daily flow. Assuming a maximum needed fire flow of 1,500 gpm, the County's current maximum day plus fire flow demand is approximately 2,200 gpm. Therefore, the most stringent demand condition for the County's current customer base is the maximum day plus fire flow demand, which must be met by the combination of the high service pumping capacity and elevated storage. The total high service pumping capacity of the County system is approximately 900 gpm. However, the County does not have any elevated storage connected to the central water system. The County's high service pumping capacity includes 900 gpm for County facilities, plus a 2,150 gpm peak allocation from the PRMRWSA connection. Therefore, the County's total water service supply capacity is 3,050 gpm. This capacity is adequate for current demands.

With respect to the water distribution system, there are no known deficiencies. The existing system is adequate to meet all water demand conditions of the existing customer base. Therefore, no improvements are required for the existing water distribution system.

b. Future Demand Capacity

Future water demands are forecasted based on County population projections. The County's level of service standard used in the calculation is 95 gallons per capita per day, as provided by DeSoto County Utilities.

The potable water demand is projected for the years 2005, 2010, 2015, 2020, 2025, and 2030 is presented in **Table PWE - 4**. By 2010, the average daily demand is projected to be 1.21 mgd, and then increase to 1.81 mgd by the year 2015. For water supply, the County must be able to provide water to meet the projected maximum day demand. As shown in the table, there is an expected water supply surplus for years 2010- through 2030. The County must implement capital improvements to provide sufficient facilities to maintain the required level of service. The County has completed a utility systems master plan to identify additional, cost effective, distribution capital improvements for implementation.

DCU System storage will be needed over time for operational reasons. The underlying assumption for this statement is that according to the agreement between

DeSoto County and the PRMRWSA, the PRMRWSA must supply water at service pressure to meet customer demands. PRMRWSA is currently constructing additional storage with its expansion to meet this need. However, the County will continue to evaluate the performance of its system to determine if there is a need for additional storage for operational reasons. The Utilities Master Plan has recommended 500,000 gallons (0.5 mgd) of additional storage capacity, which is being constructed at this time. Development will provide (fund and construct) future storage as needed to support growth as it occurs. Thus, PRMRWSA needs to have sufficient storage capacity to provide this service.

The most stringent peak water pumping demand for the County's existing demands is the maximum day demand plus fire flow conditions (see year 2005 in **Table PWE - 5**), which is 2,200 gpm. Based on the current County high service pumping facilities and the peak supply capacity to be met by PRMRWSA, the estimated peak high service pumping capability of the County's system is 3,050 gpm. Therefore, the County's capacity exceeds the current demand and no service pumping improvements are needed for the immediate future. Development will provide (fund and construct) pumping capacity as needed to support growth as it occurs.

c. Fire Protection

In addition to domestic and commercial demand, the County provides water for fire protection in areas with County owned and operated water mains. At this time, in the areas where the County has a water distribution system, there are no known deficiencies in the performance of the County's existing distribution system for meeting fire flows. However, in the Aqua Utilities of Florida water system franchise area, for which the County sells bulk water, the water system owned and operated by the private utility is unable to provide fire demands to all areas. The private system is downstream of the County's master water meter and the County has no control or operational jurisdiction of the private utility system. Through the fire flow testing of fire hydrants countywide by the DeSoto County Fire Department, it has also been determined that the City of Arcadia cannot meet fire flow standards to some of its service area.

2. Performance and Condition of Existing Facilities

For the two treatment facilities the County operates for the State, the quality of the raw water, which the County uses for water supply to the water treatment facilities, has a high total of dissolved solids concentrations and requires some advanced methods of treatment. At the DCI facility the County utilizes a blended reverse osmosis (RO) treatment processes. Other than the RO treatment, the water is disinfected and then pumped into the distribution system. At the GPW facility the well water is of a quality to require only limited treatment. Currently, the County's treatment facilities are operating sufficiently to provide the required level of treatment. It is anticipated that these facilities will continue to operate satisfactorily provided proper maintenance of the facilities is performed. All of the County's water treatment plants have consistently operated in compliance with all criteria established by the FDEP and Department of Health and Rehabilitative Services with respect to public water supplies. Each plant continues to be

operated and maintained in good operating condition. Repairs and/or upgrades to each plant are performed as required on an individual basis.

Overall, the performance of the distribution system is adequate provided regular maintenance is performed.

3. Potable Water Facility Replacement, Expansion and New Facility Siting

DeSoto County will utilize the Utility Master Plan to identify existing system deficiencies, identify improvements to meet future growth, and develop a capital improvement program which will provide the potable water facilities needed to meet the future growth. As improvements are constructed and future projects are added to the CIP this potable water element shall be reviewed and updated accordingly.

a. Water Supply

The County's ism an "Exclusive" customer of the PRMRWSA and will therefore rely upon the Authority to find and/or develop new water sources. The County makes estimates on future water usage needs on a rotating seven year basis, however, the PRMRWSA is responsible to make the actual projection and provide the potable water water needed to supply DeSoto County's central water system.

The PRMRWSA has currently begun construction on a series of major facilities to increase supply, supply treatment, and supply distribution. For supply, the Authority is developing a new 6 billion gallon, off-stream, surface water reservoir, in the RV Griffin Reserve, located in southwest DeSoto County. When river flow is high, excess water will be pumped into the reservoir and stored. The \$55 million dollar plus facility will capture and store river water during wet periods to bridge the gap caused by dry periods and as an alternative to pumping groundwater. The Authority withdraws water from the Peace River in an environmentally sensitive manner by restricting withdrawals in the dry season and currently taking no more than 10 percent of the total river flow at any time. The project is fully funded and will be under construction this year. Three other long range water supply projects are being fully studied within one each in DeSoto, Sarasota, and Manatee Counties.

For supply treatment, the Authority is expanding the existing plant in DeSoto County at a cost of \$75 million. When complete in 2009, the plant capacity will double from the current capacity of 24 million to 48 million gallons per day. This expansion will provide treatment capacity for the next 20 years, greater than the current long-range allocations requested for 32.7 million gallons. The project is fully funded and under construction.

For supply distribution, a new series of interconnecting transmission lines are being studied. Although some funding is allocated for these projects the members are still discussing the best projects for the long-term interests of the Authority and its members. The pipelines will provide redundancy and long-term environmental benefits by sharing supplies. DeSoto County's ability to supply potable water for concurrency is not directly related to these pipelines, as the plant is located in DeSoto County.

Even though the County is an “Exclusive” Customer, the County as an Authority member will continue to partner with the Authority to find new water supply sources. In accordance with section 163.3177(6)(c) of the Florida state statutes, should the County pursue the development of new water supplies, the County must consider the published Southwest Florida Water Management District’s Regional Water Supply Plan. The District’s Water Supply Plan has been created to provide a regional plan for supplying water to meet the projected needs of users across the entire region. Desoto will enter into Joint Projects with the Authority as deemed feasible. As identified in the District’s Regional Water Supply Plan, potential alternative sources that may be pursued include (1) surface water and storm water, (2) reclaimed water, and (3) water conservation. Due to DeSoto County’s interior location (not located on the coast), development of brackish groundwater supplies and seawater desalination are feasible alternatives. In addition, due to current low levels of fresh groundwater supplies (water with total dissolved solids less than 500 mg/l) within the DeSoto County region, the water management district is discouraging the development of fresh water supply wells. Therefore, the most likely sources for new water supplies are surface water, stormwater, reclaimed water reuse, and conservation methods.

b. Water Storage

There is no direct shortage of water storage capacity assuming PRMRWSA provides the needed operating capacity to meet its peak flow requirement to DeSoto County. However, water quality will force the need for water storage. Currently DCU is constructing 500,000 gallons (0.50 mg) of new storage capacity to meet system needs at the northern end of the existing system. Future water supply storage will be provided (funded and constructed) by development as needed to support growth as it occurs.

c. High Service Pumping

By year 2015, the peak hourly demand will become the most stringent pumping requirement. Based on the current county facilities and the peak supply capacity to be met by the PRMRWSA, the estimated peak high service pumping capability of the County’s system is 3,050 gpm. The County will need to make capital improvements or acquire additional peak capacity allocation from PRMRWSA system to increase its high service pumping and supply capacity. Storage and re-pumps can complete this task. The County’s water system (Utility) Master Plan has recommended the most cost effective approach to increase the County’s service pumping capacity. Future pumping capacity will be provided (funded and constructed) by development as needed to support growth as it occurs.

d. Distribution System Improvements

At this time, only one public project, consisting of a ¼ mile, water main extension, is proposed. The project will increase system capacity by tying into a new water storage (0.5 mgd) and pumping facility. Other new water transmission main improvements are planned for extending service to new areas within the County, unless needed and extended by development. However, the recently completed Utility System Master

Plan has identified future strategic water transmission main extensions that will be required by development for water distribution into growth areas.

A summary of the identified system improvements for DeSoto County's central water system is presented in **Table V-6**. Construction of these improvements should be pursued such that these facilities are operational by the year identified. System improvements will be provided (funded and constructed) by development as growth occurs.

e. Future System Improvements Summary

A summary of the identified system improvements for DeSoto County's central water system to maintain the identified level of service is presented in **Table PWE - 6**. As shown, additional high service pumping/supply capacity is needed after year 2010. Construction of these improvements should be pursued such that these facilities are operational by the year identified. System improvements will be provided (funded and constructed) by developments as growth occurs.

Table PWE - 1: DeSoto County's Central Water System Customer Summary

Type of User	Number of Customers	Comment
Residential	1	One master meter serving 42 trailers
Commercial	24	
Bulk Users	2	Aqua Utilities of Florida Franchise, and Riverside MHP

Source: DeSoto County Utilities, 2005

Table PWE - 2: FDEP Permitted Public Water Treatment Facilities Which Are Not Part of DeSoto County's Central Water System

Facility PWS #	Facility Name	Location (mgd)	Capacity (mgd)
6140314	City of Arcadia WTP	645 Turner Rd	0.300
6140451	DCI WTP	13615 SE S.R. 70	0.280
6140630	G.P. Wood WTP	5847 SE Highway 31	0.576
6140450	Nocatee Elementary	530 La Salona Ave	0.050 Under Consent, Off line
6144832	Peace River Outward Bound	8806 SW Start Center St	0.093
6144836	Learn Lab/William Stanko	C.R. 761	n/a
6144857	Desoto Co. Public Works Building	1894 NE McKay St	n/a
6144897	Turner Agri-Center	Roan Street	Extension of City

Source: Florida Department of Environmental Protection records, 2005

Table PWE - 3: FDEP Permitted Private Water Treatment Facilities

Facility PWS #	Facility Name	Location (mgd)	Capacity (mgd)
6140400	Shady Oaks of Arcadia	7895 N.E. Hwy 17	0.030
6141066	Lettuce Lake Travel Resort	Reese Street	0.010
6142031	Sunrise Mobile Home Park	S.E. Hwy 31	0.074
6142032	Oak Haven Campground	10307 S.W. Lettuce Lake Ave	0.072
6142038	Oakview MHP	2552 N.E. Turner Ave	n/a
6143090	Craig's RV Park	7895 N.E. Hwy 17	n/a
6144729	Big Tree of Arcadia	2626 N.E. Hwy 70	n/a
6144834	Desoto Village MHP	4810 S.R. 72	0.050
6144835	Little Willies RV Park	5905 N.E. Hwy 17	0.202
6144840	AJ Petroleum Store	5800 NW 74th Ave	n/a
6144841	Live Oak RV Resort	12865 SW Hwy 17	0.050
6144842	Circle K #7105	1486 Wilson Avenue	n/a
6144845	761 Grocery	9836 SW County Road 761	0.001
6144846	Reef & Beef	S.R. 70 E	0.001
6144848	Navigator Grill/Marina	9700 SW Riverview Cr	0.005
6144849	Stop-n-Shop	4399 SW Hwy 17	0.002
6144850	Plantation Restaurant	4135 SW Hwy 17	0.005
6144851	Toby's Plantation RV	3550 NE Hwy 70	n/a
6144852	Nocatee Market	4427 SW Hwy 17	0.001
6144853	Stop 'N Go	4991 SE Hwy 31	0.001
6144854	RCMA - Headstart	2590 CR 760A	n/a
6144855	Macatee Properties	P.O. Box 277	n/a
6144856	Lake Suzy Subdivision	12408 SW Sheri St	n/a
6144859	Peace River Citrus Products	4104 Hwy 72	n/a
6144860	Church of God Arcadia	Harlem Circle/Spring Rd	0.022
6144861	Pine Creek Chapel	1267 SW Pine Ave	n/a
6144862	S.C.F.A./Duplexes	11716 SW Pine Ave	n/a
6144863	S.C.F.A./RV Park	11716 SW Pine Ave	n/a
6144864	Cross Creek Country Club	6837 NE Hwy 17	0.100
6144865	Desoto Lanes/Desoto Ford	3115 SE SR 70	0.010
6144866	Riverside RV Park	9770 SW CR 769	n/a
6144867	Deli & Dessert Cottage/Daylight Donuts	2053 E Hwy 70	n/a
6144868	La Tapatia	1451 Hwy 17 S	n/a
6144869	Hi Way Motel	1374 SW Hwy 17	n/a
6144871	Loading Zone	2135 SW Hwy 17	n/a
6144875	Nocatee Church of God	4810 SW Hwy 17	n/a
6144877	First Baptist Church Nocatee	4610 SW Hwy 17	0.001
6144879	La Costena	2233 E. Hwy 70	n/a
6144880	New Life Ministries	3126 NW Roadhouse	n/a
6144883	McCaskill Labor Camp	2981-3075 McCaskill Street	0.010
6144884	McIntyre Apartment Inc	4827 NE McIntyre Apartment	n/a
6144885	Hull Apartments	7510 SW Hull Road	n/a
6144886	LL Project, Inc.	2779 SW Hillsborough Ave	n/a

Facility PWS #	Facility Name	Location (mgd)	Capacity (mgd)
6144889	Sigfrido Cisneros #2 Labor Camp	3501 Washington Street	0.002
6144892	Ramirez Labor Camp	1096 Hensel Ave	0.010
6144895	Lazy Bee Mobile Home Park	1922 SW Los Pinos	0.005

Source: Florida Department of Environmental Protection records

Table PWE - 4: DeSoto County Potable Water Demand Projections

Total Population	2005	2010	2015
Population Served By Central Water System	2,350	9,882	18,318
Average Day Demand (mgd)	0.235	0.988	1.832
Maximum Day Demand (mgd) (1.4 times ADD)	0.329	1.3832	2.5648
Peak Hour Demand (mgd) (1.2 times ADD)	0.282	1.1856	2.1984
Peak Hour Demand (gpm)	653	2,743	5,086
Max. Day plus Fire Flow (gpm)	1,826	2,871	4,043

Source: Land Design Innovations, Inc., 2005

Table PWE - 5: Comparison of DeSoto County Potable Water Demand Projections and System Capacities

	2005	2010	2015
Population Served by Central Water System	2,350	9,882	18,318
Average Day Demand (mgd)	0.235	0.988	1.832
Maximum Day Demand (mgd)	0.329	1.3832	2.56484
Peak Hour Demand (mgd)	0.282	1.1856	2.1984
Peak Hour Demand (gpm)	653	2,743	5,086
Max. Day plus Fire Flow (gpm)	1,826	2,871	4,043
Water Supply Capacity			
County Well Supply Capacity (mgd)	0 (1)	0 (1)	0 (1)
PRMRWSA allocation (mgd) (max. day basis)	0.749	3.801	6.741
Total Water Supply Capacity (mgd)	0.749	3.801	6.741
Additional Water Supply Capacity Needed (mgd)	0	0	0
Water Storage Capacity			
Storage Capacity Available (MG) (County portion)	0.200	0.200	0.200
Storage Capacity Needed (MG) (County portion)	0 (2)	0.700 (2)	1.485 (2)
Additional Storage Capacity Needed (MG) (County portion)	0	0	0
Service Pumping/Supply Capacity			
County High Service Pump Capacity (gpm)	900	900	900
PRMRWSA Service Supply Alloc. (gpm)	2,150	2,150	2,150
Total Water Service Supply Capacity (gpm)	3,050	3,050	3,050
Additional High Service Capacity Needed (gpm)	0	0	2,036

(1) Based on connection to PRMRWSA system, Project Prairie taken off-line, and no re-permitting of GP Woods wells.

(2) Assumes no supply and treatment facilities directly owned or operated by DeSoto County. The County will provide the needed storage and pumping to compliment its water supply.

(3) Additional storage and pumping capacity shall be provided (funded and constructed) by developers as growth occurs.

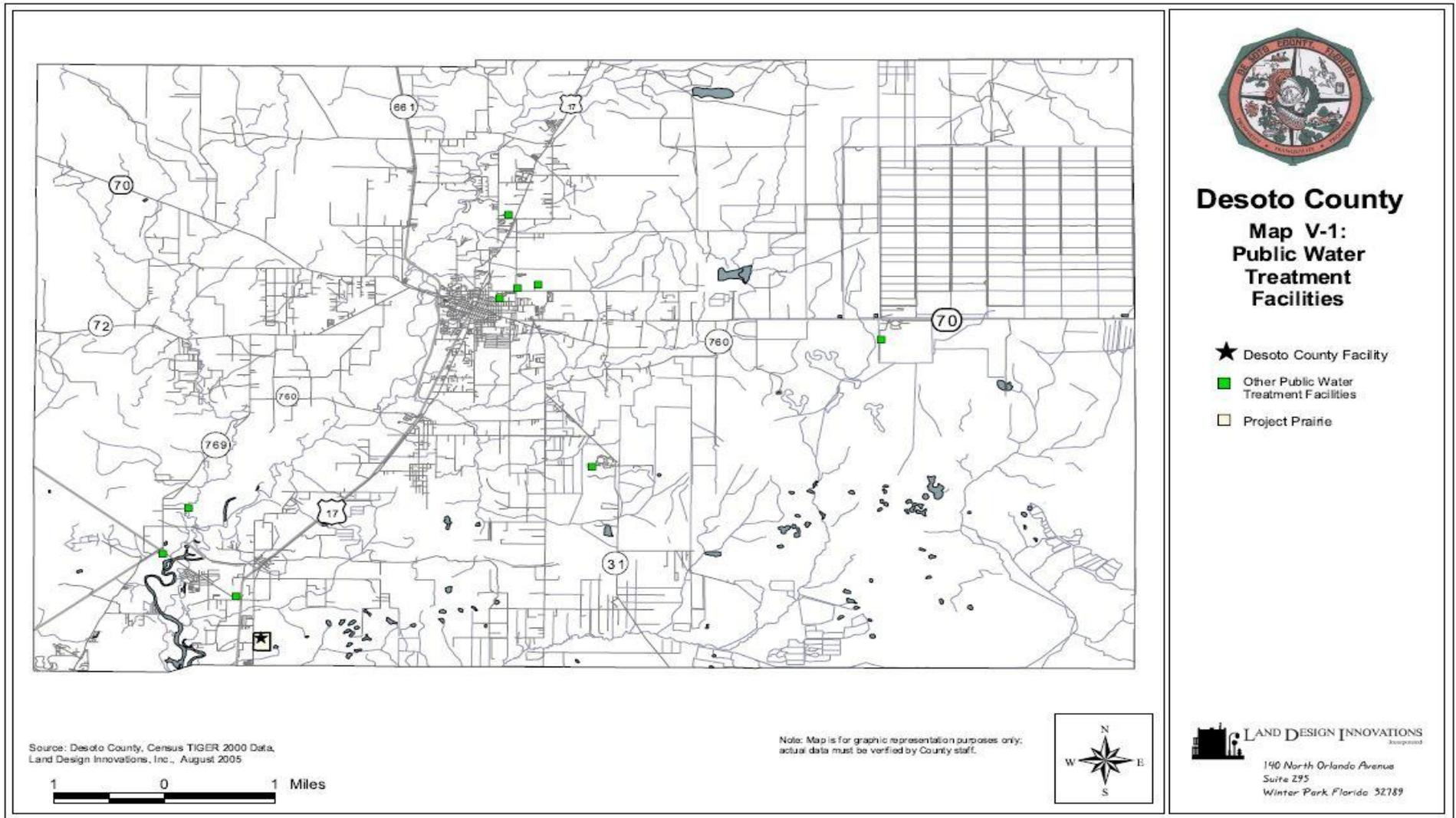
Source: Land Design Innovations, Inc., 2005

Table PWE - 6: DeSoto County Needed Potable Water System Capital Improvements Summary

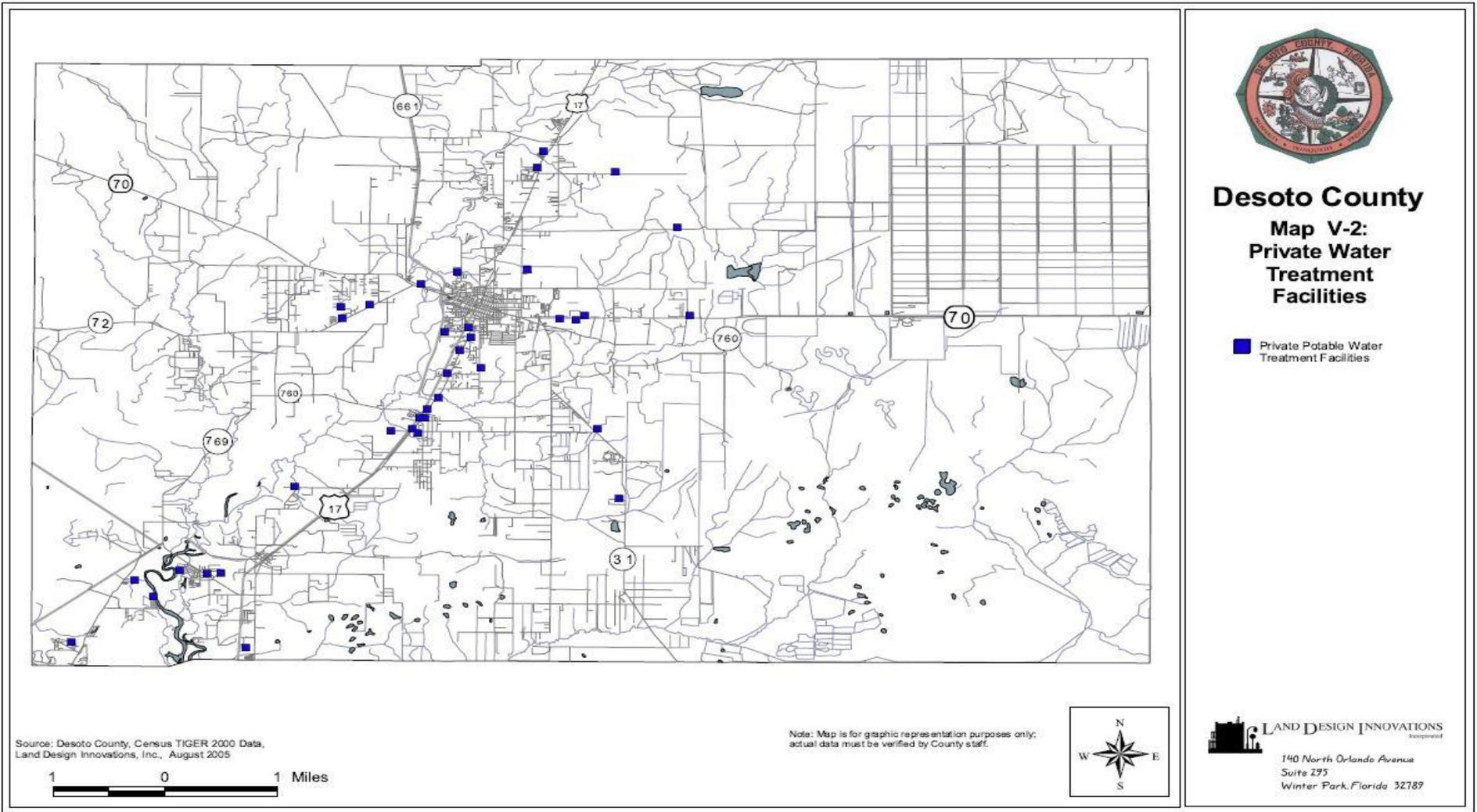
Improvement Description	Completion Date
Develop .700mg of additional Water system storage	2011
Develop Storage .600 mg	2016
Develop 2,036 gpm of additional high service pumping/supply capacity	2011

Source: Land Design Innovations, Inc., 2005

Map PWE - 1: DeSoto County Existing Public Potable Water Treatment Facilities



Map PWE - 2: Private Water Treatment Facilities Location



D. GOALS, OBJECTIVES AND POLICIES

GOAL 1: Adequate Supply Of Water. To plan for and assure an adequate supply of excellent quality potable water to meet the needs of DeSoto County’s residential and non-residential customers.

Objective 1.1: Maintain Level of Service. Based upon adopted level of service standards, the County shall annually adopt programs and activities to correct existing deficiencies in the central potable water system.

Policy 1.1.1: The County’s Level of Service for potable water supply shall be 102 gallons per person per day.

Policy 1.1.2: The County’s central potable water system infrastructure shall be based on the following:

- a. High service pump capacity shall at least be equal to the peak hour demand or the maximum day demand plus largest fire flow, whichever is greater, and assuming the largest high service pump being out of service, and
- b. The backbone distribution system shall ideally be designed for a goal of forty (40) pounds per square inch (psi) delivery pressure.

Policy 1.1.3: The County will maintain its potable water treatment facilities in optimum condition by the implementation of a preventive maintenance program.

Policy 1.1.4: The County shall maintain a Potable Water System Master Plan, which at revision will be reviewed every five (5) years.

Policy 1.1.5: At a minimum, the County shall review water fee methodology and user rates every two years during the budget process to ensure adequate funding for operation and maintenance of the treatment, storage and distribution facilities.

Policy 1.1.6: By the end of 2015, the County shall develop a system of review of individual customer water meters to ensure proper readings of those meters.

Policy 1.1.7: Institute a replacement or “change out” schedule for meters in the field to ensure replacement in a timely manner that ensures the continued accuracy of meters with industry accepted standards.

Policy 1.1.8: All improvements and/or additions to potable water facilities to correct deficiencies shall be compatible and adequate to meet the adopted level of service standards. These improvements and/or additions to potable water facilities shall comply, at a minimum, with standards recognized and approved by the Florida Department of Environmental Protection.

- Policy 1.1.9:** All improvements and/or additions to potable water facilities shall be consistent with County master utility plans and adopted utility standards for construction and adequate to meet the adopted level of service standards.
- Policy 1.1.10:** Potable water facilities shall be replaced and existing deficiencies shall be corrected with the following priorities of projects:
- a. Any project correcting an immediate threat to the health, safety, or welfare of the County's residents.
 - b. Any project that will correct an existing deficiency.
 - c. Projects that will prevent the system exceeding the adopted level of service.
 - d. Projects that will provide significant environmental improvements.
- Policy 1.1.11:** Within one year of adoption, the County will develop and implement a valve exercising and fire hydrant testing and maintenance program.
- Policy 1.1.12:** All Future Land Use Map amendments shall require an analysis of the impact of each amendment on the adopted level of service standard. Any analysis that shows a reduction in level of service below the adopted acceptable level shall be denied, unless acceptable improvements to failing facilities are planned or provided.
- Policy 1.1.13:** All expansions and other improvements that increase the demand on public infrastructure and require permitting shall comply with the adopted level of service.

Objective 1.2: Maximizing Existing Facilities. The County shall maximize the use of existing potable water facilities within its service area and shall promote compact efficient growth patterns.

- Policy 1.2.1:** The County shall seek to maximize the use of existing sanitary sewer infrastructure facilities in order to minimize urban sprawl by requiring new development to pay the total costs for the placement of infrastructure necessary to service the development, thus making infill development and development along existing utility lines more cost effective..
- Policy 1.2.2:** The County shall incorporate means and methods to require connection to the County's potable water and sewer system for existing development once it becomes available.
- Policy 1.2.3:** The County will prohibit new development from utilizing wells and on-site treatment plants where central water service is available.

Policy 1.2.4: The County shall encourage continuing education of operating staff to ensure proficiency with respect to optimization of central water maintenance and operation processes.

Policy 1.2.5: When existing central water service is determined to be unavailable to new development, the County shall require the new development to extend the central water system at the developer's expense to service the subject property, subject to the following conditions:

- a. The connection between the new development and the existing distribution line shall be along a legally dedicated right-of-way or recorded utility easement; and
- b. The existing line to be connected to must have available unreserved capacity.
- c. All water lines shall be dedicated fee simple to the County.

Policy 1.2.6: The County shall maintain adequate potable water impact fees and user rates to ensure adequate funding for expansion, repair and/or replacement of the potable water system.

Policy 1.2.7: The County shall review water rates as necessary to ensure that the fees charged cover the cost of supplying the service.

Objective 1.3: Intergovernmental Coordination. The County will coordinate with other agencies providing central water service within the County and with agencies overseeing the construction and operation of such systems.

Policy 1.3.1: The County shall continue to coordinate with the Florida Department of Environmental Protection to monitor the operation of existing water treatment plants within the County.

Policy 1.3.2: The County shall continue to discuss with the City of Arcadia, the possible use of potable water by the City to help reduce the City's well (groundwater) usage.

Policy 1.3.3: The County shall continue to discuss the development of service boundaries for water and sewer with the City of Arcadia.

Objective 1.4: Future Needs: Based upon population projections, the County will ensure the supply and treatment of safe potable water distribution through the 2030 – planning horizon to meet the adopted level of service standards.

Policy 1.4.1: Based upon the adopted level of service the County will plan jointly with the Peace River Manasota Regional Water Supply Authority (the County's exclusive provider) for replacement, expansion and extension of potable

water facilities to meet future demands concurrent with new development, which may require private funding.

- Policy 1.4.2:** The County through the Peace River Manasota Regional Water Supply Authority (PRMRWSA) will plan for adequate future treatment facilities, which at a minimum will meet all Federal and State drinking water criteria.
- Policy 1.4.3:** The County shall implement the Capital Improvement Schedule annually and adopt a County budget that prioritizes needed potable water distribution facilities for adoption in the Capital Improvements Element.
- Policy 1.4.4:** The County will review the Capital Improvements Schedule annually and adopt a County budget that prioritizes needed potable water improvements to meet the demands of future growth and approved development.
- Policy 1.4.5:** The County shall continue to monitor groundwater supply conditions in conjunction with the Southwest Florida Water management District, and whenever, the County through PRMRWSA pursues development of additional water supplies the current SWFWMD Regional Water Supply Plan will be considered.
- Policy 1.4.6:** The County shall encourage and require, as needed, the interconnection and looping of existing and proposed segments of the potable water distribution system.
- Policy 1.4.7:** DeSoto County shall ensure adequate water supplies and facilities shall be in place and available to serve new development no later than issuance of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit or its functional equivalents, DeSoto County shall consult with the applicable water supplier to determine whether adequate water supplies to serve new development will be available no later than the anticipated date of issuance of the certificate of occupancy or its functional equivalent.

Objective 1.5: Service Area Development. The County shall adopt a service area boundary for potable water around development activity areas and shall discourage leapfrog development and urban sprawl.

- Policy 1.5.1:** The County's potable water service area shall be defined as any portion of unincorporated DeSoto County, exclusive of any established public or private water utility service areas.
- Policy 1.5.2:** The County may provide wholesale potable water service to other cities or private utilities within the County by written agreement.

Policy 1.5.3: The County shall be the primary provider of potable water to residential and non-residential uses within the County's service area.

Policy 1.5.4: The County shall continue to maximize the use of the existing potable water treatment facilities connected to the central water system.

Objective 1.6: Water Conservation. The County shall maintain initiatives to conserve potable water resources, which ensure that existing level of service standards for potable water, do not fluctuate higher than twenty (20) gallons per person per day.

Policy 1.6.1: The County will maintain an inverted water rate structure to ensure conservation of potable water and to provide an incentive for the use of available treated wastewater for irrigation purposes.

Policy 1.6.2: As a component of the next Water Facilities Supply update, DeSoto County shall evaluate the feasibility and develop a costs-benefit analysis of a reclaimed wastewater effluent program whereby wastewater is treated to standards consistent with Florida Department of Environmental Protection (FDEP) requirements for "unrestricted public access" irrigation of private and public areas, so that when possible potable water is not used for irrigation in areas where reclaimed water is available for such irrigation.

Policy 1.6.3: The County will maintain specific requirements for the use of low consumption plumbing devices in the Land Development Regulations.

Policy 1.6.4: The County shall adhere to SWFWMD emergency water shortage restrictions when mandated by the District.

Policy 1.6.5: The County shall encourage the use of drought tolerant plant materials to meet landscaping requirements and shall develop Land Development Regulations to address this requirement.

Policy 1.6.6: The County shall maintain a leak detection program in order to discover and eliminate wasteful losses of potable water from the County's central water supply and distribution system.

Policy 1.6.7: Reduce Consumption. DeSoto County shall reduce per capita water usage from the current 118 GPD identified in the Water Supply Facilities Work Plan to 95 GPD by 2015.

Policy 1.6.8: Strategies to achieve water consumption reduction will be implemented through water conservation education, and development of programs to identify and repair leaking pipes and plumbing fixtures.

Policy 1.6.9: By June 2014, DeSoto County shall amend the Land Development Regulations to require a water conservation plan for new residential and non-residential subdivisions and planned unit developments. Each plan shall include at least one of the following: reuse of stormwater for irrigation or

other non-potable water use, installation of low flow fixtures, conversion of existing on-site well water for irrigation use and supplementation, use of water-wise vegetation, annual water audits performed by a certified water auditor, or other similar measures approved by the County.

Objective 1.7: **Wellhead Protection.** The County shall enforce standards for the protection of public water supply wells and corresponding cones of influence.

Policy 1.7.1: The County shall restrict all development activity within 200 feet of a public drinking water supply well.

Policy 1.7.2: The County shall prohibit the following land uses within 1,000 feet of a public drinking water supply well:

- a. Landfills
- b. Facilities for the bulk storage, handling, or processing of materials on the Florida Substance List (ch. 442, F.S.)
- c. Activities that require the storage, use, handling, production or transportation of restricted substances: i.e. agricultural chemicals, petroleum products (not including fuel pumps), hazardous/toxic wastes, industrial chemicals, medical wastes, etc.
- d. Feedlots or other concentrated animal facilities
- e. Wastewater treatment plants, percolation ponds, and similar facilities
- f. Mines
- g. Excavation of waterways or drainage facilities which intersect the water table

Policy 1.7.3: The County shall incorporate the following special restriction on development within 1,000 feet of a public drinking water supply well:

- a. Stormwater management practices shall not include drainage wells and sinkholes for stormwater disposal.

Policy 1.7.4: The County shall protect surface water used for public water supply by enacting the same measures listed in Policy 1.7.2 and and the following additional measures:

- a. Reduce densities within 1,000 feet of such water bodies.
- b. By 2009, review strategies developed by the Peace River Cumulative Impact Study Report for inclusion in the LDR's as actionable items.

- c. By 2009, develop additional stormwater treatment standards and other development standards for development east of CR 769 and CR 661 and west of Highway 17.

Objective 1.8 Water Supply Facilities Work Plan. DeSoto County shall utilize the Water Supply Facilities Work Plan (WSFWP) to identify infrastructure needs and prioritize and coordinate expansion of facilities used to withdraw, transit, treat, store and distribute potable water to meet future needs.

- Policy 1.8.1:** DeSoto County hereby adopts by reference the Water Supply Facilities Work Plan (WSFWP), dated MM/DD/YY, for a planning period of not less than 10 years. The WSFWP addresses issues that pertain to water supply facilities and requirements needed to serve current and future development within the County's water service area.
- Policy 1.8.2:** The County shall review and update the WSFWP at least every 5 years. Any changes within the first 5 years of the WSFWP shall be included in the annual Capital Improvements Plan update to ensure consistency between Potable Water Element and Capital Improvements Element.
- Policy 1.8.3:** DeSoto County shall coordinate with wholesale customers to ensure compliance with the WSFWP.
- Policy 1.8.4:** The WSFWP shall be updated within 18 months following an update of the Regional Water Supply Plan. All updates to the WSFWP will be incorporated into the Comprehensive Plan by reference.

GOAL 2: Water Distribution. Provide adequate delivery and distribution of potable water to meet fire protection demand within DeSoto County's central water system service area.

Objective 2.1: Fire Protection Capabilities. The County shall continue to monitor, evaluate, repair and replace the existing water delivery and distribution system facilities to ensure the system meets fire protection demands.

- Policy 2.1.1:** The County shall maintain an active water system and fire hydrant mapping and numbering program.
- Policy 2.1.2:** The County shall establish and maintain a hydraulic model of the County's water distribution network such that the County's water distribution system can be routinely analyzed with respect to fire flow delivery capabilities.
- Policy 2.1.3:** The County shall extend water distribution mains to areas within the County's service area and provide adequate fire protection service to residents and non-residential establishments located within the service area provided the residents/developers participate in the costs.

- Policy 2.1.4:** Fire flow levels of service shall be based upon delivery pressures of twenty (20) psi residual and minimum fire flows of 500 gpm for residential and 1,500 gpm for non-residential and multi-family developments.