

# POTABLE WATER ELEMENT

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**POTABLE WATER**



POTABLE WATER



**Seminole  
County  
Comprehensive  
Plan  
Element**

## **POTABLE WATER ELEMENT INTRODUCTION**

As of 2008, water is pumped from the ground, treated and distributed to residential and non-residential unincorporated Seminole County users through County, city and private water systems. The County currently provides potable water service to four (4) major service areas in the unincorporated area:

- A Southwest Service Area - In 2004, Seminole County purchased seven (7) privately owned water treatment and distribution systems from Florida Water Services (FWS) six (6) of which are now included as part of the Southwest Service Area (SWSA), although the individual service areas are not contiguous. One of the treatment facilities (Fern Park) was abandoned prior to the purchase, and that distribution system is now connected to the Southeast Service Area (SESA). The SWSA is supplied by the following water treatment plants (WTP) and other facilities all of which were former FWS utilities, except for Lynwood: Lynwood, Apple Valley, Dol Ray Manor, Druid Hills, Lake Brantley, Lake Harriet Estates, and Meredith Manor;
- B Southeast Service Area - Served by the Southeast Regional, Indian Hills, and Lake Hayes WTPs;
- C Northwest Service Area - Served by the Heathrow, Hanover Woods, Lake Monroe and Marham Regional WTPs; and
- D Northeast Service Area – Served by the Country Club and Greenwood Lakes WTPs.

Additional potable water service is provided to portions of unincorporated areas by several city and private water providers as detailed in the Ten-Year Water Supply Facilities Work Plan (Work Plan).

The County operates the potable water system as a fee-based enterprise. To ensure a continued supply of water, the County's Environmental Services Department prepares an annual budget and five-year capital plan for maintenance, replacement and capacity expansion based on a five-year master plan. Additionally, the County coordinates with the cities and private utilities to share wholesale service and coordinates with the St. Johns River Water Management District regarding the long term projected growth of demand for water services in Seminole County.

In 2002, 2004, and 2005, the Florida Legislature added additional requirements for the long term planning and coordination of the use of all available water supplies. The County's Work Plan was adopted by the County on 11/13/2007 and found compliant by the Department of Community Affairs. The Work Plan amendments are more fully discussed in the Issues and Concerns section of this Element and are detailed in the supplemental text section added to the Element following the Goals, Objectives and Policies section.

Since the early 1990's, public health and safety has been furthered by the adoption of a cross-connection control ordinance to reduce the chance of water contamination within the distribution system. Additionally, the Public Safety Department operates an underground fuel storage tank replacement program to reduce the possibility of ground water supply contamination.



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## POTABLE WATER ELEMENT ISSUES AND CONCERNS

### Issue POT 1 **Monitoring Of Proposed Regulations**

Proposed regulatory changes to the Safe Drinking Water Act of 1996 (PL 104-182), if passed, may have significant effect on the County's ability to provide drinking water to the public using current treatment methods. Capital modifications to the County's water treatment plants may be necessary to meet the minimum standards established.

The Safe Drinking Water Act, as amended, addresses the allowable drinking water levels of lead, copper, inorganic and organic contaminants, disinfectants, coliform and radionuclides. Since the original enactment, numerous new requirements have been proposed by the Environmental Protection Agency. The exact timetable for enactment of these is not yet determined due to potential legal challenges and questions as to what levels should be set. If the new levels are set significantly below current levels, the County could face significant capital expenditure to attain compliance. Potential expenses could arise from the development of new well fields, installation of new disinfection equipment and/or the construction of new types of treatment facilities.

### Issue POT 2 **Fluoridation**

Fluoridation has proven itself to be of value in the prevention of tooth decay in children and should be provided to all central water customers served by the County.

Seminole County has committed itself to the implementation of a water fluoridation program.

### Issue POT 3 **Cross Connection Control Program**

The public water supply could become contaminated without the proper installation, testing, inspection, operation, maintenance and retrofitting of backflow prevention devices.

The State requires that each utility have a written cross-connection control program to protect water quality. A backflow device prevents water contamination from untreated water or liquid chemicals from being drawn into or forced into the County's water mains. The proper installation of backflow prevention devices is important to the sanitary working of the water distribution system. The County's current ordinance requires backflow devices on all new construction, and requires that inspection, testing, monitoring or retrofitting of existing structures be performed.

### Issue POT 4 **Conservation**

The State Comprehensive Plan requires that water conservation be promoted as an integral part of water management programs.

The County requires all new developments to execute Reclaimed Customer Agreements where reclaimed water is or will be available. Other methods to increase conservation include public education; periodic amendment of the Building Code requirements to require use of water saving devices in



development; amendment of the Land Development Code to require the use of drought tolerant plant species and water conserving irrigation techniques (known as Florida-Friendly/Waterwise); and application of a surcharge for excessive consumption. Approved conservation methods may be used singly or in combination on a site-specific basis.

**Issue POT 5      Levels Of Service**

The State requires that local jurisdictions assure that adequate water supplies and potable water facilities meeting the adopted level of service, shall be in place and available to serve new development no later than the issuance by the County of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit, or its functional equivalent, the County shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the County of a certificate of occupancy or its functional equivalent.

The Goals, Objectives and Policies section establishes the County's level of service as 350 gallons of water per day (average daily flow) per Equivalent Residential Connection for each individual service area. The amount of peak treatment facility capacity required is established as a minimum of 2.0 times the average daily flow. These levels of service shall also be applied for planning purposes to private and city utilities serving unincorporated customers unless a different level of service is authorized by the Florida Department of Environmental Protection (FDEP) or is adopted in a comprehensive plan.

The County will continue to operate in compliance with all rules and requirements of the FDEP, including, but not limited to, peak day, peak hour and service pressure requirements.

**Issue POT 6      Future Water Supply**

For the last 15 years, the District's water supply planning and assessment investigations have documented that the amount of withdrawal of groundwater in certain areas of the District is approaching the maximum quantity that can be sustained without causing unacceptable adverse impacts to the water resources and related natural systems. Water supply planning results to date show that at some locations, withdrawals will likely approach or reach sustainable limits in the foreseeable future, well within the current 20-year planning horizon.

The 2005 District Water Supply Plan (DWSP 2005) [*also known as the Regional Water Supply Plan (RWSP)*] addressed current and future water use, traditional and alternative water sources, and water conservation efforts required to meet 2025 water supply needs, while sustaining water quality and protecting wetland and aquatic systems. It was adopted by the Governing Board in February 2006. The DWSP 2005 was designed to meet the requirements of the water supply planning provisions of Section 373, Florida Statutes, and was based on a planning horizon extending through 2025. (*The above text for this section was excerpted from: Technical Publication SJ2006-2, District Water Supply Plan, 2005.*)

The results of the DWSP 2005 indicate the potential need for new regional facilities, new water storage methods and much stricter consumptive use



permitting for new and existing wells. The County will continue to be fully engaged in the regional process of addressing and resolving future water supply issues.

#### **Issue POT 7      Water Supply Facilities Work Plan**

In 2002, 2004, and 2005 the Legislature expanded the local government comprehensive plan requirements to strengthen coordination of water supply planning and local land use planning. Stronger coordination requirements resulted from concerns that groundwater withdrawals are approaching their limit in many areas of the State, and that alternative supplies must be identified, quantified and developed. These actions were envisioned as necessary additions to the implementation of local water conservation strategies and Florida Department of Environmental Protection permitted water reuse programs.

The most significant requirement was completion of a 10-year Water Supply Facilities Work Plan (Work Plan) by all counties and cities within areas designated as “priority water resource caution areas” (PWRCAs) by the District in the DWSP 2005. The DWSP 2005 was approved by its District Governing Board in February 2006. PWRCAs correspond to the regional water supply planning areas referred to in State law. These are areas where existing and reasonably anticipated sources of water and conservation efforts may not be adequate to: 1) supply water for all existing legal uses and reasonably anticipated future needs, and 2) sustain the water resources and related natural systems.

The Work Plan must identify the current and planned water supply facilities and source(s) of water that will meet the projected demand within the local government’s jurisdiction and must be adopted as part of the Potable Water Element. The Capital Improvements Element must also be amended to include projects listed in the first five years of the Ten-Year Work Plan. Additionally, appropriate goals, objectives and policies of these and other Plan elements must be amended or put in place in support of the Work Plan.

In 2006, the County began the amendment process to incorporate the Work Plan as required by law. The Work Plan was adopted by the County on 11/13/2007 and found compliant by the Department of Community Affairs. This plan is designed to address the water needs of Seminole County’s water service areas through 2025 by permitting and constructing the first phase of the Seminole County Regional Water Treatment Facility at Yankee Lake. Should a larger regional water facility be needed in the future, the Yankee Lake site could undergo a second phase of construction, expanding capacity under a separate Consumptive Use Permit issued to a regional water partnership of users. Such a partnership would address all issues associated with a regional water supply, including production facilities and transmission lines.

#### **Meeting the Legislative Requirements**

Wekiva Parkway and Protection Act (Wekiva Act), *Chapter 369, Part III* – The Wekiva Act required the County to amend its Comprehensive Plan by December 1, 2006, to include an up-to-date 10-year Water Supply Facility Work Plan (Work Plan) for building potable water facilities necessary to



serve existing and new development and for which the local government is responsible, as required by Section 163.3177(6)(c), FS.

The County is meeting the requirements of the Wekiva Act through its adoption of a Work Plan that addresses both County facilities and service areas as well as service to unincorporated users outside County service areas by city and private water utilities. In doing so, the County has addressed the full requirements of Chapter 163, FS.

The following requirements were met with the adoption of the Water Supply Plan and finding of compliance:

- A Section 163.3177(6)(c), Florida Statutes – Within 18 months after the District Governing Board approves an updated regional water supply plan, the elements (Potable Water, et al) must incorporate the alternative water supply project or projects selected by the local government from those identified in the regional water supply plan pursuant to Section 373.0361(2)(a) or proposed by the local government under Section 373.0361(7)(b), FS.
- B The Element must identify such alternative water supply projects and traditional water supply projects and conservation and reuse necessary to meet the water needs identified in Section 373.0361(2)(a), FS, within the local government's jurisdiction and include a work plan, covering at least a 10 year planning period, for building public, private, and regional water supply facilities, including development of alternative water supplies, which are identified in the element as necessary to serve existing and new development. The work plan shall be updated, at a minimum, within 18 months after the governing board of a water management district approves an updated regional water supply plan, generally done every five (5) years.
- C The adoption of the Work Plan into the Potable Water Element in conjunction with other Comprehensive Plan amendments will meet the requirements of both the Wekiva Act and Chapter 163, Florida Statutes.

**Issue POT 8      Coordination of Countywide Water and Sewer Service**

In order to discourage urban sprawl, avoid duplication of services, maximize the use of existing facilities and plan for the provision of adequate levels of service to unincorporated users, the County relies primarily on its five year master plan and on coordination with other jurisdictions and private utilities for the provision of water and sewer services. These methods include wholesale agreements, service area agreements and interconnection agreements. As the full urbanization of the nonrural portions of the County occurs and as redevelopment of the urbanized area begins, the County will continue to review, renew, revise and seek new cooperative agreements with other jurisdictions, private suppliers and regional agencies as necessary in the area.



## POTABLE WATER ELEMENT GOAL, OBJECTIVES, AND POLICIES

### GOAL

The County shall provide quality public water facilities to serve existing and future development needs in a cost efficient, highly reliable, and environmentally sound manner.

### OBJECTIVE POT 1 ENVIRONMENTAL AND CONSERVATION POLICIES

The County shall ensure that the provision of water service and the operation of water treatment facilities under its control is accomplished in a manner which will minimize to the maximum practicable extent, any adverse impacts on the environment, public safety, residential neighborhoods and/or surrounding properties through the implementation of the following policies:

#### Policy POT 1.1 Cross Connection Control Program

The County shall enforce its cross connection ordinance that enables the County to require inspection, testing and maintenance of backflow devices as well as the retrofitting of existing facilities to meet the requirements of the ordinance. The ordinance also provides for the use of sanctions such as citations and/or disconnection if standards are not met.

#### Policy POT 1.2 Safe Drinking Water Act

The County shall monitor amendments to the Safe Drinking Water Act, as they develop. Significant amendments shall be brought to the Board of County Commissioners (Board) attention in a timely manner through a preliminary impact analysis statement provided to the Board by the Department of Environmental Services describing the range of known solutions, estimated cost of each and a future timetable to identify the most appropriate and cost effective method of compliance.

#### Policy POT 1.3 Fluoridation

The County shall continue the existing program of water fluoridation.

#### Policy POT 1.4 Water Conservation Program

- A The County shall ensure that current and proposed conservation practices meet or exceed conditions of the current Consumptive Use Permit (CUP); and
- B Ensure such practices are consistent with conservation practices identified as specific conditions in each CUP; and
- C Ensure these practices are incorporated into the Potable Water Element's Water Supply Facilities Work Plan.

#### Policy POT 1.5 Conservation Devices

Each update of the Land Development Code or Building Code shall include new requirements or revisions for water conservation devices and methods as needed. Such methods might include, but are not limited to, provisions for the use of drought tolerant species and water conserving irrigation techniques, use of Florida-Friendly/Waterwise landscaping for nonresidential construction, and surcharges for excessive consumption. Approved

conservation methods shall be used singly or in combination on a site-specific basis. The County shall coordinate with the District to reduce groundwater withdrawals for nonessential uses that consume large quantities of water (i.e. the filling of decorative fountains and ponds).

**Policy POT 1.6 Emergency Water Conservation**

The County shall continue to have and shall amend, as necessary, the emergency water conservation ordinance to enable the County to limit water usage by methods that may include, but are not limited to, citations with fines in order to enforce restrictions, and surcharges for excessive consumption and use methods as are otherwise authorized by law. The ordinance shall, at a minimum, be consistent with the St. Johns River Water Management District's Emergency Water Conservation requirements.

**Policy POT 1.7 Reuse of Reclaimed Water**

The County shall continue to require all development to enter into reclaimed customer agreements as a condition of service. Actual implementation of such agreements shall be based on, but not limited to, the following considerations: availability of effluent supply, distance from existing facilities, the nature of the soils and the nature of the development. Additionally:

- A The County shall ensure that current and proposed reuse practices meet or exceed conditions of Consumptive Use Permit (CUP);
- B Ensure such practices are consistent with the reuse practices identified in the CUP technical staff report;
- C Ensure current and proposed reuse practices are consistent with the Regional Water Supply Plan, including the 2004 interim update, and other related reuse plans; and
- D Ensure these practices are incorporated into the Potable Water Element's Water Supply Facilities Work Plan.

**Policy POT 1.8 Required Connection to Central Water Service**

The County shall require, within the unincorporated urban area, as described in *Exhibit FLU: Urban/Rural Boundary*, connection to central water service where available when a County capital project is scheduled and authorized to begin construction in the County's current adopted annual budget or construction is committed to begin within one (1) year in an enforceable schedule contained within a binding developers agreement.



**OBJECTIVE POT 2 EFFECTIVE POTABLE WATER OPERATION**

The County shall correct deficiencies and maximize the use of existing facility capacity by using the most cost effective and efficient means of providing water production, treatment, and transmission to the service areas.

**Policy POT 2.1 Continuation of User-fee Operation**

The County shall continue to construct and operate County-owned and operated water facilities by means of user fees and, when in the best interest of the County, make use of available federal and State funds.

**Policy POT 2.2 Priority of Water Service**

The County shall establish the priority of water service as follows in order of priority:

- A Maintenance to the existing water system where immediate threats to public health or safety exist;
- B Maintenance or upgrading of the existing water system to correct deficiencies, should they arise, and to meet the adopted level of service standards; and
- C Service to new development areas.

**Policy POT 2.3 Minimum Construction Standards**

The County shall provide for regulation of the construction of facilities within unincorporated Seminole County by means of the water and sewer standards as set forth in the Land Development Code.

**Policy POT 2.4 Acquisition of Utilities to Augment Capacity**

The County shall continue to evaluate the acquisition of private water utilities to augment system capacity, upgrade potable water service, maximize facility use and increase cost effectiveness through economies of scale where economically feasible and supportive of the County's long- term water planning strategy.

**OBJECTIVE POT 3 LEVELS OF SERVICE**

The County shall establish and maintain a set level of service for each County potable water facility by providing facilities with sufficient capacity to meet projected service demands.

**Policy POT 3.1 Levels of Service Standards**

The County shall maintain adopted levels of service standards through the day-to-day activities of the Department of Environmental Services and the implementation of the adopted Capital Improvements Element and the adopted annual budget. Current and proposed level of service standards shall be consistent both in this policy and in the Potable Water Element's Water Supply Facilities Work Plan.

The following levels of service standards are adopted for each individual service area:

- A 350 gallons/day/Equivalent Residential Unit. Flow demands for commercial, industrial or other special developments differing from the flow values established by the serving utility shall be established from existing records or by estimated projections, using the best available data.
- B Fire flows in single family residential areas shall provide 600 gpm at a 20 psi residual pressure. Fire flows in commercial, institutional, industrial areas and apartment or multi-unit complexes shall provide 1,250 gpm at a 20 psi residual pressure.
- C Each treatment facility shall be maintained with a peak capacity at a minimum of two (2) times the average capacity.
- D These levels of service shall also be applied for planning purposes to private and city utilities serving unincorporated customers unless a different level of service is authorized by the Florida Department of Environmental Protection (FDEP) or as adopted in a comprehensive plan.
- E The County shall continue to operate in compliance with all rules and requirements of the FDEP, as well as all other applicable laws, rules and regulations, including but not limited to peak day, peak hour and service pressure requirements.

**Policy POT 3.2 Water Quality Master Plan**

The County shall update the Water Quality Master Plan every five years. As part of the update, the County shall conduct a level of service review to determine if adjustment of the existing level is necessary based on, but not limited to, historical data and projected demand. The Water Supply Facilities Work Plan (Work Plan) shall be supported by the Water Quality Master Plan. The Work Plan shall be revised and updated as necessary to maintain consistency with the Master Plan.

**Policy POT 3.3 New and Replacement Equipment**

The County shall maintain the established levels of potable water service through the acquisition of new and replacement equipment in accordance with the adopted five year Capital Improvements Element.

**Policy POT 3.4 Transmission Lines**

The County shall ensure that future transmission lines are sized to adequately meet the projected demands of development according to development phasing needs based upon the adopted/accepted Water Quality Master Plan which uses adopted future land uses as a basis for planning.

**Policy POT 3.5 Timing of Future Treatment Facility Expansion**

The County shall ensure that sufficient treatment facility capacity is maintained, once average daily flow (ADF) equals or exceeds 75% of a facility's permitted capacity or once the sum of current ADF plus future committed ADF equals or exceeds 90% of permitted capacity. A report shall be presented to the Board of County Commissioners by the Environmental Services Department on the need to increase capacity and, if capacity needs to be increased, the method of increase, estimated cost and timing.

**Policy POT 3.6 Adopted Potable Water Service Area Map**

*Exhibit POT: County Potable Water Service Areas and Treatment Plants* is the adopted potable water service area map for Seminole County. Whether central water usage is required for a particular piece of property within the service area is determined by reference to the Future Land Use Map Series, *Exhibit FLU: Services and Facilities by Classification* and the regulations governing that property according to its designation in the Series. Generally, when determined to be available in the urban area, new development or existing development with temporary well(s) shall connect to a central water system.

**OBJECTIVE POT 4 COORDINATION AND URBAN SPRAWL**

The County shall coordinate the extension of lines or increase of facility capacity with adjacent municipal and private facilities and discourage urban sprawl through implementation of the following policies:

**Policy POT 4.1 Evaluation of Service Area Expansion**

The County shall evaluate the impact on delivering adequate service to residents within the adopted service area as depicted in *Exhibit POT: County Potable Water Service Areas and Treatment Plants* prior to the expansion of a potable water service area outside the adopted service area boundaries. The County shall not expand the service area if the adopted level of service in the existing service area cannot be maintained or if the expansion will encourage urban sprawl.

**Policy POT 4.2 Methods of Providing Potable Water Outside of the Adopted Urban Service Area**

Outside of the Adopted Urban Service Area as depicted in *Exhibit FLU: Special Area Boundaries*, the County shall:

- A Continue to rely primarily upon individual wells as the method of providing potable water to the residents and other occupants outside the urban services area;
- B Encourage private central systems that exist as of the adoption date of this Plan to continue to provide an adequate level of service to users in their respective service areas, although the County shall discourage them from expanding their service areas;
- C New development outside adopted central service areas shall not be designed nor constructed with central water and/or sewer systems; and
- D Public and private central systems may be permitted in the future if it is clearly and convincingly demonstrated by the proponents of the system expansion that a health problem exists in a built but unserved area for which there is no other feasible solution. In such cases, the service area expansion plans will be updated concurrent with an areawide administrative land use update.

**Policy POT 4.3 Existing Package Plants**

Existing package plants (.e.g., schools, mobile home parks, etc.) shall be requested by the County to connect to the County system when service becomes available.

**Policy POT 4.4 Wholesale Agreements**

- A The County shall enter into wholesale agreements with municipal and/or private utilities to encourage the most cost effective and efficient provision of water services and to avoid duplication of services during County expansion of capacity or lines when and where economically feasible and supportive of the County's long term water planning strategy.
- B Wholesale agreements shall be incorporated as needed into the Support Documents of the Water Supply Facilities Work Plan (Work Plan) and designed to support and further advance the Work Plan.



**Policy POT 4.5 Extension of Service to New Development**

The County shall continue to require new development to fund the cost of extending water lines to serve their development.

**OBJECTIVE POT 5 COORDINATION OF POTABLE WATER AND LAND USE PLANNING**

The County shall coordinate land use planning with the management of water source and supply plans through the Comprehensive Plan, local water supply initiatives and the St. Johns River Water Management District's Regional Water Supply Plan (DRWSP 2005).

**Policy POT 5.1 Ten-Year Water Supply Facilities Work Plan**

The County shall maintain a Water Supply Facilities Work Plan (Work Plan) for at least a ten (10) year planning period addressing water supply facilities necessary to serve existing and future development within the County's water service areas and support other local and regional water supply plans. The Work Plan shall be incorporated wholly into the Potable Water Element of the Comprehensive Plan and be supported by data and analysis contained in separate documents noted in the Work Plan. Other elements of the Comprehensive Plan as noted in the Work Plan shall be amended as necessary to support and be consistent with the Work Plan.

**Policy POT 5.2 Consistency of the Work Plan with the Capital Improvements Element**

Capital projects scheduled in the first five years of the ten-year Work Plan shall be included in the Capital Improvements Element which is to be financially feasible. This schedule shall be updated annually as necessary to maintain consistency with the capital projects listed in the Work Plan and within 18 months following an update to the District Regional Water Supply Plan and subsequent revision to the Work Plan.

**Policy POT 5.3 Coordination with the Seminole County Water Master Plan**

The County shall use the Work Plan in conjunction with the County Water Quality Master Plan to prioritize and coordinate the expansion and upgrade of facilities used to withdraw, transmit, treat, store and distribute potable water to meet future needs.

**Policy POT 5.4 Coordination of Water and Land Use Planning**

The County shall coordinate the Water Supply Facilities Work Plan with the adopted Future Land Use Map and the adopted socio-economic data projections of the Comprehensive Plan. The County shall coordinate the Work Plan with the adopted Future Land Use Map in two ways:

- A Long-range water supply planning to meet future service demand shall be based upon the County's projection of socio-economic data done as part of each seven-year Evaluation and Appraisal Report or more frequently as needed. The projections for population, housing, employment, etc., are based on the vacant, buildable acres of each designated future land use category and therefore provide a reasonable estimate of future service demand by location and shall serve as the starting point upon which the ten-year water demand projections shall be based.



- B Prior to issuing a building permit, the County shall continue to require a concurrency review finding that the calculated water service demand can be met by available and as yet uncommitted facility capacity and water supply.

**Policy POT 5.5 Coordination and Consistency with the St Johns Water Management District Regional Water Supply Plan**

The County shall coordinate with and be consistent with the St. Johns River Water Management District's most current Regional Water Supply Plan (DRWSP) when proposing or amending the ten-year Water Supply Facilities Work Plan (Work Plan). At a minimum, this coordination shall take place within 18 months following an update to the DRWSP, generally done every five (5) years, and be documented in the text of the Work Plan. Where appropriate and feasible, the Work Plan shall include collaborative approaches with other local governments for water supply source use and development and water resource development.

**Policy POT 5.6 Coordination with District and Local Water Providers**

The County shall coordinate and consider with the St. Johns River Water Management District (District) and other local governments on the development of efficient, cost effective, and technically feasible water supply sources that will supplement future demands, without causing adverse impacts to water quality, wetlands, and aquatic systems. Consideration and coordination efforts made for each major water project shall be noted in the Work Plan. The County shall continue to work with the "Cooperators Group" of the District, County and Cities towards the development and evaluation of implementing a Countywide water supply plan.

**Policy POT 5.7 Maximize Use of Facilities and Supply Sources**

The County shall seek to maximize the use of existing potable water facilities, when financially and technically feasible, through the implementation of management techniques that enhance a source of supply, sustain water resources and related natural systems, and/or optimize water supply yield.

**Policy POT 5.8 Assessment of Work Plan with Evaluation and Appraisal Report**

The County shall assess as part of each Evaluation and Appraisal Report:

- A The extent to which the local government has considered the DRWSP and implemented a ten-year Work Plan for building public, private, and regional water supply facilities, including the development of alternative water supplies, to meet the needs identified in the Potable Water Element.
- B The extent to which the County has been successful in identifying alternative water supply projects, traditional water supply projects, and conservation and reuse programs to meet the water needs identified in the DWSP 2005 or subsequent updates.

**Policy POT 5.9 Water Conservation Programs and Practices**

Implement and maintain the following conservation water programs and practices that will result in a reduction of potable water demand. A description of each is detailed in the Work Plan in the Potable Water Element:

- A Water Conservation Ordinance 2007-18 – Adopted June 15, 2008 implements an irrigation program that:
  - 1 Includes the St Johns River Water Management District (District) Model Ordinance recommendations;
  - 2 Exceeds the Model Ordinance by specifying the actual two (2) weekdays to which watering is restricted and also extends the restriction to watering with reclaimed/reuse water; and
  - 3 Allows Seminole County to levy fines through the Code Enforcement Board process or the citation process.
- B System Water Audits - The County shall continue to aggressively seek to accurately identify water production, transmission, and use in order to maximize system efficiency and identify areas for further savings.
- C Public Education - The County shall continue the Water Conservation Coordinator’s efforts of public education, including compliance with all individual requirements of the County’s Consumptive Use Permit and the District guidelines relative to education programs.
- D Residential Irrigation Audit Program - The County shall continue the residential irrigation audit program targeting high water users in the four major service areas for individual household irrigation audits.
- E Rate Structure Modification – The County shall continue to use the adopted rate resolution, implementing an aggressive, multi-tiered inverse block rate structure for potable and irrigation water.
- F Potential Future Conservation Programs - Seminole County has identified additional programs for potential future implementation, dependent upon the success of the efforts listed above. A detailed list and description of each program can be found in the County’s formal Conservation Plan completed in November 2006.

**Policy POT 5.10 Reclaimed Water Programs and Practices**

Implement and maintain the following reclaimed water programs and practices that will result in a reduction of potable water demand:

- A Reclaimed Ordinance – The County shall enforce the adopted ordinance requiring that residential development approved by the Board of County Commissioners that is within one of the designated reclaimed service areas as depicted in *Exhibit POT: County Reclaimed Water Service Areas*:
  - 1 Install separate irrigation lines for new development in areas currently served or scheduled to be served by reclaimed water;
  - 2 Connect existing water services once reclaimed is available;
  - 3 Install irrigation meters; and



- 4 Install appropriate irrigation systems.
- B Evaluate the Reclaimed Water Program as part of each future Evaluation and Appraisal Report.
- C Residential Reclaimed Retrofits - The County shall complete the five (5) residential reclaimed retrofits listed in the Water Supply Facilities Work Plan per the schedule provided in Support Document #1.
- D Reclaimed Augmentation Facility – The County shall design and construct a surface water reclaimed augmentation facility at Yankee Lake site per adopted Capital Improvements Plan project list. The County shall create and implement a plan to eventually use surface water as the primary back-up source to augment peak reclaimed water demands.
- E Tri-Party Agreement - The County shall continue to participate through a tri-party agreement with the Cities of Lake Mary and Sanford in implementing the North Seminole Regional Reclaimed Water And Surface Water Augmentation System Expansion and Optimization Project through the Joint Participation Agreement Between City Of Sanford, City Of Lake Mary, And Seminole County Providing For Reclaimed/Water Alternative Water Supply Distribution Infrastructure (Tri-Party Agreement).
- F Eastern Regional Reclaimed Water System – The County shall continue to maintain its agreement with the City of Orlando to maintain its reclaimed water allotment from the Iron Bridge Waste Water Treatment Plant for sale to the City of Oviedo and the University of Central Florida and the expansion of reclaimed service to new residential developments in identified reclaimed areas of the Southeast Service Area.

**Policy POT 5.11 Compliance With the Wekiva Parkway and Protection Act**

The Work Plan is intended to meet the requirements of the Wekiva Parkway and Protection Act by addressing jurisdictional water facilities necessary to serve existing and new development for which the County is responsible.

**Policy POT 5.12 Concurrency Requirements for Potable Water**

Adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance by the County of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit or its functional equivalent, the County shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the County of a certificate of occupancy or its functional equivalent.

**Policy POT 5.13 Meter Replacement Program**

The County shall initiate a meter replacement program by the end of 2008 to ensure the accurate measurement of customer usage.



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## POTABLE WATER ELEMENT WATER SUPPLY FACILITIES WORK PLAN

### INTRODUCTION

The Water Supply Facilities Work Plan (Work Plan) is the County's plan to meet current average daily demands and the anticipated growth in demand for a ten-year planning period. The Work Plan sets out how sufficient water, to meet current and future demands, is to be obtained, treated, and distributed over the planning period and how water conservation practices are to be implemented.

Seminole County Environmental Services Department's potable water system is divided into four (4) main geographical service areas: Northeast, Northwest, Southeast and Southwest. The Northeast Service Area (NESA) and Northwest Service Area (NWSA) are contiguous service areas with a reclaimed water interconnect that allows the transfer of reclaimed water between both service areas, as necessary. The other two service areas, Southeast (SESA) and Southwest (SWSA), are geographically isolated. All four service areas have existing interconnects with adjacent cities or utility companies for emergency service (water can be provided or received). The SWSA also includes six (6) of the seven (7) satellite water systems purchased from Florida Water Services in 2004, each having independent treatment facilities, distribution systems, and emergency interconnects with adjacent providers. (See: *Exhibit POT: County Potable Water Service Areas and Treatment Plants* and the same exhibit repeated in the Future Land Use Element, Exhibits section.) One of the former FWS systems was connected to the County's SESA in 2008.

### Compliance with Chapter 163, FS and the 2005 District Water Supply Plan

The Work Plan is intended to address the requirements of Chapter 163, FS, regarding the development of water supply sources and facility improvements and to assess the delivery of water service by other city and private water providers to unincorporated residents outside the County's areas of service.

Additionally, the Work Plan includes the Yankee Lake Reclaimed Water System Augmentation project selected from the St. Johns River Water Management District's (District) notice of May 2006 listing water supply development projects identified for the County in the 2005 District Water Supply Plan (DRWSP 2005). The County is currently implementing Phase 1 of the project, which is designed as a 5.5 MGD reclaimed water augmentation plant. In Phase 2, the project could be expanded to as much as 70 MGD of potable water production depending upon the number of potential funding partners participating in this regional project. At this time, no regional partners have committed to this project.

The County continues to partner with the City of Orlando via an interlocal agreement for the Eastern Regional Reclaimed Water Distribution System.

By selecting a DRWSP 2005 project and supporting other such projects, it is the County's intent to demonstrate "coordination with and consideration of the District regional water supply plan". (see *letters of notification and response in Support Document No. 1 – Addendum.*)

A more complete description of the State's requirements relative to work plans can be found in *Issue CON 3 Groundwater Supply* in the Conservation Element and *Issue POT 6 Future Water Supply* and *Issue POT 7 Water Supply Facilities Work Plan* in the Potable Water Element as well as *Policy CON 1.17 Ten-Year Water Supply Facilities Work Plan*, *Policy IGC 3.3 Plan Coordination*, and *Policies POT 5.1 Ten-Year Water Supply Facilities Work Plan* and *POT 5.5 Coordination and Consistency with District Regional Water Supply Plan*.



## **Data and Analysis**

This Work Plan is based on data and analyses prepared and compiled in the following support documents. The information provides support for the water demand projections, water supply alternatives, water conservation programs and practices, reuse programs and practices, and improvements to facilities that make up the overall Work Plan. Additionally, objectives and policies from the County's Comprehensive Plan supportive of the Work Plan are cited throughout. In particular, a new Objective was added to the Comprehensive Plan titled *Objective POT 5 Coordination of Potable Water and Land Use Planning*. Under this Objective are thirteen (13) new policies in support of the Work Plan.

Support Document No. 1: "Water Supply Facilities Work Plan", Reiss Environmental, August 2007, provides detailed information on the procedures used for calculation of population and demand projections, and more detailed descriptions of water supply, conservation, and reuse projects and programs included in the Work Plan. The support document also contains copies of both the County's most current reuse ordinance and conservation ordinances.

Support Document No. 1: "Addendum", Seminole County, October 2007 - This document supplements Support Document No. 1 dated August 2006. The document updates or adds to information not included in the original transmittal document and, in particular, provides information regarding the provision of service by city or private water utilities, either directly or indirectly, to unincorporated residents. Each item is discussed in this Work Plan. The Addendum materials will be integrated into the Support Document #1 at the next update.

Support Document No. 2: "Water Treatment Plant Evaluation Summary", Boyle Engineering Corp, April 2006, provides a detailed inventory and condition assessment of all County-owned water supply facilities, including source wells, treatment facilities, pumping stations, and distribution piping.

Support Document No. 3: "Water Quality Master Plan – Potable Water Section", Boyle Engineering Corp, December 2008, details planning and projects related to water facilities – collection, transmission, treatment, storage, pumps, wells, and distribution. The results of this Work Plan will be used to program capital projects into the 2011-2020 portion of the Work Plan planning period.

## **WATER SUPPLY FACILITIES WORK PLAN**

The Work Plan incorporates and continues a progressive plan that the County has been implementing over the past 10 years, based on seeking economical and environmentally sound solutions for water supply and distribution. Adopted Comprehensive Plan policies which supporting the Work Plan are noted in parentheses.

The geographic service area for the Seminole County Work Plan includes the entire unincorporated area of the County. Within this unincorporated area, potable water service is delivered by three major types of utilities: County retail, city wholesale/retail, and private retail. Smaller subdivision providers and private wells serve the remainder of the unincorporated County.

The main components of the Work Plan are the following:

- I Water Facility Planning – Projections, needs, projects, funding, and concurrency.
- II Groundwater Supply and Facilities Improvements - Development and optimization of groundwater supplies, treatment and distribution facilities.
- III Water Conservation Programs and Practices – Details of water conservation efforts.



- IV Reclaimed Water Programs and Practices – Expansion of reclaimed water facilities to serve residential areas.
- V Alternative Water Supply Projects - Evaluation of alternative water sources including surface water for reclaimed augmentation and potable water supply.
- VI Retail and Wholesale Service Between Water Providers - Evaluation of water service to unincorporated areas from other water providers.

## **I Water Facility Planning**

### A Projected Demands

Planning for provision of water supply service in each of the service areas is based upon projections of the County's future potable water demands by service area. Initial input for the water demand projections came from the adopted levels of service, adopted future land use designations and overall projected County population figures found in the Comprehensive Plan (*Support: Policy CIE 3.1 Adopted Level of Service Standards and Schedules of Capital Improvements*).

As part of the County's recent efforts to obtain a new consolidated Consumptive Use Permit (CUP), revised water demands were generated according to projected population increases. A summary of the methodology for projecting future population is presented in Support Document No. 1, as well as the protocols used for the CUP application in converting these population figures into future potable water demands. The results of these efforts have received conceptual approval by the District, and these demands were used as a basis for this Work Plan in place of the projections used by the District in its Water Supply Assessment 2003 to support its District Water Supply Plan 2005 (*Support: Policy POT 3.1 Levels of Service Standards and Policy POT 5.4 Coordination of Water and Land Use Planning*).

Projected demand for the major water use categories prepared by the District for the DWSP 2005 indicate that the demand for public supply will continue to grow through 2025, that domestic self-supply will hold steady, that agriculture/recreational uses will decrease, and that commercial/industrial uses will remain at their current very low level of less than one percent (*see: Table 3, Seminole County Major Water Use Categories, in the Support Document No. 1 – Addendum*).

The Potable Water Element, Exhibits section, *Exhibit POT: Potable Water Use in Seminole County* presents the resulting potable water demands projected for the Seminole County Environmental Services Department's (SCESD's) service areas. These same tables under the name of *Exhibit CIE: Capacity/Improvements Summary* are adopted into the Capital Improvements Element of the Comprehensive Plan. The projected deficits are addressed in *Exhibit POT: Projected Water Use in Seminole County* which provides the overall projected water uses, including offsets of potable water demand via the reclaimed water system expansion and conservation efforts. Note that both these tables have been accepted by the District. Note that the County continues to use its adopted level of service of 350 gpd/Equivalent Residential Unit – an industry standard – for planning purposes. The per capita rate shown in the water demand projections for the Consolidated CUP projections is expected to decrease over time as full impact of reuse programs and conservation programs to replace and reduce the use of groundwater.

### B Potable Water Supplies and Facility Needs

Water supply planning and project programming is accomplished through the County's 20 year water quality master plan, updated every five years, and the County's overall Capital Improvement Program (CIP). The CIP is a list of approved and planned projects covering the next five years and updated annually. Funding sources are identified for each CIP project

*(Support: Policy CIE 1.5 Capital Improvements Element Consistency with Other Elements, Policy CIE 1.12 Maintaining Consistency with Water Supply Facilities Work Plan and Policy POT 5.2 Consistency of the Work Plan with the Capital Improvements Element).*

Based upon the potable water demand projections in *Exhibit POT: Projected Water in Seminole County*, Seminole County is developing detailed plans for the provision of potable water over the next ten years and beyond, including groundwater supply, reclaimed water, conservation, and alternative water supply projects.

The County's Water Quality Master Plan was completed in December of 2008. This document will become "Support Document No. 3" and will identify the CIP projects designed to "fill-in" the remaining 2012-2020 planning period of the Work Plan *(Support: Policy POT 3.2 Water Quality Master Plan and Policy POT 5.3 Coordination with the Seminole County Water Master Plan)*.

### C Work Plan Project Identification

The Work Plan is presented as covering an initial ten-year planning period from 2011 to 2020 plus an additional two years to 2020, the end of the County's adopted long-range planning period. Note that the County's major groundwater and reuse/conservation projects will be completed by 2015 and are programmed into both the Work Plan and the five-year Capital Improvements Element (CIE) with this amendment. These capital projects are displayed in *Exhibit POT: Major Work Plan Capital Projects* and in the *Exhibit CIE: Five Year Capital Schedule of Improvements – Major Water Supply Plan Capital Projects*. Work Plan capital projects falling into the 2011 to 2020 period fall into two categories:

1 *Master Plan Projects* – These are projects which are part of the County's long-range Water Quality Master Plan which were completed in 2008. This 20-year planning document is Support Document No. 3 of the Water Supply Facilities Work Program.

2 *Alternative Water Supply Projects* – These are projects selected from the St Johns River Water Management District's list whose scope and timing is subject to identifying funding partners. No funding partners have committed to the County's Alternative Water Supply at this time.

### D Work Plan Project Funding

On September 22, 2009, the Seminole County Board of County Commissioners ( Board) approved a budget that included \$67.7 million dollars to fund the Work Plan projects shown in *Exhibit POT: Major Work Plan Capital Projects*. The dollars are shown in the years when they are available for use. A grey bar indicates the time period over which the projects will be expending their allotted funding. Funding sources are identified for each Capital Improvements Plan (CIP) project *(Support: Policy CIE 1.5 Capital Improvements element Consistency with Other Elements, Policy CIE 1.12 Maintaining Consistency with Water Supply Facilities Work Plan and Policy POT 5.2 Consistency of the Work Plan with the Capital Improvements Element)*.

Funding by one or more of the following committed sources will be applied to the listed Work Plan projects: beginning fund balance (cash), connection fee receipts, State grants for alternative water supply, and outside funding sources including the Series 2006 Water and Sewer Revenue Bonds, issued December 7, 2006, the Series 2010A Water and Sewer Revenue Bonds, and the Series 2010B Water and Sewer Revenue Bonds, both Series 2010 bonds, \$70.0 million, issued March 17, 2010. The Series 2006 Bonds have approximately \$26.8 million available to fund a portion of the CIP. Beginning fund balance and connection fee receipts will be available to fund the balance the CIP for the ten-year period. These dollars can be committed under the authority of the County Board or are guaranteed by



executed interlocal agreements or contracts and do not rely on public referendum to enable their use. In this manner, the definition of “financial feasibility” is met.

## E Concurrency Management

Seminole County will continue to operate a Concurrency Management System (CMS) as required by Chapter 163, FS, and shall ensure that all development orders, permits and agreements are subject to the adopted CMS standards and provisions and that potable water facilities shall be in place and available to serve new development no later than the issuance by the County of a certificate of occupancy or its functional equivalent.

Prior to approval of a building permit or its functional equivalent, the County shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the County of a certificate of occupancy or its functional equivalent (*Support: Issue FLU 2 Concurrency Management, Policy CIE 3.4 Concurrency Management and Mobility, Policy FLU 6.2 Concurrency Requirements, Policy IMP 2.5 Development Orders – Capacity Determinations and Availability, Policy CIE 3.2 Application to New Development and Redevelopment, and Policy POT 5.12 Concurrency Requirements for Potable Water*).

## II Groundwater Supply and Facilities Improvements

Added to the Conservation Element is *Issue CON 3 Groundwater Supply* and noted is the support to the Work Plan provided by the entire *Objective CON 1 Groundwater Protection*. As part of “coordination with and consideration of the District Regional Water Supply Plan”, *Policy CON 1.1 Groundwater Model/Assessment* was revised to be supportive of the District regional water supply planning process.

Over the term of this Work Plan, the County will complete the following projects to maintain and improve the supply of potable groundwater to its users:

- A Review and upgrade the seven former Florida Water Services treatment facilities as needed addressing current storage, treatment and transmission capacities and distribution systems. The County is currently considering elimination of up to five (5) of the six (6) existing water treatment plants with water service to be provided by interconnects and interlocal agreements for those locations (CIP No. 00203302, 00203303, 00203304, 00203305, 00203306, and 00203308).
- B Perform any unanticipated water treatment facility improvements and repairs (CIP No. 00056601).
- C Install Well #3 at the Country Club WTP to replace the lost capacity in the NESAs from the conversion of Well #2 at Greenwood Lakes to a monitoring well construction of a new ground storage tank (CIP No. 00178301).
- D Perform utilities master planning (CIP No. 00255201).
- E Perform general potable well improvements (CIP No. 00201503) including:
  - 1 Deepen two wells at the Lynwood WTP.
  - 2 Convert Lake Hayes Wells #1 and 3 to monitoring wells.
  - 3 Construct saltwater monitoring Well #4.
- F Perform various improvements at the Markham Regional WTP (CIP No. 00216601 and CIP No. 00216701). Improvements include two additional groundwater supply wells, a storage tank with aerator, treatment process upgrades and two high service pumps.



G Construct Aquifer Storage and Recovery facilities at the Markham WTP (CIP No. 00200401). Well construction is complete and the project is in the testing phase.

### **III Water Conservation Programs and Practices**

The County has a 10 year history of providing reclaimed water to commercial users in certain areas for irrigation use, which has served to lower commercial potable water demands. The County has also consistently participated in water conservation education and infrastructure improvements, with programs implemented by the County's full-time Conservation Coordinator. With regulatory and water supply issues growing in importance, Seminole County sponsored a study of further conservation strategies to determine efficient and cost-effective methods for reducing potable water uses, particularly those which allow for demonstration by measurement of the actual water saved.

Based on an evaluation of water use patterns relative to land use (commercial, single family, multi-family, etc.) and relative to service areas within the County (Northwest, Northeast, Southwest, Southeast), it was determined that the most effective conservation approach was a combination of continued and focused public education and other compliance-required programs, as well as minimization of current potable water use for irrigation. The significant conservation efforts described below are currently funded through the County's operational budget, unless otherwise noted. The use of reclaimed water to replace potable water is covered in the reuse section of this Work Plan. (*Support: Policy CON 1.19 Articulation of Water Conservation and Reuse Programs and Practices.*)

*Over the term of this Work Plan, the County will:*

- A Periodically complete system water audits and implement remedial actions when irregularities are found (*Support: Policy POT 5.9.B Water Conservation Programs and Practices*).
- B Prepare a Conservation Plan under the Sanitary Sewer and Reclaimed Water Master Plan budget (CIP No. 00255201) by 2010 which will set out conservation practices and programs to be applied as appropriate across the County's four service areas and to specific areas as needed. As part of this project, a variety of implementation activities are also planned once the planning is complete (*Support: Policy POT 1.4 Water Conservation Program*).
- C Continue the Water Conservation Coordinator's efforts on public education, including compliance with all individual requirements of the County's CUP and District guidelines relative to education programs (*Support: Policies CON 6.2.C and POT 5.9.C Water Conservation Programs and Practices*). Seminole County is currently committed to expenditures of approximately \$250,000 annually to this effort, primarily associated with salaries and conservation program supplies. The program will include, but not be limited to:
  - 1 Televising water conservation public service announcements.
  - 2 Providing water conservation videos to local schools and community organizations.
  - 3 Constructing, maintaining, and publicizing water efficient landscape demonstration projects (*Support: Policy CON 6.2.B Water Conservation Programs*).
  - 4 Providing water conservation exhibits in public places such as trade shows, festivals, shopping malls, utility offices, and government buildings.
  - 5 Providing/sponsoring water conservation speakers to local schools and community organizations.



- 6 Providing water conservation articles and/or reports to local news media and placing information on the County's web site.
  - 7 Displaying water conservation posters, distributing literature, and placing information on the County's web site.
  - 8 Providing landscape irrigation audits and irrigation system operating instructions to residents (more information regarding the residential irrigation audit program is provided below).
  - 9 Establishing a water audit customer assistance program that addresses both indoor and outdoor water use.
  - 10 Developing tools to quantify water savings attributable to the public education program, wherever possible (e.g., recording addresses of low-flow showerhead exchanges, and estimating potential water savings and locations accordingly).
- D Maintain a residential irrigation audit program (*Support: Policy POT 5.9.D Water Conservation Programs and Practices*). The County has implemented an expanded residential irrigation audit program targeting over 3,000 users in the four major service areas for individual audits. Evaluations suggest with confidence that the County can reduce overall potable water demand by approximately 1.9% through implementation of this program, at a relatively low cost per gallon saved. The County has approved the funding of the first six years of this program, at a level of \$150,000 per year, which will allow for audits to be performed on homes identified in the program.
- E Maintain an aggressive water conservation-promoting rate structure (*Support: Policy POT 5.9.E Water Conservation Programs and Practices*).
- F Monitor the success of the County's water conservation measures and evaluate one or more of the following additional measures, if needed and appropriate (*Support: Policy POT 5.9.F Water conservation Programs and Practices*).
- 1 Expansion of the residential irrigation audit program, as initial quantification of the program indicates that significant (20%+) water savings for customers undergoing irrigation audits can be realized.
  - 2 Ultra-low flow (ULF) toilet replacement education and incentive (rebate) program.
  - 3 Showerhead retrofit program.
  - 4 Assistance program to larger water users.
  - 5 Ordinance reform, including a proposal to mandate that new water customers verify that ULF toilets and low-flow showerheads be installed prior to initialization of potable water service by the County.
  - 6 Adoption of regulations that override green lawn deed restrictions.
  - 7 Allow development incentives for water efficient developments, such as those that use the Florida Water Star program, a point-based, new home certification program, similar to the Federal Energy Star® program.
  - 8 Assist single family homeowners to retrofit existing lawns and replace them with Florida Friendly/Waterwise plant materials (*Support: Policy CON 6.1.B Water Conservation Programs*).
  - 9 Continue if financially feasible, the program for provision of appropriate irrigation systems for single family homes. A study is underway during 2008 to evaluate whether appropriate irrigation systems can also be provided to "commercial" water





users (which includes multi-family residential uses) (*Support: Policy CON 6.2.D Water Conservation Programs*).

- G Initiate a meter replacement program targeting residential meters by the end of 2012. (CIP 00250201) (*Support: Policy POT 5.13 Meter Replacement Program*).
- H Require water-conserving plumbing devices including those required by the Florida Building Code (*Support: Policy POT 1.5 Conservation Devices*).
- Continue to emphasize the use of Florida-friendly/Waterwise irrigation practices through code updates and evaluate the feasibility of requiring Florida-Friendly landscaping for nonresidential development through code changes by 2010 (*Support: Policy POT 1.5 Conservation Devices and Policy CON 1.12 Florida-friendly/Waterwise Landscaping Regulation*).
- I Continue enforcement Water Conservation Ordinance 2009-24, adopted July 28, 2009, an irrigation regulating ordinance (*Support: Policies CON 6.2.E Water Conservation Programs and POT 5.9. A Water Conservation Programs and Practices*).
- J Require emergency water conservation measures during water shortage declarations by the District (*Support: Policy CON 1.16 Emergency Water Conservation and Policy POT 1.6 Emergency Water Conservation*).
- K Continue to report to the District's Abandoned Artesian Well Plugging Program newly identified free flowing wells. At the time of the next District Water Supply Plan update, if not earlier, the County shall reconsider its ability to participate in this matching-fund program (*Support: Policy CON 1.9 Well Capping Program*).
- L Source Protection:
- 1 Enforce the County's wellhead protection ordinance. (*Support: Policy CON 1.5 Wellfield Protection and Policy FLU 1.13 Wellfield Protection*). This policy is enforced through Chapter 55 – Wellfield Protection of the County's Land Development Code.
  - 2 Expand the wellhead protection program by pursuing interlocal agreements with other entities (*Support: Policy CON 1.6 Intergovernmental Wellfield Protection*).
  - 3 Protect aquifer recharge areas in general by enforcement of the Aquifer Protection Overlay Zoning classification (*Support: Policy CON 1.3 Recharge Area Protection*) and in the designated Rural Areas by applying specific development standards. (*Support: Policy FLU 11.14 Protection of Natural Resources*.) Also, see *Exhibit FLU: FLU Series – Cones of Influence*).
  - 4 Continue evaluation of the use of septic tanks and effluent reuse relative to most effective recharge areas (*Support: Policy CON 1.4 Recharge Area Reuse; Support Document No. 1 – Addendum, Map 2 –Unincorporated Areas of Septic Service*).
  - 5 In the County's Evaluation and Appraisal Reports include evaluation of the effectiveness of aquifer protection measures, policies and regulations and make revisions as necessary (*Support: Policy CON 1.2 Recharge Area Protection/Conservation Measures, Policy CON 1.3 Recharge Area Protection, and Policy DRG 3.9 Groundwater Recharge*).

#### IV Water Reuse Programs and Practices

The following details methods by which the use of reclaimed water will be increased to offset the demand for potable water (*Support: Policy CON 1.19 Articulation of Water Conservation and Reuse Programs and Practices*.) See *Exhibit POT: County Reclaimed Water Service Areas*.



Over the term of this Work Plan, the County will:

- A Continue to enforce the County's Reclaimed Water Ordinance (Ordinance 2010-11) (*Support: Policy POT 5.10.1 Reclaimed Water Programs and Practices and Policy POT 1.7 Reuse of Reclaimed Water*) regarding requirement for reclaimed water agreements and ensuring that current and proposed reuse practices are consistent with the CUP and Regional Water Supply Plan.
- B Maintain reclaimed water supply to customers in its Northwest and Northeast service areas (*Support: Policy POT 5.10.A Reclaimed Water Programs and Practices*).
- C Expand the reclaimed water system to supply existing residential areas in the Northwest Service Area (area of highest per capita use) (*Support: Policy CON 6.2.A Water Conservation Programs.*)
  - 1 The five phases of residential reclaimed water retrofits are included in CIP project Nos. 00217301, 00217201, 00223001, 00223101, and 00223201 (*Support: Policy POT 5.10.C Reclaimed Water Programs and Practices.*)
- D Improvements to the distribution network for reclaimed water are planned for 2012 that will add a major reclaimed water main along Markham Road.
- E Provide reclaimed water to future developments in areas of the Northeast, Northwest, and Southeast Service Areas shown in *Exhibit POT: County Reclaimed Water Service Areas*. An additional 1.30 MGD of potable water is expected to be saved through expansion of the reclaimed water system to these new areas. This savings, combined with savings from the *first five phases described in Sec IV.C will total 3.06 MGD* of potable water savings from installation/expansion of the reclaimed water system. (*Support: Policies CON 6.2.A Water Conservation Programs and POT 5.10.E Reclaimed Water Programs and Practices and 5.10.F Reclaimed Water Programs and Practices*).
- F Require mandatory hook-up to reclaimed systems where available, require meters to be installed on new reclaimed water connections, and require installation of appropriate irrigation systems. (*Support: Reclaimed Water Ordinance 2010-11, Support Document No. 1 – Addendum and Policy POT 5.10.A Reclaimed Water Programs and Practices*).
- G Require new developments within existing or future areas of reuse water availability to install dedicated lines for future connection to the expanding reuse system within the existing and future reuse service areas, as depicted in *Exhibit POT: County Reclaimed Water Service Areas* (*Support: Policy POT 5.10.A Reclaimed Water Programs and Practices*).
- H Maintain the three party agreement with the cities of Sanford and Lake Mary relative to development of a regional reuse system to deliver reclaimed water to use in place of potable water for irrigation. The agreement, as amended in 2001 and 2005, allows for up to 2.75 MGD of reclaimed water to be supplied to the County, and provides for the parties to share the costs of expanding the City of Sanford's water reuse program reclaimed water supply from 7.3 mgd to 14.6 mgd by augmenting with water from Lake Monroe, and the costs of pumping station necessary to boost the pressure at the interconnection to Seminole County. The project is co-funded by United States Environmental Protection Agency and the three parties are to match 45% of the costs. The County provided funding to the City of Sanford for improvements to the existing surface water reuse augmentation facility, and proposed storage facilities. This project is referred to as the North Seminole Regional Reclaimed Water and Surface Water Augmentation System Expansion and Optimization Project in the St. Johns River Water Management District's District Water Supply Plan 2005 and is more fully described in Sanford's February 2007 Water Supply



Facilities' Work Plan, Chapter 8 (*Support: Policy POT 5.10.E Reclaimed Water Programs and Practices*).

- I Construct and place into service by late 2012, the Seminole County Yankee Lake Reclaimed Water System Augmentation Project, a 10 mgd facility (design capacity) for treating raw water from the St. Johns River with an intake located just downstream from Lake Monroe. The County plans to withdraw 5.5 mgd in the first phase of the project. The project is a listed water supply development project in the District's District Water Supply Plan 2005 (CIP No. 00164301, 00181601) (*Policy POT 5.10.D Reclaimed Water Programs and Practices*).
- J Maintain an agreement with the City of Orlando to develop the Eastern Regional Reclaimed Water Distribution System to expand the use of reuse water allotted to Seminole County to include new residential development in the Southeast Service area as growth occurs in identified reclaimed water service areas beyond the amounts now provided to the City of Oviedo and the University of Central Florida (*Support: Policy POT 5.10.F Reclaimed Water Programs and Practices*).
- K The County currently utilizes 5.0 mgd of its allotted 8.506 mgd (of the over 20 mgd of reclaimed water produced by Iron Bridge Treatment Plant) for contract sale of bulk reclaimed water to the City of Oviedo (3 mgd) and the University of Central Florida (2 mgd). The remaining 3.506 mgd of reclaimed water is available for use in implementing the Eastern Orange County and Seminole County's Regional Reclaimed Water Reuse Project in the District's District Water Supply Plan 2005 and was completed in early 2008. The project implemented by the City of Orlando included a new four million gallon ground storage tank for reclaimed water, and associated transfer and high-service pumping stations.
- L Implement a plan to minimize the use of potable groundwater as a back-up source used to augment peak reclaimed water demands in the Northwest and Northeast Service Areas by converting entirely to the augmentation supply generated from the surface water augmentation facility at Yankee Lake once on-line in 2012 (*Support: Policy POT 5.10.D Reclaimed Water Programs and Practices*).
- M As part of completing each Comprehensive Plan Evaluation and Appraisal Report, evaluate the effectiveness of the reclaimed water program and the opportunities for improvement (*Support: Policy CON 1.11 Effluent Reuse, Policy POT 5.8 Assessment of Work Plan with Evaluation and Appraisal Report (EAR) and Policy POT 5.10.B Reclaimed Water Programs and Practices*).

### **V Alternative Water Supply Projects**

Over the term of this Work Plan, the County will:

- A Complete the reclaimed water projects identified in the Water Reuse Programs and Practices section of this Work Plan including the design and construction of a 10 mgd surface water reclaimed augmentation facility (planned Phase I permitted capacity is 5.5 MGD on an annual average basis) at the County's Yankee Lake site with an intake located on the St. Johns River just downstream of Lake Monroe. This project is made up of separate study, design, and construction (CIP Nos. 00164301, and 00181601). (*Support: Policy POT 5.10.D Reclaimed Water Programs and Practices*).
- B Design the Yankee Lake intake to allow for future additional withdrawal for reclaimed water augmentation and for potential future development of a surface water treatment facility for potable water. Based on current water demand projections, and the potable shortfall shown in *Exhibit POT: Projected Water Use in Seminole County*, it is expected



that the County will develop a surface water source for use as needed within the 20 year planning horizon. By 2025, this project is planned provide 4.52 MGD of potable water to users in the Northeast and Northwest Service Areas via this new surface water potable treatment facility (*Support: Policy POT 5.10.D Reclaimed Water Programs and Practices*).

- C On June 1, 2007, Seminole County responded to the St. Johns River Water Management Districts Water Supply Entity Notification Letter of May 30, 2006. The County's letter served as notification that Seminole County is implementing the Yankee Lake Reclaimed Water System Augmentation project identified in the DWSP 2005 (Project No. 55) in compliance with Section 163.3177 (6)(c) and Section 373.0361(2)(a), FS. The project is under construction with a scheduled completion date in early 2012. The project will withdraw 5.5 mgd (on an annual basis) of water from the St. Johns River to augment the County's reclaimed water system.

## VI Retail and Wholesale Interconnection Between Water Providers

Unincorporated residents and businesses obtain potable water from one of four major types of providers: the County itself through County water lines, through city water lines and through private (investor owned or water associations) utility water lines. Support Document No. 1 – Addendum provides basic information about these systems collected from on-line sources provided by the District. The water providers required to be addressed or noted are presented in the Addendum's *List of Public Water Suppliers in Seminole County*. Information about the providers is provided in *Table 1 - Base Data on Other Public Water Suppliers in Seminole County* of the Addendum. The following exhibits display the other utility service areas, treatment plants, wells and the extent of water the line network in the County:

- A Exhibit POT: Other Water Utility Service Areas and Treatment Plants.
- B Exhibit POT: Countywide Water Supply Wells - For the County, only two added wells are proposed and these are in close proximity to their plants – one at the Markham Regional Water Treatment Plant – CIP 00216601 and a new well to be drilled at the Country Club facility as a replacement for an existing well in the Northeast Service Area – CIP 00178301.
- C Exhibit POT: Countywide Water Line Network

For residents and areas provided retail service by County water utilities, the County performs master planning to ensure that current and future demands can be met and matches this planning with the long-range development plan of the County.

For residents and areas provided retail service by city utilities, primarily Altamonte Springs, Casselberry and Sanford, the County relies on each utility to include those unincorporated areas served in their planning for the continued delivery of service. Additionally, any development requests within the unincorporated County needing central water as a condition of development need to provide a letter verifying that the city utility could provide sufficient service to meet the development's water demand and to do so in a manner that meets the County's concurrency management system requirements as described elsewhere in this Work Plan. For residents and areas that provide retail service by private, for-profit, utilities or water associations, the same can be said as for the cities. All three providers serve primarily built-out or very slow growth areas with the exception of Sanford (*Addendum Support: Table 2 - Growth Projections in City Served Unincorporated Areas and Map 1 - Areas of Potable Water Cross-Service in Seminole County*).

At this time, the County's Comprehensive Plan contains a policy which directs the County to pursue joint planning agreements (JPA) with each of the cities to address the provision of services and facilities, among other things. In preparing these JPAs, the County can include

under this topic methods of sharing data that will ensure adequate planning for the provision of water to those areas served (*Support: Policy FLU 7.1 Joint Planning Agreements*). The City of Sanford is unique in that the County has already signed a utility interlocal making the City the designated service provider in a large area surrounding the City (*see Support Document No. 1 – Addendum, Map 1 - Areas of Potable Water Interconnection in Seminole County, for the extent of the area*). A letter of ability to service new development is required and the County's concurrency policies would apply.

The following describes the four methods by which potable water is provided by one water utility – County, city or private – to the service area of another utility or to unincorporated area customers located outside of one of the defined Seminole County potable water utility service areas.

#### A City Utility Retail Water Service Provided to the Unincorporated Area

- 1 Unincorporated areas served by cities (excepting the Sanford/Seminole JPA area) are generally built-out with little expected growth during the planning period. Table 2 in the Support Document No. 1 – Addendum, compiles the County's adopted socio-economic data for the key unincorporated traffic analysis zones served by the city utilities of Altamonte Springs and Casselberry as shown in Map 1 of the Addendum. The population change between 2008 and 2020 is projected to be 3%. These long standing service areas should be included in each city's water supply planning and incorporated into their projections of future demand and facility capacity.
- 2 At the point when the Seminole County Board of County Commissioners is asked to approve a development within a city or private water utility's service area, a letter is requested from the water provider attesting to and verifying their ability to provide the service required of the development.
- 3 Given that each of the cities is producing a detailed Water Supply Facilities Work Plan, it should be possible to include in future joint planning agreements with the cities a commitment to continue such service and formally account for future water demand in these areas (*Support: Policy FLU 7.1 Joint Planning Agreements*).
- 4 1993 Sanford/County Joint Planning Agreement (JPA) identifying long-range water and wastewater utility service planning areas. The agreement specifies that the area will be service by the City. Map 1 of the Addendum shows the area of unincorporated area subject to service as development occurs. For each development request to the County within the JPA area, the County requests written verification of the City of its ability to serve (*Support: Policy POT 5.12 Concurrency Requirements for Potable Water*).
- 5 The City of Sanford also provides potable water on a wholesale basis to the Midway-Caanan Water Association which in turn provides water to users in the Midway Area of the unincorporated County east of the city and north of SR 46.

#### B Private Utility Retail Water Service Provided to the Unincorporated Area

The service areas of private retail water providers to unincorporated residents are displayed in *Exhibit POT: Other Water Utility Service Areas and Treatment Plants*. While not producing water supply plans, development within these service areas is held to the same standard as the cities – a letter of verification that sufficient water is available to serve. Most private areas are built-out and expect very limited growth.



#### C County Retail Water Service Provided to City Areas

The County provides retail water service to approximately 65 single family homes within Winter Springs to the built-out Tuskawilla Unit 2 subdivision. Estimated average daily service is 22,750 gpd delivered from the County's Southeast Service Area. The service connections and demand are included in any water facilities and demand planning activities done for this service area by the County (under 0.1 mgd).

#### D Water Provided Under Wholesale Agreements Between Providers

In addition to city and private retail service to the unincorporated area, there are a number of wholesale agreements maintained that are collectively referenced in the County's Intergovernmental Coordination Element's *Exhibit IGC: Existing Coordination Mechanisms With Municipalities Within Seminole County* under the Subject Area of "Utilities (Water, Reclaimed Water and Sewer) as "various interlocal agreements for wholesale service". These agreements aid in the maximization of facility uses and efficient use of supply sources (*Policy POT 4.4 Wholesale Agreements and Policy POT 5.7 Maximize Use of Facilities and Supply Sources*).

Map 1 of the Addendum displays the major served areas. Note: Smaller areas with flows under 0.1mgd that are noted in this section are not mapped.

- 1 2004 agreement with the City of Oviedo for the City to provide potable water to the County's Black Hammock area. Seminole County in turn has allocated capacity to exchange with Oviedo as part of this agreement. No significant growth in this area beyond these original plans is expected, and no capital improvements are planned. Capacity to meet this off-set demand has been included and accounted for in all demand projections and plans for the Southeast service area and this should likewise be done by the City of Oviedo. Current ADF is 125 MGD. No fixed amount of water is specified.
- 2 2001 agreement with the City of Altamonte Springs for the City to provide potable water the County's Donald Avenue Water System. No significant growth in this area is expected, and no capital improvements are planned. No fixed amount of water is specified (Under 0.1 MGD).
- 3 1999 agreement with the City of Casselberry for the City to provide potable water the County's Sunlake/Sunshadow PUD area. No significant growth in this area is expected, and no capital improvements are planned. No fixed amount of water is specified.
- 4 1996 agreement with the City of Oviedo for the County to provide up to 262,500 gpd of potable water the City's Oviedo Crossings Development of Regional Impact and Dovera Community Development District areas. No significant growth in this area beyond the original plans and the original agreement is expected, and no capital improvements are planned.
- 5 1992 agreement with the Sanlando Utilities Corporation to provide potable water to 68 residential units of the County's Wingfield North Subdivision. No significant growth in this area is expected, and no capital improvements are planned. No fixed amount of water is specified. (Under 0.1 MGD.)
- 6 1988 agreement, amended in 1998, with the City of Sanford for the City to provide up to approximately 500,000 gpd of potable water the County's Chase Groves and Chase Property (The Cove) areas. No significant growth in this area is expected beyond original plans, and no capital improvements are planned.



- 7 1988 agreement to Lutheran Haven for Seminole County to provide up to .075 MGD of water.