

# **CHAPTER 4**

## **PUBLIC SERVICES**

### **Sub Elements:**

**Wastewater**

**Solid Waste**

**Stormwater Management**

**Potable Water**

**Ground Water Aquifer**

### **Goals, Objectives, & Policies**

### **Appendix:**

**A. Water Supply Plan (attached separately)**

**TABLE OF AMENDMENTS – PUBLIC SERVICES ELEMENT**

**CYCLE WSP**  
**Adopted by Ordinance No. 2009-07**  
**Date: February 16, 2009**

Amended all sub-elements for consistency with Water Supply Plan

**CYCLE 99-1**  
**Adopted by Ordinance No. 99-30**  
**Date: October 18, 1999**

Deleted Support Section from Public Service Sub-Elements.

## PUBLIC SERVICES ELEMENT

### GOALS AND OBJECTIVES

**GOAL ps-1:** Public facilities shall be provided in a manner which protects the City's investment in existing facilities.

**Objective ps1.1:** The City will implement procedures to ensure adequate facility capacity is available or will be available concurrent with the impact of development in accordance with the adopted levels of service as shown in the following policy.

**Policy ps1.1.1:** The following level of service standards are hereby adopted and shall be used as the basis for determining the availability of facility capacity and the demand generated by the development:

<u>Facility/ Service Area</u>	<u>Level of Service Standard</u>
Sanitary Sewer Facilities	Average Sewage Generation Rate
All Residences	114 gallons per capita per day
Commercial CBD	2,500 gallons per day per acre
Commercial Outlying	2,000 gallons per day per acre
Commercial Airport	1,500 gallons per day per acre
Solid Waste Facilities	Average Unit Contribution Rate
City-wide	8.6 pounds per capita per day
Drainage Facilities	Design Storm Event
City-wide	25 year frequency, 24 hour duration
Potable Water Facilities	Average Water Consumption Rate
City-wide	114 gallons per capita per day
Reclaimed Water Facilities	356 gallons per equivalent developable
City-wide	unit per day.

In order to ensure that these levels of service standards are sustained, methodologies for determining available capacity and demand shall incorporate appropriate peak demand coefficients for each facility and for the type of development proposed.

Policy ps1.1.2: All improvements for replacement, expansion or increase in capacity of facilities shall be compatible with the adopted level of service standards for the facility.

Policy ps1.1.3: Within the City's utility service areas, all new nonresidential developments, 5,000 square feet or larger, and all new residential developments, of 20 or more units, must connect to the City of DeLand potable water, wastewater and where available, reclaimed water services.

Policy ps1.1.4: Within the City's utility service areas, at such time as individual wells and/or septic systems fail, if such properties are located within 250' of a water or wastewater line, they must connect to the City's water or wastewater lines if reasonably available.

Policy ps1.1.5: The City shall require decisions concerning potable, wastewater and reclaimed water system needs, plan the location and timing of improvements to be consistent with land use and conservation resource policies and within the City's Water Facilities Work Plan and Water Supply Plan (refer to Appendix 1) as required by the Comprehensive Plan and within the St Johns River Water Management District's (SJRWMD) Regional Water Supply Plan.

Policy ps1.1.6: The City shall participate in the development of updates to the SJRWMD Water Supply Assessment and District Water Supply Plan and in other water supply development related initiatives facilitated by SJRWMD, and the City

will update the City's Water Supply Plan within eighteen months of an update of the SJRWMD District's Water Supply Plan (refer to Appendix 1, City of DeLand Water Supply Plan, Section 1).

Policy ps1.1.7: The City shall account for and meet the projected water supply needs of the areas of unincorporated Volusia County located within the boundary of the City's utility service area in accordance with the *Utility Service Agreement between Volusia County, Florida and the City of DeLand*, the City's Saint Johns River Water management District Consumptive Use Permit and the City's Water Supply Plan.

Policy ps1.1.8: The City shall coordinate with the Saint Johns River Water Management District, regional planning agencies, Volusia County and adjoining municipal governments in the support of legislation enacting requirements to implement water conservation measures. The City will adopt such measures within the timeframe designated by the Florida Legislature.

**WASTEWATER SUB-ELEMENT**  
**GOALS AND OBJECTIVES**

**GOAL ww-1:** Provide a level of wastewater and reclaimed wastewater reuse treatment that meets the established public access effluent limitations established by the Florida Department of Environmental Protection. (Changes per EAR 2009)

Objective ww1.1: Remove biological oxygen demand and suspended solids biologically through plant operation and maintenance.

Policy ww1.1.1: Develop and implement procedures to achieve the effluent limitation established for reuse.

Policy ww1.1.2: As necessary, utilize chemical additives to assure the public access discharge standard is met.

Policy ww1.1.3: On a monthly basis, monitor effluent quality and make monthly reports to the state.

Policy ww1.1.4: The City shall continue to operate its wastewater treatment facility in a manner acceptable to the Department of Environmental Protection, in regard to environmentally sound methods of treatment and disposal of wastewater.

Policy ww1.1.5: The City shall continue to require that individual wastewater treatment systems be located, constructed and operated so that they do not adversely affect public health or water resources.

Policy ww1.1.6: The City will continue to operate and maintain its water, wastewater and reclaimed wastewater reuse systems in a manner to obtain optimum operating levels and facility longevity so as to maximize the use, effectiveness and efficiency of the facilities.

**GOAL ww-2:** Reduce the quantity of wastewater discharged to the St. Johns River.

Objective ww2.1: Maintain 70% beneficial reclamation of effluent and increase the percentage of effluent recovered to 90% by 2012. Manage any residual effluent in a manner which provides recharge to the underlying aquifer systems.

Policy ww2.1.1: Except during periods of high rainfall amounts, cease discharging wastewater into the St. Johns River.

Policy ww2.1.2: Amend the existing development regulations to require the installation of wastewater reuse and potentially storage, pumping and/or augmentation facilities within new subdivisions or developments. Require the extension of wastewater reuse lines to developments within 1 mile of existing reuse lines.

Policy ww2.1.3: Participate with developers to extend wastewater reuse mains from the City's wastewater treatment plant to serve new development within portions of the City identified for reuse.

Objective ww2.2: Develop a reclaimed water augmentation program which will allow the City to utilize surface water from the St. Johns River to supplement available effluent. Utilization of up to 2 MGD of surface water has been identified as a target by SJRWMD and City staff. Improve reuse conveyance capacity from 1.0 MGD to 2.5 MGD by 2012.

Policy ww2.2.1: Continue to develop the reclaimed water distribution system with a focus on developer owner/operated systems that include storage for peak flow attenuation.

**GOAL ww-3:** Ensure that the City's wastewater collection system will have sufficient capacity to transmit peak flows to the wastewater treatment plant.

Objective ww3.1: Update the City's "Utility Master Plan" every five years and update the City's Water Supply Plan accordingly. Construct the Westside force main from the Wiley M. Nash WWTP to the Brandywine WWTP by 2012.

Policy ww3.1.1: Continue to require development to install wastewater collection mains and adequately sized facilities to serve their development and support continued growth in adjacent areas in accordance with the Utility Plan.

Policy ww3.1.2: As delineated in the City's Comprehensive Land Use Plan, the City will conduct long range planning for the purpose of supplying wastewater services for the geographic area known as the DeLand Service Area.

Objective ww3.2: With the exception of the creation of interconnections with other utility providers, the City will limit the extension of utility lines beyond the City's utility service area.

Policy ww3.2.1: Continue to implement the City's existing development regulations requiring the development to bear the expense of extending utility lines to serve the wastewater needs of the subject property.

Policy ww3.2.2: The City will upsize lines in conformance with the Year 2010 collection system model contained within the Utility Master Plan.

Policy ww3.2.2: The City will upsize lines in conformance with the Year 2012 collection system model contained within the Utility Master Plan.

Policy ww3.2.3: The City shall maintain a 5 year schedule of capital improvements required to maintain the existing the wastewater system, provide wastewater service to serve existing development to reduce the amount of effluent which is going into the aquifer, correct deficiencies with existing systems, and provide service to new development.

Policy ww3.2.4: The City shall prohibit the use of septic tanks in areas that are determined to be unsuitable for the use of septic tanks. Connection to City wastewater lines shall be required in these areas.

**SOLID WASTE SUB-ELEMENT**  
**GOALS AND OBJECTIVES**

**GOAL sw-1:** The City of DeLand will provide solid waste services to meet existing and projected demand identified in the comprehensive plan.

Objective sw1.1: Ensure a mechanism is in place to provide for the collection of solid waste generated within the City.

Policy sw1.1.1: Enforce the City's contract with the solid waste service provider to ensure that the collection of solid waste is performed in a timely and efficient manner.

Policy sw1.1.2: At the expiration of the existing contract, take necessary steps to ensure a contract is renegotiated with the existing solid waste service provider or a contract is signed with a new franchisee to provide solid waste collection services to solid waste generators within its corporate boundaries. (Changes per EAR 2009)

Policy sw1.1.3: Enforce the City's existing regulations concerning illegal dumping and littering.

Objective sw1.2: By 2010, in accordance with Volusia County regulations, reduce the solid waste stream going to landfill facilities by an additional 25% to reach an overall goal of 60% reduction since 1989.

Policy sw1.2.1: Implement the recycling pilot program for newspaper, glass and aluminum within the downtown business district.

- Policy sw1.2.2: Coordinate with Volusia County for the maintenance of the city wide recycling program for the newspaper, glass and aluminum cans.
- Policy sw1.2.3: Make available educational materials to the public regarding recycling, and the benefits derived by the public of recycling programs.
- Policy sw1.2.4: Provide household recycling bins to residences to encourage and facilitate participation in the residential recycling program.
- Objective sw1.3: Provide for the disposal of hazardous wastes.
- Policy sw1.3.1: Participate in the County's hazardous waste management program.
- Policy sw1.3.2: Make available educational materials for the proper disposal of waste oil.
- Policy sw1.3.3: Provide educational materials to the concerning common household hazardous waste materials and their proper disposal.

**STORMWATER MANAGEMENT SUB-ELEMENT**  
**GOALS AND OBJECTIVES**

**GOAL sm-1:** The City of DeLand will provide drainage facilities and services to meet existing and projected stormwater requirements identified in this plan.

Objective sm1.1: To evaluate the performance of existing stormwater systems and to prioritize and provide recommendations for upgrades, the City's Engineering Department shall periodically update the City's Stormwater Master Plan.

Policy sm1.1.1: Projects shall be entered into the City's five year CIP in accordance with the findings of the most recent update to the Stormwater Master Plan.

Policy sm1.1.2: The City of DeLand Engineering Department shall review the annual schedule of construction to ensure design service levels for facilities are acquired and maintained.

Policy sm1.1.4: All required federal and state permits shall be obtained before the City undertakes or authorizes contractors to undertake construction and/or operation of facilities.

Policy sm1.1.5: Drainage basin engineering studies shall conform to the stormwater engineering procedures and guidelines used for analysis of basins in the City of DeLand Stormwater Master Plan.

Policy sm1.1.6: The annual summaries of stormwater facilities capacities and demand information prepared by the City Staff shall be used to evaluate the need for

the timing and location of projects to extend or increase the capacity of existing facilities.

Policy sm1.1.7: The City shall continue to use a portion of revenues derived from the Stormwater Utility to provide long-term maintenance of drainage facilities.

Objective sm1.2: By 2020, a minimum of 85% of the stormwater drainage projects, listed as existing deficiencies in the 2004 Stormwater Master Plan, will be corrected.

Policy sm1.2.1: On an annual basis, the CIP will be revised to reflect those projects which have been completed and to include previously unfunded projects implementation.

**GOAL sm-2:** Adequate stormwater drainage will be provided to afford reasonable protection from flooding and to prevent degradation of quality of receiving waters.

Objective sm2.1: The stormwater drainage regulations contained in the City Land Development Code will provide for protection of natural drainage features and ensure that future development utilizes stormwater management systems compatible with the City of DeLand Master Drainage Study. The City of DeLand will implement regulations to require adequate facility capacity be designed and constructed during review of plans for improvements to existing development or construction of new development.

Policy sm2.1.1: The City of DeLand Public Works Department will prepare amendments to the stormwater drainage provisions of the Land Development Code to ensure that:

- a. Erosion and sediment controls are used during construction and integrated into development if necessary; and
- b. Periodic inspection and maintenance of on-site systems is ensured as a condition of system permit renewal.

Policy sm2.1.2: The Public Works Department will ensure that major drainage systems are inspected and receive required maintenance on at least an annual basis.

Policy sm2.1.3: Concurrent with the detailed design of the stormwater facilities' improvements that are outlined in Table 1, the 100-year floodplain analysis will be calculated and mapped for those improved drainage basins.

Policy sm2.1.4: In accordance with the City's stormwater management ordinance and Master Drainage Study, the City shall continue to encourage the use of non-structural methods of stormwater management.

Objective sm2.2: The City shall enact regulations to continue to conserve and protect the quality of current and projected future water sources and surface water runoff and continue to coordinate water supply and quality issues with state, regional, and county governments.

Policy sm2.2.1: The Land Development regulations shall incorporate the following performance standards in order to protect the quality of the City's water resources:

- a. Surface water management systems shall be designed and constructed to meet the following standards: Limit the allowable stormwater peak discharge detained from a site to be developed or altered to

the predevelopment or pre-alteration peak discharge for twenty-five years, twenty-four hour duration storm.

b. A vegetated and functional littoral zone shall be established as part of the surface water management system of landlocked lakes occurring on all property. Design of stormwater management systems shall include skimmers and other mechanical straining devices. Prior to construction of the surface water management system for any phase of a project, the developer shall prepare a design, \_\_ and management plan for the wetland/littoral zone that will be developed as part of these systems.

c. All new development shall be required to retain or detain sufficient runoff volume so that the peak discharge hydrograph of the development does not exceed the predevelopment hydrograph.

d. Stormwater facilities for all new development shall be designed and constructed so that properties located downstream from the subject property shall not be adversely affected by peak stormwater discharge or volume of the development.

Policy sm2.2.2: The City establishes the Department of Environmental Protection Rule 62-302, F.A.C. as the water quality standards for all stormwater facilities that discharge inside the City's jurisdiction.

Policy sm2.2.3: As required, revise the performance standards in the land development regulations regarding stormwater runoff to comply with the results of the study of the effect of stormwater runoff on the quality of the groundwater aquifer.

**GOAL sm-3:** Use stormwater capture to enhance groundwater recharge and, where possible, to provide irrigation for existing and/or proposed vegetation through active or passive means or a combination of active and passive means.

Objective sm3.1      Recommend the use of stormwater as a means of providing fully and/or augmenting on-site irrigation.

Objective sm3.2      Recommend the retention and/or, where appropriate and favorable for the existing community of flora and fauna, enhancement of naturally occurring drainage patterns to preserve the natural water budget of on-site conservation areas.

**POTABLE WATER SUB-ELEMENT**  
**GOALS AND OBJECTIVES**

**GOAL pw-1:** Produce a safe potable water supply with sufficient quantity for human consumption throughout the service area, based upon 114 gallons per capita per day (GCPD).

Objective pw1.1: The City will monitor water quality to assure compliance with maximum contaminant levels.

Policy pw1.1.1: Every three years, the City will complete a full test the water supply for the parameters identified in the Appendix, and in compliance with Florida Department of Environmental Protection standards.

Measure: Test results showing the quality of the City's potable water supply.

Objective pw1.2: The City shall maintain compliance with the goals relating to taste and odor, as established by the American Water Works Association.

Policy pw1.2.1: Utilization of treatment methods, such as aeration, storage, chlorine, and stabilization feed, to meet the water quality control standards.

**GOAL pw-2:** Produce an adequate quantity of potable water in the most cost effective manner.

Objective pw2.1: The City will plan and implement the expansion of the water supply to provide for peak day consumption.

Policy pw2.1.1: The City will construct new wells in accordance with its CUP, Raw water reproduction capacity should equal 20 MGD by 2010.

- Objective pw2.2: The City will maintain ground storage capacity equal to or greater than 50% of the average daily flow.
- Measure: Completed storage facilities with a total capacity equaling 50% of the average daily flow.
- Objective pw2.3: The City will reinforce the water distribution system primary feeder lines to maintain 5 feet per second as a maximum design pipeline velocity during peak daily flow.
- Policy pw2.3.1: Every five years, the City will update its Water Supply Plan and Utility Master Plan which will include a computerized hydraulic-model of the distribution system.
- Measure: The number of feet of primary distribution mains with theoretical flow velocity greater than 5 feet per second.
- Policy pw2.3.2: The City will establish a schedule and, per the schedule, test all fire hydrants within the City.
- Measure: The number of fire hydrants tested on an annual basis.
- Policy pw2.3.3: The City will continue to operate and maintain its water and wastewater system in a manner to obtain optimum operating levels and facility longevity so as to maximize the use, effectiveness and efficiency of the facilities.
- Objective pw2.4: Every five years, the City's Utility Master Plan' and Water Supply Plan will be updated to include annual water demand projections. These projections will be utilized to evaluate the City's ability to meet the established LOS.

- Policy pw2.4.1: The City’s “Utility Master Plan” will be updated every five years.
- Policy pw2.4.2: The City will maintain a valid Consumptive Use Permit (CUP) and satisfy the CUP’s conditions of issuance.
- Objective pw2.5: New developments within the utility service area shall extend water service to their site. In the event interconnection with another utility is necessary to serve the proposed development and/or interconnection undertaken by the City which will facilitate the provision of water to the proposed development occurs concurrently, the developer will bear the burden of the cost of the portion or the whole of the interconnection as associated with their site.
- Policy pw2.5.1: Continue to require that development bear the expense of extending utilities to serve the potable water needs of the subject property.
- Policy pw2.5.2: The City will participate in the cost to upsize water mains in conformance with the Year 2025 distribution system model.
- Policy pw2.5.3: The City will maintain a 5 year schedule of capital improvements required to maintain the existing potable water system, provide potable water service to specified unserved areas. Correct deficiencies with existing systems, and provide adequate fire protection.
- Policy pw2.5.4: As delineated in the City's Comprehensive Land Use Plan, the City shall conduct long range planning for the purpose of supplying potable water for the geographic area known as the DeLand Service Area.
- Policy pw2.5.5: Where available, the City shall require the extension of reclaimed wastewater reuse lines to serve new and existing developments.

Policy pw2.5.6: The City shall continue to require connection of all development to the centralized wastewater treatment facility when access to such a facility is available.

Policy pw2.5.7: The City shall strive to maintain pressure in its water system to provide-fire flow to all areas in the city at flow rates compatible with occupancy classification, at pressures greater than 20 psi.

**GOAL pw-3:** Develop alternative water supply sources.

Objective pw3.1: The City will pursue implementation of the alternative water supply project know as “Deland St Johns River Water Augmentation Project” which appears in the SJRWMD’s Water Supply Plan.

Policy pw3.1.1: The City shall acquire property and complete engineering design of the Deland St Johns River Water Augmentation Project.

Policy pw3.1.2 The City shall coordinate with the SJRWMD for the execution of the Deland St Johns River Water Augmentation Project upon determination the allocated surface water withdrawal has passed legal and regulatory tests.

Measure: Implement water withdrawal for augmentation.

Objective pw3.2: The City will participate in development of the alternative water supply projects known as Yankee Lake and Coquina Coast which appear, or are anticipated to appear in the SJRWMD Water Supply Plan.

Policy pw3.2.1: The City shall participate in the development and determination of financial and technical feasibility of the Yankee Lake and Coquina Coast projects until such time as one of the projects is identified by the State as an acceptable alternative water supply source, or until such time as an

alternative to these projects is identified and adopted by the State. Funding for the phases of the design and implementation of the selected project shall be added to the appropriate year(s) appearing in the City's CIP.

Policy pw3.2.2: The City shall coordinate with the SJRWMD for the development of the Yankee Lake or Coquina Coast project upon determination the selected project, or project alternative, has successfully passed legal and regulatory tests.

Policy pw3.2.3: The City shall reserve funds for, and subsequently purchase capacity rights to participate in the selected alternative water supply project.

Measure: Complete the design and implementation of the selected alternative water supply project(s).

**AQUIFER RECHARGE SUB-ELEMENT**  
**GOALS AND OBJECTIVES**

**GOAL gw-1:** Retain the Floridian aquifer and surface water as the primary sources for the City's potable water supply. Alternative water sources will be implemented to augment these water sources.

Objective gw1.1: Implement the City's existing development regulations to control the type and density of development to protect the quality and quantity of the water within the aquifer.

Policy gw1.1.1: Enforce existing subdivision and zoning regulations to restrict the type and intensity of development to reduce the amount of impervious surface and the diversion of stormwater from recharge locations.

Objective gw1.2: Maintain regulations that will protect the City's minimum potable water standards.

Policy gw1.2.1: Acquire land around existing and future well sites to serve as buffers between such wells and adjacent development.

Policy gw1.2.2: Continue to test the ground water on an annual basis and, review the test results to ascertain any changes in water quality in the surficial and artesian aquifers.

Policy gw1.2.3: Restrict industrial plants which use hazardous materials from locating in prime recharge areas.

Policy gw1.2.4: Restrict underground fuel storage tanks from within the cone of influence of the City's potable water wells.

- Measure: An annual comprehensive analysis will be made of the priority pollutants and results will be compared with the data from the previous year.
- Policy gw1.2.5: Employ conservative well spacing and withdrawal rates to avoid the potential for salt water intrusion.
- Measure: Conduct the wellfield monitoring plan in accordance with the CUP requirements. The monitoring plan evaluates the effects of the groundwater withdrawals on the aquifer system.
- Policy gw1.2.6: The City shall prohibit the use of septic tanks in areas that are determined to be unsuitable for the use of septic tanks.
- Objective 1.3: Enhance aquifer recharge by expanding the reclaimed water distribution system and utilize surface water to augment reclaimed water supplies.
- Measure: Monitor the potentiometric surface of pumping wells and terminate operation when the surface reaches elevation 5 M.S.L. (mean sea level).
- Policy gw1.3.1: Require new developments to install reclaimed water distribution systems. Developments with greater than 100 units should provide on-site storage and pumping facilities to reduce peak demands and promote aquifer recharge. Developers have the option of contributing to a dedicated fund for reuse system expansion. The contribution amount shall be calculated at the time of application.
- Policy gw1.3.2: Construct recharge basins to accept excess effluent and treated surface water. The recharge basins should be sited in areas conducive to aquifer recharge.

**APPENDIX A**  
**WATER SUPPLY PLAN**

Adopted: February 16, 2009

Approved by DCA: April 8, 2009

(Attached separately)