



**STORMWATER MANAGEMENT SUB-ELEMENT**

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# UTILITY ELEMENT

## I. INTRODUCTION

### A. Purpose

The Utility Element of the Palm Beach County's Comprehensive Plan consists of three Sub-Elements: Potable Water and Wastewater, Solid Waste, and Stormwater Management. The purpose of this Element, per Chapter 163.3177(6)(c), F.S., and Rule 9J-5.011, F.A.C., is to provide for necessary public facilities and services correlated to future land use projections.

### B. Assessment & Conclusions

Goals, Objectives and Policies are expressed in each of the Sub-Elements, addressing the County's desire to maximize the use of existing facilities, correct existing deficiencies, promote a more efficient land use pattern, and conserve and protect water resources. Diversified levels of service standards have been adopted in this Element for the purposes of determining capacities, levels of service, and levels of protection. It is the objective of the County to require that services be provided concurrent with development. Level of service standards must be met for issuance of Development Orders.

It is also the objective of the County to protect water resources. The Potable Water and Wastewater Sub-Element addresses the protection and preservation of water resources and water quality, the conservation of potable water and the use of reclaimed water, safe management and disposal of solid and hazardous wastes, and the protection of wellfields and prime aquifer recharge areas.

While each Sub-Element focuses on a specific utility or facilities, all are interrelated, as they are interrelated with other Elements of this Plan. For example, wastewater demand and the necessary capacities are correlated to potable water use. Disposal of treated effluent and solid/hazardous waste has the potential of affecting groundwater quality, as does stormwater runoff found in surface waters. The agriculturally designed drainage system must be sufficient to provide protection for residential structures and septic tanks. Septic tank malfunction and infiltration of waste into the groundwater system is of concern. Protection of the aquifer system and wellfields through conservation and reuse, recharge enhancement, limitations on withdrawal, regulation of land use, and maintenance of minimum flows and levels will ensure the availability of an adequate water supply for all competing demands, maintain and enhance the functions of natural systems and preserve water quality.

Several regional water supply, surface water management studies, and ecosystem restoration projects are being developed in South Florida. Many of these projects will have a significant impact in Palm Beach County. Among the most critical projects are:

1. The US Army Corp of Engineers Central and South Florida (C&SF) Project Comprehensive Review Study (Restudy), authorized by the US Congress in 1992 and delivered to the Congress July 1,1999. This study will examine structural and operational modifications to the regional water management system to protect the Everglades and the Florida Bay ecosystems and to improve other functions including urban and agricultural water supply and flood control. In the year 2000, the US Congress gave authorization to implement the study recommendations through the Water Resources Development Act of 2000, which

authorized the implementation of the Comprehensive Everglades Restoration Plan (CERP). CERP is to be implemented in the next decades and the Congress authorized the first 1.4 billion dollars for the construction of the first group of priority projects.

2. The SFWMD Governing Board adopted the updated 2005-2006 Lower East Coast (LEC) Water Supply Plan. In addition, the SFWMD Governing Board adopted the Regional Water Availability Rule as part of SFWMD's consumptive use permit program in February 2007. Therefore, given the Governing Board direction to reduce reliance on the regional system for future water supply needs, the focus of the 2005-2006 LEC Water Supply Plan Update was on alternative water sources and projects. The Updated Plan included recommendations for water supply and water resource development projects to help meet the needs of the region through 2025. The Updated Plan also lays out a map to develop a 20-year water supply plan for the region. This plan and the CERP were carefully coordinated by the SFWMD and the Army Corps of Engineers to ensure integration of water resource planning for the region.
3. Other related programs are: the Water Preserve Areas (WPA's) Feasibility Study, which is exploring concepts to capture and store excess surface waters that are normally released to tide via the C&SF Project canal system by back pumping these surface waters to the WPA's; the Comprehensive Water Management Plan for Northern Palm Beach County, which would capture water from the southern L-8 Basin, provide water quality treatment, and route water to the West Palm Beach Water Catchment Area the Loxahatchee Slough and the NW Fork of the Loxahatchee River, when needed; and the Integrated Water Resources Strategy for Southeastern Palm Beach County, which includes improving existing flood control and water supply services for the urban and agricultural areas, water supply augmentation through the use of alternative water technologies, and coordination with regional ecosystem enhancement and land use planning efforts.

In 1994 the Federal and State governments entered into an agreement to settle a Federal lawsuit and the Everglades Forever Act was enacted. The implementation of this act includes the development of Stormwater Treatment Areas (STA's) and the establishment of Best Management Practices (BMP's) in the Everglades Agricultural Area, with the purpose of filtering phosphorus and other detrimental nutrients currently going to the Everglades.

Several Federal and State legislative initiatives and regulatory programs that have been adopted or are currently being discussed, might also have an impact on the surface and groundwater management situation in South Florida and particularly in Palm Beach County. Among them is the 1995 Florida Water Plan (FWP) which includes directives mandating water management districts and other agencies to achieve "Minimum Flows and Levels" (MFL's) for Florida water courses, lakes and aquifers, and also calls for new legislation to strengthen the link between land use planning and water management.

Lake Okeechobee water management actions are guided by a regulation schedule that in part address necessary actions that would be taken in drier years when Lake Okeechobee would be required to meet the water supply needs of agriculture and the public. Recently, water resource managers have determined that the regulation schedule can be improved and have begun the Lake Okeechobee Regulation Schedule Study (LORSS) that includes a two-part approach for developing improved water management guidelines for Lake Okeechobee; short-term and long-

term actions. The Short-Term actions involve operational changes only without the benefit of new construction to stabilize the potential for levee failure due to wave run-up and breach during hurricanes or failure due to piping related erosion and levee destabilization. The Long-Term actions will develop a new regulation schedule that will take into account the construction of early Comprehensive Everglades Restoration Plan (CERP) projects, including Acceler8 project components and related Lake Okeechobee levee improvements. Early coordination with the SFWMD and the Army Corps of Engineers determined serious deficiencies with respect to water supply, documenting a reduction in available storage and inconsistency with state MFL requirements.

Passed by the Florida Legislature on May 2, 2007, the Northern Everglades and Estuaries Protection Program, or Senate Bill 0392/House Bill 7157, expands the existing Lake Okeechobee Protection Program to include the Caloosahatchee River and St. Lucie River watersheds, including the estuaries. This legislation became effective July 1, 2007. The legislation requires the development of restoration plans and schedules, and provides dedicated funding to improve and protect the northern Everglades, including Lake Okeechobee and the two estuaries by setting aside land, constructing treatment wetlands and identifying water storage areas needed to improve the quality, timing and distribution of water in the natural system. This new legislation has the potential to detain water that otherwise would go to Lake Okeechobee in the more northern regions of the South Florida Water Management District making it more difficult to manage water supplies in South Florida, particularly during times of need.

Palm Beach County continues to actively participate in all the above-described projects and will follow the outcome of the several initiatives. In order to provide a more efficient and balanced review of these projects, to develop consolidated and technically sound position statements on the diverse issues, and to identify their potential impact on Palm Beach County, the County Administration created a Water Issues Group. This group includes top administrators, executives and senior professionals from the County's WUD, ERM, PZ&B, and Engineering departments and the County Administration. The County has developed through the WUD a County Water Policy, which is used as a guide to evaluate the diverse initiatives as they become adopted or are finalized, and to help provide more specific position statements. Further analysis of these issues will be reflected in the Utility Support Document and modifications or updates to the Goals, Objectives and Policies might be implemented as needed.

## POTABLE WATER & WASTEWATER SUB-ELEMENT

### I. INTRODUCTION

Potable Water and Wastewater are required by Chapter 163.3177(6)(c), F. S., and Rule 9J-5.011, F.A.C.

#### A. Purpose

The Potable Water and Wastewater Sub-Element has as its purpose:

1. To provide for necessary public facilities and services (including fire flow);
2. To establish different levels of service in order to meet a diversified demand;
3. To determine the most appropriate use of the County's water resources to meet current and future urban, environmental and agricultural demands;
4. To determine sound management of wastewater in a manner consistent with federal, state and local law, including methods of disposing of treated wastes and sludge from water and sewer treatment plants.
5. To establish the conditions upon which central potable water and/or wastewater service will be provided, and to identify those areas where public service will not be provided.

#### B. Assessment and Conclusions

Southeast Florida is a region where appropriate management of water resources is critical for the future sustainability of the region. This region encompasses a fast and steady growing population, some of the most important agricultural industries in the country, and last but not least, a fragile natural environment which includes the Everglades National Park and its supporting regional ecosystem. The region's water resources need to be planned and managed in order to respond to the competing needs of the growing population, the continuation of agriculture and the preservation and enhancement of the region's natural resources.

Palm Beach County is participating in and closely following the diverse regional programs addressing the future of water resources and water supply in the region. Several policies in this sub-element and other elements of the Comprehensive Plan state the need for County participation and monitoring of these regional initiatives.

##### 1. General Findings

In addition to the regional issues indicated above, the most relevant issues relating to Water Supply, Potable Water and Wastewater in Palm Beach County are the following:

- a. The unincorporated area of Palm Beach County receives potable water and/or wastewater from multiple providers. This Sub-Element identifies the service areas, capacities, and level of service of each provider. Analysis performed for this Sub-Element determines the impact of the proposed Land Use Plan on each provider's ability to meet future demand. This analysis provides the basis for intergovernmental and government/private provider coordination, to assure the availability of potable water and /or wastewater to meet projected demand. It also

assures the County that needs can be met in the County's own service area.

- b. The Sub-Element also provides a strategy to assist the County in meeting the requirements of Chapter 163.3180(2)(a), F.S., to provide required public services, such as potable water and wastewater, concurrently with the demands for those services. This strategy includes a capacity management system, which is necessary because the unincorporated area receives service from a number of providers.
- c. The Sub-Element provides information for current and future property owners and developers regarding proposed location, levels of service (LOS), and capacity of potable water and wastewater service.
- d. Palm Beach County residents obtain potable water and wastewater services through a variety of service providers. Population living within municipalities received drinking water either from those municipalities, or private franchises or special districts authorized to serve those municipal residents. The exceptions are the municipalities of Greenacres where potable water and wastewater services are totally provided by the Palm Beach County Water Utilities Department; and the Cities of Atlantis, Belle Glade, Boynton Beach, Pahokee, and South Bay as well as Seacoast Utility Authority and Seminole Improvement District where potable water is sold wholesale by Palm Beach County Water Utilities Department.

## **2. Potable Water Providers**

The residents of unincorporated areas of the County receive potable water services from one of the following sources:

- a. Eastern Palm Beach County: Palm Beach County Water Utilities Department (PBCWUD); Seacoast Utilities; Village of Wellington, Village of Golf; Town of Jupiter; Village of Palm Springs; City of Lake Worth; City of Boynton Beach; City of Riviera Beach; Village of Tequesta; City of Delray Beach; City of Boca Raton; City of West Palm Beach; Seminole Improvement District; and small private water supply systems.
- b. Glades Area (Western Palm Beach County): City of Belle Glade; City of Pahokee; City of South Bay; and small private water supply systems.
- c. While most Eastern Palm Beach County drinking water providers rely upon groundwater as the source of raw water (excluding the City of West Palm Beach), the Glades Area municipalities draw water from Lake Okeechobee.

## **3. Wastewater Providers**

Unincorporated residents located in eastern Palm Beach County received sanitary service from one of three types of systems:

- a. Central wastewater service, including the Palm Beach County Water Utilities Department (PBCWUD), Loxahatchee River Environmental Control District (ENCON), Seacoast Utilities, Village of Wellington, Seminole Improvement District, City of West Palm Beach, Village of Palm Springs; Village of Golf, City of Lake Worth; City of Boynton Beach; City of Riviera Beach; City of Delray Beach; and City of Boca Raton.

- b. Package treatment plant systems serving only one land use or development (such as a mobile home park); or
- c. Septic tanks operated and permitted under the provisions of the County's Environmental Control Rule I (ECR I).

A majority of the urban unincorporated areas in the Glades are served by the cities of Belle Glade, Pahokee and South Bay. Significant portions of unincorporated rural residential Palm Beach County including antiquated and unrecorded subdivisions, some of which are growing at a faster rate than other areas in the County rely on septic tanks.

Package treatment plants serving labor camps and sugar industry sites are also present in unincorporated Palm Beach County areas in the Glades. Palm Beach County prohibits the use of package treatment plants in the urban and limited urban service areas, while allowing restricted use of package plants in the Everglades Agricultural Area and in other areas dedicated to agricultural production, in order to provide wastewater service to bonafide agricultural uses and to essential public facilities.

## II. GOALS, OBJECTIVES, AND POLICIES

### GOAL 1: PROVISION OF SERVICES

To ensure that potable water and wastewater service in the County Water Utilities Department service area is provided concurrent with development within the Urban Service Area and to foster the provision of these services in unincorporated areas outside the County Water Utilities Department service area, within the Urban Service Area. The provision of service shall be in accordance with the growth management guidelines and allow for water wells, septic or sanitary service in unincorporated areas not served by PBCWUD public utilities, in accordance with the growth management guidelines. *[9J.5.011(2)(a), F.A.C.]*

#### OBJECTIVE 1.1 Service Concurrent with Development

Potable water and wastewater service shall be provided concurrent with development, consistent with adopted regulations in the Unified Land development Code (ULDC) in accordance with s. 163.3180(2)(a) and 9J 5.055(3)(a)1 and 2, F.A.C.. *[163.3180(2)(a), F.S., 9J-5.0055, F.A.C.]*

**Policy 1.1-a:** New development within the County Water Utilities Department service area shall be approved only when adequate water supply and treatment and distribution capacity is available, or provisions are included (as identified in Capital Improvement Element Policies 1.2-g and 1.2-h) for the needed potable water and/or wastewater, or when the developer obligates funds to provide that development's share of capital improvements to any of these systems, as well as the distribution systems within the development as detailed in the Unified Land Development Code. *[163.3180(2)(a), F.S., 9J 5.0055, F.A.C.]*

**Policy 1.1-b:** The County shall not approve developments in unincorporated areas which are served by other potable water and/or wastewater providers unless the following conditions are met: *[9J-5.055(3)(a)(2), F.A.C.]*

1. The provider must provide certification to the County that capacity is available to provide service at the adopted level of service, and

2. Public Health Department has verified and approved that capacity is available, and
3. The construction of the facilities or provision of services is the subject of a binding and guaranteed contract with the service provider.
4. The potable water concurrency provider must provide a written water availability statement indicating an adequate water supply consistent with established level of service (LOS) standards is available to serve the development. At a minimum, the water availability statement shall indicate an adequate water supply is immediately available and all required delivery infrastructure shall be fully constructed and operable prior to the issuance of the County Building Department Certificate of Occupancy.

**Policy 1.1-c:** The County shall continue to annually approve a capital improvement program based on the five year program adopted by the Board of County Commissioners, which shall obligate funds for improvements to the County's water treatment and distribution system, and the wastewater collection and treatment system consistent with local, state and federal regulations. *[9J-5.055(1)(b), F.A.C.]*

**Policy 1.1-d:** The County has amended its Unified Land Development Code and shall continue to operate a Capacity Management System and maintain an "Approved Projects Database", to ensure that all service providers will have adequate capacity to serve new development at the time that such development requires service. *[9J-5.055(3), F.A.C.]* The Capacity Management System shall include, but not be limited to developer agreements, or other legally binding instruments, to be executed between developer and provider, certifying that appropriate arrangements have been made to reserve capacity for a specified time period. These agreements must be enacted prior to issuance of development orders by the County. *[9J-5.055(3)(a)2, F.A.C.]*

**Policy 1.1-e:** The County shall continue to provide a report form to each provider for use in furnishing concurrency responses, documenting the amount of capacity obligated for a particular proposal in the unincorporated area, and the amount remaining. In addition, the County shall request an annual capacity report summarizing the total amount of capacity obligated and remaining available for that service provider's entire system. The annual report will be used to monitor the Capacity Management System, and to prepare the Annual Adequate Public Facilities Report (AUR) and Evaluation and Appraisal Report (EAR). *[9J-5.055(3), F.A.C.]*

**Policy 1.1-f:** The County shall accomplish intergovernmental coordination with the numerous municipalities, special districts, and utility providers of Palm Beach County through the utilization of the Concurrency Management System. *[9J-5.015(3)(b)1, F.A.C.]*  
**Cross Reference:** See *Intergovernmental Coordination Element Policy 4.1-a.*

## **OBJECTIVE 1.2 Potable Water - Levels of Service: Capacity**

Level of service standards for potable water shall be adopted for purposes of determining capacities required for issuance of development orders, pursuant to Capital Improvement Policies 1.2-d and 1.2-e in the Capital Improvement Element. Concurrency for potable water may be satisfied through an Urban or Rural Level of Service Standard depending upon the Service Area designation. A centralized potable water utility system represents the Urban Level of Service. An on-site water-well represents the Rural Level of Service. The Urban, Limited

Urban, and Rural Service Areas are depicted on the Service Areas Map", included in the Official Comprehensive Plan Map Series and defined in Land Use Goal 3. [9J-5.005(3), F.A.C.]

**Policy 1.2-a:** The minimum levels of service within the Urban Service Area shall be those described in Table 1: Minimum Level of Service Standards for Potable Water. [9J-5.011(2)(c)2(d), F.A.C.]

**Policy 1.2-b:** The minimum level of service for single lots of record in the urban service area, which represent infill development, is a water well permitted in accordance with State and local regulations as administered by the Palm Beach County Health Department. It is required by ECR-II, however, that new construction must connect to public water if available. The criteria for availability is defined in ECR-II, Article 15.B of the ULDC. [9J-5.011(2)(c)2, F.A.C.]

**Policy 1.2-c:** Design for additional capacity shall begin when 80 percent of facility capacity is demanded, and construction of additional capacity shall begin when 90 percent of facility capacity is demanded in order to guarantee provision of more than the minimum level of service. Systems approaching build out shall be exempt from this requirement. Systems approaching build out are defined to be systems that are built to the ultimate capacity required to accommodate all projected growth within the system's service area. [9J-5.011(2)(c)1, F.A.C.]

**Policy 1.2-d:** All improvements for replacement, expansion or increase in capacity of facilities within the Palm Beach County Water Utilities Department service area shall be compatible with adopted level of service standards for facility design as required by federal and state regulations. [9J-5.011(2)(c)1, F.A.C.] **Cross Reference:** See Utilities Support Document, Section IV(l)(5), for an analysis of the difference between level of service for facility design, and the adopted level of service for unit of demand used for concurrency purposes.

**Policy 1.2-e:** Palm Beach County shall continue the water service improvement program of replacing 4" lines with 6" lines to provide adequate fire flow in older developed portions within its service area. [9J-5.011(2)(c)1, F.A.C.]

**Policy 1.2-f:** The minimum level of service within the Limited Urban Service Area shall be either an on-site potable water-well or a potable water utility system. If a centralized potable water utility system is utilized, then the standards described in Table 1: Minimum Level of Service Standards for Potable Water shall apply. If a new utility provider is utilized Table 1 shall be amended to accurately reflect the appropriate level of service which shall be met in the area.

**Policy 1.2-g:** The minimum level of service for development within the Rural Service Area, shall be an onsite potable water-well permitted and operated in conformance with State and County regulations. There shall be no minimum levels of service for fire flow or storage in the Rural Service Area.

### **OBJECTIVE 1.3      Wastewater - Level of Service: Capacity**

Level of service standards for wastewater shall be adopted for purposes of determining capacities required for issuance of Development Orders, pursuant to Capital Improvement Policies 1.2-d and 1.2-e. Concurrency for wastewater service may be satisfied through either an Urban or a Rural Level of Service Standard, depending upon the Service Area designation. A centralized wastewater system represents the Urban Level of Service; an onsite sewage

treatment and disposal system represents the Rural Level of Service. The Urban, Limited, and Rural Service Areas are depicted on the Service Areas Map, included in the official Comprehensive Plan Map Series and defined in Land Use Goal 3. [9J-5.005(3), F.A.C.]

**Policy 1.3-a:** The minimum level of service within the Urban Service Area shall be those contained in Table 2 - Minimum Level of Service for Wastewater. [9J-5.011(2)(c)2(a), F.A.C.]

**Policy 1.3-b:** In the urban service area, the minimum level of service for single lots of record which represent infill development is a septic tank permitted in accordance with State and local regulations as administered by the Palm Beach County Health Department; however, connection to public sewer is required when available. The criteria for availability is defined in ECR-I, Article 15.A of the ULDC. [9J-5.011(2)(c)2, F.A.C.]

**Policy 1.3-c:** The PBCWUD shall prepare a capacity analysis for each of its wastewater treatment plants in accordance with State and Federal regulations. The analysis shall be updated annually when a capacity increase is necessary within the next 10 years. Design for additional capacity in the PBCWUD service area shall begin before a facility is 4 years away from the need for on-line capacity expansion as determined by a capacity analysis. Construction permitting of additional capacity shall be initiated at least 3 years before on-line capacity is required, and construction shall be complete and an operating permit application submitted to DEP at least 6 months prior to when initial capacity is exceeded. As the system approaches build out, it shall be exempt from this requirement. Systems approaching build out are defined to be systems that are built to the ultimate capacity required to accommodate all projected growth within the system's service area. [9J-5.011(2)(c)1, F.A.C.]

**Policy 1.3-d:** The minimum level of service within the Limited Urban Service Area shall be an "on-site sewage disposal system" permitted in accordance with State and local regulations as administered by the Palm Beach County Public Health Department or a centralized wastewater system. If a centralized wastewater utility system is utilized, then the standards described in Table 2: Minimum Levels of Service for Sanitary Sewer shall apply. If a new utility provider is utilized Table 2 shall be amended to accurately reflect the appropriate level of service which shall be met in the area. *Note: The words "on-site sewage disposal system" should correctly read "on-site sewage treatment and disposal system". This scrivener's error will be corrected in Amendment Round 00-1.*

**Policy 1.3-e:** The minimum level of service for development, within the Rural Service Area, is an "onsite sewage treatment and disposal system" permitted and operated in conformance with State and County regulations, as permitted by the Public Health Department. Development Orders shall not be issued if there is a demonstrated public health hazard in the area.

**Table 1**  
**Minimum Level of Service Standards for Potable Water**  
**(Policy 1.2-a)**  
*[9J-5.011(2)(c)2(b), F.A.C.]*

<b>Facility</b>	<b>Potable Water (1)</b>	<b>Fire Flow (2)</b> Residential/Commercial	<b>Storage (3)</b>
Palm Beach County Water Utilities Department	126	1,000 /1,500-5,000	2/3 ADF of System
Seacoast Utility Authority	191	1,000 /1,500-5,000	2/3 ADF of System
Village of Wellington	131	1,000 /1,500-5,000	2/3 ADF of System
Town of Jupiter	170	1,000./1,500-5,000	2/3 ADF of System
City of Riviera Beach	195	1,000 /1,500-5,000	4.0 million gallons
Village of Palm Springs	194	1,000 /1,500-5,000	2/3 ADF of System
City of Lake Worth	170	1,000 /1,500-5,000	5.9 million gallons
City of Boynton Beach	177	1,000 /1,500-5,000	10.3 million gallons
City of Delray Beach	276	1,000./1,500-5,000	2/3 ADF of System
City of Boca Raton	350	1,000 /1,500-5,000	2/3 ADF of System
Village of Royal Palm Beach	135	1,000 /1,500-5,000	2/3 ADF of System
City of Belle Glade	91	1,000 /1,500-5,000	2/3 ADF of System
City of Pahokee	86	1,000 /1,500-5,000	2/3 ADF of System
City of South Bay	150	1,000 /1,500-5,000 .	2/3 ADF of System
Seminole Improvement District	540(4)	1,000 /1,500-5,000	100% ADF of System
Village of Tequesta	3.9 (5)	1,000 /1,500-5,000	100% ADF of System
City of West Palm Beach	47(5)	1,000 /1,500-5,000	100% ADF of System

1. In gallons per capita per day (gpd). Source: Utility Providers, 2002
2. Requirements for Fire Flow in PBC. Source: Fire Rescue Ordinance # 98-29 / In gallons per minute (gpm)
3. ADF stands for "Average Daily Flow" of the system
4. In 000 gallons per day (gpd). The District has 4-5 residents and a water and sewer system that currently serves non-residential uses: three schools, a shopping center, a citrus packing plant and Lion Country Safari. Source: Seminole I.D., Feb 2002.
5. Capacity in MGD

**Table 2**  
**Minimum Level of Service Standards for Wastewater**  
**(Policy 1.3-a)**  
*[9J-5.011(2)(c)2(b), F.A.C.]*

<b>Facility</b>	<b>Wastewater (1)</b>	<b>Effluent</b>	<b>Sludge</b>
Palm Beach County Water Utilities Department	85	Per EPA/DEP	Per DEP/SWA
City of Boca Raton	215	Per EPA/DEP	Per DEP/SWA
City of Delray Beach	130	Per EPA/DEP	Per DEP/SWA
City of Boynton Beach	110	Per EPA/DEP	Per DEP/SWA
City of Riviera Beach	135	Per EPA/DEP	Per DEP/SWA
City of West Palm Beach	55(3)	Per EPA/DEP	Per DEP/SWA
Village of Royal Palm Beach	85	Per EPA/DEP	Per DEP/SWA
Village of Palm Springs	75	Per EPA/DEP	Per DEP/SWA
City of Lake Worth	100	Per EPA/DEP	Per DEP/SWA
City of Belle Glade	101	Per EPA/DEP	Per DEP/SWA
City of Pahokee	108	Per EPA/DEP	Per DEP/SWA
City of South Bay	150	Per EPA/DEP	Per DEP/SWA
Loxahatchee River District	108	Per EPA/DEP	Per DEP
Seacoast Utility Authority	107	Per EPA/DEP	Per DEP
Village of Wellington	96	Per EPA/DEP	Per DEP/SWA
Seminole Improvement District (2)	60 (2)	Per EPA/DEP	Per EPA/DEP

1. Gallons per Capita per Day (gpd). Source: Service Providers 2000
2. In 000 gallons per day (gpd). The District has 4-5 residents and a water and sewer system that currently serves non-residential uses: three schools, a shopping center, a citrus packing plant and Lion Country Safari. Source: Seminole I.D., Feb 2002.
3. Capacity in MGD

#### **OBJECTIVE 1.4 Potable Water - Level of Service: Quality**

The following level of service standards for potable water quality are hereby adopted for compliance with federal and state laws and regulations. The County shall continue to comply with ECR II requirements to meet local regulations.

**Policy 1.4-a:** The County shall upgrade treatment processes to provide aesthetically pleasing water, while meeting all EPA, DER and ECR II requirements. The County shall implement improvements necessary for filtration, disinfection, trihalomethanes and other regulated contaminants. Programmed improvements include: addition of ozone disinfection to existing lime-softening treatment plants, improvements in filtration and construction of a low-pressure reverse osmosis facility.

#### **OBJECTIVE 1.5 Service Improvements**

In order to promote public health, safety, and welfare, and to make the best use of existing capacity, the County shall encourage the conversion of well and/or septic tank users within the Urban Service Area to central water or Wastewater facilities. Through an assessment process the construction or reconstruction of water and/or sewer lines will improve the distribution of water and collection of Wastewater. The assessment program shall provide an affordable financial vehicle for the continuing program to improve water and wastewater facilities upon properties specifically benefiting from such improvements. *[9J-5.011 (2)(b)1, F.A.C.]*

**Policy 1.5-a:** Palm Beach County shall continue to offer the utility assessment program to areas lacking service within the Palm Beach County Water Utilities Department service area. The utility assessment program is a voluntary program requiring petition for service by at least 51 percent of the homeowners. Candidate areas for service through this program shall be identified based on a continuing evaluation of need. *[9J-5.011 (2)(b)1, F.A.C.]*

#### **OBJECTIVE 1.6 Conditions for the provision of potable water and/or wastewater and for the correction of existing and potential deficiencies**

Potable water, wastewater, and/or reclaimed water shall be in order to protect public health, make the best use of available capacity and discourage urban sprawl. *[9J-5.011 (2)(b) 1, 2 and 3, F.A.C.]*

**Policy 1.6-a:** The County shall provide central water and sewer service to those developed unincorporated areas where it has been determined by Palm Beach County Health Department (PBCHD) that use of private wells and/or septic tanks poses a health threat. *[9J-5.011 (2)(c)1, F.A.C.]*

1. PBCHD shall identify those areas where a public health emergency exists or is imminent due to failing septic tank systems. Upon notification of emergency the utility with jurisdiction over the identified area shall implement steps to extend water and/or sewer service to the affected areas.
2. PBCHD shall identify those areas where use of private wells and/or septic tanks presents potential health problems; a priority shall be assigned based on health risk factors. Within one year of identification, the County shall determine the cost of providing central service, identify the sources of funds, and establish a timetable for provision of service based on the priority assigned by the PBCHD;

the County shall also identify intergovernmental mechanisms needed to address areas not located in PBCWUD service area, and funding mechanisms for economically depressed areas in need of service.

**Policy 1.6-b:** Designation of areas within the PBCWUD service area that require emergency wastewater and/or potable water service due to public health threats caused by illegal disposal of hazardous waste, storm damage to individual systems, or other circumstance, shall involve notification of Palm Beach County by the PBCHD. Funding for such emergency actions shall come from the General Fund, and the County shall seek to recover costs by identifying potentially responsible parties. *[9J-5.011 (2)(c)1, F.A.C.]*

**Policy 1.6-c:** The County shall coordinate with representatives from the Special Districts, to ensure that District plans are compatible with the County's Comprehensive Plan, in compliance with Paragraph 189.415, Chapter 189, F.S., and with 9J-5.015 (3)(b) 1, F.A.C. The coordination called for is to make sure that Special District plans, programs and projects are consistent with the County's Comprehensive Plan, in particular with the Growth Management Strategies specified in the Future Land Use Element of the Plan, and the service delivery objectives and polices in the Future Land Use and Utility Elements of the Plan.

**Policy 1.6-d:** At the time of submittal of a land use amendment the applicant shall notify the Planning Division, and the Public Health Department if a central water utility or sanitary sewer service is proposed anywhere in unincorporated Palm Beach County, outside the Urban Service Area.

## **OBJECTIVE 1.7      Rehabilitation of the Sewer System**

Palm Beach County shall identify areas within its service area in need of rehabilitation and/or replacement, and shall program these improvements with funds through the Capital Improvement Element. *[9J-5.011 (2)(b) 1, 2, F.A.C.]*

**Policy 1.7-a:** The County shall continue to rebuild and upgrade older pump stations and equip stations with remote telemetry for control and monitoring, as identified in the Capital Improvement Element. *[9J-5.011 (2)(c)1, F.A.C.]*

**Policy 1.7-b:** The County shall reduce and/or eliminate infiltration/inflow in the Wastewater system through replacement and/or rehabilitation of lines and manholes. Annual identification of areas in need of such rehabilitation shall be continued. *[9J-5.011 (2)(c)1, F.A.C.]*

## **OBJECTIVE 1.8      Package Treatment Plants**

Palm Beach County shall regulate the location of package treatment plants and shall limit their use to serve development required to balance the land uses in a given locale.

**Policy 1.8-a:** The use of package treatment plants shall be prohibited within the Urban Service Area.

**Policy 1.8-b:** Package treatment plants shall be prohibited in the Limited Urban Services Area, except for:

1. the United Technology Corporation Protection Overlay;
2. the North County General Aviation Facility; and
3. for use by schools, if determined appropriate on a case by case basis.

**Policy 1.8-c:** In the Everglades Agricultural Area, and other land dedicated to agricultural production in unincorporated Palm Beach County, the use of package plants shall be limited to serve essential public facilities and bonafide agricultural uses.

**Policy 1.8-d:** All package treatment plants shall be maintained by the Water Utilities Department, special district, or by the public utility that has legal authority for providing potable water or sanitary sewer services in the area; or by a tri-party agreement between the developer or the affected bona fide agricultural use, Palm Beach County, and a special district.

## **GOAL 2 WATER AND GROUNDWATER PROTECTION**

It is the GOAL of Palm Beach County to promote the conservation and protection of surface and groundwater resources with the purpose of securing future water supplies for urban and agricultural users and for the preservation and enhancement of the regional ecosystem. *[9J.5.011(2)(a), F.A.C.]*

### **OBJECTIVE 2.1 Water Conservation**

Palm Beach County shall implement procedures and programs to conserve water through reuse, and other methods, consistent with federal, state and regional policy plan goals and regulations. *[9J-5011 (2) (b) 4, F.A.C.]*

**Policy 2.1-a:** Palm Beach County encourages and promotes the use of innovative and alternative technologies to augment water resources including: conventional reclaimed water irrigation piping systems, constructed wetlands, aquifer storage and recovery (ASR), groundwater recharge and indirect reuse systems. *[9J-5011(2) (c) 3, F.A.C.]*

**Policy 2.1-b:** The County shall require the use of Irrigation Quality (I.Q.) reclaimed water for irrigation in any development within the Palm Beach County Water Utilities Department Mandatory Reclaimed Water Service Area (MRWSA) or where a reclaimed water main is within 300 feet of the property to be developed. *[9J-5011(2) (c) 3, F.A.C.]*

1. The MRWSA shall correspond to the area surrounding the Southern Region Water Reclamation Facility on Hagen Ranch Road in suburban Delray Beach *(See detailed description of this area on page 3, item 4, of the Utility Element Support Documents)*
2. In the future the County may create a new MRWSA to correspond to the area surrounding the Central Region Water Reclamation Facility at the former Century Village Wastewater Treatment Plant in suburban West Palm Beach.
3. If all or a portion of any new development or project falls within the MRWSA, the entire development or project shall be required to use reclaimed water service.
4. No new customer shall construct or use a new irrigation system which does not use reclaimed water where reclaimed water service is available.
5. Notwithstanding the above requirements, other customers may connect to the reclaimed water system with the approval of the Department.

**Policy 2.1-c:** Palm Beach County shall implement land development regulations that require proper plant selection and siting, preservation of existing native vegetation and use of native plants, efficient irrigation systems (example: xeriscaping), and appropriate maintenance procedures. [9J-5011(2) (c) 3, F.A.C.]

**Policy 2.1-d:** The County shall require manual operation of all irrigation systems or automatic systems with sensors, in order to eliminate irrigation cycles during rain or when ground is saturated. [9J-5011(2) (c) 3, F.A.C.]

**Policy 2.1-e:** The County shall coordinate with the South Florida Water Management District (SFWMD) in the development of the County's Water Supply Plan. The County shall coordinate with the SFWMD in development of a plan, which will provide adequate water for the conservation, and restoration of native ecosystems, agricultural, domestic, public water supply, and industrial needs. The County shall participate on the Lower East Coast Regional Water Supply Plan (LEC) Advisory Committee, local water supply plans, and other committees essential to Palm Beach County's interest. The County shall also coordinate with the public and private sectors, major utilities and municipal providers, and with water control and special districts, which manage water resources in the development of local water supply plans. [9J-5011(2)(c) 3, F.A.C.] **Cross-Reference:** For more information on the water supply issue and its importance to the future of water resources in the County, see the Conservation Element data and analysis sections and Policies 3.1-a through 3.1-g, under Objective 3.1.

**Policy 2.1-f:** Palm Beach County shall encourage water conservation programs as directed by various public and private agencies and organizations, through the distribution of information prepared by those entities. [9J-5011(2) (c) 3, F.A.C.]

**Policy 2.1-g:** Palm Beach County shall promote the prohibition of water-only meters used strictly for irrigation, where reasonable alternative irrigation sources exist, by providing information on this issue to other utility providers. [9J-5011(2) (c) 3, F.A.C.]

**Policy 2.1-h:** The Palm Beach County Water Utility Department shall promote water conservation through the use of increasing block utility rate structures by providing information on this issue to other utility providers. [9J-5011(2) (c) 3, F.A.C.]

**Policy 2.1-i:** Palm Beach County shall pursue a long-term goal of a water consumption rate of 150 gallons per capita per day and shall structure water rates to support this goal. Palm Beach County shall urge all providers to adopt this goal and similarly restructure their rate schedules, in order to achieve water conservation. [9J-5011(2) (c) 3, F.A.C.]

## **OBJECTIVE 2.2      Groundwater Protection**

Palm Beach County shall continue to enforce local regulations designed and adopted to prevent groundwater degradation, and to protect water and groundwater resources, such as the Wellfield Protection Ordinance, Environmental Control Rule I (ECR-I), Environmental Control Rule II (ECR-II), and the Turnpike Aquifer Protection Overlay District (TAPO). [9J-5011(2)(b)5]

**Policy 2.2-a:** Cones of influence of wellfields shall be identified on the Wellfield Zone of Influence map as areas where use of regulated substances is restricted. The map is maintained by Palm Beach County ERM, which is the agency that administers the Wellfield Protection Ordinance. [9J-5011(2) (c) 4, F.A.C.] **Cross Reference:** See Conservation Element Policies 3.1-j through 3.1-l.

**Policy 2.2-b:** New uses or developments, or non-conforming uses and developments proposed for expansion, located within the Turnpike Aquifer Protection Overlay (TAPO) District and designed for the purpose of storing, handling or processing of regulated substances, as defined by the Unified Land Development Code, shall comply with the requirements of the Wellfield Protection Ordinance restrictions for zone 3. [9J-5011(2)(c)4, F.A.C.] **Cross Reference:** See Conservation Element Policy 3.1-i.

**Policy 2.2-c:** The County and the Palm Beach County Health Department shall continue to enforce the provisions of Article 15 of the ULDC - Public Health Department regulations. In particular, Article 15.A.3 of Environmental Control Rule I, which sets the general provisions for construction, use and abandonment of on-site sewage treatment and disposal systems; and Article 15.A.4 addressing permits, permit conditions and approvals of such systems. [9J-5011(2)(c)4 and 10D-6, F.A.C.] **Note:** For an expanded analysis of this policy see the Utilities Support Document

### **GOAL 3 WATER SUPPLY PLANNING**

It is the GOAL of Palm Beach County to promote the water supply planning and to coordinate with applicable agencies during the planning process.

#### **OBJECTIVE 3.1 Water Supply Planning**

Palm Beach County shall plan for future water supplies through the adoption and scheduled updates of a Water Supply Work Plan and incorporate the alternative water supply projects identified in the South Florida Water Management Districts regional water supply plan pursuant to s. 373.0361(2)(a) or proposed by the County under s. 373.0361(7)(b).

**Policy 3.1-a:** The County shall coordinate future revisions of the regional water supply plan through comprehensive plan amendments, as required by state law.

**Policy 3.1-b:** The County's 20-Year Water Supply Work Plan dated April 11, 2008 is adopted by reference and established to meet current and projected potable water needs based on the availability and appropriate use of regional water resources and the combined use of alternative water supplies. The County shall initiate revisions to the Work Plan and Comprehensive Plan for consistency with the County's Water Use Permit renewals at a minimum every 5 years or within 18 months after the SFWMD approves an updated regional water supply plan. The raw water supplies that will be needed during the 20-Year period to satisfy projected needs are depicted in Table 3.1-b-1. **Cross-Reference:** For the complete 20-year Water Supply Facilities Work Plan see the Potable Water & Wastewater Support Documents.

**Table 3.1-b-1  
Facility Capacity Analysis for Palm Beach County**

<b>Facility Capacity Analyses</b>	<b>2006</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
Population Served <sup>1</sup>	431,091	449,101	499,336	566,986	596,289
Demand per Capita (gpd) <sup>2</sup>	126	126	126	126	126
Contracted FW Bulk Water (mgd)	2.6	9.3	13.1	13.1	14.1
Total Finished Water Average Daily Demand (mgd)	57	66	76	85	89
<b>Total Raw Water Average Daily Demand (mgd)<sup>3</sup></b>	<b>67</b>	<b>77</b>	<b>89</b>	<b>99</b>	<b>104</b>
Available Raw Water Facility Capacity (mgd) <sup>4</sup>	108	119	127	138	148
Raw Water Facility Capacity Surplus (Deficit) <sup>5</sup>	42	42	38	39	43
Permitted Raw Water Allocation (gpd annual average) <sup>6</sup>	87	87	87	87	87
Surficial Aquifer ADF Withdrawal (mgd) <sup>7</sup>	67	77	82	84	84
<b>Permitted Surplus (Deficit)</b>	<b>20</b>	<b>10</b>	<b>5</b>	<b>3</b>	<b>3</b>

<sup>1</sup> Population Served represents projected retail customers and self-served conversions, Table 5-6.

<sup>2</sup> Demand per Capita based upon population served.

<sup>3</sup> ADF raw water = 1.17 \* ADF FW (per historical and capacity based analyses)

<sup>4</sup> Raw Water Facility Capacity = Wellfield Capacity with two largest wells out of service for each individual wellfield.

<sup>5</sup> Calculated by subtracting average daily demand from available facility capacity.

<sup>6</sup> Permitted allocation from Permit #50-00135.

<sup>7</sup> Values do NOT reflect offsets from alternative water supplies as further documented in Section 8.

**Policy 3.1-c:** The County Water Utilities Department shall coordinate with other water utility providers, including municipalities, public and private utilities, regional water supply authorities, special districts, and the South Florida Water Management District to encourage the planning and development of multi-jurisdictional water supply facilities that are sufficient to meet projected demands for established planning periods, including the development of alternative water sources to supplement traditional sources of groundwater and surface water supplies. [163.3177(6)(c), F.S.]

**Policy 3.1-d:** The County Water Utility Department shall coordinate with the potable water and sanitary sewer providers within the County, including municipalities, public and private utilities, and special districts, to coordinate the development of consistent water supply plans and considering the SFWMD's regional water supply plan approved pursuant to s. 373.0361. [163.3177(6)(c), F.S.] *Cross Reference: Please also refer to the Intergovernmental Coordination Element.*

**Policy 3.1-e:** The County shall coordinate with the South Florida Water Management District and other entities to assist with implementation of the provisions of the Regional Water Plan, CERP and other regional water resource management and restoration programs, to evaluate the long-term needs of the natural and built environments, to monitor activities that may result in the degradation or over-utilization of potable water resources, and to assure adequate water supply for the competing needs of native ecosystems, agriculture, and domestic and industrial users. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-f:** The County shall coordinate with the South Florida Water Management District and other entities to facilitate flexible site designs within and adjacent to the East Coast Buffer area, through mechanisms such as flexible site development provisions that protect, enhance, and are compatible with the functions of the East Coast Buffer area. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-g:** The County shall coordinate with the South Florida Water Management District and other entities to encourage wetland mitigation, environmental protection, and water management efforts that support and optimize the functions of the East Coast Buffer and the Water Preserve Areas. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-h:** The County shall coordinate with the South Florida Water Management District and other entities to give priority to water supply for native ecosystems and other areas with significant plant and animal life. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-i:** The County shall coordinate with the South Florida Water Management District and other entities to encourage and support a coordinated regulatory and programmatic approach for protection of aquifer recharge areas and for environmental protection efforts. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-j:** The County shall implement the regulations of the Unified Land Development Code, especially the environmental threshold reviews, wellfield protection provisions, and the Turnpike Aquifer Protection Overlay provisions to protect aquifers through water conservation and preservation of the functions of aquifer recharge areas. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-k:** The County shall enforce the provisions of the Wellfield Protection Ordinance. The use handling, production, and storage of regulated substances shall be prohibited in Zones 1, 2, 3, and 4, unless the facility or business qualifies for a General or Special Exemption and/or obtains an operating permit under the provision of the Ordinance. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

**Policy 3.1-l:** The County shall develop future wellfields consistent with the Wellfield Protection Ordinance and the Turnpike Aquifer Protection Overlay District, when it can be determined through hydrologic testing that such operation would not adversely affect the natural resources or other management objectives of these resources. *Cross Reference: Please also refer to the policies under Goal 3 of the Conservation Element.*

## **STORMWATER MANAGEMENT SUB-ELEMENT**

### **I. INTRODUCTION**

The Stormwater Management Sub-Element is a requirement of Chap. 163.3177(6)(c), F.S., and Rule 9J-5.011, F.A.C.

#### **A. Purpose of the Sub-Element**

The Sub-Element addresses Stormwater and surface water management in Palm Beach County, including identification of drainage systems, characteristics, problems and needs.

This Sub-Element pulls together studies and plans of the County's drainage, water control, improvement and water management districts. From this, recommendations are made regarding drainage facilities and surface water management, to ensure protection of developed areas from flooding and prevent damage to critical environmental resources.

#### **B. Principal Findings and Plan Approach**

##### **1. Capacity constraints of the Primary Surface Water Management System**

A major consideration throughout this Sub-element is that the existing primary surface water management system is expected to remain essentially fixed in capacity. The primary surface water management system includes components of the Central & South Florida Project and classified surface waters of the State located in Palm Beach County. The various jurisdictions in the County must coordinate efforts in order to provide acceptable levels of protection under this constraint. The future of Stormwater and surface water management in the County will be dependent on allocating drainage/runoff discharge in a fixed system. While such discharges are under the permitting jurisdiction of the South Florida Water Management District and the existing twenty drainage, water management and improvement districts operating in the County, Palm Beach County is charged with regulating the on-site secondary and tertiary systems. Site-specific drainage designs, requiring retention/detention and other non-structural techniques, will be the focal point of the County's campaign.

##### **4. The Central and South Florida Restudy**

The US Army Corp of Engineers Central and South Florida (C&SF) Project Comprehensive Review Study (Restudy), authorized by the US Congress in 1992 and delivered to the Congress July 1, 1999. This study examines structural and operational modifications to the regional water management system to protect the Everglades and the Florida Bay ecosystems and to improve other functions including urban and agricultural water supply and flood control. In the year 2000, the US Congress gave authorization to implement the study recommendations through the Water Resources Development Act of 2000, which authorized the implementation of the Comprehensive Everglades Restoration Plan (CERP). CERP is to be implemented in the next decades and the Congress authorized the first 1.4 billion dollars for the construction of the first group of priority projects. As result of these modifications, there is the potential for enhancing flood protection and improving the surface water management system in Palm Beach County.

**5. Stormwater quality management**

Stormwater quality is addressed in Palm Beach County primarily through the National Pollution Discharge Elimination System (NPDES) permitting program. The County and 39 other entities jointly applied for a permit in 1995. The permit requires that stormwater discharges from areas of new development, significant redevelopment and roadways shall not cause or contribute to violations of State Water Quality Standards.

An initial five year monitoring period is required by the NPDES permit. Analysis of data collected during the monitoring period must determine whether existing water quality standards for stormwater discharge are adequate to protect water quality within the classified receiving water bodies. The results will be used to determine if land development regulations should be modified to require reduced discharge or improved treatment of stormwater from areas of new urban development, or if retrofitting is needed in identified existing problem areas.

**C. Definitions and Technical Concepts**

**1. Drainage**

Drainage may be described as the component of surface water management related to removal of surplus water from areas where the presence of such surplus is incompatible with beneficial land uses.

**2. Functional classification of drainage systems**

For planning purposes, surface water management and drainage facilities may be divided into three general functional categories of interacting systems: primary, secondary and tertiary.

**a. Primary Systems:** The "primary system" consists of classified surface waters of the State including canals and/or natural watercourses providing final conveyance of overall drainage basin flows to the ocean or major inland water bodies. This is the outlet system for the basin. Capacity is essentially fixed by original design as well as natural, economic and environmental constraints that preclude significant upgrading or expansion. In Palm Beach County, the South Florida Water Management District holds permitting and operational jurisdiction over this portion of the system along with various Drainage Districts authorized by Chapter 298, F.S.

**b. Secondary Systems:** The "secondary system" consists of a broad range of facilities for treatment and/or control of runoff generated by defined areas of specific land uses. Outflows from such systems are normally subject to positive structural control requirements and permit limitations on their discharge to the primary system. These facilities are generally designed to control area surface and groundwater elevations and maintain the quantity and quality of developed area runoff at pre-development levels, or as otherwise required to mitigate adverse impacts on classified receiving waters. The secondary system includes "on-site" storage facilities, providing Stormwater treatment and control prior to discharge from individual development projects, as well as "off-site" facilities, operated by Chapter 298 Districts or other public agencies to provide comparable treatment of combined runoff from multiple project sites.

- c. **Tertiary Systems:** Storm sewers, swales, gutters and site grading comprise the "tertiary system" for immediate drainage of streets and developed areas. The major design consideration is rapid removal of Stormwater from structures and areas of land uses subject to damage or disruption by inundation. These facilities must be capable of continuous, reliable performance, with minimal interruption for maintenance. Although such facilities are normally designed solely for conveyance, with little or no capacity for treatment and control of runoff, maximizing the use of overland flows across vegetated pervious areas such as grassed slopes and swales may provide a significant degree of infiltration and sediment removal, reducing the capacity required for secondary system facilities.

### 3. **Levels of Protection Standards**

As established in this Sub-Element, these standards represent degrees of protection provided for various development features expressed in terms of storm events to be accommodated by the applicable drainage facilities. As a result, these standards are levels of protection to be provided at development design of on-site Stormwater management facilities, and do not constitute levels of service standards to be provided by off-site (public) conveyance facilities. They include site performance standards used as minimum design requirements for tertiary drainage systems (See Policy 1.1-a, Table 1); and minimum requirements for on-site secondary drainage systems for discharge control and treatment of Stormwater runoff, based on criteria of the agency having jurisdiction over the receiving waters (See Policies 1.1-b and 1.1-c).

### 4. **Measurement of Storm Events: return period and duration of rainfall**

Since the possible combinations of rainfall rate and duration are essentially limitless, rainfall records for a given geographic area are grouped according to the statistical probability that a given average rate of rainfall (intensity) will be equaled or exceeded for a given period of time (duration). As a convention, probability is expressed in terms of the number of years (return period) expected between recurring storms of a specific intensity and duration or, more properly, that the probability of such a storm occurring in any single year is one divided by the return period. For example, if a two-hour rainfall at an average rate of at least three inches/hour is expected to occur once in five years (or has a one-fifth chance of occurring in any given year), such a storm would be expressed as a "five-year, two-hour storm of three inches/hour." The capability of a drainage system to dispose of runoff is commonly expressed in terms of the maximum storm event from which runoff can be conveyed or stored by the component facilities in a desirable manner.

Specifying the return period and duration of rainfall to be handled by a drainage facility establishes the degree of protection that the facility can be expected to provide. That is, the chance of overloading a facility designed to accommodate runoff from a five-year, two-hour "design storm" is one in five, while the chance of satisfactory performance is four in five, in any given year for a storm lasting two hours. Since it is neither economically nor technically feasible to provide absolute protection from all storms, the greater the potential threat to life and property if a drainage system should fail, the more severe (less probable) the design storm used in determining the drainage capacity required for that system.

## II. GOALS, OBJECTIVES AND POLICIES

### GOAL 1 STORMWATER MANAGEMENT AND PROTECTION FROM INUNDATION AND FLOODING

It is the GOAL of Palm Beach County to ensure the provision of technically and economically feasible surface and storm water systems. These systems shall be adequate to maintain the adopted levels of protection from flooding and Stormwater inundation for existing and future land uses, and shall be compatible with the County's goals for land use management and the protection of critical environmental resources. *[9J.5.011(2)(a), F.A.C.]*

#### OBJECTIVE 1.1 Levels of Protection *[9J-5.005(3) and 9J-5.011(2)(c)2, F.A.C.]*

The levels of protection adopted for surface and storm water facilities shall be adequate to:

1. Provide protection from flooding and inundation consistent with the severity of the potential threats to health, safety, welfare, and property;
2. Maintain Stormwater runoff rates at levels compatible with safe conveyance capacities of receiving waters; and
3. Mitigate degradation of water quality in surface and ground waters.

**Policy 1.1-a:** The levels of protection from flooding and inundation are contained in Table 1: Levels of Protection from Flooding and Inundation, and shall be used as a basis for establishing minimum design requirements for tertiary drainage systems. *[9J-5.011(2)(c)2(c), F.A.C.]*

**Policy 1.1-b:** The level of protection provided by on-site secondary drainage systems for discharge control shall not exceed the discharge limit established by the agency having jurisdiction over the receiving water at the point of outfall. If not otherwise specified, post-development peak discharge shall not exceed the pre-development peak rate based on the 25-year, three-day storm. *[9J-5.011(2)(c)2(c), F.A.C.]*

**Policy 1.1-c:** The level of protection provided by on-site secondary drainage facilities for treatment of Stormwater runoff shall be, as a minimum, the volume and duration of required retention or detention as specified by South Florida Water Management District Criteria.

**Policy 1.1-d:** No permit authorizing construction shall be issued by the County without adequate assurance of concurrent construction, by the developer, of tertiary and secondary drainage designed to provide protection in accordance with adopted level of protection standards. *[9J-5.055(3)(a)1 and 2, F.A.C.]*

**Table 1**

**Levels of Protection from Flooding and Inundation  
(Policy 1.1-a)**

[9J-5.011(2)(c)2(c), F.A.C.]

DEVELOPMENT FEATURE	LEVEL OF PROTECTION
Lowest habitable space of residential and commercial buildings	Inundation elevation resulting from 100-year, 3-day rainfall, assuming zero discharge; or 100-year flood elevation per F.E.M.A. Flood Insurance Rate Maps; or 100-year flood elevation as established by SFWMD rule, whichever is more restrictive.
Residential Subdivision Lots with gross area one-quarter acre or less. (1) (2)	3-year, 24-hour rainfall.
Residential Subdivision lots with gross area greater than one-quarter acre.	
(a) within 20 ft. of habitable building.	(a) 3-year, 24-hour rainfall.
(b) remainder of lot except areas designated for Stormwater management purposes.	(b) duration of inundation not to exceed 8 hours subsequent to 3-year, 24-hour rainfall.
Local Streets. (1) (2)	3-year, 24-hour rainfall.
Collector Streets not included in Thoroughfare Plan. (1) (2)	5-year, 24-hour rainfall.
Thoroughfare Plan Streets.	In accordance with applicable requirements, per FDOT Drainage Manual.
Residential Parking Lots. (1) (2)	3-year, 24-hour rainfall (5-year, 24-hour rainfall when exfiltration trench system used.)
Commercial Parking Lots. (1) (2)	3-year, 24-hour rainfall (5-year, 24-hour rainfall when exfiltration trench system used.)
Recreation and Open Space Areas not specifically designated for Stormwater management purposes.	Duration of inundation not to exceed 8 hours following 3-year, 24-hour rainfall.

1. Hydraulic capacity design of related storm water discharge facilities is to be based on peak runoff rates produced by rainfall intensities for applicable return periods in accordance with intensity versus duration curves for FDOT - Zone 10.
2. Tailwater elevations for design of related storm sewerage shall be based on peak receiving water elevations determined for the noted return period and duration.

## **OBJECTIVE 1.2      Impacts on Existing Flood Protection**

Palm Beach County's land development shall continue to implement policies and regulations in the Unified Land Development Code (ULDC), which require that new development does not adversely impact the existing drainage, or flood protection capabilities of off-site lands. *[9J-5.0055(1)(e), F.A.C.]*

**Policy 1.2-a:** Development orders subject to requirements of the Unified Land Development Code (ULDC) shall provide for the conveyance of all off-site discharge to legal positive outfall via drainage facilities which are constructed in appropriate easements, with adequate capacity to accommodate the allowable discharge, without overflow to adjacent lands, or by providing alternative methods to meet the stormwater level of protection standards, approved by the County's Engineering Department and consistent with South Florida Water Management District's criteria. *[9J-5.0055(1)(e), F.A.C.]*

**Policy 1.2-b:** Development orders subject to requirements of the Unified Land Development Code (ULDC) shall provide for continued conveyance of existing inflows from off-site lands, in a manner that will not increase inundation elevations on adjacent lands, or downstream rates of discharge resulting from storms, up to and including the 25-year, three-day event. *[9J-5.0055(1)(e) and 9J-5.011(2)(c)2(c), F.A.C.]*

## **OBJECTIVE 1.3      Cost of Improvements**

Palm Beach County shall ensure that the cost of drainage improvements required to serve development be borne by those directly benefiting from such improvements. *Not a 9.J-5 Requirement. Palm Beach County Board of County Commissioners directive.*

**Policy 1.3-a:** Where funding or construction of off-site road improvements by the developer are required as a condition to development approval, provision of adequate secondary drainage facilities and conveyance to legal positive outfall shall be considered as part of the developer's obligation for off-site road improvements.

## **GOAL 2      STORMWATER QUALITY**

It is the GOAL of Palm Beach County to promote, develop and implement programs and regulations oriented to improve the Stormwater quality, in coordination and cooperation with the South Florida Water Management District, special districts, and other entities involved in Stormwater management. *[9J.5.011(2)(a), F.A.C.]*

### **OBJECTIVE 2.1      Stormwater Quality Management**

Water quality standards set by State Law or the SFWMD shall be addressed by the performance of Stormwater quality monitoring and enforcement as required by the NPDES program. *[9-J.5011(2)(c)5(a), F.A.C.]*

**Policy 2.1-a:** The Palm Beach County Department of Environmental Resources Management (ERM) shall conduct monitoring of the County's 304 major outfall facilities over a five year period as required by the EPA NPDES permit. *[9-J.5011(2)(c)5(a), F.A.C.]*

**Policy 2.1-b:** The County through ERM shall provide enforcement to those water control districts requesting such assistance. *[9-J.5011(2)(c)5(a), F.A.C.]*

**Policy 2.1-c:** The County shall develop regulations establishing requirements for provision of additional on-site treatment, by the developer, when public policy determines the need for additional protection of sensitive receiving waters, or where existing discharges are determined to be causing or contributing to contravention of applicable water quality standards in the receiving water. [9-J.5011(2)(c)5(a), F.A.C.]

1. The work to identify impacted waters will be performed in accordance with (NPDES) permit governing the County, and the special districts which are also NPDES permittees. The findings of other agencies performing tests in addition to the NPDES program permittees should also be reflected.
2. The results of this monitoring will be used to amend the standards specified in policies under Objective 1.1 of this sub-element, if necessary.

**Cross-Reference:** See Conservation Element Policy 3.1-e of the and Coastal Management Element Policies 1.1-e through 1.1-g.

### **GOAL 3: STORMWATER MANAGEMENT COORDINATION**

It is the GOAL of Palm Beach County to promote sound management of stormwater and surface water to meet the future demands of the environment, urban growth and agriculture. [9J.5.011(2)(a), F.A.C.] *Cross-Reference:* See Conservation Element Policy 3.1-a.

#### **Objective 3.1 Coordination with Special Districts**

Palm Beach County shall coordinate with the Special Districts in addressing stormwater and surface water management issues. [9J-5.015(3)(b)1 , F.A.C.]

**Policy 3.1-a:** Pursuant to Chapter 189.415(2), F.S., the County shall review the facility reports prepared by the local special districts for consistency with the County's Comprehensive Plan. Consistency should be determined based on the Comprehensive Plan's provisions for:

1. Stormwater and surface water management, consistent with regulations of the SFWMD, and with Federal, State, and local law; and
2. Land use and growth management provisions for the urban and rural service areas.

**Policy 3.1-b:** The results of the review of facilities reports, upon determination of consistency, shall be incorporated into the Comprehensive Plan. When a facility report is found inconsistent with the plan, the issue should be either resolved through a cooperative effort among the parties involved until consistency is reached, or it may trigger an amendment to the plan. [9J-5.015(3)(b)1 , F.A.C.] **Cross reference:** See Potable Water and Wastewater Sub-Element Policy 1.7-c for additional direction on implementation procedures to coordinate with the Special Districts.

**Policy 3.1-c:** The Planning, Zoning, and Building Department shall improve coordination with special districts during the review of applications for land use amendments, to confirm consistency with the Comprehensive Plan and that proposed projects can be adequately served. The County shall seek written confirmation from the special district that it has adequate stormwater capacity to serve new development pursuant to the Comprehensive Plan and the Unified Land Development Code.

### **Objective 3.2 Assessment of Stormwater Management Programs**

Given the existing functional structure of stormwater systems in Palm Beach County, and the diversity of operational jurisdictions involved in the management of such systems, the County shall cooperate with the SFWMD and the Special Districts in the identification and assessment of stormwater and surface water problems and the definition of remediation strategies. [9-J.5015(3)(b)1, F.A.C.]

**Policy 3.2-a:** The County shall cooperate with the SFWMD and the Special Districts in establishing monitoring programs to evaluate whether adopted levels of protection from flooding and inundation are adequate. In this cooperative effort: [9-J.5015(3)(b)1, F.A.C.]

1. The County, within the Office of the County Engineer, shall continue the informal complaint review and referral process to monitor stormwater and surface water problems based on citizen inquiries, stormwater and surface water maintenance records and current file reports.
  - a. The County shall request that Special Districts compile and maintain similar records, with emphasis on situations affecting the primary and secondary systems under their jurisdiction.
  - b. An inventory of basin-wide surface and storm water management situations and problems affecting the primary system shall be the responsibility of the SFWMD.

**Policy 3.2-b:** The County shall cooperate with the SFWMD and the Special Districts, in investigating stormwater and surface water problems as to severity, frequency, cause and available remedies. Results shall be used to prepare an assessment of stormwater and surface water management needs, including recommended strategies for mitigation. Problem areas shall be identified and the entity with jurisdiction of such areas shall be notified. In this cooperative effort: [9-J.5015(3)(b)1, F.A.C.]

1. The County, within the Office of the County Engineer, shall conduct the investigation of secondary and tertiary systems within the County's jurisdiction.
2. The County shall request that Special Districts conduct the investigation on primary and secondary systems within their jurisdiction.
3. Basin-wide surface and storm water management situations and problems affecting the primary system shall be the responsibility of the SFWMD.

**Policy 3.2-c:** When specific studies are undertaken and findings recommend more stringent requirements than those included in the Comprehensive Plan, the stricter requirements shall be considered for adoption into the Unified Land Development Code (ULDC). [9-J.5015(3)(b)1, F.A.C.]

**Policy 3.2-d:** The County recognizes the need to retrofit stormwater management facilities within some existing developed areas where the prevalence of small lots and the inability to achieve legal positive outfall preclude these areas from meeting current regulatory standards. The Engineering Department shall work with the South Florida Water Management District, any appropriate special districts and the Florida Department of Environmental Protection to develop alternative water discharge and control standards for stormwater management for these areas.

## **SOLID WASTE SUB-ELEMENT**

### **I. INTRODUCTION**

#### **A. Purpose**

The Solid Waste Sub-Element is intended to summarize the provisions of the Integrated Solid Waste Management Plan of the Solid Waste Authority (SWA) of Palm Beach County and to integrate the goals of that plan into the Palm Beach County Comprehensive Plan. This Sub-Element is excerpted from the Solid Waste Authority's Plan which was written to comply with the requirements of Chapter 403, Florida Statutes.

The Solid Waste Sub-Element is a requirement of Chapter 163.3177(6)(c), F.S. and Rule 9J-5.011, F.A.C. Federal, state and local laws and regulations regulate solid waste management.

#### **B. Assessment and Conclusions**

##### **1. The Solid Waste Authority's Mandate**

The Solid Waste Authority (SWA) of Palm Beach County is a dependent special taxing district created by the Florida Legislature under the Palm Beach County Solid Waste Act, Chapter 75-473, Laws of Florida, as amended.

Under this Act, the SWA was established for the purpose of developing and implementing plans for an integrated countywide solid waste management system comprised of recycling, resource recovery, transfer station and landfill facilities designed to serve the future needs of the County at reasonable cost. The SWA has the power to construct and operate solid waste disposal facilities, including resource recovery facilities and to require that all solid waste collected by private and/or public agencies within the County be delivered to processing and disposal facilities designated by the Authority.

##### **2. The Integrated Solid Waste Management Plan**

The Integrated Solid Waste Management Plan (ISWMP) of the SWA has been adopted as the program for solid waste management in Palm Beach County. The ISWMP was developed incorporating the principles of Integrated Solid Waste Management which include waste reduction, use of a combination of techniques and programs tailored to local conditions and circumstances, flexibility and long-term strategic planning. These principles allow the SWA to use the various options available for different segments of the waste streams in a hierarchy of waste management alternatives. The hierarchy defined in the ISWMP is Source Reduction, Recycling, Composting, Combustion and Landfill. It can be represented as a pyramid, with Source Reduction at the top, and Landfill as the base.

##### **3. Solid Waste Disposal Capacity**

The ISWMP provides for additional disposal capacity to replace the existing capacity upon depletion, which is projected to occur in approximately the year 2020. The ISWMP calls for a regular evaluation of the remaining system capacity, using a Landfill Depletion Model. The amount of remaining capacity (in years) can be used as a basis for initiating the steps to develop or implement replacement capacity. Typically, it may take up to 10 years to site, acquire,

permit, and develop replacement disposal facilities. Once a piece of property has been acquired, permitting and development can take up to 5 years, depending on the specifics of the site.

The ISWMP serves as a basis for initiating this process at the appropriate time. The regular review of remaining capacity assures that this process can be initiated in sufficient time to provide replacement capacity. The initiation of these activities will be determined by the remaining life of the disposal facility. A piece of property in the EAA was acquired in 1996 as a potential future landfill site.

**4. The Landfill Depletion Model**

The disposal capacity of the system will be evaluated annually using the Landfill Depletion Model. The amount of available capacity, combined with a regular review of remaining capacity and population growth, enables the Authority to initiate policy and planning activities for replacement capacity at a future date. Presently, it appears those activities would be initiated in the 2010 - 2015 time frame, depending on the alternatives pursued.

**5. Level of Service**

Historically, the per capita generation of solid waste in this country had increased at the rate of three to four percent per year throughout the 1960s and 1970s. This historical increase was a result of greater use of packaging materials and disposable products, coupled with a rise in the standard of living.

This increase has slowed considerably as a result of increased awareness and concern for recycling and reuse of solid waste as well as improved markets for recovered materials, providing increased economic incentives. In addition, the Solid Waste Authority achieved its 50% reduction goal by 1998 and has launched a source reduction program to reduce the generation of solid waste.

The strongest evidence in support of the stabilization of waste generation rates is the per capita rate calculated by the Authority based on waste delivered. The 1986 per capita rate was 7.1 pounds. The 1994 rate was 7.13 pounds, a total increase of only 0.4 percent in eight years. It is reasonable to assume that the factors that tend to increase solid waste generation will be offset to some extent by the factors that tend to decrease solid waste generation and that solid waste generation rates will remain fairly stable through the foreseeable future. Based on these premises the SWA has adopted the current level of service specified in the Comprehensive Plan, and uses these figures to feed the Landfill Depletion Model.

## II. GOAL, OBJECTIVES AND POLICIES

**GOAL 1:** It is the GOAL of Palm Beach County to facilitate environmentally sound, solid and hazardous waste management. [9J.5.011(2)(a), F.A.C.]

### OBJECTIVE 1.1 Implementation

Upon adoption of the Comprehensive Plan, all public and private activities concerning the management and disposal of solid and hazardous waste shall be consistent with the Goal, Objectives and Policies of this Element. [9J5.005(6) F.A.C.]

**Policy 1.1-a:** Palm Beach County shall monitor the implementation of the ISWMP and adopt any future modification or update to the plan. The Board of County Commissioners adopted in 1997, through the BCC appointed SWA Citizens Advisory Committee, the Integrated Solid Waste Management Plan (ISWMP) of the Solid Waste Authority of Palm Beach County, as the program for solid waste management in Palm Beach County.

### OBJECTIVE 1.2 Level of Service

The following minimum levels of service are hereby adopted for unincorporated Palm Beach County: [9J-5.005 (3) F.A.C.]

COMPONENT	LEVEL OF SERVICE
Collection	The Franchise Agreements of the Solid Waste Authority specify a minimum level of service for residential is twice per week garbage collection, twice per week bulk trash collection, once per week vegetation collection, and once per week recyclable collection.
	The minimum level of service for commercial is once per week garbage and trash. Recycling service is available to all commercial businesses.
Disposal	Disposal capacity sufficient for a per capita generation rate of solid waste delivered to Authority facilities of 7.13 lbs/person/day. Although the county-wide solid waste generation is higher, significant quantities of recyclable materials, particularly construction and demolition debris and vegetation are diverted to private recycling facilities. The above figure includes only the portion of the waste stream the Authority reasonably expects to receive. [9J-5.011(2)(c)2(b), F.A.C.]

**Policy 1.2-a:** Palm Beach County shall continue to operate a source separation program at all County administrative buildings, consistent with the recycling program of the Solid Waste Authority of Palm Beach County.

**Policy 1.2-b:** Palm Beach County and the Solid Waste Authority shall continue to implement programs with the purpose of further reducing waste in Palm Beach County. The Solid Waste Authority of Palm Beach County met the recycling goals of the 1988 Solid Waste Management Act, and the Authority's goal of achieving a 50% reduction in the quantity of waste landfilled by 1998.

### **OBJECTIVE 1.3      Special Wastes**

Palm Beach County shall maintain proper management and disposal of special wastes.  
*[9J-5.011(2)(b), F.A.C.]*

**Policy 1.3-a:** The County Water Utilities Department (PBCWUD) shall continue to dispose of stabilized, dewatered sludge from wastewater treatment plants at facilities provided by the Solid Waste Authority, pursuant to Interlocal Agreement approved by the Solid Waste Authority September 16, 1992.

**Policy 1.3-b:** The County shall encourage septage haulers to dispose of septage at facilities approved by the Public Health Department or the Florida Department of Environmental Protection, including facilities at the East Central Regional Wastewater Facility, which were developed pursuant to agreements with the Solid Waste Authority.

### ABBREVIATED AMENDMENT HISTORY

Action	Date	Ord. No.	Effective Date
<i>Adopted as individual Sub-Elements (Potable Water, Wastewater, Drainage (Stormwater Protection), and Solid Waste Sub-Element</i>	<i>08/31/89</i>	<i>89 - 17</i>	<i>09/11/89</i>
<i>97-2 EAR Re-write Adopted: The Infrastructure Sub-Elements were merged into a single Utility Element and were revised according to the recommendations in the Evaluation and Appraisal Report.</i>	<i>11/17/97</i>	<i>97 - 49</i>	<i>10/28/98</i>
<i>99-1 Revisions: Revisions for consistency with the Managed Growth Tier System</i>	<i>08/17/99</i>	<i>99 - 29</i>	<i>10/14/99</i>
<i>99-1 Revisions: General Revisions and Updates</i>	<i>08/17/99</i>	<i>99 - 32</i>	<i>10/14/99</i>
<i>99-2 Corrective Ordinance - changes to Potable Water Objective 1.2 and Groundwater Protection Policy 2.2-c was deleted</i>	<i>12/13/99</i>	<i>99 - 50</i>	<i>01/19/00</i>
<i>00-1 Drainage Level of Service Revisions to Policy 1.2-a</i>	<i>09/18/00</i>	<i>2000 - 31</i>	<i>11/14/00</i>
<i>00-2 Utility Element LOS Table 1 &amp; 2 Revisions</i>	<i>12/06/00</i>	<i>2000 - 54</i>	<i>01/31/01</i>
<i>02-1 Revisions: General Revisions and Updates</i>	<i>08/28/02</i>	<i>2002 - 54</i>	<i>10/25/02</i>
<i>04-1 Revisions: LOS Tables &amp; Service Delivery Policies</i>	<i>08/24/04</i>	<i>2004-26</i>	<i>10/29/04</i>
<i>05-1 Revisions: ULDC References Update</i>	<i>08/25/05</i>	<i>2005-26</i>	<i>11/01/05</i>
<i>06-2 Revisions to LOS Tables</i>	<i>11/13/06</i>	<i>2006-49</i>	<i>02/23/07</i>
<i>07-1 To revise references from a CIE six year capital improvement schedule to a five year schedule</i>	<i>08/27/07</i>	<i>2007-10</i>	<i>10/26/07</i>
<i>08-1 Level of Service – To update Table 2 for PBC WUD LOS</i>	<i>08/21/08</i>	<i>2008-33</i>	<i>10/17/08</i>
<i>08-1 Water Supply Plan – To adopt the County's Water Supply Plan and revise accordingly</i>	<i>08/21/08</i>	<i>2008-31</i>	<i>10/17/08</i>

**Note:** For a complete history of the specific changes to this element, please contact the Planning Division at (561) 233-5300.

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