



City of
PAHOKEE
FLORIDA

**Appendix 4A: City of Pahokee
10-Year Water Supply
Facilities Work Plan**



Introduction

Purpose of Work Plan

Changes to Florida Statutes now require local governments to prepare and adopt a 10 year Water Supply Facilities Work Plan (WSFWP) that is consistent with the appropriate regional water supply plan, which, for the City of Pahokee, is the South Florida Water Management District's *Lower East Coast Water Supply Plan 2018* (LECWSP). The LECWSP provides details on the current and projected water supply for the area. The plan considers public water supply, domestic and small public supply, commercial/industrial/institutional supply, recreational/landscape irrigation supply, power generation supply, and agricultural supply as components for water use in the region. The plan concludes that future water needs can be met through the 2040 planning horizon with appropriate management, conservation, and implementation of identified projects. The City's WSFWP, developed using data from the Palm Beach County 10-Year WSFWP and County's comprehensive plan, shall be incorporated into the City's comprehensive plan as an attachment, per Policy 4.2.1.5.

The City of Pahokee is located directly along the eastern shores of Lake Okeechobee in Palm Beach County. Its land area is approximately 3,173 acres. The City is an agricultural-oriented community, growing sugar cane and other seasonal vegetables. The 2023 population was determined to be 5,607 persons. The City does not operate a utility nor generate its own water. The City's water services are provided by the Palm Beach County Water Utilities Department (PBCWUD).

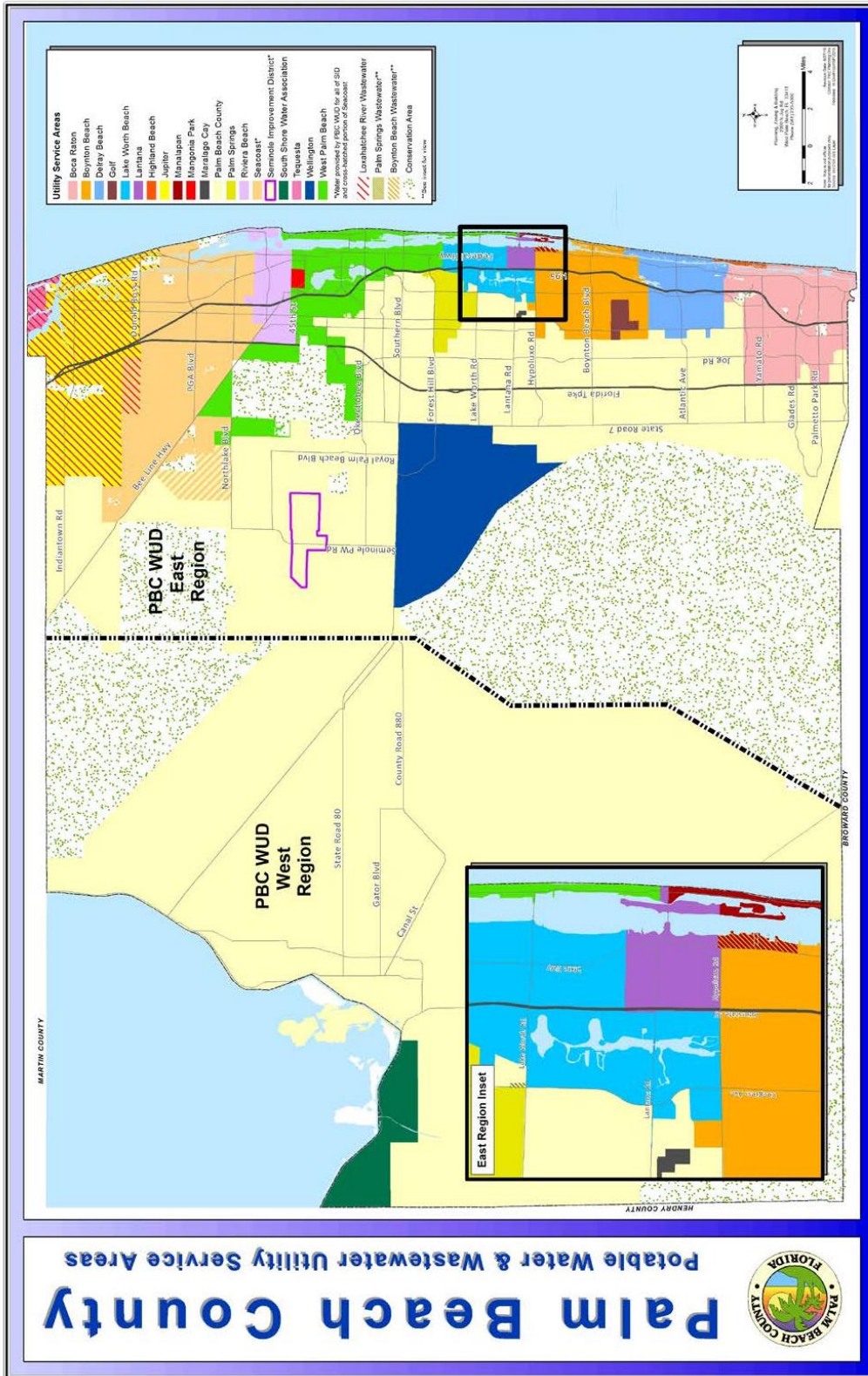
Provision of Water

In 2008, the County finished construction of the new Lake Region Water Treatment Plant (LRWTP) to serve the Cities of Pahokee, Belle Glade and South Bay. The 10 mgd LRWTP, a 100% alternative water source that utilizes reverse osmosis, has adequate capacity to serve the existing populations of the Glades Cities, surrounding unincorporated County, and future additional population increases and projected development in the area.

The County's Western Region Distribution System is served by Wellfield 11, which was constructed in 2019. Raw water is withdrawn from the Upper Floridian aquifer via 11 wells located along State Highway 715 north of Hooker Highway. Figure 1 shows the utility service areas for the PBCWUD.

In May of 2013, Palm Beach County assumed the former Glades Utility Authority service area rights to provide potable water, wastewater, and reclaimed water service to the Cities of Belle Glade, South Bay, and Pahokee. In the County's 10-Year Water Supply Facilities Work Plan, and within the Utility Element of the County's comprehensive plan, projections are included that indicate that level of service standards and capacity needs are available for their service areas.

Figure 1: Utility Service Provider Locations Throughout Palm Beach County



Source: Palm Beach County 2020 Water Supply Facilities Work Plan

Data and Analysis

The PBCWUD Western Region Distribution System per capita rate is 157 gallons per capita per day (gpcd). Information regarding utilities serving unincorporated Palm Beach County, including **water sources, per capita rates, and water supply and infrastructure projects** can be found in Table 1.

Table 1: Utilities Serving Unincorporated Palm Beach County

Utility Name	Consumptive Use Permit No.	Per Capita Finished Water (2012-2016)	Water Source	Projects & Infrastructure
Boca Raton	50-00367-W	299	SAS	No projects
Boynton Beach	50-00499-W	119	FAS; SAS	No projects
Delray Beach	50-00177-W	229	FAS; SAS	No projects
Golf	50-00612-W	151	SAS	No projects
Jupiter	50-00010-W	215	FAS; SAS	Surface water recharge system - The final phase of the project includes connecting the regional system to recharge wetlands and recharging the local aquifer.
Lake Worth Beach	50-00234-W	107	FAS; SAS	No projects
Maralago Cay	50-01283-W	225	SAS	No projects
PBCWUD Eastern Region	50-00135-W	111	FAS; SAS	South County Reclaimed Phase I - Construction of a 24-inch diameter reclaimed water transmission pipeline from BCWWS to serve the southern portion of the PBCWUD service area
PBCWUD Western Region	50-06857-W	157	FAS	No projects
Palm Springs	50-00036-W	81	SAS	R.L. Pratt Washwater Recovery Basin - Construct a washwater recovery basin to recycle; Purchase up to 0.30 mgd of bulk water from PBCWUD
Riviera Beach	50-00460-W	184	SAS	Purchase bulk water from PBCWUD or West Palm Beach
Seacoast	50-00365-W	191	FAS; SAS	Construct FAS wells F-6 and F-9 water supply well and connecting raw water transmission main
Tequesta	50-00046-W	309	FAS; SAS	No projects
Wellington	50-00464-W	107	SAS	Phased Reclaim System Expansions - Install additional reuse filter equipment as influent flow increases. It will be a phased project: 1.30 mgd by 2020, 2.90 mgd by 2030 and 6.50 mgd by 2040
West Palm Beach	50-00615-W	243	SAS	C-17 Pump Station - Withdraw from the Congress Avenue Canal and pumping it into the City's adjacent M-Canal (Lake Mangonia); ASR Well Expansion Program - Install up to 3 ASR wells injecting surface water into the FAS (classified as Class V injection wells) and associated monitor wells; Grassy Waters Preserve Water Quality, Diversion, and Storage Improvements

Source: 2018 Lower East Coast Water Supply Plan Update, Chapter 8 and Appendix E

Acronyms

SAS = surficial aquifer system
 FAS = Floridan aquifer system
 BCWWS = Broward County Water and Wastewater Services

ASR = aquifer storage and recovery
 PBCWUD = Palm Beach County Water Utilities Department
 WTP = water treatment plant

Tables 2 and 3, taken from the County’s WSFWP and comprehensive plan, show **capacity and demand** information for services provided to the City.

Table 2: Western Region Facility Capacity Analysis

Facility Capacity Analyses	2018	2020	2025	2030
Western Region Population Served ¹	34,018	34,856	36,500	38,020
Demand per Capita (gpd) ²	157	157	157	157
Total Finished Water Average Daily Demand (mgd)	5	5	6	6
Total Raw Water Average Daily Demand (mgd)³ = Finished Water x 1.31	7	7	8	8
Available Raw Water Facility Capacity (mgd) ⁴	8	8	8	8
Raw Water Facility Capacity Surplus ⁵	1	1	0	0
Permitted Raw Water Allocation (mgd annual average) ⁶	10	10	10	10
Total Raw Water Average Daily Demand	7	7	8	8
Permitted Water Available	3	3	2	2

¹ Population Served represents projected retail customers and self-served conversions, Table 5-4.
² Demand per Capita based upon population served.
³ ADF raw water = 1.31* ADF FW (per historical and capacity-based analyses)
⁴ Raw Water Facility Capacity = Wellfield Capacity with two largest wells out of service for each individual wellfield.
⁵ Calculated by subtracting average daily demand from available facility capacity.
⁶ Permitted allocation from Permit #50-06857-W.

Source: Palm Beach County Comprehensive Plan, Utility Element, Table 6.2

Table 3: PBCWUD Western Region Water Supply Demand

Population and Finished Water Demand						
	Existing		Projected			
	2016	2020	2030	2040		
Population	34,886	36,137	38,446	39,888		
Average 2012-2016 Per Capita (gallons per day finished water)	157					
Potable Water Demands (daily average annual finished water in mgd)	5.48	5.67	6.04	6.26		
SFWMD Water Use Permitted Allocation (mgd)						
Potable Water Source	Permit Number 50-06857-W (expires 2025)					
SAS	0.00					
FAS	9.43					
Total Allocation	9.43					
FDEP Potable Water Treatment Capacity (PWS ID # 4505005)						
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)					
	Existing	Projected				
	2016	2020	2030	2040		
SAS	0.00	0.00	0.00	0.00		
FAS	10.00	10.00	10.00	10.00		
Total Potable Capacity	10.00	10.00	10.00	10.00		
Nonpotable Alternative Water Source Capacity (mgd)						
Total Nonpotable Capacity	0.00	0.00	0.00	0.00		
Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost (\$ million)	Projected Cumulative Design Capacity (mgd)		
				2020	2030	2040
Potable Water						
No Projects						
Total Potable Water			\$0.00	0.00	0.00	0.00
Nonpotable Water						
No Projects						
Total Nonpotable Water			\$0.00	0.00	0.00	0.00
Total New Water			\$0.00	0.00	0.00	0.00

*Note: (Service Area Cities of Belle Glade, Pahokee, and South Bay)
Source: Palm Beach County 2020 10-Year Water Supply Facilities Work Plan*

Table 4, taken from the Palm Beach County 2020 WSFWP, provides the **population projections** for each of the service providers in the County. The City of Pahokee falls under the PBCWUD Western Region.

Table 4: Population Forecast Throughout Palm Beach County

Utility	2018		2020		2025		2030	
	Total Pop Served	Unincorp. Pop Served	Total Pop Served	Unincorp. Pop Served	Total Pop Served	Unincorp. Pop Served	Total Pop Served	Unincorp. Pop Served
Boca Raton	116,873	23,519	120,249	23,606	127,315	23,950	132,145	24,171
Boynton Beach	111,908	32,355	115,252	32,969	122,642	36,064	127,632	37,407
<i>Boynton Beach Self-Served (On Wells)</i>	<i>1,324</i>	<i>1,324</i>	<i>1,298</i>	<i>1,298</i>	<i>1,064</i>	<i>1,064</i>	<i>811</i>	<i>811</i>
Delray Beach	69,338	2,265	72,180	2,325	77,538	2,678	81,613	2,796
Golf	2,726	2,477	2,740	2,488	2,774	2,495	2,809	2,527
Highland Beach	3,698	0	3,728	0	3,811	0	3,874	0
Jupiter	75,829	14,030	78,455	14,352	84,362	16,973	89,156	18,839
<i>Jupiter Self-Served (On Wells)</i>	<i>12,249</i>	<i>12,249</i>	<i>12,170</i>	<i>12,170</i>	<i>11,956</i>	<i>11,956</i>	<i>11,557</i>	<i>11,557</i>
Lake Worth Beach	50,272	13,351	51,768	13,845	54,037	14,223	56,051	14,582
Lantana	11,121	0	11,920	0	12,898	0	13,583	0
Manalapan	2,584	0	2,630	0	2,669	0	2,786	0
Mangonia Park	1,976	0	2,030	0	2,212	0	2,505	0
Maralago Cay	1,159	1,159	1,165	1,165	1,178	1,178	1,190	1,190
Palm Springs	50,210	23,826	52,114	24,392	55,820	25,578	57,954	27,109
Riviera Beach	41,139	3,041	42,392	3,146	45,582	3,554	47,652	3,646
Seacoast	91,533	16,638	94,987	17,164	100,727	18,053	105,200	18,681
<i>Seacoast Self Served (On Wells)</i>	<i>636</i>	<i>636</i>	<i>626</i>	<i>626</i>	<i>566</i>	<i>566</i>	<i>516</i>	<i>516</i>
Tequesta	8,449	2,232	8,681	2,264	9,006	2,276	9,286	2,354
Wellington	56,849	2,789	59,442	2,897	63,851	3,234	67,255	3,412
<i>Wellington Self-Served (On Wells)</i>	<i>2,906</i>	<i>621</i>	<i>2,891</i>	<i>616</i>	<i>2,843</i>	<i>585</i>	<i>2,796</i>	<i>556</i>
West Palm Beach	120,589	110	124,452	8	132,900	24	141,506	33
PBC WUD East Region	519,505	427,988	530,964	436,495	561,670	462,165	595,462	487,675
<i>Seminole Improvement District</i>	<i>372</i>	<i>0</i>	<i>1,906</i>	<i>0</i>	<i>5,476</i>	<i>0</i>	<i>9,678</i>	<i>0</i>
PBC WUD West Region	34,018	5,403	34,856	5,476	36,500	5,639	38,020	6,783
PBC WUD Total	553,523	433,391	565,820	441,971	598,170	467,804	633,482	494,458
<i>Self-Served (On Wells)</i>	<i>46,526</i>	<i>43,324</i>	<i>46,010</i>	<i>42,830</i>	<i>45,678</i>	<i>42,698</i>	<i>45,041</i>	<i>42,261</i>
PBC WUD East Vacant Potential	33,814		34,448		35,973		37,758	
PBC WUD West Vacant Potential	2,641		2,691		2,810		2,949	
PBC WUD Total Potential	589,978		602,959		636,953		674,189	
Total Projected Population	1,433,417		1,473,000		1,559,600		1,636,400	
BEBR County Population	1,433,417		1,473,000		1,559,600		1,636,400	

Source: PBC WUD, PBC Planning 2015-2018 Population Allocation Model, 2018 Existing Land Use layer, PBC Property Appraiser, PBC Building/Zoning Division, University of Florida Bureau of Economic and Business Research

PBCWUD’s **projected populations through 2030** are shown in Table 6. In 2030, PBCWUD expects to be providing potable water to 633,482 people as well as a portion of the population that is currently self-served.

Table 6: Population Forecast for PBCWUD

PBC WUD Served Population	2018	2020	2025	2030
Unincorporated County	433,391	441,961	464,807	487,675
Atlantis	2,055	2,104	2,138	2,168
Belle Glade	17,654	17,983	18,477	19,172
Boca Raton	170	226	372	530
Cloud Lake	128	133	139	152
Glen Ridge	213	217	228	239
Greenacres	39,550	40,148	41,116	42,306
Haverhill	2,116	2,232	2,394	2,530
Lake Clarke Shores	340	352	355	361
Loxahatchee Groves	91	235	774	1,333
Pahokee	5,805	5,927	6,218	6,433
Palm Beach Gardens	1,356	1,421	3,296	5,283
Palm Springs	1,309	1,364	1,772	2,939
Royal Palm Beach	33,897	34,372	34,784	36,390
South Bay	5,197	5,251	5,415	5,703
Wellington	9,362	9,461	9,575	9,698
Westlake	372	1,906	5,476	9,678
West Palm Beach	517	527	834	892
Total Population Served by PBC WUD	553,523	565,820	598,170	633,482
The following values represent the population throughout unincorporated Palm Beach County that is self-served via wells. All have the potential to request utility service from PBC WUD at any given time. For conservative facility planning purposes, plants are sized to be able to serve all the self-served population in addition to the population projected throughout the utility service area.				
Self-Served Population	2018	2020	2025	2030
Loxahatchee Groves	3,202	3,180	2,980	2,780
Unincorporated PBC/Glades	43,324	42,830	42,698	42,261
Total Self-Served Population	46,526	46,010	45,678	45,041

Source: Palm Beach County 2020 Water Supply Facilities Work Plan

Capital Improvements

According to the County's WSFWP, the 20-year Consumptive Water Use Permit supporting the Western Region was issued on October 12, 2005 and expires on October 12, 2025. The permit authorizes withdrawals to meet the future reasonable-beneficial demands of 42,115 residents across the Cities of Belle Glade, Pahokee, and South Bay with a per capita use rate of 224 gallons per capita per day from the Floridan aquifer system. The Plan notes that the permit has been modified several times since issuance to update proposed withdrawal facilities and address concerns over upconing of saline water. Additionally, the County notes that the permit is not subject to any of the District's Restricted Allocation Area or Source of Limited Availability criteria due to a combination of its location and withdrawal source.

The WSFWP indicates that:

- The County has committed to spend \$5 million for 5 years toward the repair and replacement of aged and deteriorated water and wastewater infrastructure in the Glades Region.
- The County and South Florida Water Management District (SFWMD) have developed water supply strategies to ensure infrastructure is expanded to accompany growth and protect the environment; and adequate financing is in place.
- The County continues to investigate innovative and cost-effective alternative water supply projects.
- The County is in the position to meet the demands of growth and achieve maximum efficiency and effectiveness.
- There are no plans to increase plant capacity at the LRWTP; however, system efficiency will increase, allowing for more effective utilization of the facility and flexibility in the operation of the existing wellfield to abate concerns over upconing of saline water.

Alternative Water Resource Program

The County is actively and aggressively implementing alternative water resource projects. The County's WSFWP states that there are programs that support the SFWMD LEC Plan for reducing reliance on the regional shallow aquifer system including demand reducing, supply management, and augmentation techniques. The County is proactively expanding alternative water resources that address both innovative supply sources and reuse of wastewater. The Goals of the programs are:

- Reducing impact on the "regional system"
- Long-term planning for water availability
- Mitigating localized wellfield impacts
- Maximizing funding opportunities

The anticipated benefits of the County's alternative water resources program include:

- Minimizing dependence upon the surficial aquifer system and the regional water supply system;

- Implementing a robust water conservation plan;
- Maintaining a steady raw water supply for water treatment plants;
- Reducing the amount of fresh water drained from the land and discharged to the ocean;
- Minimizing stressing of wellfields;
- Minimizing the "net" quantity of water withdrawn from the surficial aquifer system;
- Providing landscaping water supply during drought conditions;
- Reducing reliance upon a deep injection well system;
- Providing habitat for migratory birds and waterfowl and endangered species;
- Providing passive recreation opportunities for the public; and
- Increasing suburban green space.

Goals, Objectives, and Policies in the City's Comprehensive Plan

As part of the 2024 Evaluation and Appraisal Review process, goals, objectives, and policies (GOPs) that address water supply sources and facilities, as well as conservation and reuse programs, were reviewed and modified to reflect current conditions within the City. The following are the policies, by element, adopted during the EAR process:

Future Land Use Element

Policy 1.1.2.5 – Prior to the issuance of development permits, the City shall review the State of Florida Master Site File to evaluate impacts upon structures which may have potential historical significance, and if deemed appropriate by the City Commission, take action to protect such structures. The City shall create and annually update its inventory of historic sites within the State of Florida Master Site file.

Policy ~~1.1.2.5~~ 1.1.2.6 - The City shall coordinate land uses with available and projected fiscal resources and a financially feasible schedule of capital improvements for water supply and facility projects with Palm Beach County.

Policy ~~1.1.2.6~~ 1.1.2.7 - The City shall continue ongoing and meaningful coordination ~~through~~ with the ~~Glades Utility Authority~~ Palm Beach County Water Utilities Department to ensure adequate provision of potable water and conservation techniques.

Policy 1.1.4.5 - The ~~Future Land Use Infrastructure~~ Element shall include data and analysis demonstrating coordination with current and future water supply demands.

Policy 1.1.4.6 - The City's 10-Year Water Supply Facilities Work Plan shall contain projects and an implementation schedule as needed to meet the future population demand.

Policy 1.1.4.7 - Consistent with public health and safety, sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance of a certificate of occupancy. Prior to approval of a building permit, the ~~e~~City shall ~~consult with the Lake Region Water Treatment Plant to determine whether~~ receive confirmation from the Palm Beach County Water Utilities Department that adequate water supplies and sanitary sewer treatment capacity to serve the new development will be available no later than the anticipated date of issuance of a certificate of occupancy.

Policy 1.1.4.8 - Proposed Future Land Use Map amendments shall be supported with data and analysis

demonstrating that adequate water supplies and associated public facilities will be available to meet the projected growth demands.

Policy 1.1.4.9 – To the maximum extent feasible, all new development shall be connected to central public sanitary sewer service. Development activity shall be directed towards areas of the City which already have sanitary sewer infrastructure in place.

Infrastructure Element (Potable Water Sub-element)

Policy 4.2.1.5 – The City shall prepare a Water Supply Facilities Work Plan, for a minimum 10- year period, ~~for building water supply facilities identified in the Potable Water Sub Element to serve existing and new development.~~ The Work Plan shall be adopted as an attachment to the Infrastructure Potable Water Sub-Element and its goals, objectives and policies incorporated into the Comprehensive Plan within eighteen months after the South Florida Water Management District Regional-Lower East Coast Water Supply Plan has been approved or updated.

Policy 4.2.3.1 – The City shall not support the extension of ~~extend~~ potable water service to developments which would exceed either the adopted levels of service or capacity standards of the ~~City's~~ water treatment facilities.

Policy 4.2.3.2 – In order to promote compact urban growth and retain potable water treatment plant capacity and storage for the incorporated area of Pahokee, the City shall not support the extension of potable water services to unincorporated areas ~~shall be approved only by a majority vote of the City Commission.~~

Policy 4.2.3.3 – Extensions of the potable water system to private developments shall be made only at the developer's expense. The City Commission may ask PBCWUD to reduce or waive such expenses upon finding that such an extension would be in the best interest of the public health, safety, or welfare.

Policy 4.2.3.4 – The 10-Year Water Supply Facilities Work Plan shall guide coordination with PBCWUD to provide future expansion and upgrade of facilities needed to transmit and distribute potable water to meet current and future demands.

Objective 4.2.4 – The City shall encourage ~~continue to implement a~~ water conservation programs.

Policy 4.2.4.1 – The City shall assist the PBCWUD with the distribution of w Water conservation information ~~shall be included with monthly billings and distributed to new customers at the time of hook-up.~~

Conservation Element

Policy 5.1.3.3 – The City shall work towards the further education of the public regarding various methods of water conservation at the household and small business level.

Policy 5.1.3.4 – The City shall continue its efforts to publicize and promote water conservation techniques and programs, including reuse programs and potable water conservation strategies.

Policy: 5.1.3.5 – The City shall assess projected water needs and sources for the long-range planning period by creating and maintaining a minimum 10-Year Water Supply Facilities Work Plan. Future water supply planning shall emphasize the efficient use of water resources and where possible and financially feasible, utilize alternative water sources.

Policy 5.1.3.6 – The City shall investigate the long-range feasibility of utilizing reclaimed water for

irrigation purposes.

Policy 5.1.3.7 – The City shall support~~s~~ the South Florida Water Management District’s water restrictions and conservation efforts during times of water shortages as well as year-round conservation rules.

Intergovernmental Coordination Element

Policy 7.1.1.6. - The City shall coordinate implementation of the goals, objectives and policies in its Water Supply Facilities Work Plan with the South Florida Water Management District’s Lower East Coast Water Supply Plan and Palm Beach County Water Supply Facilities Work Plan.

Policy 7.1.1.7 - The City shall increase its coordination efforts with the South Florida Water Management District (SFWMD), and Palm Beach County ~~and the Glades Utility Authority~~ regarding the sharing and updating of information to meet ongoing water supply needs.

Policy 7.1.1.8 - The City shall participate in on-going collaborative efforts with other local governments and agencies for long-term alternative water supply sources. The city shall participate in, at a minimum, annual meetings with Palm Beach County, SFWMD, and the cities of Belle Glade and South Bay ~~and the Glades Utility Authority~~ to discuss population projections, land use changes and implementation of conservation reuse programs and alternative water supplies.

Policy 7.1.2.4 - The City shall coordinate with SFWMD, and Palm Beach County ~~and the Glades Utility Authority~~ in the implementation of alternative water supply projects, the establishment of its level-of-service standards and resource allocations.

Capital Improvement Element

Policy 8.1.2.~~89~~: The City shall require that all development be timed and staged in conjunction with the provision of public facilities for which level of service standards have been adopted by this comprehensive plan and that the adopted levels are maintained.

Policy 8.1.2.~~94~~: The City of Pahokee will continue to enforce the City’s adopted concurrency management system ~~System for the Management of Concurrency (SYMCON)~~ in the land development code coordinated with the Concurrency Management Element to ensure that adequate facility capacity is available or will be available to serve development at the time a development permit is issued.

Policy 8.1.2.~~104~~: The City shall coordinate planning for the City’s infrastructure improvements related to water supply with the plans of state agencies, the South Florida Water Management District (SFWMD), Palm Beach County, and the cities of Belle Glade and South Bay ~~and the Glades Utility Authority~~ to ensure a regional approach to water supply planning.

Policy 8.1.2.~~112~~: The Schedule of Capital Improvements shall include funding for major capital projects needed for water supply facilities and infrastructure. The potable water projects ~~for the FY10-14 period included~~ in the Palm Beach County ~~2-10~~-Year Water Supply Work Plan ~~adopted August 21, 2008~~ shall be incorporated by reference.

~~Policy 8.1.2.13: The City shall assess its priorities for the replacement of facilities, correction of existing water supply and facility deficiencies, provision for future water supply and facility as needed.~~

Policy 8.1.2.~~124~~: Consistent with public health and safety, sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no

later than the issuance of a certificate of occupancy. Prior to approval of a building permit, the City shall consult with the Palm Beach County Water Utilities Department Lake Region Water Treatment Plant to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance of a certificate of occupancy.

Policy 8.1.2.1~~35~~: The City shall participate in the development of conservation programs contained in the Lower East Coast Water Supply Plan in conjunction with the South Florida Water Management District and shall adopt the plan into the Infrastructure Element of this Plan as required by Florida Statute.