

# D

## Potable Water and Wastewater Treatment Facilities

### POTABLE WATER TREATMENT FACILITIES

In the Lower East Coast (LEC) Planning Area, potable water is produced by large water treatment facilities, smaller “package” water treatment facilities, and private wells supplying individual users. This appendix focuses on large facilities with average withdrawals of water equal to or greater than 100,000 gallons per day or 0.1 million gallons per day (MGD).

#### Descriptions of Existing Facilities

**Table D-1** presents summary descriptions for each of the large potable water treatment facilities and their withdrawal (water) sources located in the LEC Planning Area. The table contains the name of the utility or supply entity, the South Florida Water Management District (SFWMD) consumptive use permit number, annual water allocation in MGD, raw water withdrawal sources, volume withdrawn in 2010, and the Florida Department of Environmental Protection (FDEP) water treatment facility permit number and rated (design) capacity. **Figures D-1** through **D-3** show the locations of potable water treatment facilities in Palm Beach, Broward, and Miami-Dade counties, respectively. Additional information about the water sources — Surficial Aquifer System (SAS), Floridan Aquifer System (FAS), Upper Floridan aquifer, and surface water — is available from the SFWMD Water Use Regulatory Database, which is accessible online from the following link: <http://my.sfwmd.gov/ePermitting/MainPage.do>. More information regarding the potable water treatment plants permitted by the FDEP can be found at the following site: <http://www.dep.state.fl.us/water/drinkingwater/bfr.htm>.

**Table D-1. Potable water treatment facilities in the LEC Planning Area.**

Utility or Supply Entity	Consumptive Use			Withdrawal Sources (MGD)		Water Treatment	
	SFWMD Permit Number	Annual Allocation (MGD raw)	2010 Daily Average (MGD raw)	SAS	FAS	FDEP Permit Number	Rated Capacity (MGD)
<b>Palm Beach County</b>							
A.G. Holley State Hospital	50-01092-W	0.09	0.82	0.82	0.00	4500006	0.36
Boca Raton, City of	50-00367-W	51.54	42.19	42.19	0.00	4500130	70.00
Boynton Beach, City of	50-00499-W	20.86	14.23	13.72	0.51	4500773	29.64
Delray Beach Water and Sewer Department, City of	50-00177-W	19.10	15.27	15.04	0.22	4500351	26.00
Glades Utility Authority	50-06857-W	9.43	6.61	0.00	6.61		10.00
Golf, Village of	50-00612-W	0.60	0.51	0.51	0.00	4501528	0.86
Highland Beach, Town of	50-00346-W	3.15	2.05	0.00	2.05	4500609	2.36
Jupiter, Town of	50-00010-W	24.41	16.60	8.15	8.45	4501491	30.00
Lake Worth Utilities, City of	50-00234-W	12.07	4.75	4.75	0.00	4500773	12.90
Lantana, Town of	50-00575-W	2.48	1.77	1.77	0.00	4500784	3.84
Manalapan, Town of	50-00506-W	1.91	1.34	1.33	0.00	4500840	2.35
Mangonia Park, Town of	50-00030-W	0.58	0.32	0.32	0.00	4500841	1.08
Maralago Cay	50-01283-W	0.27	0.19	0.19	0.00	4500062	0.42
Palm Beach County Water Utilities Department	50-00135-W	86.99	59.03	59.03	0.00	4504393	101.38
Palm Springs, Village of	50-00036-W	4.74	4.00	4.00	0.00	4501058	10.00
Riviera Beach, City of	50-00460-W	9.26	6.60	6.60	0.00	4501229	17.50
Seacoast Utility Authority	50-00365-W	19.44	18.10	18.10	0.00	4501124	30.50
Tequesta, Village of	50-00046-W	4.85	3.34	1.51	1.83	4501438	5.13
Wellington Public Utilities Department	50-00464-W	8.05	6.73	6.73	0.00	4500014	12.80
West Palm Beach Public Utilities, City of <sup>a</sup>	50-00615-W	39.30	27.94	27.94	0.00	4501559	47.00
<b>Palm Beach County Total</b>		<b>319.12</b>	<b>232.39</b>	<b>212.70</b>	<b>19.67</b>		<b>414.12</b>
<b>Broward County</b>							
Broward County Water and Wastewater Services (2A/North Regional)	06-01634-W	22.06	13.36	12.64	0.72	4060163	40.00
Broward County Water and Wastewater Services (1A)	06-00146-W	13.90	7.63	7.63	0.00	4060167	16.00
Cooper City Utility Department, City of	06-00365-W	4.55	3.46	3.46	0.00	4060282	6.00
Coral Springs, City of	06-00102-W	9.44	6.96	6.96	0.00	4060290	16.00
Coral Springs Improvement District	06-00100-W	5.42	4.33	4.33	0.00	4060291	7.20
Dania Beach, City of	06-00187-W	2.91	2.42	2.42	0.00	4060253	3.02
Davie, Town of	06-00134-W	19.85	4.10	4.10	0.00	4060344	7.40
Deerfield Beach, City of	06-00082-W	14.15	10.10	10.10	0.00	4060254	24.30
Fort Lauderdale, City of	06-00123-W	61.19	44.95	44.95	0.00	4060486	90.00
Hallandale Beach, City of	06-00138-W	7.29	5.55	5.55	0.00	4060573	10.00
Hillsboro Beach, Town of	06-00101-W	0.88	0.76	0.76	0.00	4060615	2.02

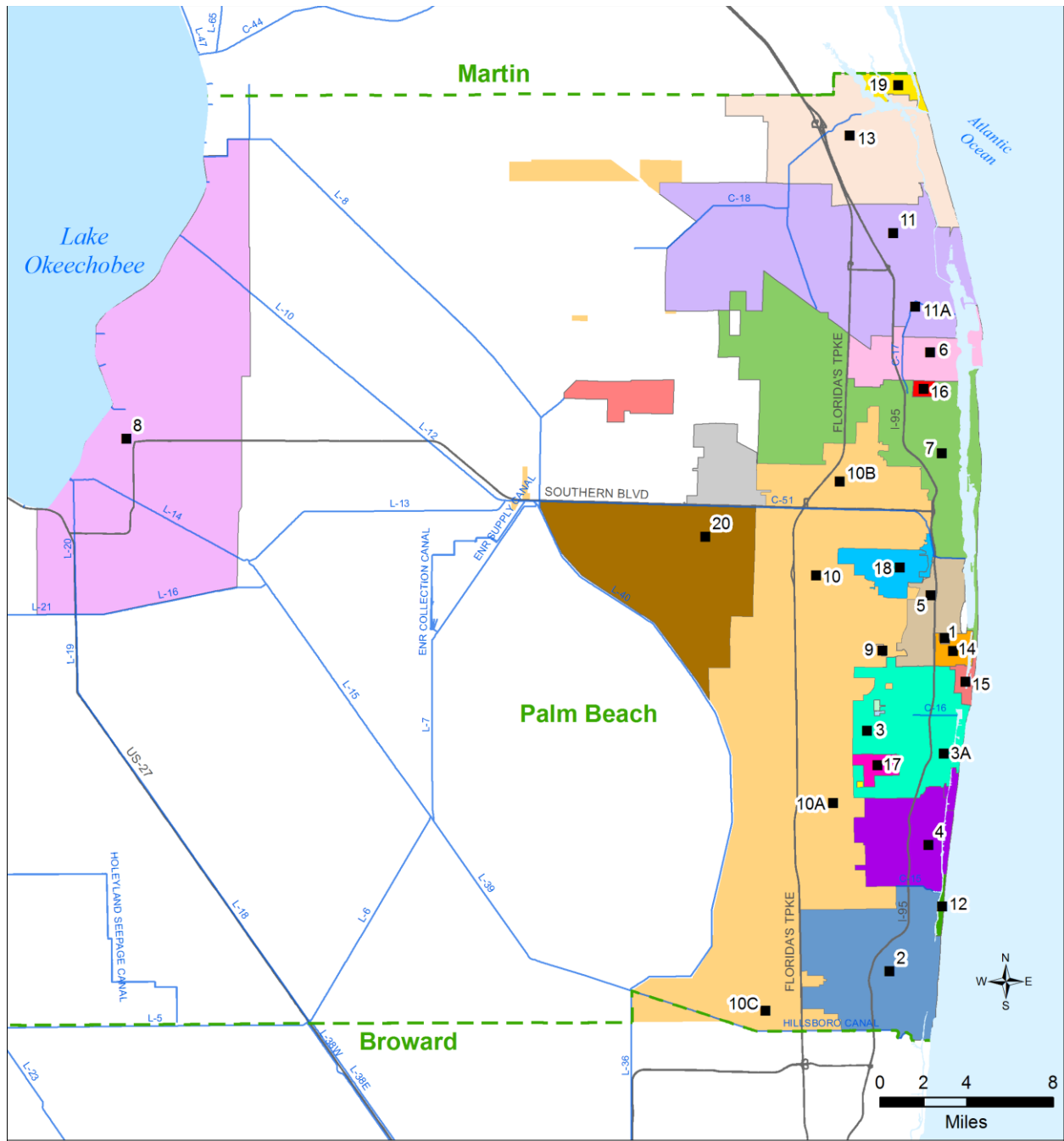
a. Withdrawal source is surface water from Clear Lake, Grassy Waters Preserve, and M Canal.

Table D-1. Continued.

Utility or Supply Entity	Consumptive Use			Withdrawal Sources (MGD)		Water Treatment	
	SFWMD Permit Number	Annual Allocation (MGD raw)	2010 Daily Average (MGD raw)	SAS	FAS	FDEP Permit Number	Rated Capacity (MGD)
Hollywood, City of	06-00038-W	39.38	24.00	22.24	1.75	4060642	37.50
Lauderhill, City of	06-00129-W	8.72	5.76	5.76	0.00	4060787	16.00
Margate, City of	06-00121-W	8.51	7.83	7.83	0.00	4060845	18.00
Miramar, City of	06-00054-W	16.00	12.46	12.46	0.00	4060925	5.70
North Lauderdale, City of	06-00004-W	3.24	2.60	2.60	0.00	4060976	7.50
North Springs Improvement District	06-00274-W	5.18	4.50	4.50	0.00	4064390	6.80
Parkland Utilities, Inc.	06-00242-W	0.35	0.25	0.25	0.00	4061957	0.58
Pembroke Pines, City of	06-00135-W	15.60	12.13	12.13	0.00	4061083	18.00
Plantation, City of	06-00103-W	17.24	14.14	14.14	0.00	4061121	24.00
Pompano Beach, City of	06-00070-W	17.75	14.55	14.55	0.00	4061129	40.00
Royal Utility Corporation	06-00003-W	0.41	0.33	0.33	0.00	4061517	1.00
Seminole Tribe of Florida Utility	NA <sup>a</sup>	2.40	1.30	1.30	0.00	NA	NA
Sunrise, City of	06-00120-W	37.77	28.39	28.39	0.00	4061408	44.00
Tamarac, City of	06-00071-W	7.19	6.20	6.20	0.00	4061429	20.00
Tindall Hammock Irrigation and Soil Conservation District	06-00170-W	2.02	0.50	0.50	0.00	4060419	1.33
<b>Broward County Total</b>		<b>343.40</b>	<b>238.56</b>	<b>236.09</b>	<b>2.47</b>		<b>462.35</b>
<b>Miami-Dade County</b>							
Americana Village	13-02004-W	1.46	0.23	0.23	0.00	4131403	0.50
Florida City Water and Sewer Department	13-00029-W	2.28	1.78	1.78	0.00	4130255	4.00
Homestead, City of	13-00046-W	10.55	10.33	10.33	0.00	4130645	19.20
Miami-Dade Water and Sewer Department (MDWASD)	13-00017-W	408.51	309.10	308.01	1.09	4130871	454.77
North Miami, City of	13-00059-W	17.27	13.28	13.28	0.00	4130977	9.30
North Miami Beach, City of	13-00060-W	38.38	22.60	17.00	5.60	4131618	32.00
<b>Miami-Dade County Total</b>		<b>478.45</b>	<b>357.32</b>	<b>350.63</b>	<b>6.69</b>		<b>519.77</b>
<b>Monroe County</b>							
Florida Keys Aqueduct Authority <sup>b</sup>	13-00005-W	23.97	17.67	16.66	1.01	4134357	29.80
<b>Monroe County Total</b>		<b>23.97</b>	<b>17.67</b>	<b>16.66</b>	<b>1.01</b>		<b>29.80</b>

a. NA – not applicable

b. Withdrawals located in Miami-Dade County.



Current 2012		
1 AG Holley State Hospital	8 Glades Utility Authority	13 Town of Jupiter
2 City of Boca Raton	9 Maralago Cay	14 Town of Lantana
3 City of Boynton Beach West Plant	10 Palm Beach County Water Utilities Department Plant #2	15 Town of Manalapan
3A City of Boynton Beach East Plant	10A Palm Beach County Water Utilities Department Plant #3	16 Town of Mangonia Park
4 City of Delray Beach Water and Sewer Department	10B Palm Beach County Water Utilities Department Plant #8	17 Village of Golf
5 City of Lake Worth Utilities	10C Palm Beach County Water Utilities Department Plant #9	18 Village of Palm Springs
6 City of Riviera Beach	11 Seacoast Utility Authority (Hood Plant)	19 Village of Tequesta
7 City of West Palm Beach Public Utilities	11A Seacoast Utility Authority (Richard Plant)	20 Wellington Public Utilities Department
	12 Town of Highland Beach	

\* Service Areas w/out number do not have water treatment plant.

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 Date: 9/20/2012  
 Map Doc.: PB\_Current2012\_Uilities.mxd

**Figure D-1. Potable water treatment facilities in Palm Beach County.**

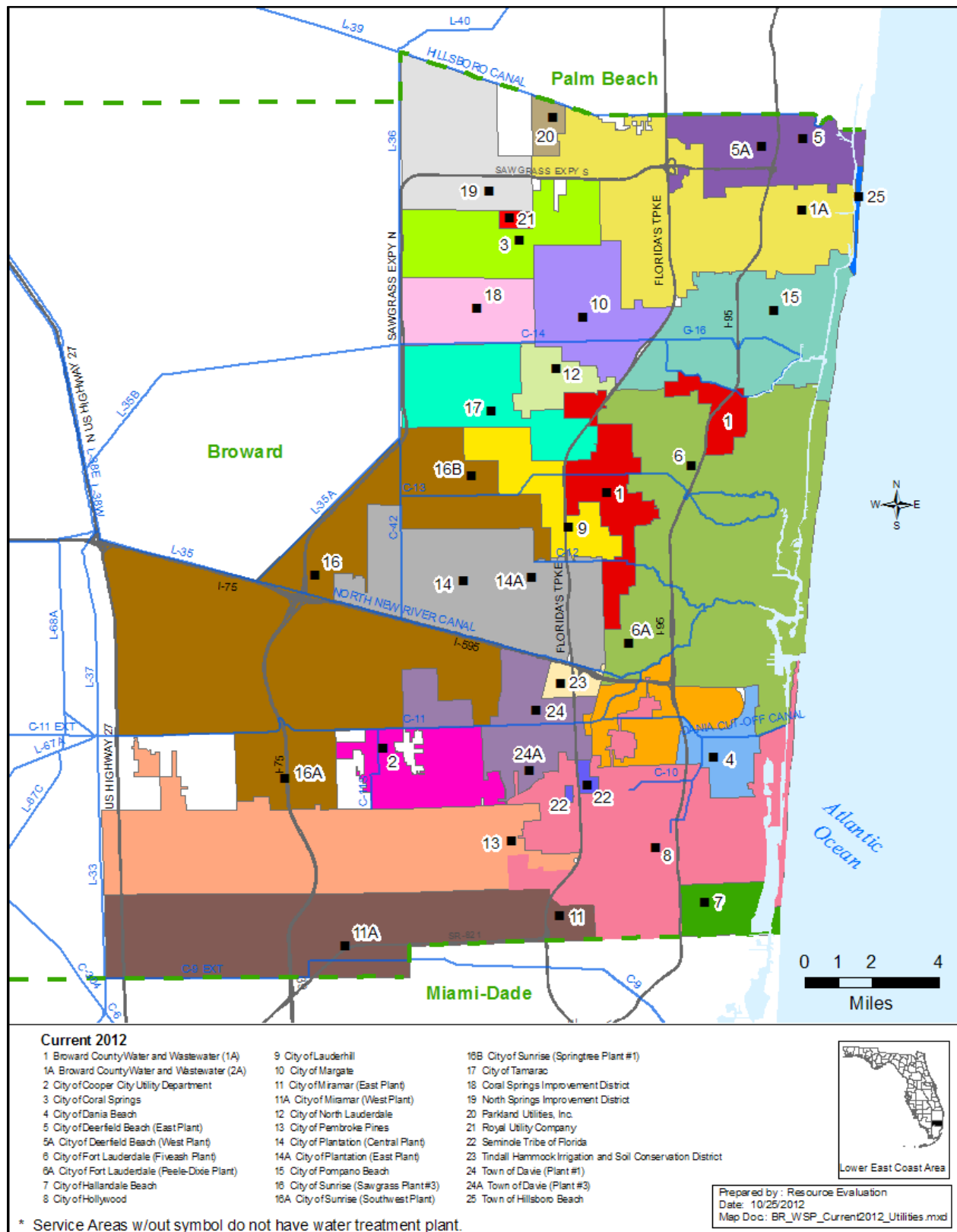
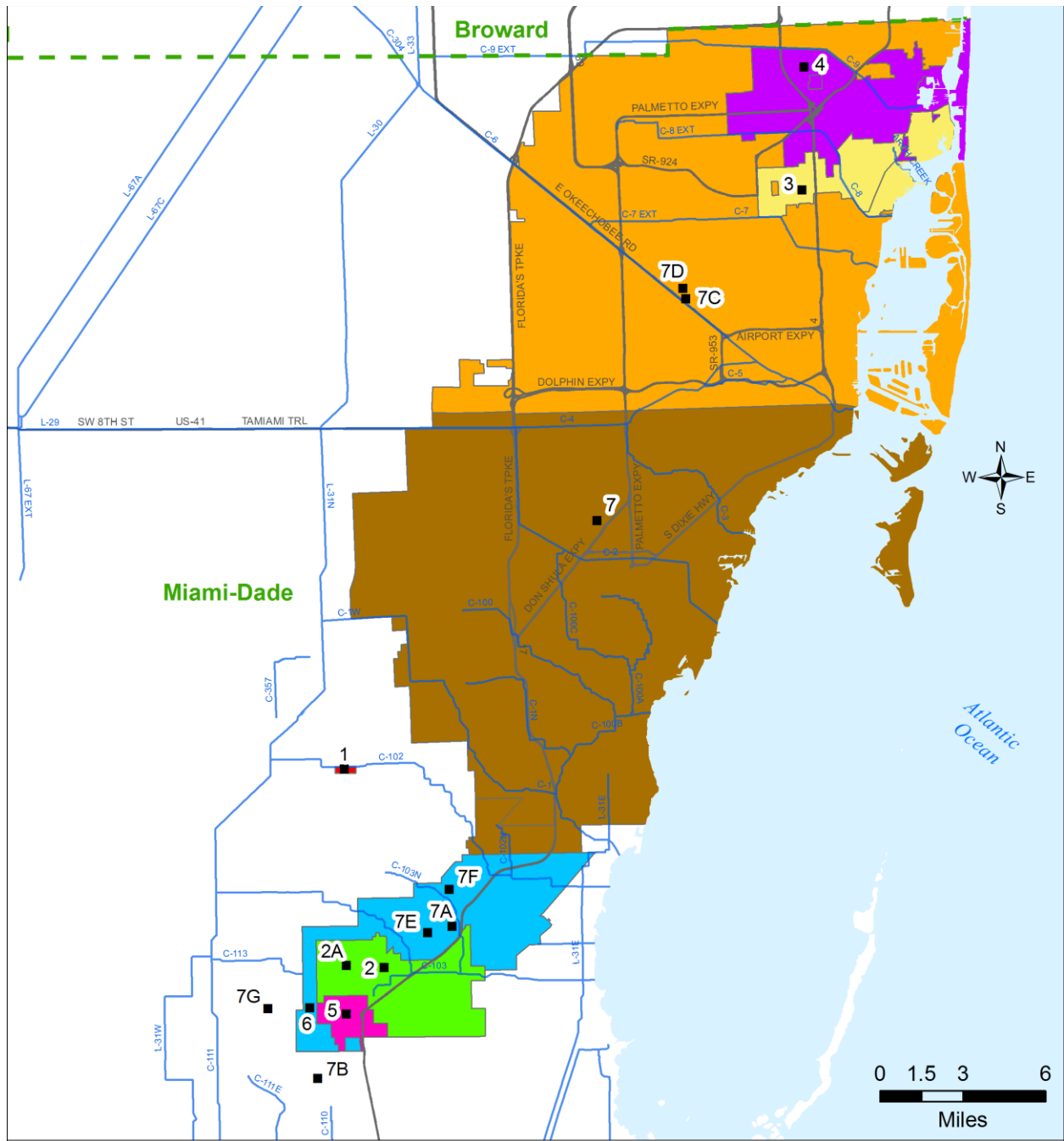


Figure D-2. Potable water treatment facilities in Broward County.



**Current 2012**

- |   |                                |
|---|--------------------------------|
| 1 Americana Village                       | 7 MDWSD (Alexander Orr Plant)  |
| 2 City of Homestead (Harris Field Plant)  | 7A MDWSD (Elevated Tank Plant) |
| 2A City of Homestead (Wittkop Park Plant) | 7B MDWSD (Everglades Plant)    |
| 3 City of North Miami                     | 7C MDWSD (Hialeah Plant)       |
| 4 City of North Miami Beach               | 7D MDWSD (John Preston Plant)  |
| 5 Florida City Water and Sewer Department | 7E MDWSD (Leisure City Plant)  |
| 6 Florida Keys Aqueduct Authority         | 7F MDWSD (Naranja Plant)       |
|   | 7G MDWSD (Newton Plant)        |

\* Service Areas w/out number do not have water treatment plant.



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**Figure D-3. Potable water treatment facilities in Miami-Dade County.**

[Note: MDWSD – Miami-Dade Water and Sewer Department.]

## WASTEWATER TREATMENT FACILITIES

Wastewater treatment is accomplished through regional wastewater treatment facilities (WWTFs), smaller “package plants,” and septic tanks. The focus of this appendix is on the larger system facilities with a capacity of 0.1 MGD or greater. These WWTFs allow economy of operation and have sufficient flows to positively impact water resources through reuse of reclaimed water and support for a regional reuse program. In the LEC Planning Area, many of these facilities are located close to potential reclaimed water users and/or distribution pipelines.

In 2010, there were 44 WWTFs in the LEC planning area, with 25 of these reusing at least part of their wastewater (FDEP 2011). The locations of the WWTFs in the LEC Planning Area and the reclaimed water distribution pipelines are shown in **Figures D-4** through **D-6**.

**Tables D-2** through **D-5** show 2010 and 2030 projected data from the 44 WWTFs. The primary source of information for these tables is the FDEP *2010 Reuse Inventory* (FDEP 2011). The FDEP inventory is a compilation of wastewater and reuse information based on fiscal year data contained in the annual reuse reports submitted by each wastewater utility or system. Secondary sources of information include communications with the utilities and planning documents, such as 10-year water supply facilities work plans, which are prepared by local governments.

Significant increases in both wastewater effluent and water reuse flows are expected by 2030. The term reuse percentage is frequently used when describing reuse facilities and is intended to reflect the amount of water reused when compared to the amount of wastewater treated. The annual FDEP reuse inventories use the term “flow ratio,” which is defined as “the total reuse flow divided by the total wastewater flow.” The definition continues by clarifying “flow ratios greater than 1.0 (i.e., greater than 100 percent) indicate that reuse may include supplemental water supplies,…” Any supplemental water supplies (e.g., groundwater or surface water) are included in the “reuse flows.” If supplemental flows cause the reuse percentage to exceed 100 percent. However, the reuse percentage will show 100 percent. This has not occurred with any of the data reported in this appendix.

**Tables D-6** through **D-9** show the flows for the different disposal methods and reuse types for each of the profiled facilities. The tables demonstrate that public access irrigation (e.g., golf courses, parks, and schools) has been, and will continue to be, the primary means of water reuse in the region. For treated wastewater that is not reused, the primary means of disposal has been discharge through ocean outfalls.

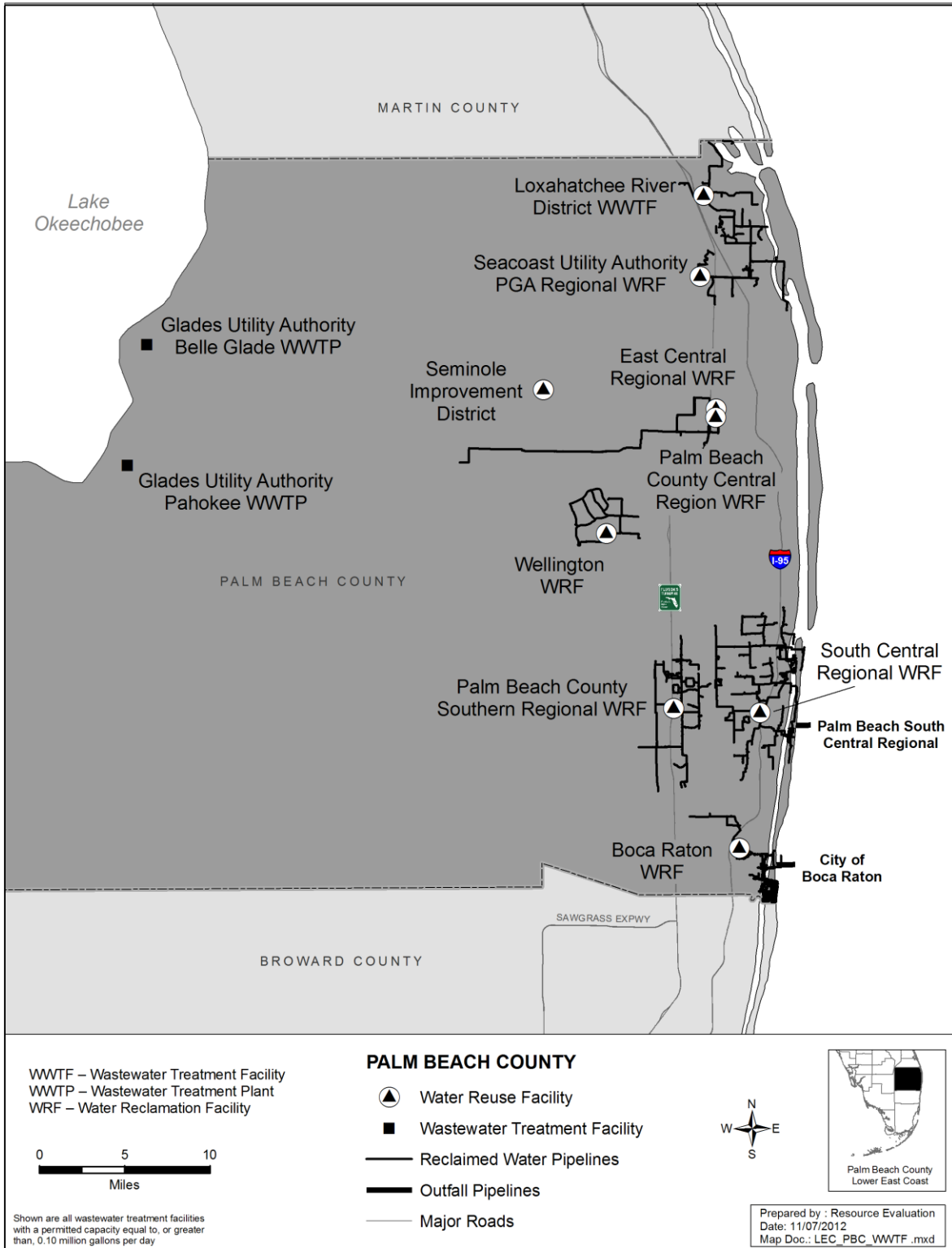
In 2008, amendments to Section 403.086, Florida Statutes [F.S.], were passed (commonly referred to as the state enacted an Ocean Outfall legislation), requiring the elimination of the use of six ocean outfalls in southeastern Florida as a primary means for disposal of treated domestic wastewater and the reuse of at least 60 percent of the outfall flows by 2025. The twin objectives of this statute were to reduce nutrient loadings to the environment and to achieve the more efficient use of water to meet water supply needs. The profiles provided at the end of this appendix indicate if a facility is affected by these

amendments. By 2030, deep well injection is expected to replace ocean outfall discharge as the primary means of disposal for wastewater that is not reused.

Although the regionwide capacity of the WWTFs in the LEC Planning Area totals 860 MGD, an average daily flow of 639 MGD of wastewater was treated on average in 2010. Excess treatment capacity is necessary to ensure a margin of safety in meeting daily peak flows. Regionally, 71 MGD (11 percent) of average daily treated wastewater was reused. The majority of the treated wastewater was reused for public access irrigation, primarily in Palm Beach County. Public access irrigation accounted for 41 MGD of the 71 MGD, groundwater recharge through percolation ponds used 6 MGD, and other miscellaneous uses, such as processes at the WWTF and wetland hydration, used 24 MGD. Treated effluent not reused was disposed of through deep well injection (353 MGD), ocean outfall (240 MGD), or shallow injection wells (1 MGD).

By 2030, it is projected that average daily wastewater flows will increase by 28 percent over the 2010 average daily flows in the LEC Planning Area. Average daily reuse flows are projected to increase from about 71 MGD in 2010 to over 420 MGD by 2030. The significant increase in projected water reuse is primarily due to the ocean outfall utilities meeting the 60 percent reuse requirement by 2025.





**Figure D-4. Wastewater and reuse systems in Palm Beach County.**

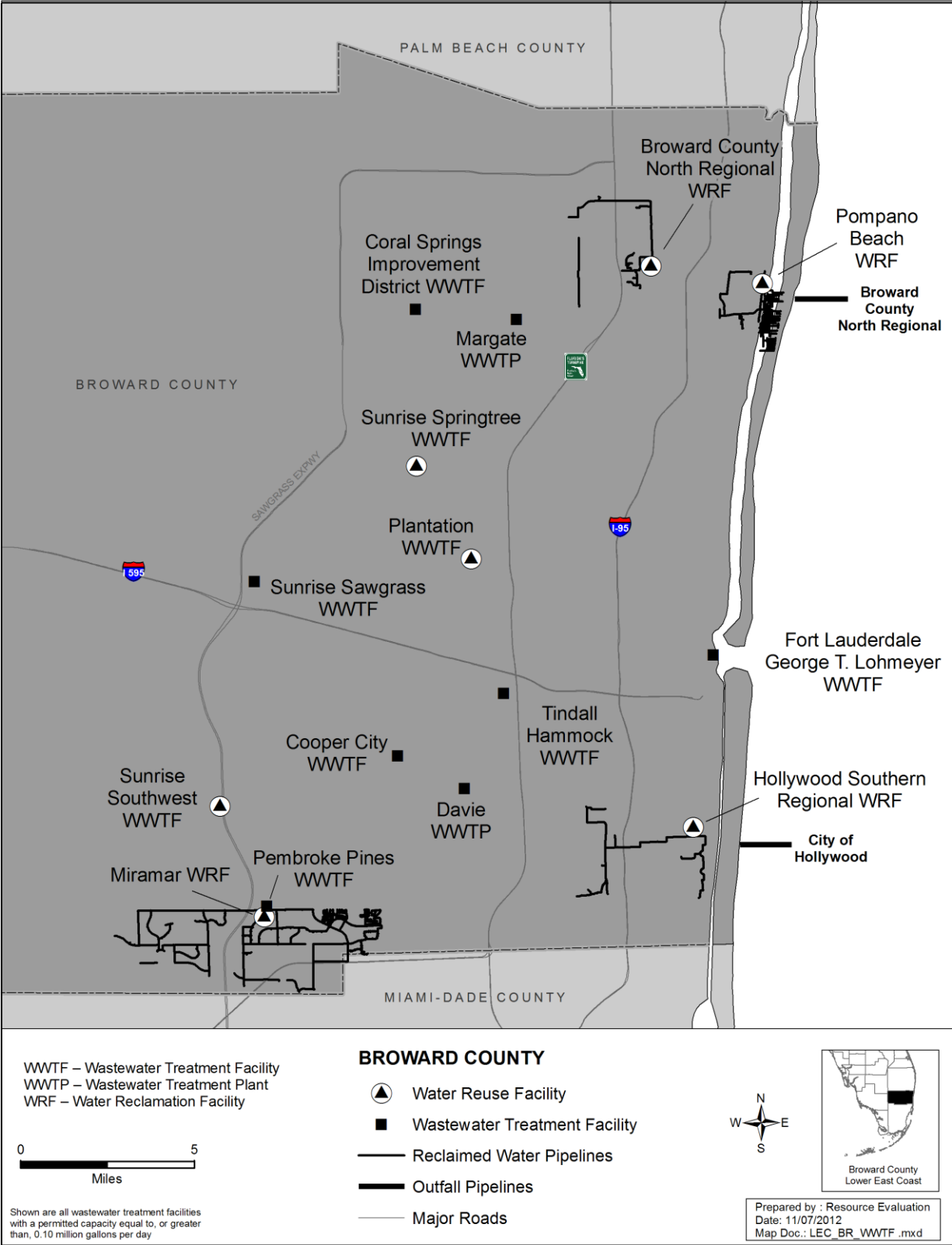
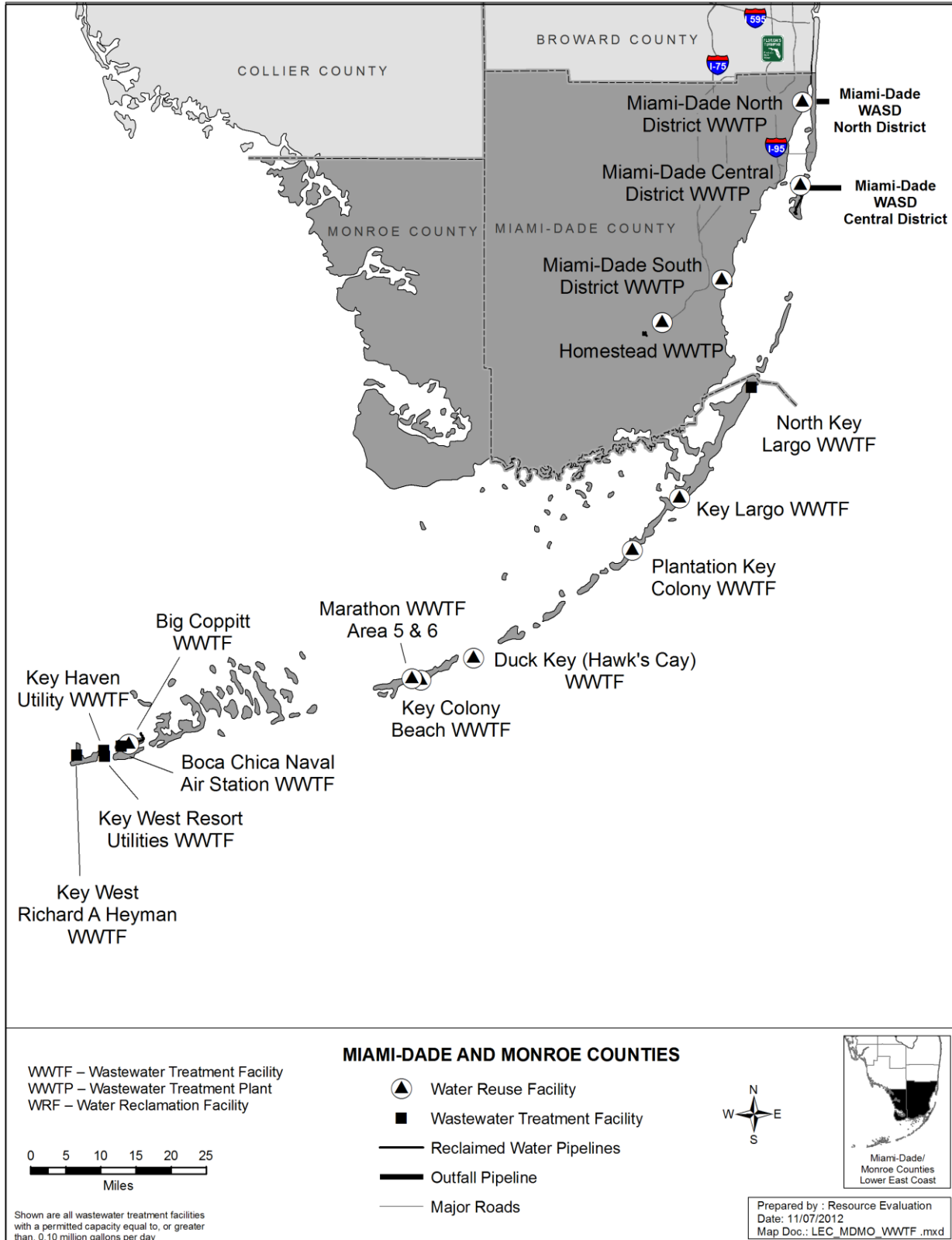


Figure D-5. Wastewater/reuse facilities in Broward County.



**Figure D-6.** Wastewater/reuse facilities in Miami-Dade County and the portion of Monroe County within the LEC Planning Area.

**Table D-2.** Summary of capacities and flows for WWTFs with flow greater than 0.1 MGD in Palm Beach County.<sup>a</sup>

Wastewater Treatment Facility	FDEP Permit Number	2010				2030			
		FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)	FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)
Boca Raton	FL0026344	17.50	14.65 <sup>c</sup>	6.62	45%	17.50	14.80	14.80	100%
East Central Regional	FL0041360	64.00	40.94	1.77	4%	64.00 <sup>d</sup>	51.11 <sup>e</sup>	22.00 <sup>f</sup>	43%
Glades Utility Authority – Belle Glade	FLA027740	3.90	2.43	0.13	5%	3.90 <sup>d</sup>	3.04 <sup>e</sup>	0.13 <sup>g</sup>	4%
Glades Utility Authority – Pahokee	FLA136778	1.20	0.83	0.01	1%	1.20 <sup>d</sup>	1.04 <sup>e</sup>	0.01 <sup>g</sup>	1%
Loxahatchee River District	FL0034649	11.00	6.73	6.39	95%	11.00	11.00	8.40	76%
Palm Beach County – Central Region	FL0471275	3.00	0.51	0.51	100%	6.00	6.00	6.00	100%
Palm Beach County – Southern Regional	FL0041424	35.00	22.90	14.20	62%	50.00	30.00	25.00	83%
Seacoast Utility Authority PGA Regional	FL0038768	12.00	7.51	6.11	81%	12.00	10.00	10.00	100%
Seminole Improvement District	FL0170224	0.32	0.04	0.04	100%	0.32 <sup>d</sup>	0.05 <sup>e</sup>	0.05 <sup>h</sup>	100%
South Central Regional	FL0035980	24.00	16.76	5.98	36%	24.00	22.63	19.94	88%
Wellington	FLA042595	4.75	4.06	0.10	2%	5.06 <sup>d</sup>	5.06 <sup>e</sup>	4.50 <sup>i</sup>	89%
<b>Palm Beach County Total</b>		<b>176.67</b>	<b>117.36</b>	<b>41.86</b>	<b>36%</b>	<b>194.98</b>	<b>154.73</b>	<b>110.83</b>	<b>72%</b>

a. Historic (2010) data is from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Reuse percentage is calculated by dividing "Average Daily Reuse Flow" by "Average Daily WWTF Flow".

c. Reported 2010 wastewater flow at the Boca Raton Water Reclamation Facility (WRF) includes RO concentrate from the water treatment facility.

d. The utility did not provide the projected 2030 capacity. The SFWMD assumes it will remain at the current level unless the projected flow exceeded capacity. In that case, capacity is increased to equal projected flow.

e. The utility did not provide the projected 2030 flow. It is estimated based on the percentage change in potable water flow for the utility from 2010 to 2030.

f. The utility did not provide the projected 2030 reuse flow. It is determined by adding the 2010 flow (1.77 MGD) and an estimated 20 MGD provided to the FPL West County Energy Center.

g. The utility did not provide the projected 2030 reuse flow. The SFWMD assumes it will remain constant from 2010 to 2030.

h. The utility did not provide the projected 2030 reuse flow. The SFWMD assumes it will remain at 100 percent.

i. The utility did not provide the projected 2030 reuse flow. It is based on a projection in the *Village of Wellington Water Supply Facilities Work Plan and Related Comprehensive Plan Amendments* (Village of Wellington 2009).

**Table D-3.** Summary of capacities and flows for WWTFs with flow greater than 0.1 MGD in Broward County.<sup>a</sup>

Wastewater Treatment Facility	Permit Number	2010				2030			
		FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)	FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)
Broward County North Regional	FL0031771	84.00	71.00	4.40	6%	100.00	87.00	22.50	26%
Cooper City	FL0040398	3.10	2.24 <sup>c</sup>	0.00	0%	3.10	2.70	0.90	33%
Coral Springs Improvement District	FLA041301	5.72	5.06	0.00	0%	7.72	5.40	0.00	0%
Davie	FL0040541	4.85	0.98	0.00	0%	12.00	12.00	6.30	53%
Fort Lauderdale – George T. Lohmeyer	FLA041378	55.70	37.60	0.00	0%	56.60	38.50	4.00	10%
Hollywood Southern Regional	FL0026255	55.50	45.90	1.79	4%	65.00	64.10	23.40	37%
Margate	FL0041289	10.10	7.21	0.00	0%	10.10	7.20	1.50	21%
Miramar	FLA017025	10.10	7.64	2.09	27%	12.60	11.80	6.00	51%
North Springs Improvement District (proposed)	--	--	--	--	--	5.00	4.00	4.00	100%
Pembroke Pines	FLA013575	9.50	7.07	0.00	0%	9.50	7.70	5.30	69%
Plantation	FL0040401	18.90	13.80	0.41	3%	18.90 <sup>d</sup>	15.54 <sup>e</sup>	1.77 <sup>f</sup>	11%
Pompano Beach	FLA013581	7.50	1.35	1.35	100%	12.50	4.50	4.50	100%
Sunrise – Southwest	FLA013580	0.45	0.37	0.37	100%	0.99	0.99	0.99	100%
Sunrise – Sawgrass	FLA042641	20.00	18.26	0.00	0%	25.00	22.00	8.00	36%
Sunrise – Springtree	FLA041947	10.00	7.19	0.00	0%	16.00	12.00	7.00	58%
Tindall Hammock	FLA013583	0.60	0.27	0.27	100%	0.60	0.40	0.40	100%
<b>Broward County Total</b>		<b>296.02</b>	<b>225.94</b>	<b>10.68</b>	<b>5%</b>	<b>355.61</b>	<b>295.83</b>	<b>96.56</b>	<b>33%</b>

a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Reuse percentage is calculated by dividing "Average Daily Reuse Flow" by "Average Daily WWTF Flow."

c. The Cooper City WWTF reports 2010 wastewater flow does not include concentrate from the city's water treatment plant.

d. The utility did not provide the projected 2030 capacity. The SFWMD assumes the capacity will remain at the current level unless the projected flow exceeds capacity. In that case, capacity is increased to equal projected flow.

e. The utility did not provide the projected 2030 flow. It is estimated based on the percentage change in potable water flow for the utility from 2010 to 2030.

f. The utility did not provide the projected reuse flow. It is based on the assumption that two golf courses will be provided reclaimed water at their permitted allocations – Jacaranda Golf Course (0.87 MGD) and Plantation Preserve Golf Course (0.90 MGD).

**Table D-4.** Summary of capacities and flows for WWTFs with flow greater than 0.1 MGD in Miami-Dade County.<sup>a</sup>

Wastewater Treatment Facility	Permit Number	2010				2030			
		FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)	FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)
Americana Village Condominium	FLA013641	0.20	0.15	0.00	0%	0.20 <sup>c</sup>	0.18 <sup>d</sup>	0.00	0%
Cricket Club Condominium	FLA013637	0.11	0.07	0.00	0%	0.11 <sup>c</sup>	0.08 <sup>d</sup>	0.00	0%
Homestead	FLA013609	6.00	5.30	5.30	100%	10.00	10.00	10.00	100%
Miami-Dade Central District (MDWASD)	FLA024805	143.00	101.00	6.22	6%	80.00	69.00	5.00	7%
Miami-Dade North District (MDWASD)	FL0032182	112.50	87.15	2.08	2%	80.00	60.00	1.61	3%
Miami-Dade Northwest District (proposed) (MDWASD)	--	--	--	--	--	62.00	56.00	56.00	100%
Miami-Dade South District (MDWASD)	FLA042137	112.50	93.18	4.54	5%	120.00	120.00	90.00	75%
Miami-Dade West District (proposed) (MDWASD)	--	--	--	--	--	50.00	50.00	50.00	100%
<b>Miami-Dade County Total</b>		<b>374.31</b>	<b>286.85</b>	<b>18.14</b>	<b>6%</b>	<b>402.31</b>	<b>365.26</b>	<b>212.61</b>	<b>58%</b>

a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Reuse percentage is calculated by dividing "Average Daily Reuse Flow" by "Average Daily WWTF Flow."

c. The utility did not provide the projected 2030 capacity. The SFWMD assumes it will remain at the current level unless the projected flow exceeded capacity. In that case, capacity is increased to equal projected flow.

d. The utility did not provide the projected 2030 flow. It is estimated based on the percentage change in potable water flow for the utility from 2010 to 2030.

**Table D-5.** Summary of capacities and flows for WWTFs with flow greater than 0.1 MGD in Monroe County.<sup>a</sup>

Wastewater Treatment Facility	Permit Number	2010				2030			
		FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)	FDEP-Rated WWTF Capacity (MGD)	Average Daily WWTF Flow (MGD)	Average Daily Reuse Flow (MGD)	Reuse Percentage <sup>b</sup> (%)
Big Coppitt Regional	FLA567591	0.32	0.08	0.00	0%	0.40	0.40	0.35	88%
Boca Chica Naval Air Station	FLA147117	0.44	0.09	0.00	0%	0.44 <sup>c</sup>	0.09 <sup>c</sup>	0.00 <sup>c</sup>	0%
Duck Key (Hawk's Cay)	FLA014772	0.10	0.05	0.03	60%	0.30	0.30	0.20	67%
Key Colony Beach	FLA014720	0.34	0.18	0.03	17%	0.34 <sup>c</sup>	0.18 <sup>d</sup>	0.18	100%
Key Haven Utility	FLA014867	0.20	0.09	0.00	0%	--	-- <sup>e</sup>	--	--
Key Largo	FLA370967	0.18	0.07	0.00	0%	0.18 <sup>f</sup>	0.13 <sup>f</sup>	0.00	0%
Key West – Richard A. Heyman	FLA147222	10.00	4.41	0.00	0%	10.00	6.20	0.20	3%
Key West Resort Utilities	FLA014951	0.50	0.29	0.17	59%	0.50 <sup>c</sup>	0.38 <sup>e</sup>	0.38 <sup>e</sup>	100%
Marathon – Service Area 3 <sup>g</sup>	FLA642851	--	--	--	--	0.15 <sup>h</sup>	0.05 <sup>h</sup>	0.03 <sup>i</sup>	60%
Marathon – Service Area 4 <sup>g</sup>	FLA550973	--	--	--	--	0.15 <sup>h</sup>	0.05 <sup>h</sup>	0.03 <sup>i</sup>	60%
Marathon – Service Area 5	FLA187364	0.16	0.07	0.00	0%	0.15 <sup>h</sup>	0.07 <sup>h</sup>	0.04 <sup>i</sup>	57%
Marathon – Service Area 6	FLA579033	0.20	0.02	0.00	0%	0.15 <sup>h</sup>	0.02 <sup>h</sup>	0.00 <sup>i</sup>	0%
Marathon – Service Area 7 <sup>j</sup>	FLA705250	--	--	--	--	0.15 <sup>h</sup>	0.05 <sup>h</sup>	0.03 <sup>i</sup>	60%
North Key Largo (Ocean Reef)	FLA015009	0.55	0.25	0.00	0%	0.50	0.28	0.10	36%
Plantation Key Colony <sup>k</sup>	FLA351849	0.36	0.06	0.00	0%	--	--	--	--
<b>Monroe County Total</b>		<b>13.35</b>	<b>5.66</b>	<b>0.23</b>	<b>4%</b>	<b>13.41</b>	<b>8.20</b>	<b>1.54</b>	<b>19%</b>

a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Reuse percentage is calculated by dividing "Average Daily Reuse Flow" by "Average Daily WWTF Flow."

c. The utility did not provide the projected 2030 capacity and flow. The SFWMD assumes both will remain at current levels unless the projected flow exceeded capacity. In that case, capacity is increased to equal projected flow.

d. The utility did not provide the projected 2030 flow. It remains the same as 2010, given no expected increase in potable water use in the Florida Keys.

e. The Key Haven Utility WWTF is expected to be decommissioned by 2016. Flows are projected to be diverted to the Key West Resort Utilities WWTF.

f. The utility did not provide the projected 2030 capacity and flow. The SFWMD assumes capacity will remain the same as in 2010. The projected flow is based on no increases from the 2010 flow at the Key Largo WWTF (0.07 MGD) plus flow at the Plantation Key Colony WWTF (0.06 MGD). It is projected that, by 2030, wastewater flow from Plantation Key Colony WWTF will be sent to the Key Largo WWTF for treatment.

g. The system is now complete but was not in operation in 2010.

h. The utility did not provide the projected 2030 capacity and flow. Both are based on the size of other WWTFs in Marathon.

i. The utility did not provide the projected 2030 reuse flow. It is estimated based on a 60 percent reuse at the facility that is documented with the capability to produce reclaimed water.

j. The system is under construction.

k. Islamorada, including Plantation Key Colony, is expecting to begin sending wastewater to the Key Largo WWTF for treatment sometime in the near future.

**Table D-6.** Disposal and reuse methods of WWTFs with flow greater than 0.1 MGD in Palm Beach County.<sup>a</sup>

Wastewater Treatment Facility	2010					2030				
	Disposal		Reuse			Disposal		Reuse		
	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)
Boca Raton	13.24	0.00	5.75	0.00	0.87	0.00	0.00	12.80	0.00	2.00
East Central Regional <sup>e</sup>	0.00	39.17	0.00	0.00	1.77	0.00	29.11	2.00	0.00	20.00
Glades Utility Authority – Belle Glade <sup>e</sup>	0.00	2.30	0.00	0.00	0.13	0.00	2.91	0.00	0.00	0.13
Glades Utility Authority – Pahokee <sup>e</sup>	0.00	0.82	0.00	0.01	0.00	0.00	1.03	0.00	0.01	0.00
Loxahatchee River District <sup>f</sup>	0.00	1.61	5.60	0.00	0.79	0.00	2.60	8.40	0.00	0.00
Palm Beach County – Central Region	0.00	0.00	0.51	0.00	0.00	0.00	0.00	6.00	0.00	0.00
Palm Beach County – Southern Regional	0.00	8.70	12.70	0.00	1.50	0.00	8.00	22.00	0.00	3.00
Seacoast Utility Authority PGA Regional	0.00	1.25	6.09	0.00	0.02	0.00	0.00	10.00	0.00	0.00
Seminole Improvement District	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.05
South Central Regional	0.04	10.74	5.87	0.00	0.11	0.00	2.69	19.94	0.00	0.00
Wellington <sup>e</sup>	0.00	3.96	0.03	0.07	0.00	0.00	0.56	4.43	0.07	0.00
<b>Palm Beach County Total</b>	<b>13.28</b>	<b>68.55</b>	<b>36.55</b>	<b>0.08</b>	<b>5.23</b>	<b>0.00</b>	<b>46.90</b>	<b>85.57</b>	<b>0.08</b>	<b>25.18</b>

a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Public access irrigation includes golf courses, parks, schools, common areas, etc.

c. Groundwater recharge includes percolation ponds/pits.

d. Other reuse types include other permitted uses, such as for cooling water, processes at the treatment plant, toilet flushing, etc.

e. The utility did not provide the projected (2030) information. Disposal and reuse is based on projected flows from **Table D-2**.

f. The Loxahatchee River District WWTF blends concentrate from the Town of Jupiter's water treatment plant into their reuse system, some of which is disposed.



**Table D-7.** Disposal and reuse methods of WWTFs with flow greater than 0.1 MGD in Broward County.<sup>a</sup>

Wastewater Treatment Facility	2010					2030				
	Disposal		Reuse			Disposal		Reuse		
	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)
Broward County North Regional	28.00	38.00	0.20	0.00	4.20	0.00	77.50	10.00	0.00	12.50
Cooper City <sup>e</sup>	0.00	0.63	0.00	0.00	0.00	0.00	0.10	0.90	0.00	0.00
Coral Springs Improvement District	0.00	5.06	0.00	0.00	0.00	0.00	5.40	0.00	0.00	0.00
Davie <sup>f</sup>	0.00	0.00	0.00	0.00	0.00	0.00	5.70	1.90	3.00	1.40
Fort Lauderdale – George T. Lohmeyer	0.00	37.60	0.00	0.00	0.00	0.00	38.50	0.00	0.00	4.00
Hollywood Southern Regional	19.60	26.30	1.79	0.00	0.00	0.00	40.70	3.00	20.40	0.00
Margate	0.00	7.21	0.00	0.00	0.00	0.00	5.70	1.00	0.00	0.50
Miramar	0.00	5.55	0.78	0.00	1.31	0.00	5.80	6.00	0.00	0.00
North Springs Improvement District (proposed)	--	--	--	--	--	0.00	0.00	4.00	0.00	0.00
Pembroke Pines	0.00	7.07	0.00	0.00	0.00	0.00	2.40	0.00	5.30	0.00
Plantation	0.00	13.39	0.00	0.00	0.41	0.00	13.77 <sup>g</sup>	1.77 <sup>g</sup>	0.00	0.00
Pompano Beach	0.00	0.00	1.35	0.00	0.00	0.00	0.00	4.50	0.00	0.00
Sunrise – Southwest	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.99	0.00
Sunrise – Sawgrass	0.00	18.26	0.00	0.00	0.00	0.00	14.00	8.00	0.00	0.00
Sunrise – Springtree	0.00	7.19	0.00	0.00	0.00	0.00	0.00	7.00	0.00	0.00
Tindall Hammock	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.40	0.00
<b>Broward County Total</b>	<b>47.60</b>	<b>166.26</b>	<b>4.12</b>	<b>0.64</b>	<b>5.92</b>	<b>0.00</b>	<b>209.57</b>	<b>48.07</b>	<b>30.09</b>	<b>18.40</b>

a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Public access irrigation includes golf courses, parks, schools, common areas, etc.

c. Groundwater recharge includes percolation ponds/pits.

d. Other reuse types include other permitted uses, such as for cooling water, processes at the treatment plant, toilet flushing, etc.

e. The Cooper City WWTF pumps most of its treated water (1.61 MGD in 2010) to the Hollywood Southern Regional WRF, and that is expected to continue to 2030 (1.70 MGD). The 2010 deep injection well flow includes concentrate from the city's water treatment plant.

f. Effluent from the Davie Wastewater Treatment Plant (WWTP) is pumped to the Hollywood Southern Regional WRF for reuse/disposal (3.38 MGD in 2010).

g. The utility did not provide this information. It is based on 1.77 MGD of water reuse (**Table D-3**) and the remaining flow being disposed using deep well injection.

**Table D-8.** Disposal and reuse methods of WWTFs with flow greater than 0.1 MGD in Miami-Dade County.<sup>a</sup>

Wastewater Treatment Facility	2010					2030				
	Disposal		Reuse			Disposal		Reuse		
	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)
Americana Village Condominium <sup>e</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cricket Club Condominium <sup>e</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Homestead	0.00	0.00	0.00	5.30	0.00	0.00	0.00	0.00	10.00	0.00
Miami-Dade Central District (MDWASD)	114.10	0.00	0.00	0.00	6.22	0.00	69.00	0.00	0.00	5.00
Miami-Dade North District (MDWASD)	64.58	19.29	0.11	0.00	1.97	0.00	58.39	0.11	0.00	1.50
Miami-Dade Northwest District (proposed) (MDWASD)	--	--	--	--	--	0.00	0.00	0.00	56.00	0.00
Miami-Dade South District (MDWASD)	0.00	94.82	0.00	0.00	4.54	0.00	30.00	0.00	0.00	90.00 <sup>f</sup>
Miami-Dade West District (proposed) (MDWASD)	--	--	--	--	--	0.00	0.00	0.00	50.00	0.00
<b>Miami-Dade County Total</b>	<b>178.68</b>	<b>114.11</b>	<b>0.11</b>	<b>5.30</b>	<b>12.73</b>	<b>0.00</b>	<b>157.39</b>	<b>0.11</b>	<b>116.00</b>	<b>96.50</b>

a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.

b. Public access irrigation includes golf courses, parks, schools, common areas, etc.

c. Groundwater recharge includes percolation ponds/pits.

d. Other reuse types include other permitted uses, such as for cooling water, processes at the treatment plant, toilet flushing, etc.

e. Treated wastewater from this facility is disposed to on-site soakage pits.

f. This water is used as cooling water for the FPL Turkey Point Energy Facility.

**Table D-9.** Disposal and reuse methods of WWTFs with flow greater than 0.1 MGD in Monroe County.<sup>a</sup>

Wastewater Treatment Facility	2010					2030				
	Disposal		Reuse			Disposal		Reuse		
	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)	Ocean Outfall (MGD)	Deep Injection Well (MGD)	Public Access Irrigation <sup>b</sup> (MGD)	Groundwater Recharge <sup>c</sup> (MGD)	Other Reuse Types <sup>d</sup> (MGD)
Big Coppitt Regional	0.08	0.00	0.00	0.00	0.00	0.05	0.00	0.30	0.00	0.05
Boca Chica Naval Air Station <sup>e</sup>	0.09	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00
Duck Key (Hawk's Cay)	0.02	0.00	0.03	0.00	0.00	0.10	0.00	0.20	0.00	0.00
Key Colony Beach <sup>e</sup>	0.15	0.00	0.03	0.00	0.00	0.15	0.00	0.03	0.00	0.00
Key Haven Utility <sup>f</sup>	0.09	0.00	0.00	0.00	0.00	--	--	--	--	--
Key Largo <sup>g</sup>	0.07	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00
Key West – Richard A. Heyman	0.00	4.41	0.00	0.00	0.00	0.00	6.00	0.00	0.00	0.20
Key West Resort Utilities	0.12	0.00	0.14	0.00	0.03	0.00	0.00	0.38	0.00	0.00
Marathon – Service Area 3 <sup>h</sup>	--	--	--	--	--	0.02	0.00	0.03	0.00	0.00
Marathon – Service Area 4 <sup>h</sup>	--	--	--	--	--	0.02	0.00	0.03	0.00	0.00
Marathon – Service Area 5	0.07	0.00	0.00	0.00	0.00	0.03	0.00	0.04	0.00	0.00
Marathon – Service Area 6	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Marathon – Service Area 7 <sup>i</sup>	--	--	--	--	--	0.02	0.00	0.03	0.00	0.00
North Key Largo (Ocean Reef)	0.25	0.00	0.00	0.00	0.00	0.18	0.00	0.10	0.00	0.00
Plantation Key Colony <sup>g</sup>	0.06	0.00	0.00	0.00	0.00	--	--	--	--	--
<b>Monroe County Total</b>	<b>1.02</b>	<b>4.41</b>	<b>0.20</b>	<b>0.00</b>	<b>0.03</b>	<b>0.81</b>	<b>6.00</b>	<b>1.14</b>	<b>0.00</b>	<b>0.25</b>

- a. Historic (2010) data are from the *2010 Reuse Inventory* (FDEP 2011). Projected (2030) data are provided by the utilities unless otherwise noted.
- b. Public access irrigation includes golf courses, parks, schools, common areas, etc.
- c. Groundwater recharge includes percolation ponds/pits.
- d. Other reuse types include other permitted uses, such as for cooling water, processes at the treatment plant, toilet flushing, etc.
- e. The utility did not provide the projected (2030) information. The SFWMD assumes disposal and reuse remain constant from 2010 to 2030.
- f. The Key Haven Utility WWTF is expected to be decommissioned by 2016.
- g. Islamorada, including Plantation Key Colony, is expecting to begin sending wastewater to the Key Largo WWTF for treatment sometime in the near future.
- h. The system is now complete but was not in operation in 2010.
- i. The system is under construction.

## Wastewater/Reuse Utility Profiles

The remainder of this appendix contains profiles for each of the wastewater/reuse facilities with a treatment capacity of 0.1 MGD or greater within the LEC Planning Area. The profiles are organized alphabetically by county then by utility. Each profile contains the following:

- ◆ **Existing Treatment, Disposal, and Reuse** – This section presents the FDEP-rated treatment capacity and average daily flows of wastewater and reclaimed water. If applicable, the average daily flow of effluent disposal is presented. Current capacity and flow information is gathered from the *2010 Reuse Inventory* (FDEP 2011).
- ◆ **Future Treatment, Disposal, and Reuse** – This section provides a summary of any proposed/future plans for the utility, which may include increased capacities, flows, or reclaimed water customers.

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## Profiles of Palm Beach County Facilities

### *Boca Raton Water Reclamation Facility*

#### Existing Treatment, Disposal, and Reuse

The City of Boca Raton's Utility Services Department operates the Boca Raton Water Reclamation Facility (WRF). The facility, which has a FDEP-permitted capacity of 17.50 MGD, provides wastewater services for the City of Boca Raton. Since the early 1990s, the city's in-city reclamation irrigation system water has been reclaiming water at the Glades Road Utility Services Complex. The treatment facility uses a multistage treatment process.

In 2010, the annual average daily effluent flow from the facility was 14.65 MGD. The effluent from the facility is either further treated and reused, or combined with demineralized concentrate from the city's reverse osmosis (RO) system at their water treatment facility and discharged. In 2010, the city reused 6.62 MGD of reclaimed water. Most reuse occurred through public access irrigation, such as parks, schools, golf courses, and residences. The remaining wastewater effluent (8.03 MGD) was combined with the RO concentrate (5.21 MGD) and discharged through the ocean outfall.

The city's reclaimed water supply was also supplemented with groundwater. In 2010, 0.62 MGD of groundwater was used for supplementation on an annual average daily basis. The city is moving toward becoming a 100 percent annual average daily flow facility for reuse activities as authorized by the FDEP.

In order for the City of Boca Raton to increase its consumptive use permitted groundwater allocation to meet projected population demands, and negate potential impact to a wetlands, and meet Restricted Allocation Area criteria, the SFWMD included conditions for the provision of reclaimed water to certain customers within their permit.

The Boca Raton WRF provides reclaimed water to three universities, six golf courses, three churches, four schools, and four parks. It also provides reclaimed water to approximately 52 multiple family, 700 single family, and 85 business units. It is also used in medians and other public areas.

#### **Primary End Users**

Boca Raton Community Hospital  
City of Boca Raton Utility Services Complex

#### Future Treatment, Disposal, and Reuse

In an effort to meet the 2008 Ocean Outfall (Subsection 403.086(9), F.S.) requirements, the City of Boca Raton has expanded its reclaimed water production capacity to 17.50 MGD and extended the reclaimed distribution system's capacity to over 17.50 MGD. By 2015, the city is expecting to reclaim and reuse 100 percent of the available treated effluent.

Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The 2030 information was provided by the City of Boca Raton in March 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>17.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>17.50 MGD</b>
<b>Total Wastewater Effluent</b>	<b>14.65 MGD</b>	<b>Total Wastewater Effluent</b>	<b>14.80 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Ocean outfall total	13.24 MGD	Ocean outfall total	0.0 MGD
Wastewater effluent	8.03 MGD		
RO concentrate	5.21 MGD		
<u>Reuse</u>		<u>Reuse</u>	
Total	6.62 MGD	Total	14.80 MGD
Irrigation	5.75 MGD	Irrigation	12.80 MGD
At the facility	0.87 MGD	Industrial	2.00 MGD
<b>Reuse Percentage</b>	<b>45%</b>	<b>Reuse Percentage</b>	<b>100%</b>

## *East Central Regional Water Reclamation Facility*

### Existing Treatment, Disposal, and Reuse

The East Central Regional WRF is funded and governed by a board of representatives from the entities served by that facility: the cities of West Palm Beach, Lake Worth, and Riviera Beach; the Town of Palm Beach; and Palm Beach County. Each entity is responsible for its wastewater collection and transmission systems. The facility, which has a FDEP-permitted capacity of 64.00 MGD, treated an annual average daily flow of 40.94 MGD in 2010. Approximately 1.77 MGD of the treated wastewater was reused in 2010, while 39.17 MGD was disposed of through deep well injection.

Some secondary treated effluent from the this facility is sent to the adjacent Palm Beach County Central WRF, at which it is further treated to reclaimed water standards and reused for irrigation. Palm Beach County's Central Region WRF is summarized in a separate profile.

There are two reclaimed water treatment systems at the East Central Regional WRF. One of the treatment trains provides reclaimed water to the City of West Palm Beach's Wetlands-Based Water Reclamation Project. In 2006, the city completed construction on the project that involves the discharge of highly treated effluent to an adjacent wetland area to restore and recharge the wetland and the SAS. Withdrawals from the city's SAS wellfield are dependent on the reclaimed water application rate at the wetlands. The city has encountered problems with the advanced wastewater treatment process at the facility, resulting in lower than planned recharge volumes to the Wetlands-Based Water Reclamation Project.

The second reclaimed water treatment system at the East Central Regional WRF is rated for 26 MGD and primarily provides advanced secondary reclaimed water to the Florida Power & Light (FPL) West County Energy Center for cooling. The distribution pipeline between the East Central Regional WRF and the FPL facility was constructed and is maintained by the Palm Beach County Water Utilities Department. Reclaimed water deliveries to the FPL center started in 2011.

#### **Primary End Users**

City of West Palm Beach Wetlands-Based Water Reclamation Project  
FPL West County Energy Center

### Future Treatment, Disposal, and Reuse

The agreement between the Palm Beach County Water Utilities Department and FPL is for delivery of up to 26 MGD of reclaimed water. Additional reclaimed water users located along the length of the pipeline between the East Central Regional WRF and the FPL center in the future will depend on future demands and supplies.

The City of West Palm Beach may be making changes to the advanced wetland treatment system at the East Central Regional WRF to increase the output of reclaimed water and its deliveries to the Wetlands-Based Water Reclamation Project. The facility will continue to

provide secondary-treated wastewater to the Palm Beach County’s Central Regional WRF for the benefit of water reuse customers in their service area.

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of West Palm Beach did not provide the 2030 projections. The SFWMD assumes the 2030 treatment capacity will remain at the current level. The increase in wastewater flow is estimated to increase in proportion to the increase in potable water supply in the City of West Palm Beach from 2010 to 2030. The projected reuse flow is a combination of an estimated 2.0 MGD through the city and 20.0 MGD from the Palm Beach County Water Utilities Department to the FPL West County Energy Center.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>64.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>64.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>40.94 MGD</b>	<b>Total Wastewater Effluent</b>	<b>51.11 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	39.17 MGD	Deep well injection	29.11 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	1.77 MGD	Total	22.0 MGD
Wetlands	1.77 MGD	Cooling	20.0 MGD
		Irrigation	2.0 MGD
<b>Reuse Percentage</b>	<b>4%</b>	<b>Reuse Percentage</b>	<b>43%</b>



## Glades Utility Authority – Belle Glade Wastewater Treatment Plant

### Existing Treatment, Disposal, and Reuse

The 2009 partnership agreement between Palm Beach County and the cities of Belle Glade, Pahokee, and South Bay created and formed the Glades Utility Authority. The authority is responsible for developing a regional water and wastewater infrastructure system, and providing a regional solution for sustainable water and wastewater utilities in the tri-city area.

The City of Belle Glade operates and maintains its own wastewater collection and treatment system. The Belle Glade Wastewater Treatment Plant (WWTP) has a FDEP-permitted capacity of 3.90 MGD. It provides wastewater services for Belle Glade and, on a contract basis, for the City of South Bay. In 2010, the annual average daily flow from the plant was 2.43 MGD. Most of the treated effluent (2.30 MGD) was disposed of through deep well injection. A small amount (0.13 MGD) of water was reused for agricultural irrigation.

### Future Treatment, Disposal, and Reuse

The Glades Utility Authority does not currently have plans to implement a reclaimed water system. Previously, the City of Belle Glade determined a water reuse system was not feasible. In the future, the Glades Utility Authority may determine such an initiative would enhance water availability.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Glades Utility Authority did not provide the 2030 information. The SFWMD assumes the 2030 treatment capacity will remain at the current level. The increase in wastewater flow is anticipated to increase in proportion to the increase in potable water supply from 2010 to 2030. The projected reuse flow is assumed to remain constant.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>3.90 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>3.90 MGD</b>
<b>Total Wastewater Effluent</b>	<b>2.43 MGD</b>	<b>Total Wastewater Effluent</b>	<b>3.04 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	2.30 MGD	Deep well injection	2.91 MGD
<u>Reuse</u>		<u>Reuse</u>	
Agricultural irrigation	0.13 MGD	Agricultural irrigation	0.13 MGD
<b>Reuse Percentage</b>	<b>5%</b>	<b>Reuse Percentage</b>	<b>4%</b>

## Glades Utility Authority – Pahokee Wastewater Treatment Plant

### Existing Treatment, Disposal, and Reuse

The 2009 partnership agreement between Palm Beach County and the cities of Belle Glade, Pahokee, and South Bay created and formed the Glades Utility Authority. The authority is responsible for developing a regional water and wastewater infrastructure system, and providing a regional solution for sustainable water and wastewater utilities in the tri-city area.

The City of Pahokee operates and maintains its own wastewater collection and treatment system. The Pahokee WWTP has a FDEP-permitted capacity of 1.20 MGD. In 2010, the annual average daily flow from the plant was 0.83 MGD, with a small amount (0.01 MGD) of reuse through on-site percolation ponds. Most of the treated effluent (0.82 MGD) is disposed of through deep well injection.

### Future Treatment, Disposal, and Reuse

The Glades Utility Authority does not currently have plans to implement a reclaimed water system. Previously, the City of Pahokee determined a water reuse system was not feasible. In the future, the Glades Utility Authority may determine such an initiative would enhance water availability.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Glades Utility Authority did not provide the 2030 projections. The SFWMD assumes the 2030 treatment capacity will remain at the current level. The increase in wastewater flow is anticipated to increase in proportion to the increase in potable water supply from 2010 to 2030. The projected reuse is assumed to remain constant between 2010 and 2030.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>1.20 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>1.20 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.83 MGD</b>	<b>Total Wastewater Effluent</b>	<b>1.04 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	0.82 MGD	Deep well injection	1.03 MGD
<u>Reuse</u>		<u>Reuse</u>	
Percolation ponds	0.01 MGD	Groundwater recharge	0.01 MGD
<b>Reuse Percentage</b>	<b>1%</b>	<b>Reuse Percentage</b>	<b>1%</b>

## ***Loxahatchee River District Wastewater Treatment Facility***

### **Existing Treatment, Disposal, and Reuse**

In 1971, the state legislature created the Loxahatchee River Environmental Control District, now referred to as the Loxahatchee River District. The district owns, operates, and maintains a WWTF in the Town of Jupiter. The facility serves the municipalities of Jupiter, Tequesta, and Juno Beach, along with the unincorporated areas of northern Palm Beach and southern Martin counties. The facility has a FDEP-permitted capacity of 11.00 MGD, with an annual average daily wastewater flow of 6.73 MGD in 2010. Approximately 6.39 MGD of the treated wastewater was reused in 2010, while 1.61 MGD was disposed through deep well injection. The reclaimed water is used primarily for irrigation of residences, golf courses, parks, and schools.

Concentrate from the Town of Jupiter's water treatment plant is blended with reclaimed water from the Loxahatchee River District. The blended concentrate increases Loxahatchee River District's reclaimed water supply and reduces the need for supplemented supplies from traditional sources of water. In 2010, Loxahatchee River District provided reclaimed water to 14 golf courses, 14 parks, three schools, and over 4,400 residences for irrigation.

#### **Primary End Users**

Abacoa Golf Club  
Abacoa Development  
Admirals Cove East  
Admirals Cove West  
Bears Club  
Frenchman's Creek North  
Golf Club of Jupiter  
Indian Creek Golf Club  
Jonathans Landing Golf Club  
Jupiter Country Club  
Jupiter Hills Club Numbers 1 and 2  
Loxahatchee Club (Maplewood)  
Riverbend Country Club  
Riverbend Golf Club  
Turtle Creek Golf Club  
Tequesta Country Club

### **Future Treatment, Disposal, and Reuse**

Although the Loxahatchee River District reuses most of its reclaimed water, some expansion of the system is expected in the future as the wastewater treatment flow increases. The goal is to optimize the overall water reuse efficiency, and correspondingly reduce disposal through deep well injection.

Future reclaimed water uses for the Loxahatchee River District WWTF depend upon an existing agreement with Seacoast Utility Authority. Under the agreement, Seacoast Utility

Authority sends reclaimed water to the Abacoa development for irrigation. If the agreement is renewed, the Loxahatchee River District will likely use their increased reclaimed water to meet the water needs of additional users. If it is not renewed, much of the additional reclaimed water produced by Loxahatchee River District may be used at Abacoa.

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The 2030 information was provided by the Loxahatchee River District in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>11.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>11.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>6.73 MGD</b>	<b>Total Wastewater Effluent</b>	<b>11.00 MGD</b>
<b><u>Disposal</u></b>		<b><u>Disposal</u></b>	
Deep well injection <sup>a</sup>	1.61 MGD	Deep well injection	2.6 MGD
<b><u>Reuse</u></b>		<b><u>Reuse</u></b>	
Total	6.39 MGD	Total	8.4 MGD
Irrigation	5.60 MGD	Irrigation	8.4 MGD
At the facility	0.79 MGD		
<b>Reuse Percentage</b>	<b>95%</b>	<b>Reuse Percentage</b>	<b>76%</b>

a. Disposal includes concentrate water from the Town of Jupiter’s water treatment plant.

## ***Palm Beach County – Central Region Water Reclamation Facility***

### **Existing Treatment, Disposal, and Reuse**

The Palm Beach County Water Utilities Department constructed the Central Region WRF on the site of the former Century Village WWTP. The facility, which began operation in 2008, receives secondary-treated effluent from the adjacent East Central Regional WRF and treats it to reclaimed water quality for irrigation. The Central Region WRF has a FDEP-permitted capacity of 3.00 MGD, and treated an annual average daily flow of 0.51 MGD in 2010. All of the reclaimed water from the facility was reused in 2010.

Reclaimed water from this facility is used to irrigate a golf course and various landscaped areas. The Central Region WRF reduces competition for traditional water supplies in the area by providing reclaimed water for irrigation and eliminating competition for groundwater withdrawn by the nearby Palm Beach County System Number 8 Wellfield and the City of West Palm Beach's wellfield.

#### **Primary End Users**

Century Village  
Cypress Lakes  
Emerald Dunes Golf Course  
Vista Center

### **Future Treatment, Disposal, and Reuse**

Although all of the reclaimed water from the Central Region WRF is reused, some expansion and optimization of the system may be planned. Potential future reclaimed water end users will be determined in the near future.

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Palm Beach County Water Utilities Department provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>3.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>6.0 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.51 MGD</b>	<b>Total Wastewater Effluent</b>	<b>6.0 MGD</b>
<b><u>Reuse</u></b>		<b><u>Reuse</u></b>	
Irrigation	0.51 MGD	Irrigation	6.0 MGD
<b>Reuse Percentage</b>	<b>100%</b>	<b>Reuse Percentage</b>	<b>100%</b>

## *Palm Beach County – Southern Regional Water Reclamation Facility*

### Existing Treatment, Disposal, and Reuse

The Palm Beach County Water Utilities Department operates and maintains the Southern Regional WRF located in unincorporated Boynton Beach. The facility treats wastewater and provides reclaimed water for unincorporated areas of Boynton Beach and Delray Beach. The facility had a FDEP-permitted capacity of 35.00 MGD, with an annual average daily flow of 22.90 MGD in 2010. Approximately 14.20 MGD of the treated wastewater was reused in 2010, while 8.70 MGD was disposed through deep well injection. The reclaimed water is primarily used for irrigation. However, a portion of the reclaimed water hydrates the Wakodahatchee and Green Cay wetlands.

The Wakodahatchee Wetlands were constructed from former percolation ponds and act as a natural filter for nutrients before recharging the shallow aquifer. The 114-acre Green Cay Wetlands, located on former agricultural land, are used to recharge the local aquifer system, create ecologically significant wildlife habitat, and extend the function of the nearby Wakodahatchee Wetlands.

The facility provides reclaimed water to nine golf courses, two parks, one school, and more than 6,000 residences for irrigation.

#### **Primary End Users**

Aberdeen  
Addison Reserve Country Club  
Amherst Partners  
Avalon Estates of Boynton Beach  
Boynton Beach Medical Center  
Briella Townhomes  
Bruce Stumpf, Inc.  
Canyon Lakes  
Casa Bella  
Cascades Association  
Cypress Lakes Master Homeowner's Association  
Enclave at Westchester  
GL Homes of Boynton Beach  
Gleneagles Country Club  
Green Cay Wetlands  
Greystone at Boynton Beach Homeowner's Association  
Hagen Ranch Road median  
Indian Springs East and West  
Indian Springs Golf Course  
Karl Corporation  
Lake Lexington Club  
Lakeridge Falls Homeowner's Association  
Lexington Club Community  
Monterey Estates  
Palm Isles West Association

Polo Trace Golf Course  
Polo Trace West  
Ponte Vecchio Homeowner's Association  
Reform Temple at Shaarei Shalom  
San Marco Homeowner's Association  
Sawgrass Lakes Homeowner's Association  
Seacrest Services  
Shops at San Marco  
Southern Golf Partners  
St. Andrews Country Club  
Tivoli Reserve of Palm Beach County Homeowner's Association  
Tivoli Lakes of Palm Beach County Homeowner's Association  
United Civic Association  
Valencia Falls Homeowner's Association  
Valencia Isles Homeowner's Association  
Valencia Lakes Homeowner's Association  
Valencia Palms  
Valencia Pointe Master Homeowner's Association  
Valencia Reserve  
Villa Borghese Homeowner's Association  
Water Treatment Plant System 3  
Wakodahatchee Wetlands  
Westchester Golf Course  
Woolbright Jog Limited Liability Company

#### **Future Treatment, Disposal, and Reuse**

Palm Beach County has a mandatory reuse zone ordinance for new developments within a section of its service area. The Palm Beach County Water Utilities Department continues to pursue additional water reuse opportunities in this zone and surrounding areas. The goal is to increase the overall water reuse percentage and reduce disposal through deep well injection.

#### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Palm Beach County Water Utilities Department provided the 2030 information in April 2012.

## FACILITY SUMMARY

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>35.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>50.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>22.90 MGD</b>	<b>Total Wastewater Effluent</b>	<b>30.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	8.70 MGD	Deep well injection	8.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	14.20 MGD	Total	25.00 MGD
Irrigation	12.70 MGD	Irrigation	22.00 MGD
Wetlands	1.50 MGD	Wetlands	3.00 MGD
<b>Reuse Percentage</b>	<b>62%</b>	<b>Reuse Percentage</b>	<b>83%</b>

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## *Seacoast Utility Authority PGA Regional Water Reclamation Facility*

### Existing Treatment, Disposal, and Reuse

The Seacoast Utility Authority owns, operates, and maintains the PGA Regional WRF. The facility services some unincorporated areas of northern Palm Beach County, the incorporated areas of the City of Palm Beach Gardens, the Village of North Palm Beach, the Town of Lake Park, and portions of the Town of Juno Beach. The PGA Regional WRF has a FDEP-permitted capacity of 12.00 MGD, with an annual average daily flow of 7.51 MGD in 2010, which includes a transfer of 1.27 MGD to the Loxahatchee River District.

In 2010, 0.20 MGD of groundwater, 0.72 MGD of water from the C-17 Canal, and 0.21 MGD of potable water on an annual average basis supplemented the Seacoast Utility Authority's reclaimed water supply. Approximately 6.11 MGD of reclaimed water was reused in 2010, while 1.25 MGD was disposed through deep well injection. The reclaimed water is primarily used for irrigation of golf courses, residences, parks, and streetscapes.

In 2010, Seacoast Utility Authority provided reclaimed water to ten golf courses, roadway medians, and two parks, among other users for irrigation.

#### **Primary End Users**

Abacoa  
Ballen Isles East Golf Course  
Ballen Isles West Golf Course  
Central Park  
Crystal Pointe  
Eastpointe Country Club  
Eastpointe Golf and Raquet  
Eastpointe Briar Lake  
Everglades Condominium  
FPL Administrative Complex  
FPL Monet Substation  
Frenchmans Creek Golf Course  
Frenchmans Reserve  
Gardens Mall  
Gemini Condominium  
Governor's Pointe  
Lost Tree Village Golf Course  
Mariners Cove  
McArthur (Regional) Center  
Mirasol  
Mirasol Walk  
Hibiscus  
Oak Harbour  
Old Palm Golf Course  
Old Port Cove  
North Palm Beach Country Club  
Paloma

Palm Beach Gardens Regional Park  
 PGA Boulevard streetscape  
 Royale Harbour Condominium  
 Seamark Condominium  
 Seacoast Utility Authority Water Treatment Plant  
 Seasons 52 Restaurant  
 Shady Lakes Homeowner's Association  
 Southampton  
 The Bears Club  
 The Isles  
 Waterway Terrace Condominium  
 Seacoast Utility Authority administration building

**Future Treatment, Disposal, and Reuse**

Although most of the treated effluent from the PGA Regional WRF is reused, the Seacoast Utility Authority will continue its efforts to promote the use of reclaimed water as an alternative water supply. The goal is to increase the overall water reuse percentage and reduce disposal through deep well injection. Seacoast Utility Authority projects use of deep well injection only during wet weather conditions and periodic testing of the well.

**Potential End Users**

Bent Tree  
 Cimarron

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Seacoast Utility Authority provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>12.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>12.00 MGD</b>
<b>Total Wastewater Effluent<sup>a</sup></b>	<b>7.51 MGD</b>	<b>Total Wastewater Effluent</b>	<b>10.00 MGD</b>
<b><u>Disposal</u></b>		<b><u>Disposal</u></b>	
Deep well injection	1.25 MGD	Deep well injection	0.0 MGD
<b><u>Reuse</u></b>		<b><u>Reuse</u></b>	
Total	6.11 MGD	Total	10.00 MGD
Irrigation	6.09 MGD	Irrigation	10.00 MGD
At the facility	0.02 MGD		
<b>Reuse Percentage</b>	<b>81%</b>	<b>Reuse Percentage</b>	<b>100%</b>

a. 1.27 MGD of reclaimed water from the facility was transferred to the Loxahatchee River District.

## ***Seminole Improvement District Wastewater Treatment Facility***

### **Existing Treatment, Disposal, and Reuse**

The Seminole Improvement District is an independent Chapter 298 special district that provides potable water, sewer, and reclaimed water service to the central-western communities of Palm Beach County. In 2006, an agreement was executed between the county and Seminole Improvement District to define its service area and to work cooperatively on regional wastewater treatment and water reuse. The Seminole Improvement District WRF has a FDEP-permitted capacity of 0.32 MGD, with an annual average daily flow of 0.04 MGD in 2010. All of the reclaimed water is land applied for agricultural irrigation.

### **Future Treatment, Disposal, and Reuse**

The Seminole Improvement District does not have plans to modify their existing water reuse system. However, the Seminole Improvement District and the county may determine in the future that modifications may provide enhanced water availability.

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). Neither the Seminole Improvement District nor Palm Beach County provided the 2030 information. The SFWMD assumes the 2030 treatment capacity remains at the current level. The increase in wastewater flow is anticipated to increase in proportion to the increase in potable water. Reuse is anticipated to remain at 100 percent.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.32 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.32 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.04 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.05 MGD</b>
<b><u>Reuse</u></b>		<b><u>Reuse</u></b>	
Agricultural irrigation	0.04 MGD	Agricultural irrigation	0.05 MGD
<b>Reuse Percentage</b>	<b>100 %</b>	<b>Reuse Percentage</b>	<b>100%</b>

## *South Central Regional Water Reclamation Facility*

### Existing Treatment, Disposal, and Reuse

The South Central Regional Wastewater and Disposal Board, formed in 1974 as a special district, treats wastewater from the cities of Boynton Beach and Delray Beach at the South Central Regional Wastewater Reclamation Facility. Each city operates and maintains wastewater collection systems in their respective service areas. Older contracts with end users were directly with the South Central Regional Wastewater and Disposal Board. The more recent contracts for reclaimed water are between the end users and the cities of Boynton Beach and Delray Beach.

The South Central Regional WRF has a FDEP-permitted capacity of 24.00 MGD, with an annual average daily flow of 16.76 MGD in 2010. Approximately 5.98 MGD of the treated wastewater was reused in 2010. About 10.74 MGD of treated wastewater was disposed through deep well injection and 0.04 MGD through an ocean outfall. The facility distributes the reclaimed water to both the cities of Boynton Beach and Delray Beach for their customers to irrigate nine golf courses, one school, 500 residences, among other uses. The facility directly contracts with several customers for an allotment of 4.00 MGD, which is used for irrigation.

The 2008 Ocean Outfall statute (Subsection 403.086(9), F.S.) mandated the elimination of ocean outfalls by 2025 with the additional requirement that 60 percent of facility flow be beneficially reused. In Palm Beach County there are two ocean outfalls utilized by regional wastewater service providers to dispose of treated wastewater. The South Central Regional WRF utilizes one of these outfalls. Based on historic flows to the ocean outfall, the facility is required to reuse 7.7 MGD of treated wastewater by 2025. The South Central Regional Wastewater and Disposal Board plans to meet the requirements of the statute by increasing the capacity of water reuse in the cities of Boynton Beach and Delray Beach. A deep injection well was installed, thereby nearly eliminating discharge through the ocean outfall. The ocean outfall will remain in place for emergency discharges.

### *City of Boynton Beach*

The City of Boynton Beach's Utilities Department operates and maintains the city's wastewater and reclaimed water systems. The city receives reclaimed water from the South Central Regional WRF and reuses it, primarily for irrigation purposes. The city's permitted allocation is conditioned on the provision of reclaimed water to various identified entities.

#### **Primary End Users**

- Bethesda Hospital
- Bethesda Service Center
- Boynton Ball Park
- Boynton Beach Cemetery
- Boynton Beach Children's Museum
- Boynton Beach Water Treatment Plant
- Boynton Library

Boynton Senior Center  
City Tennis Courts  
Congress Avenue Park and Tennis Center  
Country Club of Florida\*  
Delray Dunes\*  
East Water Plant  
Entrance to Chapel Hill  
Forest Park Elementary  
Hunters Run Golf and Racquet Club  
Hunters Run\*  
Las Ventanas  
Little League Ball Park  
Pence Park  
Pine Tree Golf Club\*  
Quail Ridge\*  
Sterling Village  
Village of Golf\*

\* Customer of the South Central Regional Wastewater and Disposal Board within the City of Boynton Beach service area.

### ***City of Delray Beach***

The City of Delray Beach's Public Utilities Division operates and maintains the city's wastewater and reclaimed water systems. The city receives reclaimed water from the South Central Regional WRF and uses it, primarily for irrigation purposes. The reclaimed water has largely replaced potable use and permitted withdrawals from the SAS. The city's water use permit contains limiting conditions requiring the provision of reclaimed water to four irrigation users (Delray Beach Municipal Golf Course, Hamlet Country Club, Del-Aire Country Club, and Lakeview Golf Club).

#### **Primary End Users**

Barrier island residential (north of Atlantic Avenue)  
Clearbrook Homeowner's Association  
Crosswinds of Delray  
Del-Aire Golf Club  
Delray Beach Municipal Golf Course  
Delray Business Center  
Fairways of Delray  
Hamlet Golf Course  
Lakeview Golf Club  
Medians  
New Atlantic High School  
North Water Storage Tank/Pump Station (200 Northwest First Avenue)  
Northwest Second Street corridor (Martin Luther King, Jr. Drive)  
Pines of Delray Association, East and West  
Pompey Park  
St. Mary's Church (Atlantic Avenue/Homewood Boulevard)  
Verona Woods Homeowner's Association  
Wahoo Properties

## Future Treatment, Disposal, and Reuse

### *City of Boynton Beach*

As the City of Boynton Beach's reclaimed water system expands, it is expected that reclaimed water will replace both current groundwater withdrawals from the SAS and potable demand on the system. The ultimate build-out capacity of the city's reclaimed water system is estimated at 11.0 MGD. The city proposes irrigation as the primary use for the future expansion of the reclaimed system.

#### **Potential End Users**

Banyan Springs  
Barrier Island residential  
Barton Memorial Park  
Bent Tree  
Boynton Beach Civic Center  
Caloosa Park  
Cascade Lakes  
Colonial Club  
Colonial Estates  
Congress Avenue Park  
Congress Middle School  
Crosspointe Elementary School  
Cypress Creek Golf Course  
Greentree Villas  
Hampshire Gardens  
Highpoint Residential  
Holiday Inn  
Hunters Run Residential Homeowner's Association  
Indian Hills at Indian Spring  
Jaycees Park  
Leisureville Golf Course  
Limetree  
Little Club  
Los Mangos  
Oakwood Lakes  
Palm Chase  
Palmetto Greens Park  
Santa Cruz  
Snug Harbor  
St. Andrews Golf Club  
St. Vincent de Paul Seminary  
Tuscany Bay (Military Trail)  
Tuscany on the Intracoastal  
WXEL

## *City of Delray Beach*

The City of Delray Beach has an ordinance requiring customers to connect to the reclaimed water system based on proximity to reclaimed water pipelines. As the city's reclaimed water system expands, it is expected that the reclaimed water will replace both current groundwater withdrawals from the SAS and potable demand on the system. The ultimate build-out capacity of the city's reclaimed water system is estimated at approximately 8.0 MGD. Water produced by expansion of the reclaimed system is primarily expected to be for irrigation along the barrier island.

### **Potential End Users**

Banyan Creek Elementary  
Carver Middle School  
Carver Recreation Center  
City Hall  
Country Manors  
Delray Beach City Cemetery  
Environmental Services Department Complex  
Gulf Stream Country Club  
High Point  
Lavers  
Little Club  
Miller Park  
Old Atlantic High School  
Old School Square  
Orchardview Park  
Pine Grove Elementary  
Plumosa Elementary  
Police station/courthouse  
Rainberry Bay Homeowner's Association  
Barrier island residential (south of Atlantic Avenue)  
Sherwood Park Golf Course

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). South Central Regional Wastewater Disposal Board provided the City of Delray Beach 2030 information in April 2012. The City of Boynton Beach provided 2030 information in April 2012. These 2030 projections are dependent on the cities of Boynton Beach and Delray Beach reusing a total of 15.94 MGD (7.97 MGD for each city).

## FACILITY SUMMARY

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>24.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>24.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>16.76 MGD</b>	<b>Total Wastewater Effluent</b>	<b>22.63 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Total	10.78 MGD	Total	2.69 MGD
Deep well injection	10.74 MGD	Deep well injection	2.69 MGD
Ocean outfall	0.04 MGD		
<u>Reuse</u>		<u>Reuse</u>	
Total	5.98 MGD	Total	19.94 MGD
Irrigation	5.87 MGD	Irrigation – Boynton Beach	7.97 MGD
At the facility	0.11 MGD	Irrigation – Delray Beach	7.97 MGD
		Irrigation – Contracts	4.00 MGD
<b>Reuse Percentage</b>	<b>36%</b>	<b>Reuse Percentage</b>	<b>88%</b>



## ***Wellington Water Reclamation Facility***

### **Existing Treatment, Disposal, and Reuse**

The Village of Wellington's Utilities Department owns, operates, and maintains the Wellington WRF. The facility serves the village with wastewater collection services, treatment, and water reuse. The facility has a FDEP-permitted capacity of 4.75 MGD, with an annual average daily flow of 4.06 MGD in 2010. Approximately 0.10 MGD of the treated wastewater was reused in 2010, while 3.96 MGD was disposed through deep well injection. Construction to upgrade the treatment system slightly reduced reclaimed water flows from the facility in 2010, down from 0.25 MGD in 2009.

Reclaimed water from the Wellington WRF is primarily used for irrigation of local parks and for groundwater recharge at Wetland Park, which was constructed to provide wildlife habitat and public access.

#### **Primary End Users**

Boys and Girls Club Park  
K-Park  
Olympia Park  
Tigershark Cove Park  
Town Center  
Village Park

### **Future Treatment, Disposal, and Reuse**

Construction to upgrade the treatment system has temporarily reduced reclaimed water flows; however, it will increase the reclaimed capacity to 4.5 MGD. With the increased capacity, the village intends to provide reclaimed water to the past/current users and evaluate the feasibility of future expansion.

#### **Potential End Users**

Big Blue Trace  
Forest Hill Boulevard  
Greenview Shores Boulevard  
International Polo  
Old Polo (a and b)  
Pierson Polo  
Polo Golf Course  
Polo South  
Southshore Boulevard (north)  
Southshore Boulevard (south)  
Wellington Trace West  
Wellington Trace East

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The utility did not provide the 2030 information. The increase in wastewater flow is anticipated to increase in proportion to the increase in potable water supply in the village from 2010 to 2030. The projected capacity is assumed to increase to match the estimated flow. The projected reuse flow is from the *Village of Wellington Water Supply Facilities Work Plan and Related Comprehensive Plan Amendments* (Village of Wellington 2009). All reuse is assumed to be for irrigation purposes, except the groundwater recharge was kept constant from 2010 to 2030.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>4.75 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>5.06 MGD</b>
<b>Total Wastewater Effluent</b>	<b>4.06 MGD</b>	<b>Total Wastewater Effluent</b>	<b>5.06 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	3.96 MGD	Deep well injection	0.56 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.10 MGD	Total	4.50 MGD
Irrigation	0.03 MGD	Irrigation	4.43 MGD
Groundwater recharge	0.07 MGD	Groundwater recharge	0.07 MGD
<b>Reuse Percentage</b>	<b>2%</b>	<b>Reuse Percentage</b>	<b>89%</b>

## Profiles of Broward County Facilities

### *Broward County North Regional Water Reclamation Facility*

#### Existing Treatment, Disposal, and Reuse

Broward County Water and Wastewater Services operates the Broward County North Regional WRF located in the City of Pompano Beach. The facility has a FDEP-permitted capacity of 84.00 MGD. It provides wastewater services for northern Broward County. In 2010, the annual average daily wastewater flow at the facility was 71.00 MGD. Approximately 4.40 MGD of the treated wastewater is reused at the facility or at adjacent facilities for irrigation, process, or cooling water.

In 2010, most of the treated wastewater was disposed of via deep injection wells (38.0 MGD) and ocean outfall (28.0 MGD). Of the water sent to the ocean outfall, an average 1.35 MGD was captured by the City of Pompano Beach in 2010 for further treatment and reuse. Overall, water reuse at the facility was approximately 6 percent of the wastewater treated at the facility.

#### **Primary End Users**

Broward County Septage Receiving Facility  
Broward County North Regional WRF  
Pompano Beach Park of Commerce  
Wheelabrator Environmental Services

#### Future Treatment, Disposal, and Reuse

One of the two ocean outfalls for disposal of treated wastewater in Broward County is utilized by the North Regional WRF. Based on historic flows to the ocean outfall, the facility is required to reuse 22.4 MGD of treated wastewater by 2025 to comply with the 2008 Ocean Outfall statute (Subsection 403.086(9), F.S.). The county is promoting collaborative regional water supply strategies to meet the required 60 percent water reuse by 2025. The county also intends to develop a regional reuse master plan along with a new or amended county ordinance(s) for the establishment of mandatory reuse zones.

Broward County Water and Wastewater Services continues to investigate means to increase its reclaimed water usage, both as a method to meet future water needs and the requirements of the 2008 Ocean Outfall requirements. The county is in the process of extending reclaimed water to the Pompano Highlands neighborhood for irrigation. The City of Coconut Creek, which is within the North Regional WRF's service area, has installed infrastructure to accept reclaimed water from the facility, primarily for irrigation. The first phase of the City of Coconut Creek reclaimed water system is planned to be operational in spring 2013. The City of Pompano Beach is expected to continue expanding its reclaimed system.

**Potential End Users**  
 City of Coconut Creek  
 Pompano Highlands  
 Potential larger users (e.g., golf courses, parks, and schools)

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). Broward County Wastewater Services provided the 2030 information in May 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>84.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>100.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>71.00 MGD</b>	<b>Total Wastewater Effluent</b>	<b>87.00 MGD</b>
<b><u>Disposal</u></b>		<b><u>Disposal</u></b>	
Total	66.00 MGD	Total	77.50 MGD
Deep well injection	38.00 MGD	Deep well injection	77.50 MGD
Ocean outfall	28.00 MGD		
<b><u>Reuse</u></b>		<b><u>Reuse</u></b>	
Total	4.40 MGD	Total	22.50 MGD
At the facility	2.90 MGD	Industrial or other	12.50 MGD
Cooling water	1.30 MGD	Irrigation	10.00 MGD
Irrigation	0.20 MGD		
<b>Reuse Percentage</b>	<b>6%</b>	<b>Reuse Percentage</b>	<b>26%</b>

## ***Cooper City Wastewater Treatment Facility***

### **Existing Treatment, Disposal, and Reuse**

The City of Cooper City Utility Department operates the Cooper City WWTF, which has a FDEP-permitted capacity of 3.10 MGD. The facility provides wastewater services to its customers in the city and small sections of Davie and Southwest Ranches. In 2010, the annual average daily flow from the facility was 2.24 MGD. Treated effluent is disposed of through deep well injection or pumped to the Hollywood Southern Regional WRF. A contract between Cooper City and the City of Hollywood requires a minimum of 1.7 MGD of treated effluent be sent to the Hollywood facility. The salinity of treated effluent from Cooper City is lower than from the Hollywood facility and, therefore, is preferable for reuse applications.

### **Future Treatment, Disposal, and Reuse**

Cooper City has a National Pollutant Discharge Elimination System permit with the FDEP for its discharges through the Hollywood ocean outfall. Therefore, Cooper City is obligated to meet the reuse requirements. Based on historic flows to the ocean outfall, the Cooper City WWTF is required to reuse 0.9 MGD of treated wastewater by 2025.

The Cooper City WWTF currently does not have plans to implement a water reuse system within the city. The city will continue to evaluate reclaimed water as an alternative water supply source. The SFWMD anticipates the city will work with neighboring utilities to leverage resources and take advantage of economies of scale to meet the 2008 Ocean Outfall requirements (Subsection 403.086(9), F.S.). Costs and potential increases for allocation based on terminated base condition water use and offsets are components of future considerations for water reuse in the city.

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Cooper City Utility Department provided the 2030 information.

## FACILITY SUMMARY

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>3.10 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>3.10 MGD</b>
<b>Total Wastewater Effluent<sup>a</sup></b>	<b>2.24 MGD</b>	<b>Total Wastewater Effluent<sup>a</sup></b>	<b>2.70 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Total	2.24MGD	Total	1.80 MGD
Deep well injection	0.63 MGD	Deep well injection	0.10 MGD
Pumped to Hollywood	1.61 MGD	Pumped to Hollywood	1.70 MGD
<u>Reuse</u>		<u>Reuse</u>	
In Cooper City <sup>b</sup>	0.00 MGD	In Cooper City <sup>c</sup>	0.90 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>33%</b>

- a. Treated effluent from the WWTF is combined with concentrate from the water treatment plant before it is sent to the City of Hollywood or deep well injected.
- b. Some reuse using wastewater from Cooper City occurs through the City of Hollywood's system.
- c. Some reuse using wastewater from Cooper City occurs through the City of Hollywood's system.

## *Coral Springs Improvement District Wastewater Treatment Facility*

### Existing Treatment, Disposal, and Reuse

The Coral Springs Improvement District WWTF has a FDEP-permitted capacity of 5.72 MGD and provides wastewater services to customers within its service area. In 2010, the annual average daily flow from the facility was 5.06 MGD. Treated effluent from the district's facility is disposed through two deep injection wells. The facility also has a 0.01-MGD on-site rapid infiltration basin for short-term, emergency backup disposal. Coral Springs Improvement District has determined water reuse is not feasible at this time.

### Future Treatment, Disposal, and Reuse

Coral Springs Improvement District will upgrade the WWTF and continue to evaluate the potential of producing reclaimed water.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Coral Springs Improvement District provided the 2030 information in May 2012. Additional data is from the Coral Springs Improvement District FDEP permit (FLA041301).

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>5.72 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>7.72 MGD</b>
<b>Total Wastewater Effluent</b>	<b>5.06 MGD</b>	<b>Total Wastewater Effluent</b>	<b>5.40 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	5.06 MGD	Deep well injection	5.40 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Total	0.00 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>0%</b>

## *Davie Wastewater Treatment Plant/Water Reclamation Facility*

### Existing Treatment, Disposal, and Reuse

The Town of Davie Utilities Department operates the Davie WWTP. The facility has a FDEP-permitted capacity of 4.85 MGD and provides wastewater services to the majority of eastern Davie and the Seminole Tribe of Florida Hard Rock Hotel complex. The Cooper City and Tindall Hammock WWTFs also provide service to a small portion of the town. The remaining sections of the Town of Davie (predominantly the western portions) are served by Broward County, and the cities of Hollywood, Fort Lauderdale, and Sunrise. A WRF is under construction at the facility.

In 2010, the annual average daily flow at the Davie WWTP was 0.98 MGD. The town pumps treated effluent to the Hollywood Southern Regional WRF, which also receives effluent from the Cooper City WWTF. Through a large user agreement, Davie is required to send treated effluent to the Hollywood facility until 2037. The salinity of treated effluent from the Davie facility is lower than that from the Hollywood facility and, therefore, is preferable for reuse applications. Currently, the Town of Davie's facility does not yet produce reclaimed water.

### Future Treatment, Disposal, and Reuse

The Town of Davie has a National Pollutant Discharge Elimination System permit with the FDEP for its discharges through the City of Hollywood's ocean outfall and is obligated to meet the 2008 Ocean Outfall requirements (Subsection 403.086(9), F.S.). Based on historic flows to the ocean outfall, the Town of Davie Utility Department must reuse 1.2 MGD of treated wastewater by 2025.

The Town of Davie is in the process of constructing a WRF. The facility is expected to provide up to 2.0 MGD of reclaimed water for irrigation and industrial uses in 2013. It is anticipated the volume will double by 2023. When the new WRF becomes operational, the town will divert flows from their existing WWTP to the WRF, reducing the amount of wastewater effluent sent to the Hollywood Southern Regional WRF.

#### **Potential End Users**

- Arrowhead Country Club
- Broward College
- Broward County schools
- Davie Bamford Pine Island Park Sports Complex
- Grand Oaks Country Club
- McFatter Technical Center
- Nova Southeastern University Main Campus
- Sunforest Complex
- University of Florida Research Center

As part of the town's reuse program, aquifer recharge and indirect potable reuse is planned for the existing Davie WWTP (System II). Future System II expansions and upgrades include



high-level disinfection and two Biscayne aquifer recharge wells. The existing WWTP will have the capacity to recharge up to 3.0 MGD into the aquifer.

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Town of Davie Reclaimed Water Distribution System and Davie Utilities Department provided the 2030 information in October 2011 and in April 2012, respectively.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030<sup>b</sup></u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>4.85 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>12.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.98 MGD</b>	<b>Total Wastewater Effluent</b>	<b>12.00 MGD</b>
<u>Disposal/Reuse<sup>a</sup></u>		<u>Disposal</u>	
Pumped to Hollywood	3.38 MGD	Deep well injection	5.7 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Total	6.30 MGD
		Irrigation	1.90 MGD
		Groundwater recharge	3.00 MGD
		Other types of reuse	1.40 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>53%</b>

- a. Some reuse using wastewater occurs through the Hollywood Southern Regional WRF.
- b. Includes both the existing WWTP and the WRF now under construction.

## Fort Lauderdale George T. Lohmeyer Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The City of Fort Lauderdale’s George T. Lohmeyer WWTF is designed as a central regional facility and is used to treat all wastewater generated in a region encompassing the Port Everglades, the cities of Fort Lauderdale, Wilton Manors, and Oakland Park, and parts of the City of Tamarac, Town of Davie, and unincorporated Broward County. The facility has a FDEP-permitted capacity of 55.70 MGD and a 2010 annual average daily flow of 37.60 MGD. Treated effluent from the facility is disposed through five deep injection wells.

The facility does not currently provide reclaimed water for reuse. The facility is located far from any traditional users of reclaimed water and space to construct the necessary treatment facilities is limited at the plant site or vicinity. In addition, the treated effluent has elevated chloride concentrations limiting its viability as reuse water. Therefore, the city has determined that water reuse alternatives are not feasible at this time.

### Future Treatment, Disposal, and Reuse

The City of Fort Lauderdale continues to consider water reuse, particularly options that can be used to help develop alternative water supplies. Indirect potable reuse systems are under consideration because of the dual benefits of providing more disposal capacity and augmenting local water supplies.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Fort Lauderdale provided the 2030 information in April 2012.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>55.70 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>56.60 MGD</b>
<b>Total Wastewater Effluent</b>	<b>37.60 MGD</b>	<b>Total Wastewater Effluent</b>	<b>38.50 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	37.60 MGD	Deep well injection	38.50 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	At the facility	4.00 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>10%</b>

## ***Hollywood Southern Regional Water Reclamation Facility***

### **Existing Treatment, Disposal, and Reuse**

The City of Hollywood Department of Public Utilities operates the city-owned Hollywood Southern Regional WRF. The facility, which has a FDEP-permitted capacity of 55.50 MGD, provides wastewater services for the City of Hollywood and southern Broward County. In 2010, the annual average daily flow of treated wastewater from the facility was 45.90 MGD. The facility received additional treated wastewater from the Town of Davie and Cooper City. Approximately 45.90 MGD of the treated wastewater was disposed through deep well injection and an ocean outfall, while 1.79 MGD was reused. Most of the reclaimed water reuse was for public access irrigation. Overall, the facility reused approximately 4 percent of the wastewater treated at the facility in 2010.

Influent to the facility is relatively high in salinity making it unusable for typical irrigation purposes. However, the city has implemented a reclaimed water reuse system making use of lower salinity effluent from the Town of Davie and Cooper City.

#### **Primary End Users**

Diplomat Country Club  
Eco Grande Golf Course  
Emerald Hills Golf Course  
City nursery (from tanker truck)  
David Park  
Dowdy Field  
Hillcrest Country Club  
Hollywood Beach Golf Course  
Hollywood Boulevard median  
Lincoln Park Elementary School  
Memorial Regional Hospital East Campus  
Orangebrook Country Club  
Rotary Park  
Townhomes of Emerald Hills  
U.S. Highway 1 median

### **Future Treatment, Disposal, and Reuse**

The Hollywood Southern Regional WRF is one of the two ocean outfalls in Broward County utilized by regional wastewater service providers to dispose of treated wastewater. Based on historic flows to the ocean outfall, the facility is required to reuse 20.4 MGD of treated wastewater by 2025 to fulfill the requirements of the 2008 Ocean Outfall statute (Subsection 403.086(9), F.S.).

The City of Hollywood Department of Public Utilities continues to investigate means of increasing its reclaimed water usage, both as an alternative to meet future water needs and to meet the requirements of the 2008 Ocean Outfall amendments (Subsection 403.086(9), F.S.). Options under consideration include the addition of new reclaimed water customers and groundwater recharge.

**Potential End Users**

- City of Dania Beach
- City of Hallandale Beach
- City of Hollywood remaining green areas
- Topeekeegee Yugnee Park, Sheridan Street, and Park Road
- West Lake Village

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The 2030 information is from the *City of Hollywood Wastewater Master Plan* (Hazen & Sawyer, P.C. 2007). This master plan went to 2025. Therefore, the 2030 flow projections were estimated from the 2025 projections.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>55.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>65.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>45.90 MGD</b>	<b>Total Wastewater Effluent</b>	<b>64.10 MGD</b>
<b><u>Disposal</u></b>		<b><u>Disposal</u></b>	
Total	45.90 MGD	Total	40.70 MGD
Deep well injection	26.30 MGD	Deep well injection	40.70 MGD
Ocean outfall	19.60 MGD		
<b><u>Reuse<sup>a</sup></u></b>		<b><u>Reuse</u></b>	
Total	1.79 MGD	Total	23.40 MGD
Irrigation	1.79 MGD	Irrigation	3.00 MGD
		Aquifer recharge	20.40 MGD
<b>Reuse Percentage</b>	<b>4%</b>	<b>Reuse Percentage</b>	<b>37%</b>

a. Due to elevated salinity in the City of Hollywood’s wastewater, most reuse occurs using treated wastewater received from the Cooper City WWTF and Town of Davie WWTP.

## Margate Wastewater Treatment Plant

### Existing Treatment, Disposal, and Reuse

The City of Margate's Department of Environmental and Engineering Services operates the Margate WWTP. The WWTP has a FDEP-permitted capacity of 10.10 MGD and provides wastewater services to the entire developed area within city limits and a section of southern Coconut Creek. In 2010, the annual average daily flow from the facility was 7.21 MGD. As of 2010, all treated wastewater was disposed of through deep well injection.

### Future Treatment, Disposal, and Reuse

The City of Margate is planning for the design and construction of a 1.5-MGD reclaimed water treatment plant, along with the associated transmission and distribution system piping. The West Water Treatment Plant will be located within the city's West WWTP and will produce reclaimed water primarily for irrigation of nearby golf courses and roadway medians and for in-plant processes. Completion is expected in 2015. In the future, the city hopes to expand use to city parks and residential neighborhoods.

#### **Primary End Users**

Carolina Golf Club  
 Coral Cay (Colonies of Margate I, II, and III)  
 In-plant process water and spray irrigation  
 Margate Executive Golf Course  
 Oriole Golf and Tennis Club of Margate  
 Palm Springs III

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The 2030 information was provided by the City of Margate and the University of Florida's Bureau of Economic and Business Research (BEBR) 2030 medium population projections (BEBR 2011).

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>10.10 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>10.10 MGD</b>
<b>Total Wastewater Effluent</b>	<b>7.21 MGD</b>	<b>Total Wastewater Effluent</b>	<b>7.20 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	7.21 MGD	Deep well injection	5.7 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Total	1.50 MGD
		Irrigation	1.00 MGD
		Plant process water	0.50 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>21%</b>

## ***Miramar Water Reclamation Facility***

### **Existing Treatment, Disposal, and Reuse**

The City of Miramar's Utilities Department operates a WRF that serves the western section of the city. Wastewater collected from the eastern part of the city is sent to the Hollywood Southern Regional WRF for treatment. The Miramar WRF has a FDEP-permitted capacity of 10.10 MGD, and in 2010, the annual average daily flow from the facility was 7.64 MGD. Approximately 5.55 MGD of the treated wastewater was disposed through deep well injection, while 2.09 MGD was reused. Most of the water reuse was for public access irrigation.

#### **Primary End Users**

Ansin Sport Complex Avalon

City hall

GSA-ICE building

Hiatus Road, Miramar Parkway, Southwest 130th Avenue, and Southwest 145th Avenue medians

Miramar Park of Commerce (north only)

Monarch Lakes (common areas)

Renaissance Middle School

Villages of Renaissance

### **Future Treatment, Disposal, and Reuse**

The City of Miramar will continue evaluating options for increasing the amount of water reuse, both to help meet the 2008 Ocean Outfall statute requirements (Subsection 403.086(9), F.S.) for the City of Hollywood outfall and increase water supplies. The city recently completed a 2.0-MGD reclaimed water system expansion and is in the process of connecting more irrigation users to the distribution system. The city is anticipating that the increased use of reclaimed water within the vicinity of its western wellfield will decrease the stress on traditional sources of water and might yield substitution credits (or terminated base condition water use) or offsets to the city's western wells.

#### **Potential End Users**

Huntington Park

Miramar Park of Commerce – Phase V

Silver Falls

Trammel Crow Industrial Center

Vizcaya Park and common area

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Miramar provided the 2030 information in April 2012.

## FACILITY SUMMARY

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>10.10 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>12.60 MGD</b>
<b>Total Wastewater Effluent</b>	<b>7.64 MGD</b>	<b>Total Wastewater Effluent</b>	<b>11.80 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	5.55 MGD	Deep well injection	5.80 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	2.09 MGD	Total	6.0 MGD
Irrigation	0.78 MGD	Irrigation	6.0 MGD
At the treatment facility	1.31 MGD		
<b>Reuse Percentage</b>	<b>27%</b>	<b>Reuse Percentage</b>	<b>51%</b>

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## ***North Springs Improvement District Water Reclamation Facility (proposed)***

### **Existing Treatment, Disposal, and Reuse**

The North Springs Improvement District funds, operates, and maintains a wastewater collection system in northeastern Broward County. This system provides wastewater services to businesses and residents in the cities of Coral Springs and Parkland. Broward County North Regional Water Reclamation Facility receives, treats, and disposes of the wastewater collected by North Springs Improvement District.

### **Future Treatment, Disposal, and Reuse**

North Springs Improvement District intends to expand its service area to capture the properties in a section of Broward County known as “the wedge” by constructing a WRF. (The state legislature approved the transfer of the 1,949-acre wedge shaped property from Palm Beach County to Broward County. The transfer became official in 2009). The reuse facility will treat wastewater and produce irrigation quality water for distribution to properties within the North Springs Improvement District boundaries and new development within the wedge. Potentially, users beyond the North Springs Improvement District boundaries could also be supplied.

Currently, four major developers have been identified for reclaimed water reuse within the wedge area: Lenar Homes, Standard Pacific, WCI, and Triple H. North Springs Improvement District met with each of the developers to obtain site plans and to calculate irrigation demands. The irrigation end users within this area will be 90 percent residential and 10 percent commercial.

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The North Springs Improvement District provided the 2030 information in March 2012.



## FACILITY SUMMARY

<u>2010<sup>a</sup></u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>5.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.00 MGD</b>	<b>Total Wastewater Effluent</b>	<b>4.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Total	0.00 MGD	Deep well injection <sup>b</sup>	0.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Total	4.00 MGD
		Irrigation	4.00 MGD
		Wetland recharge <sup>c</sup>	0.00 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>100%</b>

a. The facility was not built in 2010.

b. Deep well injection will only be used for emergencies.

c. Reuse water will only be used for wetland recharge if irrigation demand is met.

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## Pembroke Pines Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The City of Pembroke Pines Division of Environmental Services operates the Pembroke Pines WWTF. The facility has a FDEP-permitted capacity of 9.50 MGD and serves the western section of the city. The Hollywood Southern Regional Water Reclamation Plant receives and treats wastewater from the eastern portion of the city. In 2010, the annual average daily treated wastewater flow from the Pembroke Pines WWTF was 7.07 MGD. Currently, the city does not treat wastewater for reuse. Treated wastewater from the city's facility is disposed of through deep well injection.

### Future Treatment, Disposal, and Reuse

The City of Pembroke Pines evaluated two options for water reuse: irrigation reuse and aquifer recharge. In 2011, the city completed a pilot project to evaluate the feasibility of recharging the SAS with reclaimed water. Based on the results of the pilot project, the concept was deemed technically feasible, but no further progress was made toward evaluating and implementing aquifer recharge. Additionally, the city is concerned about the potential cost to meet the county's nutrient limitations for phosphorous and nitrogen.

#### **Potential End Users**

Biscayne aquifer  
City of Pembroke Pines

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Pembroke Pines provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>9.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>9.50 MGD</b>
<b>Total Wastewater Effluent</b>	<b>7.07 MGD</b>	<b>Total Wastewater Effluent</b>	<b>7.70 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	7.07 MGD	Deep well injection	2.40 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Aquifer recharge	5.3 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>69%</b>

## ***Plantation Wastewater Treatment Facility***

### **Existing Treatment, Disposal, and Reuse**

The City of Plantation Utilities Department operates and maintains the Plantation WWTF, which serves the entire incorporated area. The facility has a FDEP-permitted capacity of 18.90 MGD. In 2010, the annual average daily flow through the facility was 13.80 MGD. Approximately 13.39 MGD of the treated wastewater was disposed by deep well injection, while 0.41 MGD was reused for treatment processes including irrigation at the facility.

In 2008, the City of Plantation completed a pilot project to evaluate potential treatment options to use reclaimed water to recharge the SAS. The project indirectly recharged the aquifer through surface water discharge into a local canal. Although the concept is technically feasible from a treatment perspective, costs and regulatory constraints have stalled its progress.

### **Future Treatment, Disposal, and Reuse**

The city will continue to evaluate options to increase the amount of water reuse. The city is considering using reclaimed water for irrigation at the Plantation Preserve and Jacaranda golf courses within the city. The city anticipates the increased use of reclaimed water within the city might decrease stress on traditional sources of water and yield substitution credits or offsets, in compliance with the LEC regional water availability criteria, to increase the city's allocation from the SAS. The offset and substitution credits need to be identified for their cost effectiveness.

Flat population growth and conservation efforts delayed, the immediate need for alternative water supply capacity. These factors, as well as current funding limitations, delayed implementation of reclaimed water projects. However, the city purchased 6.6 acres of adjacent property for future plant expansions, as needed. The projected flow for the facility in 2030 is yet to be determined.

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The utility did not provide the 2030 information. The capacity was assumed to remain the same as in 2010. Flows were projected based on the percentage change in potable water flow for the utility from 2010 to 2030. The SFWMD assumed reclaimed water for irrigation use is assumed to be used at the Jacaranda and Plantation Preserve golf courses.

## FACILITY SUMMARY

<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>18.90 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>18.90 MGD</b>
<b>Total Wastewater Effluent</b>	<b>13.80 MGD</b>	<b>Total Wastewater Effluent</b>	<b>15.54 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	13.39 MGD	Deep well injection	13.77 MGD
<u>Reuse</u>		<u>Reuse</u>	
Facility Processes	0.41 MGD	Irrigation	1.77 MGD
<b>Reuse Percentage</b>	<b>3%</b>	<b>Reuse Percentage</b>	<b>11%</b>

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## *Pompano Beach Water Reclamation Facility*

### Existing Treatment, Disposal, and Reuse

The City of Pompano Beach Utilities Department operates and maintains a reclaimed water treatment and distribution system named “Our Alternative Supply Irrigation System” referred to as OASIS. The city does not have its own WWTP. The Broward County North Regional Water Reclamation Facility collects wastewater within the city. Pompano Beach diverts a portion of the effluent from the Broward County North Regional Water Reclamation Facility ocean outfall pipeline. The diverted effluent undergoes further treatment with filtration and high-level disinfection at the Pompano Beach’s facility and then reused within the city. The city’s water reuse system has a FDEP-permitted capacity of 7.50 MGD. In 2010, the annual average daily flow from the reuse system was 1.35 MGD.

The Pompano Beach WRF provides reclaimed water for irrigation of the Municipal Golf Course, Pompano Community Park, landscaping along Federal Highway and Copans Road, city medians, and residential areas east of Dixie Highway. Water reuse produced by the City of Pompano Beach will contribute towards the Broward County North Regional WRF’s goal of achieving 60 percent water reuse by 2025.

#### **Primary End Users**

- Citi Centre Mall
- City cemetery
- City Municipal Golf Course
- City nursery
- City parks
- Medians
- Residential areas
- Sand and Spurs Stables
- Schools

### Future Treatment, Disposal, and Reuse

The city intends to continue expanding its water reuse system by adding customers, including residential customers in the eastern section of the city. In 2011, the city, with Broward County as a partner, implemented a program to complete and pay for the upfront connection costs for single family residential properties. Pompano Beach has a reclaimed water large user agreement with the City of Lighthouse Point that could result in additional users in the future. The city will also negotiate an agreement with Broward County to provide reuse water through a master meter to customers of Pompano Highlands, located in Broward County's service area.

**Potential End Users**

Additional Pompano Beach residential irrigation and other public access irrigation  
Broward County (Pompano Highlands)  
Lighthouse Point residences and other public access irrigation

Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Pompano Beach provided the 2030 information in March 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>7.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>12.50 MGD</b>
<b>Reuse Effluent Flow</b>	<b>1.35 MGD</b>	<b>Total Wastewater Effluent</b>	<b>4.50 MGD</b>
<u>Reuse</u>		<u>Reuse</u>	
Irrigation	1.35 MGD	Irrigation	4.50 MGD
<b>Reuse Percentage</b>	<b>100%</b>	<b>Reuse Percentage</b>	<b>100%</b>

## Sunrise Wastewater Treatment Facilities

### Existing Treatment, Disposal, and Reuse

The City of Sunrise Utilities Department operates and maintains three WWTFs, serving the cities of Sunrise and Weston, the Town of Southwest Ranches, and about 60 percent of the Town of Davie. The Sawgrass and Springtree WWTFs do not currently provide reclaimed water for reuse. These facilities dispose of treated effluent using deep well injection. The Sawgrass WWTP has a FDEP-permitted capacity of 20.00 MGD and had an average daily flow of 18.26 MGD in 2010. The Springtree WWTP has a FDEP-permitted capacity of 10.00 MGD and had an average daily flow of 7.19 MGD in 2010. The Southwest WWTF treats effluent through four percolation ponds. The Southwest WWTF has a FDEP-permitted capacity of 0.45 MGD, and in 2010, the annual average daily wastewater flow was 0.37 MGD.

In 2007, the City of Sunrise conducted a pilot test using a select group of emerging advanced wastewater treatment technologies for possible future application to meet reuse initiatives. The study concluded that nutrient removal to county standards is possible, and recommended the city investigate the possibility of using the highly treated water for aquifer recharge.

### Future Treatment, Disposal, and Reuse

The City of Sunrise intends to pursue additional water reuse opportunities at the Southwest and Sawgrass WWTFs in an effort to reduce irrigation demands from potable water. Irrigation will be the primary focus of reclaimed water reuse in the future at both locations. At the Southwest WWTF, irrigation of the facility's grounds will be the initial focus followed by expansion to surrounding tracts. A deep injection well might be added to the Southwest WWTF for disposal during peak flows, with use of the existing percolation ponds as an emergency backup. The Sawgrass WWTF is expected to expand to provide reclaimed water for irrigation in an effort to offset withdrawals from the Biscayne aquifer.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Sunrise provided the 2030 information in April 2012.

FACILITY SUMMARY – SOUTHWEST WWTF			
<u>2010</u>		<u>Projected 2030</u>	
FDEP-Permitted Treatment Capacity	0.45 MGD	FDEP-Permitted Treatment Capacity	0.99 MGD
Total Wastewater Effluent	0.37 MGD	Total Wastewater Effluent	0.99 MGD
<u>Reuse</u>		<u>Reuse</u>	
Percolation Ponds	0.37 MGD	Groundwater recharge	0.99 MGD
Reuse Percentage	100%	Reuse Percentage	100%

## FACILITY SUMMARY – SAWGRASS WWTF

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>20.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>25.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>18.26 MGD</b>	<b>Total Wastewater Effluent</b>	<b>22.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection <sup>a</sup>	25.45 MGD	Deep well injection	14.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Irrigation	8.0 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>36%</b>

a. Effluent from the Springtree WWTF is transferred to the Sawgrass WWTF for disposal through deep injection wells.

## FACILITY SUMMARY – SPRINGTREE WWTF

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>10.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>16.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>7.19 MGD</b>	<b>Total Wastewater Effluent</b>	<b>12.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection <sup>a</sup>	0.00 MGD	Deep well injection <sup>a</sup>	0.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Irrigation	7.00 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>58%</b>

a. Effluent from the Springtree WWTF is transferred to the Sawgrass WWTF for disposal through deep injection wells.



## Tindall Hammock Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The Tindall Hammock Irrigation and Soil Conservation District operates and maintains a wastewater collection and treatment system that serves a small area within the Town of Davie. The WWTF, which has a FDEP-permitted capacity of 0.60 MGD, had an annual average daily flow of 0.27 MGD in 2010. The treated effluent is discharged to an on-site borrow pit lake, which recharges the SAS.

### Future Treatment, Disposal, and Reuse

No changes are proposed for the Tindall Hammock WWTF water reuse system. The small facility will continue to use the on-site borrow pit lake for recharge of the shallow aquifer.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Tindall Hammock Irrigation and Soil Conservation District provided the 2030 information.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
FDEP-Permitted Treatment Capacity	0.60 MGD	FDEP-Permitted Treatment Capacity	0.60 MGD
Total Wastewater Effluent	0.27 MGD	Total Wastewater Effluent	0.40 MGD
<u>Reuse</u>		<u>Reuse</u>	
Rapid infiltration basin	0.27 MGD	Borrow-pit lake	0.40 MGD
Reuse Percentage	100%	Reuse Percentage	100%

## Profiles of Miami-Dade County Facilities

### *Homestead Wastewater Treatment Plant*

#### Existing Treatment, Disposal, and Reuse

The City of Homestead Public Works and Engineering Department operates and maintains the Homestead WWTP, which has a FDEP-permitted capacity of 6.00 MGD. The annual average daily flow from the Homestead WWTP was 5.30 MGD in 2010. Excess wastewater flows are pumped to the Miami-Dade South District WWTP. All of the treated water is discharged to a series of rapid infiltration trenches that recharge the Biscayne aquifer. The Homestead WWTP reused 100 percent of the wastewater treated at the facility in 2010.

#### Future Treatment, Disposal, and Reuse

The City of Homestead has evaluated various alternative water supply projects to meet future growth demands. The city determined it could provide reclaimed water from its WWTP to the city-owned electric generating plant for cooling water purposes. The electric generating plant would then discharge to rapid infiltration basins, recharging of the Biscayne aquifer. Currently, the electric generating plant utilizes the Biscayne aquifer for its cooling towers, with no active plans to use reclaimed water for cooling. The city will continue evaluating options for increasing reclaimed water reuse. It anticipates that increased use of reclaimed water within the city might decrease stress on traditional sources of water and might yield substitution credits or offsets to the city's allocation from the Biscayne aquifer, provided such use meets the LEC regional water availability criteria.

#### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Homestead provided the 2030 information in April 2012.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>6.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>10.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>5.30 MGD</b>	<b>Total Wastewater Effluent</b>	<b>10.00 MGD</b>
<u>Reuse</u>		<u>Reuse</u>	
On-site rapid infiltration trenches	5.30 MGD	Rapid infiltration basin	10.00 MGD
<b>Reuse Percentage</b>	<b>100%</b>	<b>Reuse Percentage</b>	<b>100%</b>

## *Miami-Dade Water and Sewer Department Wastewater Treatment Plants*

The Miami-Dade Water and Sewer Department (MDWASD) collects and treats most of the wastewater generated in Miami-Dade County. The MDWASD wastewater service area is divided into three regional districts. The North District, Central District, and South District WWTPs are located in the eastern portion of the county. MDWASD is considering a new West District Water Reclamation Plant.

The MDWASD currently uses two ocean outfalls and 21 deep injection wells to dispose of treated wastewater. The North District WWTP uses a combination of ocean outfall and deep injection for disposal, the Central District WWTP uses solely ocean outfall, and the South District WWTP uses solely deep well injection. Each facility reuses a small amount of treated wastewater, mostly for processes at the facilities.

Two factors are driving the commitment to increased water reuse in Miami-Dade County. First, the utility's water use permit stipulates that 170 MGD of water reuse must be in place before volumes over its base condition water use are withdrawn from the Alexander Orr and South Dade subarea wellfields. The intent of the requirement is to comply with the LEC Restricted Allocation Area criteria and implement projects that recharge the aquifer with highly treated reclaimed water thereby offsetting impacts to the regional system.

Secondly, the 2008 Ocean Outfall amendments mandate significant reuse (Subsection 403.086(9), F.S.). Because all of MDWASD's WWTPs are interconnected, three plants are considered one system. Therefore, MDWASD may to meet the reuse requirement on a systemwide basis. The MDWASD will be required to beneficially reuse 117.5 MGD of treated wastewater by 2025. MDWASD's intent is to reuse most of the water at their South District WWTP, diverting flows from the North and Central District WWTPs to the South District WWTP. It has also proposed the construction of the West District Water Reclamation Plant to support reuse projects located near these sites.

## Miami-Dade Central District Wastewater Treatment Plant

### Existing Treatment, Disposal, and Reuse

The Miami-Dade Central District WWTP services the area from Northwest 79th Street to the Tamiami Canal and includes a portion of the City of Coral Gables to Southwest 156th Street. This district services the unincorporated areas inside its boundary and the municipalities of Doral, Miami, Miami Beach, Miami Springs, Medley, Coral Gables, South Miami, Bal Harbor, and Key Biscayne. The facility has a FDEP-permitted capacity of 143 MGD, and in 2010 had an annual average daily flow of 101 MGD. In 2010, an average rate of 114.1 MGD of treated wastewater was discharged through the Central District ocean outfall, and 6.22 MGD was reused. The water reuse was for in-plant processes at the facility.

#### **Primary End User**

In-plant processes at the Central District WWTP (e.g., flushing, wash downs, and pump seal lubrication)

The MDWASD installed reclaimed water piping in the Village of Key Biscayne. However, the connection to the Central District WWTP has not been made. The purpose of the project was to replace potable water irrigation at Crandon Park and areas of Key Biscayne. The future of this project is uncertain at this time.

### Future Treatment, Disposal, and Reuse

To meet the 2018 deadline for reducing nutrients from the ocean outfall, the MDWASD is considering installing deep injection wells at the Central District WWTP and/or recharge wells on Virginia Key. Wastewater not disposed through the Central District ocean outfall could be sent south and/or west for reuse at other locations. The MDWASD is currently evaluating the options to meet the reuse requirements. The MDWASD, as part of the ocean outfall implementation plan due to the FDEP by July 1, 2013, will more fully describe the scope of its reclaimed water plan for its system, including the Central District WWTP.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The MDWASD provided the 2030 information in April 2012.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>143.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>80.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>101.00 MGD</b>	<b>Total Wastewater Effluent</b>	<b>69.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Ocean outfall	114.10 MGD	Deep well injection	69.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
At the facility	6.22 MGD	At the facility	5.00 MGD
<b>Reuse Percentage</b>	<b>6%</b>	<b>Reuse Percentage</b>	<b>7%</b>

## ***Miami-Dade North District Wastewater Treatment Plant***

### **Existing Treatment, Disposal, and Reuse**

The Miami-Dade North District WWTP services from the north county boundary line to near Northwest 79th Street and includes unincorporated areas, and the municipalities of Hialeah, Hialeah Gardens, North Miami, Miami Gardens, Miami Lakes, Miami Shores, Opa-Locka, and North Miami Beach. The facility has three independent process trains: one to treat lower-chlorides wastewater from the western part of the district and two to treat high chlorides from a mixture of wastewaters from the western and coastal areas. The facility has a FDEP-permitted capacity of 112.50 MGD, and had an annual average daily flow of 87.15 MGD in 2010. In 2010, a total of 64.58 MGD of treated wastewater was discharged through ocean outfall, 19.29 MGD was disposed through four deep injection wells, and 3.25 MGD of sludge was transferred to the Miami-Dade Central District WWTP. On average in 2010, approximately 2.08 MGD of water was reused.

#### **Primary End Users**

Florida International University – Biscayne Bay  
Miami-Dade North District WWTP (in-plant processes)

The MDWASD was considering water reuse opportunities with the cities of North Miami and North Miami Beach, but those cities have been unable to provide the needed reclaimed water distribution facilities. Those opportunities are currently on hold.

### **Future Treatment, Disposal, and Reuse**

To meet the 2018 deadline for reducing nutrients from the ocean outfall, the MDWASD is considering installing additional deep injection wells at the North District WWTP. Wastewater not disposed at the North District WWTP could be sent south and/or west for reuse at other locations. The MDWASD is evaluating options, such as groundwater recharge, to meet reuse requirements. The scope of water reuse at the North District WWTP will be determined as part of the ocean outfall implementation plan that is due to the FDEP by July 1, 2013. The MDWASD is currently diverting flows from the ocean outfall to four injections wells to meet the advanced wastewater treatment equivalent requirement.

### **Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011) and the MDWASD in April 2012. The MDWASD provided the 2030 information in April 2012.

## FACILITY SUMMARY

<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>112.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>80.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>87.15 MGD</b>	<b>Total Wastewater Effluent</b>	<b>60.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Total	87.12 MGD	Total	58.39 MGD
Ocean outfall	64.58 MGD	Deep well injection	58.39 MGD
Deep well injection	19.29 MGD		
Sludge transfer to Central District WWTP	3.25 MGD		
<u>Reuse</u>		<u>Reuse</u>	
Total	2.08 MGD	Total	1.61 MGD
At the facility	1.97 MGD	Irrigation	0.11 MGD
Irrigation	0.11 MGD	At the facility	1.50 MGD
<b>Reuse Percentage</b>	<b>2%</b>	<b>Reuse Percentage</b>	<b>3%</b>

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## *Miami-Dade Northwest District Wastewater Treatment Plant (Proposed)*

### Future Treatment, Disposal, and Reuse

Reclaimed water from the proposed West Water Reclamation Plant could be used to meet the ocean outfall requirements. If reclaimed water is not sent to the Biscayne Bay Coastal Wetlands Rehydration, the MDWASD developed a preliminary plan to construct a WWTP in northwestern Miami-Dade County to satisfy the remaining reuse requirement. Reclaimed water produced at the Northwest District WWTP would be used as an offset in compliance with the LEC regional water availability criteria, to avoid impacts to the water resource from groundwater withdrawals at MDWASD's Northwest Wellfield. The scope of water reuse at the proposed Northwest WWTP will be determined as part of the ocean outfall implementation plan due to the FDEP by July 1, 2013.

### Information Sources

The MDWASD provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010<sup>a</sup></u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>62.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.00 MGD</b>	<b>Total Wastewater Effluent</b>	<b>56.00 MGD</b>
<b><u>Reuse</u></b>		<b><u>Reuse</u></b>	
<b>Total</b>	<b>0.00 MGD</b>	<b>Aquifer recharge</b>	<b>56.00 MGD</b>
<b>Reuse Percentage</b>		<b>Reuse Percentage</b>	<b>100%</b>

a. The facility was not built in 2010.

## *Miami-Dade South District Wastewater Treatment Plant*

### Existing Treatment, Disposal, and Reuse

The Miami-Dade South District WWTP services unincorporated areas located between the Tamiami Canal and Southwest 360th Street and the municipalities of Pinecrest, Palmetto Bay, and Florida City, and the Homestead Air Force Base. The facility has a FDEP-permitted capacity of 112.50 MGD, and in 2010 had an annual average daily flow of 93.18 MGD. In 2010, treated wastewater was disposed through deep well injection an average rate of 94.82 MGD, while 4.54 MGD was reused. The water reuse was for in-plant processes at the facility.

#### **Primary End User**

In-plant processes at South District WWTP (e.g., flushing, wash downs, and pump seal lubrication)

### Future Treatment, Disposal, and Reuse

The South District WWTP does not include an ocean outfall. Wastewater is disposed of through deep well injection. The MDWASD is currently evaluating options, including groundwater recharge, to meet the reuse requirements of the ocean outfall amendments. The scope of water reuse at the South District WWTP will be determined as part of the ocean outfall implementation plan due to the FDEP by July 1, 2013.

The implementation plan will likely include the reuse of reclaimed water by FPL. To ensure their commitment to reclaimed water supplies, the MDWASD and FPL signed a joint participation agreement for the delivery of reclaimed water from the South District Water Reclamation Plant to the FPL Turkey Point Energy Facility. This project would provide up to 90 MGD of reclaimed water for FPL use. The construction of the treated water pipeline is scheduled to be completed in 2021.

Miami-Dade County approved the design of the new South District Water Reclamation Plant in 2007. In February 2011, the project was put on hold. Due to lower demands and updated population projections, along with additional reuse opportunities, the MDWASD is reevaluating its water supply demands before proceeding with construction.

Miami-Dade County had committed to reclaimed water reuse as part of the Comprehensive Everglades Restoration Plan (CERP). The MDWASD conducted a pilot project to test different treatment technologies and gain insights into the biological and ecological response of typical wetlands to highly treated effluent. The results of the pilot project will help to optimize the treatment system and the preferred areas for rehydration to maximize the benefits to wetlands and Biscayne Bay. The FDEP, SFWMD, and Biscayne National Park are currently evaluating the final report's results and conclusions.

#### **Potential End User**

FPL Turkey Point Energy Facility



Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The MDWASD provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>112.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>120.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>93.18 MGD</b>	<b>Total Wastewater Effluent</b>	<b>120.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	94.82 MGD	Deep well injection	30.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
At the facility	4.54 MGD	Cooling water for FPL Turkey Point Energy Facility	90.00 MGD
<b>Reuse Percentage</b>	<b>5%</b>	<b>Reuse Percentage</b>	<b>75%</b>

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## Miami-Dade West District Water Reclamation Plant (Proposed)

### Proposed Treatment, Disposal, and Reuse

The *Miami-Dade Water and Sewer Department Reuse Feasibility Update* (MDWASD 2007) recommended the addition of the West District Water Reclamation Plant. The facility would include wastewater treatment with storage facilities for peak wet weather conditions in the central-west area of the county. The MDWASD evaluated potential sites for the proposed plant. Various alternatives, including plant capacity associated with reclaimed water opportunities, are being developed in conjunction with systemwide wastewater transmission and treatment facilities. Reclaimed water produced at this plant could be used as an offset to avoid impacts created by additional groundwater withdrawals at MDWASD's Southwest Wellfield and comply with the LEC regional water availability criteria. MDWASD tentatively scheduled this plant to come on line by 2026.

Reclaimed water from the proposed plant could be used to meet the ocean outfall requirements. The scope of water reuse at the proposed plant will be determined as part of the ocean outfall implementation plan due to the FDEP by July 1, 2013.

### Information Source

The MDWASD provided this information in April 2012.

FACILITY SUMMARY			
<u>2010<sup>a</sup></u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>50.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.00 MGD</b>	<b>Total Wastewater Effluent</b>	<b>50.00 MGD</b>
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Aquifer recharge	50.00 MGD
<b>Reuse Percentage</b>		<b>Reuse Percentage</b>	<b>100%</b>

a. The facility was not built in 2010.

## Profile of Monroe County Facilities

### *Big Coppitt Regional Wastewater Treatment Facility*

#### Existing Treatment, Disposal, and Reuse

The Florida Keys Aqueduct Authority (FKAA) operates and maintains the Big Coppitt Regional WWTF. The facility, located on Rockland Key, provides service to Big Coppitt, Rockland, Geiger, and Shark keys. The facility has a FDEP-permitted capacity of 0.32 MGD, with an annual average daily flow of 0.08 MGD in 2010. Currently, treated wastewater is disposed through shallow injection wells.

#### Future Treatment, Disposal, and Reuse

Although the *Monroe County Sanitary Wastewater Master Plan* (CH2MHILL 2000) concluded that reclaimed water was not feasible to install, operate, and maintain in the Florida Keys/Monroe County, the FKAA plans to evaluate each of its wastewater service areas to determine ways to implement and feasibly provide reclaimed water for its customers. The FKAA is upgrading the wastewater treatment capabilities at the Big Coppitt Regional WWTF and installing a reclaimed water distribution system. The reclaimed water will be utilized for nonpotable water uses to reduce disposal through shallow injection wells. Potential nonpotable uses include irrigation and boat washing.

#### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The FKAA provided the 2030 information in April 2012.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
FDEP-Permitted Treatment Capacity	0.32 MGD	FDEP-Permitted Treatment Capacity	0.40 MGD
Total Wastewater Effluent	0.08 MGD	Total Wastewater Effluent	0.40 MGD
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.08 MGD	Shallow well injection	0.05 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Total	0.35 MGD
		Irrigation	0.30 MGD
		Other (e.g., concrete mix, equipment wash down)	0.05 MGD
Reuse Percentage	0%	Reuse Percentage	88%

## Boca Chica Naval Air Station Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The United States Navy owns and operates a wastewater collection system and treatment plant at Boca Chica Field. The Boca Chica WWTF has a FDEP-permitted capacity of 0.44 MGD, with an annual average daily flow of 0.09 MGD in 2010. Currently, treated wastewater is disposed of through six shallow injection wells.

### Future Treatment, Disposal, and Reuse

Currently, Boca Chica WWTP has no plans to reuse treated wastewater.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The United States Navy did not provide the 2030 information. The SFWMD assumes the projected capacity and flows will remain the same as in 2010.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
FDEP-Permitted Treatment Capacity	0.44 MGD	FDEP-Permitted Treatment Capacity	0.44 MGD
Total Wastewater Effluent	0.09 MGD	Total Wastewater Effluent	0.09 MGD
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.09 MGD	Shallow well injection	0.09 MGD
Reuse Percentage	0%	Reuse Percentage	0%

## Duck Key (Hawk's Cay) Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

Duck Key is a small island community consisting of five islands located east of the City of Marathon in unincorporated Monroe County. The FCAA acquired the Duck Key Utility Service Area, which includes Hawk's Cay Resort, Conch Key, and a residential area. The Duck Key WWTF provides service to the area, and has a FDEP-permitted capacity of 0.10 MGD and an annual average daily flow of 0.05 MGD in 2010. The Duck Key facility, as of 2010, is reusing 0.03 MGD of the treated wastewater, while 0.02 MGD is disposed of through shallow injection wells.

The Duck Key WWTF was upgraded to advanced wastewater treatment standards.

### Future Treatment, Disposal, and Reuse

A reclaimed water distribution system and service connections are being installed, which is expected to provide irrigation for approximately 230 residential and commercial properties. The use of reclaimed water will assist in offsetting the use of potable water for outdoor use. Residential customers on Duck Key are being given the opportunity to tie into the reuse system.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The FCAA provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.10 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.30 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.05 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.30 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.02 MGD	Shallow well injection	0.10 MGD
<u>Reuse</u>		<u>Reuse</u>	
Irrigation	0.03 MGD	Irrigation	0.20 MGD
<b>Reuse Percentage</b>	<b>60%</b>	<b>Reuse Percentage</b>	<b>67%</b>

## Key Colony Beach Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The City of Key Colony Beach operates and maintains a wastewater collection and treatment system to serve the city. The Key Colony Beach WWTF has a FDEP-permitted capacity of 0.34 MGD, with an annual average daily flow of 0.18 MGD in 2010. In 2010, 0.03 MGD of the treated wastewater was reused. The remainder was disposed of through a series of shallow injection wells.

Although the wastewater is relatively high in salinity, the water is treated using RO and is cheaper to produce than buying potable water from the FKA.

#### **Primary End Users**

City parks (delivered by truck)  
Key Colony Beach Golf Course

### Future Treatment, Disposal, and Reuse

The Key Colony Beach WWTF plans to upgrade the RO system to allow for the production of additional reuse water to irrigate the Key Colony Beach Golf Course and city parks. Because the irrigation demands of these users exceed the projected capacity of the facility, no additional reclaimed water customers are expected in the future.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The city did not provide the 2030. The SFWMD assumes the capacity and flows will remain the same as in 2010. Projected reuse is 100 percent based on utility input.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.34 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.34 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.18 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.18 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.15 MGD	Shallow well injection	0.15 MGD
<u>Reuse</u>		<u>Reuse</u>	
Golf course irrigation	0.03 MGD	Irrigation	0.03 MGD
<b>Reuse Percentage</b>	<b>17%</b>	<b>Reuse Percentage</b>	<b>100%</b>

## Key Haven Utility Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

Key Haven Utility operated and maintained a wastewater collection and treatment system serving the Key Haven development. In 2009, the FCAA acquired the wastewater utility. The facility has a FDEP-permitted capacity of 0.20 MGD, with an annual average daily flow of 0.09 MGD in 2010. Currently, treated wastewater is disposed through shallow injection wells.

### Future Treatment, Disposal, and Reuse

The FCAA plans to decommission the Key Haven WWTP by December 31, 2015. The flow from the service area will be routed to the Key West or Stock Island WWTFs (Key West Resort Utilities) for treatment.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011).

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030<sup>a</sup></u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.20 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.09 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.09 MGD	Total	0.00 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>0%</b>

a. The Key Haven WWTF is planned for decommissioning prior to December 31, 2015.

## Key Largo Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The State of Florida created the Key Largo Wastewater Treatment District in 2002. The district operates and maintains a wastewater collection and treatment system that serves an area generally from the north end of the Florida Keys at the Miami-Dade County line extending south and westward to Tavernier Creek, excluding the community of Ocean Reef. The Key Largo WWTF has a FDEP-permitted capacity of 0.18 MGD, with an annual average daily flow of 0.07 MGD in 2010. Currently, all of the treated wastewater is disposed through shallow injection wells.

### Future Treatment, Disposal, and Reuse

The Key Largo Wastewater Treatment District is considering expanding its service to Islamorada. The district is negotiating with portions of Islamorada to treat its wastewater at the Key Largo WWTF instead of Islamorada building its own treatment plant. This is expected to occur prior to 2030. Presently, the Key Largo Wastewater Treatment District does not plan to reuse treated wastewater.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Key Largo Wastewater Treatment District did not provide the 2030 information. The SFWMD assumes the projected 2030 capacity will remain the same. The projected flow is based on no increase from the 2010 flow at the Key Largo WWTF (0.07 MGD) plus 2010 flow at the Plantation Key Colony WWTF (0.06 MGD) since it is projected that, by 2030, wastewater flow from Plantation Key Colony will be sent to the Key Largo WWTF for treatment.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030</u>	
FDEP-Permitted Treatment Capacity	0.18 MGD	FDEP-Permitted Treatment Capacity	0.18 MGD
Total Wastewater Effluent	0.07 MGD	Total Wastewater Effluent	0.13 MGD
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.07 MGD	Shallow well injection	0.13 MGD
Reuse Percentage	0%	Reuse Percentage	0%



## Key West – Richard A. Heyman Environmental Protection Facility

### Existing Treatment, Disposal, and Reuse

The City of Key West Utilities Department owns a wastewater collection and treatment system that serves the city. Also known also as the Richard A. Heyman Environmental Protection Facility, the facility is located on Flemming Key just off the island of Key West. It has a FDEP-permitted capacity of 10.00 MGD, with an annual average daily flow of 4.41 MGD in 2010. Currently, the treated effluent is disposed through two deep injection wells.

### Future Treatment, Disposal, and Reuse

The City of Key West does not have current plans to reuse wastewater. Although the WWTF treats water to advanced water treatment standards, the relatively high salinity of the wastewater/effluent make it a challenge to reuse, especially for irrigation.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The City of Key West provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>10.00 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>10.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>4.41 MGD</b>	<b>Total Wastewater Effluent</b>	<b>6.20 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Deep well injection	4.41 MGD	Deep well injection	6.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Facility processes	0.20 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>3%</b>

## Key West Resort Utilities Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

Key West Resort Utilities operates and maintains a wastewater collection and treatment system that serves southern Stock Island. The facility uses a vacuum collection system and has a FDEP-permitted capacity of 0.50 MGD. The annual average daily flow in 2010 was 0.29 MGD. In 2010, 0.17 MGD of the treated wastewater was reused. The remainder was disposed of via three shallow injection wells. The facility pumps reclaimed water to a percolation pond for irrigation at the Key West Country Club. Reclaimed water is also provided to the Monroe County Detention Center for nonpotable purposes (e.g., toilet flushing).

#### **Primary End Users**

Key West Country Club  
Monroe County Detention Center

### Future Treatment, Disposal, and Reuse

Key West Resort Utilities has expanded distribution capabilities to provide reclaimed water to a school, a hospital, and a college. However, these potential users have not yet agreed to accept the reclaimed water.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The Key West Resort Utilities provided the 2030 information in April 2012. The plan assumes flows include those from the Key Haven Utility facility, which is scheduled for decommissioning by December 31, 2015.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.50 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.50 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.29 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.38 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.12 MGD	Shallow well injection	0.00 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.17 MGD	Total	0.38 MGD
Golf course irrigation	0.14 MGD	Irrigation	0.38 MGD
Toilet flushing	0.03 MGD		
<b>Reuse Percentage</b>	<b>59%</b>	<b>Reuse Percentage</b>	<b>100%</b>

## *Marathon Wastewater Treatment Facilities*

### Existing Treatment, Disposal, and Reuse

The City of Marathon Utility Department oversees a series of wastewater collection and treatment systems. The area serviced by the Marathon WWTFs is defined as the east end of the Seven Mile Bridge extending eastward to Tom's Harbor Bridge and includes the following: Knight's Key, Vaca Key, Boot Key, the Sombrero area, Fat Deer Key, Coco Plum, Long Point Key, Little Crawl Key, Crawl Key, Valhalla Island, and Grassy Key. The facilities have a combined capacity of 0.36 MGD and treated 0.09 MGD in 2010. Since incorporating in 1999, Marathon has pursued a citywide sewer system and determined that a system of force mains combined with vacuum collection systems is best suited for the area.

Wastewater services are divided into seven service areas:

- ◆ **Service Area 1:** Knight's Key (entire island) – Wastewater collection system has been completed.
- ◆ **Service Area 2:** Boot Key (entire island) – Plans for wastewater service for Boot Key were suspended following the closure of the Boot Key Drawbridge.
- ◆ **Service Area 3:** Vaca Key West (11th Street to 39th Street) – The wastewater collection systems and the WWTP are complete, but were not operating in 2010.
- ◆ **Service Area 4:** Vaca Key Central (39th Street to 60th Street) – The wastewater collection systems and the WWTF were completed in March 2010. FDEP approved a reclaimed system. Although initial elevated chloride levels inhibited the distribution of the reclaimed water, it is used for park facility irrigation.
- ◆ **Service Area 5:** Vaca Key East (60th Street to Vaca Cut) – The wastewater collection systems are complete. The WWTF expansion is also completed and property owners have been notified to connect to the system.
- ◆ **Service Area 6:** Fat Deer Key West-Coco Plum (Vaca Cut to Coco Plum) – The wastewater collection system is complete. The WWTF is operating and connections continue.
- ◆ **Service Area 7:** Grassy Key (Fat Deer Key East through Grassy Key) – Most of the collection system has been installed. Construction on the WWTF continues. A portion of the collection system has been cleared for use. The city has notified more than half of the properties to connect to the system.

### Future Treatment, Disposal, and Reuse

The City of Marathon is considering water reuse in the future. However, the city must complete upgrades to the treatment systems and resolve issues with elevated salinity. The city has the capability of producing reclaimed water at wastewater treatment facilities within service areas 3, 4, 5, and 7.

**Potential End Users**

- Marathon High School (Service Area 4)
- Parks and event fields (Service Area 3)
- Sombrero Beach (Service Area 4)
- Sombrero Country Club (Service Area 4)

**Information Sources**

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The utility did not provide the 2030 information. The projected capacity and flow are based on 2010 numbers. These are a combination of all the existing and proposed treatment facilities in service areas 3, 4, 5, 6, and 7. The plan update assumes all facilities, except Service Area 6, have reuse capabilities.

<b>FACILITY SUMMARY</b>			
<b><u>2010<sup>a</sup></u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.36 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.75 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.09 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.24 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.09 MGD	Shallow well injection	0.11 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Irrigation	0.13 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>54%</b>

a. WWTFs in service areas 3, 4, and 7 were not operating in 2010.

## North Key Largo (Ocean Reef) Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The North Key Largo Utility Corporation operates and maintains a wastewater collection and treatment system serving the Ocean Reef community in North Key Largo. The North Key Largo WWTF facility has a FDEP-permitted capacity of 0.55 MGD, with an annual average daily flow of 0.25 MGD in 2010. Currently, all of the treated wastewater is disposed of through shallow injection wells. Recent facility upgrades enabled the production of reclaimed water.

### Future Treatment, Disposal, and Reuse

A portion of the effluent treated by the North Key Largo WWTF will be reused for golf course irrigation.

#### **Primary End User**

Ocean Reef Golf Club (Card Sound Golf Course)

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The North Key Largo Utility Corporation provided the 2030 information in April 2012.

<b>FACILITY SUMMARY</b>			
<b><u>2010</u></b>		<b><u>Projected 2030</u></b>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.55 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.50 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.25 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.28 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.25 MGD	Shallow well injection	0.18 MGD
<u>Reuse</u>		<u>Reuse</u>	
Total	0.00 MGD	Irrigation	0.10 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	<b>36%</b>

## Plantation Key Colony Wastewater Treatment Facility

### Existing Treatment, Disposal, and Reuse

The four-island Village of Islamorada operates and maintains a wastewater collection and treatment system within Plantation Key. The Plantation Key Colony WWTF has a FDEP-permitted capacity of 0.36 MGD, with an annual average daily flow of 0.06 MGD in 2010. Currently, the treated wastewater is disposed through shallow injection wells.

### Future Treatment, Disposal, and Reuse

Currently, the Village of Islamorada, excluding Plantation Key Colony, is considering centralizing its wastewater services with the Key Largo Wastewater Treatment District. Islamorada is negotiating with Key Largo to treat its wastewater at the Key Largo WWTF instead of building its own treatment facility.

Currently, there are no plans within the Village of Islamorada, or the Key Largo WWTF, to reuse treated wastewater.

### Information Sources

The 2010 information is from the *2010 Reuse Inventory* (FDEP 2011). The 2030 information was provided by Plantation Key Colony in May 2012.

FACILITY SUMMARY			
<u>2010</u>		<u>Projected 2030<sup>a</sup></u>	
<b>FDEP-Permitted Treatment Capacity</b>	<b>0.36 MGD</b>	<b>FDEP-Permitted Treatment Capacity</b>	<b>0.00 MGD</b>
<b>Total Wastewater Effluent</b>	<b>0.06 MGD</b>	<b>Total Wastewater Effluent</b>	<b>0.00 MGD</b>
<u>Disposal</u>		<u>Disposal</u>	
Shallow well injection	0.06 MGD	Shallow well injection	0.00 MGD
<b>Reuse Percentage</b>	<b>0%</b>	<b>Reuse Percentage</b>	

a. At the time of this writing, wastewater flows from Plantation Key Colony are expected to be sent to the Key Largo WWTF by 2030.

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