SOUTH FLORIDA WATER MANAGEMENT DISTRICT
PROTECTOR OF THE EVERGLADES SINCE 1949

2023-2024
LOWER EAST COAST
WATER SUPPLY PLAN UPDATE

APPENDICES

List of Appendices

A

Water Demand Projections

Table of Contents

List of Tables

List of Figures

POPULATION ESTIMATES AND PROJECTIONS

The South Florida Water Management District (SFWMD or District) develops water demand estimates and projections in coordination with stakeholder groups, other agencies, utilities, and local governments. **Chapter 2** of the *2023–2024 Lower East Coast Water Supply Plan Update* (2023–2024 LEC Plan Update) provides summary information, and this appendix describes the methods used to develop water demand estimates for 2020 and 2021 base year as well as projections through 2045 for the LEC Planning Area. Demands are developed for six water use categories: Public Supply (PS), Domestic Self-Supply (DSS), Agriculture (AG), Commercial/Industrial/Institutional (CII), Landscape/Recreational (L/R), and Power Generation (PG). Water demand estimates and projections are provided in 5-year increments through 2045 for average rainfall and 1-in-10-year drought conditions. In addition, demands are described and analyzed in two ways: gross (or raw) demand and net (or finished) demand.

This section presents the methodology used to develop the 2021 population estimates and 2045 population projections for the LEC Planning Area, which are essential to determining water demands for all six water use categories. The University of Florida's Bureau of Economic and Business Research (BEBR) provides population estimates and projections at the county level; however, water supply planning requires projections at the subcounty level to delineate PS utility service areas and DSS populations. Section 373.709(2)(a)1., Florida Statutes (F.S.), prescribes the use of BEBR medium population projections in determining water supply needs in regional water supply plans.

In accordance with Section 373.709(2)(a)1., F.S., permanent resident estimates and projections for each county, published by BEBR (Rayer and Wang 2021), were used as the basis of population projections in this 2023–2024 LEC Plan Update. BEBR county population estimates and projections are also used by local governments in their Comprehensive Plans. Adjustments were made to include only the portion of Hendry County within the planning area. The LEC Planning Area also includes unpopulated portions of Collier County within the Big Cypress Basin. The 2021 permanent resident populations within the LEC Planning Area were as follows:

- Broward County: 1,951,637 permanent residents
- Hendry County: 4,881 permanent residents
- Miami-Dade County: 2,702,740 permanent residents
- Monroe County: 78,267 permanent residents
- Palm Beach County: 1,485,183 permanent residents

Utility Service Areas

To establish current and future PS and DSS populations, each PS utility's 2021 and 2045 potable water service area was delineated. A utility service area refers to the area with water distribution infrastructure and water customers served by a particular PS utility. The SFWMD developed 2021 and 2045 utility service area maps based on information from utilities and SFWMD's Water Use Permit database. Accuracy of the service area maps was verified through correspondence with all PS utilities.

Population Projection Methodology

Census block populations from the 2020 Decennial United States Census (United States Census Bureau 2020) and 2021 PS service area maps were used to estimate the 2021 permanent resident populations for PS utilities and DSS areas. Each census block within the LEC Planning Area was assigned to a PS service area or a DSS area. The distribution of population in census blocks not entirely within a single PS service area or DSS area was based on visual comparison of residential land use coverage. PS service area and DSS area population estimates for 2017 through 2020 were calculated by applying annual county growth rates published by BEBR with 2021 population estimates (Rayer and Wang 2021) and the United States Census Bureau (2020).

When available, detailed subcounty population projections from county planning departments were assigned to PS utility service areas and DSS areas. In some cases, modifications were made to service area populations based on information from local land use planning maps and local government Comprehensive Plans. Population projections to 2045 were calculated using Future Utility Service Area distributions of population served with the 2020 Decennial Census data (United States Census Bureau 2020). Population growth rate was provided by the county population projections (BEBR medium) from BEBR 2021 (Rayer and Wang 2021). BEBR publishes low, medium, and high population projections to account for uncertainty in future population growth.

Population Projection Results

Table A-1 provides the results of the population distributions by county and PS utility from 2020 to 2045. The results were shared with and reviewed by utility, municipal, local government, and tribal staff.

Table A-1. Service area population projections in the LEC Planning Area.

PS Utility or DSS	Service Area Population Projections						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
BCWWS District 1	85,726	86,812	89,584	93,615	96,430	98,282	104,299
BCWWS District 2A	120,733	121,376	124,391	125,635	127,520	128,138	131,374
Cooper City	34,563	34,653	34,924	35,289	35,658	36,031	36,407
Coral Springs	63,996	64,604	69,116	71,268	74,832	76,329	77,092
CSID	40,026	40,227	40,626	41,236	41,442	41,649	41,774
Dania Beach	18,574	19,088	20,470	22,107	23,876	25,786	27,591
Davie	33,194	34,034	36,513	38,717	41,814	44,741	47,873
Deerfield Beach	54,651	55,047	56,838	59,111	61,475	63,934	65,213
Fort Lauderdale	239,084	243,077	253,429	271,169	284,492	301,362	305,742
Hallandale Beach	40,900	41,282	42,987	44,277	45,162	46,065	46,987
Hillsboro Beach	2,067	2,087	2,108	2,151	2,194	2,238	2,282
Hollywood[a]	207,808	210,299	220,276	229,087	233,846	236,045	240,838
Lauderhill	63,159	63,484	65,053	67,005	68,345	69,712	71,106
Margate	64,305	64,915	67,586	70,290	72,398	73,846	75,323
Miramar	127,400	128,539	132,496	137,796	141,930	144,768	146,216
North Lauderdale	36,607	36,893	38,494	39,263	40,049	40,441	41,667

Table A-1. Continued.

PS Utility or DSS	Service Area Population Projections						
	2020	2021	2025	2030	2035	2040	2045
Broward County (Continued)							
NSID	38,683	39,134	41,075	42,718	43,573	44,444	45,333
Parkland	2,640	2,730	2,798	2,966	3,144	3,333	3,533
Pembroke Pines	163,119	163,564	166,381	168,045	169,725	171,422	173,137
Plantation	93,746	94,764	96,558	99,455	101,444	103,473	105,542
Pompano Beach	91,201	92,870	94,849	98,643	102,589	105,837	107,706
Royal Waterworks	3,566	3,596	3,602	3,638	3,674	3,711	3,748
STOF – Hollywood[b]	1,134	1,227	2,097	2,559	2,983	3,407	3,884
Sunrise	231,552	233,430	236,183	240,907	245,725	248,133	253,146
Tamarac	65,700	66,280	66,685	68,019	69,379	70,767	71,474
Tindall Hammock	3,314	3,437	3,480	3,654	3,837	4,029	4,230
PS Total	**1,927,447**	**1,947,447**	**2,008,600**	**2,078,619**	**2,137,536**	**2,187,923**	**2,233,517**
DSS Total	**4,765**	**4,190**	**5,200**	**5,181**	**4,764**	**4,777**	**4,283**
Broward County Total	**1,932,212**	**1,951,637**	**2,013,800**	**2,083,800**	**2,142,300**	**2,192,700**	**2,237,800**
Hendry County[c]							
STOF – Big Cypress[b]	864	948	1,004	1,178	1,398	1,558	1,729
PS Total	**864**	**948**	**1,004**	**1,178**	**1,398**	**1,558**	**1,729**
DSS Total	**3,952**	**3,933**	**3,860**	**3,735**	**3,564**	**3,429**	**3,357**
Hendry County Total	**4,816**	**4,881**	**4,864**	**4,913**	**4,962**	**4,987**	**5,086**
Miami-Dade County							
Americana Village	1,587	1,588	1,587	1,587	1,595	1,595	1,595
Florida City	13,787	14,191	16,680	18,962	19,531	20,100	22,110
Homestead	70,733	80,218	83,146	86,538	89,697	92,603	95,372
MDWASD	2,361,344	2,363,914	2,445,436	2,532,174	2,620,629	2,703,983	2,771,853
North Miami	71,140	69,994	71,852	74,007	76,227	77,752	78,081
North Miami Beach	162,838	163,784	165,964	181,448	190,520	198,141	210,647
PS Total	**2,681,429**	**2,693,688**	**2,784,664**	**2,894,715**	**2,998,200**	**3,094,173**	**3,179,658**
DSS Total	**20,338**	**9,052**	**15,821**	**20,069**	**23,075**	**24,933**	**33,021**
Miami-Dade County Total[d]	**2,701,767**	**2,702,740**	**2,800,485**	**2,914,784**	**3,021,275**	**3,119,106**	**3,212,679**
Monroe County							
FKAA	77,823	78,267	78,800	79,400	79,800	80,000	80,200
PS Total	**77,823**	**78,267**	**78,800**	**79,400**	**79,800**	**80,000**	**80,200**
DSS Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Monroe County Total	**77,823**	**78,267**	**78,800**	**79,400**	**79,800**	**80,000**	**80,200**
Palm Beach County							
Boca Raton	118,603	119,994	122,126	124,569	126,437	127,702	131,533
Boynton Beach	115,935	119,413	122,995	126,601	131,665	135,615	136,890
Delray Beach	70,992	71,922	74,542	76,003	79,043	81,415	82,180
Golf	2,767	2,801	2,905	3,022	3,142	3,237	3,334
Highland Beach	4,080	4,143	4,467	4,645	4,738	4,881	4,978
Jupiter (Palm Beach)	73,826	74,581	79,099	80,586	83,820	85,443	87,133
Jupiter (Martin)	2,285	2,311	2,416	2,527	2,617	2,697	2,770
Lake Worth Beach	48,524	48,806	50,951	52,989	55,108	58,612	59,176
Lantana	10,560	10,656	11,088	11,532	11,993	12,353	12,723

Table A-1. Continued.

PS Utility or DSS	Service Area Population Projections						
	2020	2021	2025	2030	2035	2040	2045
Palm Beach County (Continued)							
Manalapan	2,635	429	440	458	476	490	505
Mangonia Park	2,142	2,180	2,249	2,339	2,433	2,506	2,581
Maralago Cay	1,240	1,240	1,240	1,240	1,240	1,240	1,240
PBCWUD	538,596	545,848	577,044	611,385	635,840	655,340	678,344
PBCWUD Western Region	36,305	36,660	37,405	38,153	38,916	39,695	40,488
Palm Springs	51,866	52,857	53,422	55,024	56,675	58,375	60,127
Riviera Beach	42,749	43,485	44,442	45,898	48,069	50,501	53,531
Seacoast	96,113	96,473	97,911	102,856	103,569	105,683	106,537
Tequesta (Palm Beach)	9,633	9,777	9,922	10,220	10,424	10,633	10,805
Tequesta (Martin)	3,578	3,629	3,679	3,743	3,777	3,795	3,804
Wellington	56,539	56,777	57,105	63,116	65,640	68,266	70,314
West Palm Beach	131,384	132,402	136,361	140,247	146,885	151,045	156,033
PS Total	**1,414,490**	**1,430,447**	**1,485,714**	**1,550,882**	**1,606,115**	**1,653,030**	**1,698,451**
DSS Total	**52,004**	**54,736**	**59,186**	**61,318**	**62,485**	**63,970**	**60,049**
Palm Beach County Total	**1,466,494**	**1,485,183**	**1,544,900**	**1,612,200**	**1,668,600**	**1,717,000**	**1,758,500**
LEC Planning Area Total							
PS Total	**6,102,053**	**6,150,796**	**6,358,782**	**6,604,795**	**6,823,048**	**7,016,684**	**7,193,554**
DSS Total	**81,059**	**71,911**	**84,067**	**90,302**	**93,889**	**97,109**	**100,711**
LEC Planning Area Total	**6,183,112**	**6,222,707**	**6,442,849**	**6,695,097**	**6,916,937**	**7,113,793**	**7,294,265**

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; DSS = Domestic Self-Supply; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PS = Public Supply; STOF = Seminole Tribe of Florida.

[a] BCWWS District 3 population is included.

[b] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[c] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

[d] Miami-Dade County total is based on Metropolitan Statistical Area population estimates.

The populations shown in **Table A-1** indicate the LEC Planning Area will contain more than 1 million additional permanent residents by 2045, an increase of approximately 17%. Growth rates in Palm Beach, Broward, Miami-Dade, and Monroe counties are projected to gradually decline through 2045. The utilities with the largest populations served, both in 2021 and 2045, are the Miami-Dade Water and Sewer Department, Palm Beach County Water Utilities Department, and City of Fort Lauderdale.

Comparing this 2023–2024 LEC Plan Update population projection to those published in the 2018 and 2013 LEC plan updates can provide insight into the importance of population growth rates based on BEBR medium projections. Prior to the national economic downturn in 2008, higher rates of development in the region pointed to substantial population growth (**Figure A-1**). The BEBR medium projections used in this 2023–2024 LEC Plan Update compared to the 2018 and 2013 LEC plan updates share a more consistent view of future population based on estimates of lower growth rates following the 2008 recession.

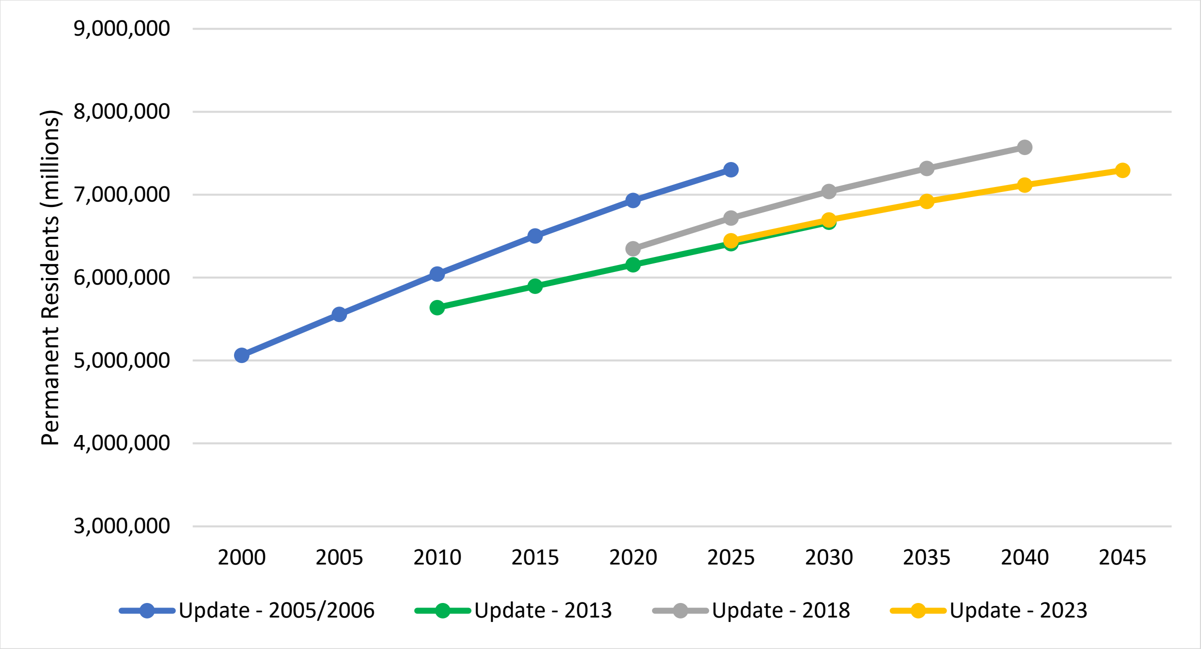


Figure A-1. Comparison of population projections from the 2005/2006, 2013, 2018, and 2023/2024 LEC plan updates.

PUBLIC SUPPLY

The PS category includes potable water supplied by water treatment plants with a current allocation of 0.10 million gallons per day (mgd) or greater. Developing PS demand projections in the LEC Planning Area was a multistep process that included determining PS utility service area and DSS populations, calculating per capita use rates (PCURs), and projecting future water needs.

NOTE ✷

Perceived discrepancies in table totals are due to rounding.

PS Projection Methodology

Per Capita Use Rates

For each PS utility, a net (finished) water PCUR was developed by dividing the annual net (finished) water volume for 2017 through 2021 by the corresponding service area populations (permanent residents) for each year. The five annual PCURs were then averaged (**Table A-2**). Net (finished) water volumes for 2017 through 2021 were obtained from the PS utility monthly operating reports submitted to the Florida Department of Environmental Protection (FDEP). The net (finished) water volume reported to the FDEP includes all water produced for permanent and seasonal residents; industrial, landscaping, and irrigation water supplied by PS utilities; and any water distribution losses. The resulting PCURs conform to guidance provided by the FDEP for consistent statewide water supply planning. Future water conservation savings were not factored into PCURs and demand projections due to water savings uncertainty. The average PCURs for each county were calculated by averaging PS and DSS PCURs, weighted by their respective permanent resident populations.

Table A-2. Average net (finished) water per capita use rates (in gallons per capita per day) in the LEC Planning Area.

PS Utility or DSS	2017-2021 Average PCUR
Broward County	
BCWWS District 1	83
BCWWS District 2A	110
Cooper City	90
Coral Springs	95
CSID	97
Dania Beach	113
Davie	138
Deerfield Beach	164
Fort Lauderdale	152
Hallandale Beach	150
Hillsboro Beach	327
Hollywood	107
Lauderhill	94
Margate	89
Miramar	105
North Lauderdale	73
NSID	109
Parkland	100
Pembroke Pines	80
Plantation	110
Pompano Beach	157
Royal Waterworks	91
STOF – Hollywood[a]	714
Sunrise	99
Tamarac	100
Tindall Hammock	145
Broward County Average	**112**
Hendry County[b,c]	
STOF – Big Cypress[a]	287
Hendry County DSS	93
Hendry County Average	**131**
Miami-Dade County	
Americana Village	145
Florida City	152
Homestead	166
MDWASD	130
North Miami	94
North Miami Beach	116
Miami-Dade County Average	**129**
Monroe County	
FKAA	235
Monroe County Average	**235**

Table A-2. Continued.

PS Utility or DSS	2017-2021 Average PCUR
Palm Beach County	
Boca Raton	290
Boynton Beach	119
Delray Beach	204
Golf	145
Highland Beach	301
Jupiter (Palm Beach and Martin)	211
Lake Worth Beach	106
Lantana	184
Manalapan	2,157
Mangonia Park	189
Maralago Cay	205
PBCWUD	102
PBCWUD Western Region	176
Palm Springs	75
Riviera Beach	192
Seacoast	188
Tequesta (Palm Beach and Martin)	253
Wellington	104
West Palm Beach	230
Palm Beach County Average	**154**
LEC Planning Area Average	**131**

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; DSS = Domestic Self-Supply; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PCUR = per capita use rate; PS = Public Supply; STOF = Seminole Tribe of Florida.

[a] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[b] DSS and average PCUR are from the *2022 Lower West Coast Water Supply Plan Update* (SFWMD 2022).

[c] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

[d] Manalapan discontinued providing water to Hypoluxo in November of 2020. The per capita is based on an average of 2021 and 2022 for Manalapan only.

Finished-to-Raw Water Conversion

Net (finished) demands (**Table A-3**) were calculated by multiplying the PS service area or DSS area population and the 5-year average PCUR. Gross (raw) water withdrawals are the volumes needed from the water source(s) to produce the required net (finished) water volumes considering water treatment process losses. Water use permit allocations are based on the gross (raw) water volume to meet service area demands. To determine gross (raw) water demand for each PS utility, net (finished) water projections were multiplied by finished-to-raw ratios (**Table A-4**), which are based on the treatment efficiency of each PS treatment plant. For example, if a typical reverse osmosis treatment facility withdraws a gross (raw) volume of 10.00 mgd and produces 8.00 mgd of net (finished) water, its treatment losses are 20%. Therefore, its finished-to-raw ratio would be 1.25 (10 mgd divided by 8 mgd).

Treatment efficiencies were determined from information supplied in the water use permit and from actual pumpage reports. The assumed losses are 0% for aeration/disinfection only, 3% for lime softening/flocculation, 15% for nanofiltration, and 25% for reverse osmosis. If a utility has more than one treatment method, the ratio reflects combined treatment efficiencies. Finished-to-raw adjustments for potable water treatment plants in the LEC Planning Area based on their treatment processes are shown in **Figures A-2, A-3,** and **A-4**. Recent developments by the United States Environmental Protection Agency on the regulatory criteria for polyfluoroalkyl substances or PFAS could require changes in the level of treatment required and may result in increased demands.

Table A-3. PS net (finished) water demands under average rainfall conditions in the LEC Planning Area.

PS Utility	Net (Finished) Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
BCWWS District 1	7.12	7.21	7.44	7.77	8.00	8.16	8.66
BCWWS District 2A	13.28	13.35	13.68	13.82	14.03	14.10	14.45
Cooper City	3.11	3.12	3.14	3.18	3.21	3.24	3.28
Coral Springs	6.08	6.14	6.57	6.77	7.11	7.25	7.32
CSID	3.88	3.90	3.94	4.00	4.02	4.04	4.05
Dania Beach	2.10	2.16	2.31	2.50	2.70	2.91	3.12
Davie	4.58	4.70	5.04	5.34	5.77	6.17	6.61
Deerfield Beach	8.96	9.03	9.32	9.69	10.08	10.49	10.69
Fort Lauderdale	36.34	36.95	38.52	41.22	43.24	45.81	46.47
Hallandale Beach	6.14	6.19	6.45	6.64	6.77	6.91	7.05
Hillsboro Beach	0.68	0.68	0.69	0.70	0.72	0.73	0.75
Hollywood	22.24	22.50	23.57	24.51	25.02	25.26	25.77
Lauderhill	5.94	5.97	6.12	6.30	6.42	6.55	6.68
Margate	5.72	5.78	6.02	6.26	6.44	6.57	6.70
Miramar	13.38	13.50	13.91	14.47	14.90	15.20	15.35
North Lauderdale	2.67	2.69	2.81	2.87	2.92	2.95	3.04
NSID	4.22	4.27	4.48	4.66	4.75	4.84	4.94
Parkland	0.26	0.27	0.28	0.30	0.31	0.33	0.35
Pembroke Pines	13.05	13.09	13.31	13.44	13.58	13.71	13.85
Plantation	10.31	10.42	10.62	10.94	11.16	11.38	11.61
Pompano Beach	14.32	14.58	14.89	15.49	16.11	16.62	16.91
Royal Waterworks	0.32	0.33	0.33	0.33	0.33	0.34	0.34
STOF – Hollywood[a]	0.81	0.88	1.43	1.50	1.57	1.64	2.42
Sunrise	22.92	23.11	23.38	23.85	24.33	24.57	25.06
Tamarac	6.57	6.63	6.67	6.80	6.94	7.08	7.15
Tindall Hammock	0.48	0.49	0.50	0.53	0.55	0.58	0.61
Broward County Total	**215.47**	**217.92**	**225.41**	**233.87**	**241.00**	**247.43**	**253.24**
Hendry County[b]							
STOF – Big Cypress[a]	0.25	0.27	0.35	0.41	0.42	0.47	0.54
Hendry County Total	**0.25**	**0.27**	**0.35**	**0.41**	**0.42**	**0.47**	**0.54**

Table A-3. Continued.

PS Utility	Net (Finished) Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Miami-Dade County							
Americana Village	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Florida City	2.10	2.16	2.54	2.88	2.97	3.06	3.36
Homestead	11.74	13.32	13.80	14.37	14.89	15.37	15.83
MDWASD	306.97	307.31	317.91	329.18	340.68	351.52	360.34
North Miami	6.69	6.58	6.75	6.96	7.17	7.31	7.34
North Miami Beach	18.89	19.00	19.25	21.05	22.10	22.98	24.44
Miami-Dade County Total	**346.62**	**348.59**	**360.48**	**374.66**	**388.04**	**400.47**	**411.54**
Monroe County							
FKAA	18.29	18.39	18.52	18.66	18.75	18.80	18.85
Monroe County Total	**18.29**	**18.39**	**18.52**	**18.66**	**18.75**	**18.80**	**18.85**
Palm Beach County							
Boca Raton	34.39	34.80	35.42	36.12	36.67	37.03	38.14
Boynton Beach	13.80	14.21	14.64	15.07	15.67	16.14	16.29
Delray Beach	14.48	14.67	15.21	15.50	16.12	16.61	16.76
Golf	0.40	0.41	0.42	0.44	0.46	0.47	0.48
Highland Beach	1.23	1.25	1.34	1.40	1.43	1.47	1.50
Jupiter[c]	16.06	16.22	17.20	17.54	18.24	18.60	18.97
Lake Worth Beach	5.14	5.17	5.40	5.62	5.84	6.21	6.27
Lantana	1.94	1.96	2.04	2.12	2.21	2.27	2.34
Manalapan	1.10	0.93	0.95	0.99	1.03	1.06	1.09
Mangonia Park	0.40	0.41	0.43	0.44	0.46	0.47	0.49
Maralago Cay	0.25	0.25	0.25	0.25	0.25	0.25	0.25
PBCWUD	55.48	56.22	59.44	62.97	65.49	67.50	69.87
PBCWUD Western Region	6.39	6.45	6.58	6.71	6.85	6.99	7.13
Palm Springs	3.89	3.96	4.01	4.13	4.25	4.38	4.51
Riviera Beach	8.21	8.35	8.53	8.81	9.23	9.70	10.28
Seacoast	18.07	18.14	18.41	19.34	19.47	19.87	20.03
Tequesta[c]	3.34	3.39	3.44	3.53	3.59	3.65	3.70
Wellington	5.88	5.90	5.94	6.56	6.83	7.10	7.31
West Palm Beach	30.22	30.45	31.36	32.26	33.78	34.74	35.89
Palm Beach County Total	**220.68**	**223.16**	**231.00**	**239.81**	**247.86**	**254.51**	**261.30**
LEC Planning Area Total	**801.31**	**808.33**	**835.76**	**867.41**	**896.07**	**921.68**	**945.47**

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; mgd = million gallons per day; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PS = Public Supply; STOF = Seminole Tribe of Florida.

[a] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[b] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

[c] Values include Palm Beach and Martin counties.

Table A-4. Finished-to-raw water adjustment ratios for PS utilities in the LEC Planning Area.

PS Utility	Finished-to-Raw Ratio
Broward County	
BCWWS District 1	1.03
BCWWS District 2A	1.03
Cooper City	1.20
Coral Springs	1.03
CSID	1.24
Dania Beach	1.08
Davie	1.16
Deerfield Beach	1.13
Fort Lauderdale	1.06
Hallandale Beach	1.12
Hillsboro Beach	1.03
Hollywood	1.09
Lauderhill	1.03
Margate	1.17
Miramar	1.25
North Lauderdale	1.03
NSID	1.33
Parkland	1.03
Pembroke Pines	1.03
Plantation	1.25
Pompano Beach	1.12
Royal Waterworks	1.03
STOF – Hollywood[a]	1.18
Sunrise	1.11
Tamarac	1.03
Tindall Hammock	1.03
Hendry County[b]	
STOF – Big Cypress[a]	1.03
Miami-Dade County	
Americana Village	1.03
Florida City	1.03
Homestead	1.03
MDWASD	1.08
North Miami	1.03
North Miami Beach	1.21
Monroe County	
FKAA	1.05
Palm Beach County	
Boca Raton	1.12
Boynton Beach	1.09
Delray Beach	1.03
Golf	1.18
Highland Beach	1.33
Jupiter (Palm Beach and Martin)	1.20

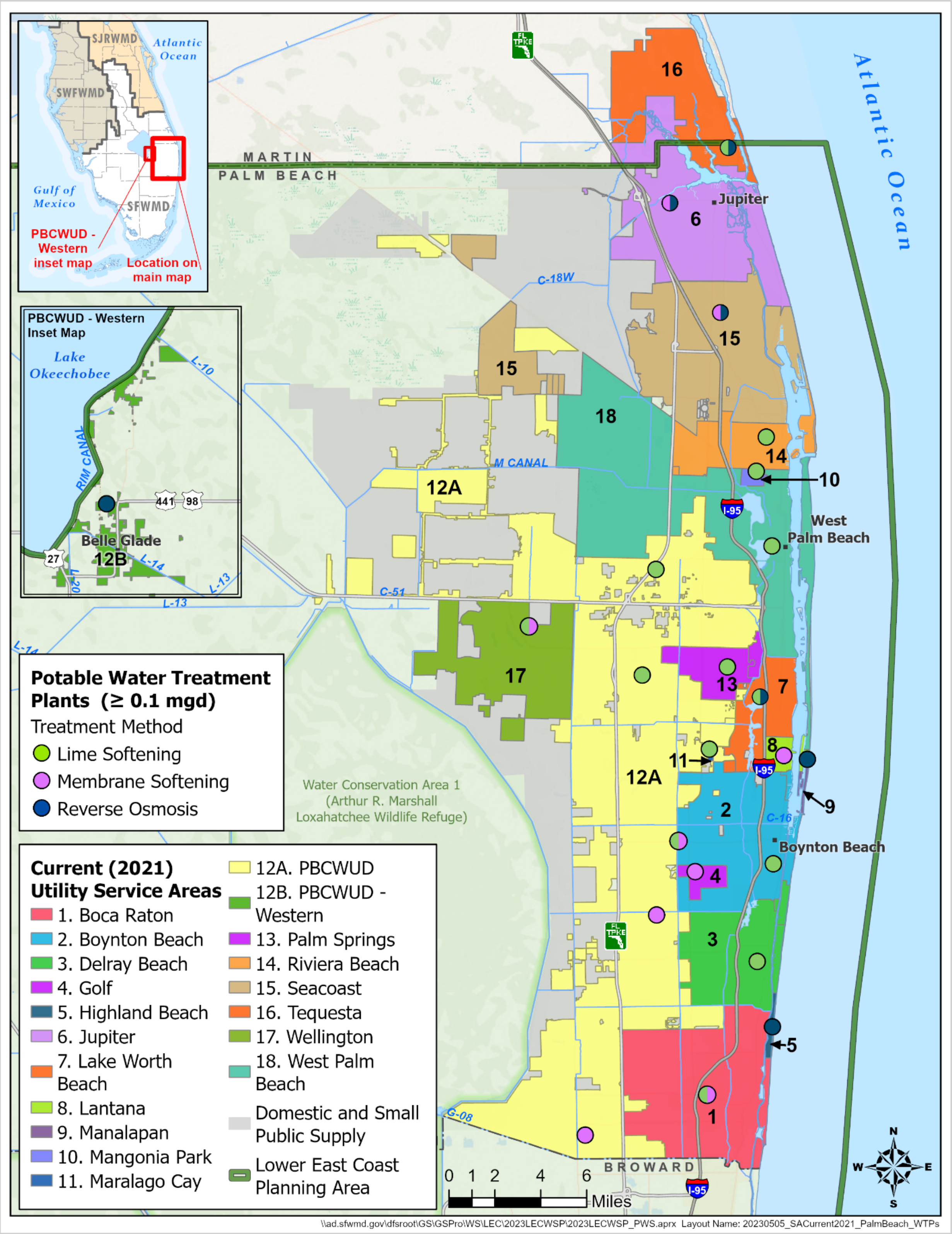
Table A-4. Continued.

PS Utility	Finished-to-Raw Ratio
Palm Beach County (Continued)	
Lake Worth Beach	1.27
Lantana	1.18
Manalapan	1.33
Mangonia Park	1.03
Maralago Cay	1.03
PBCWUD	1.15
PBCWUD Western Region	1.33
Palm Springs	1.05
Riviera Beach	1.03
Seacoast	1.20
Tequesta (Palm Beach and Martin)	1.24
Wellington	1.15
West Palm Beach	1.03

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PS = Public Supply; STOF = Seminole Tribe of Florida.

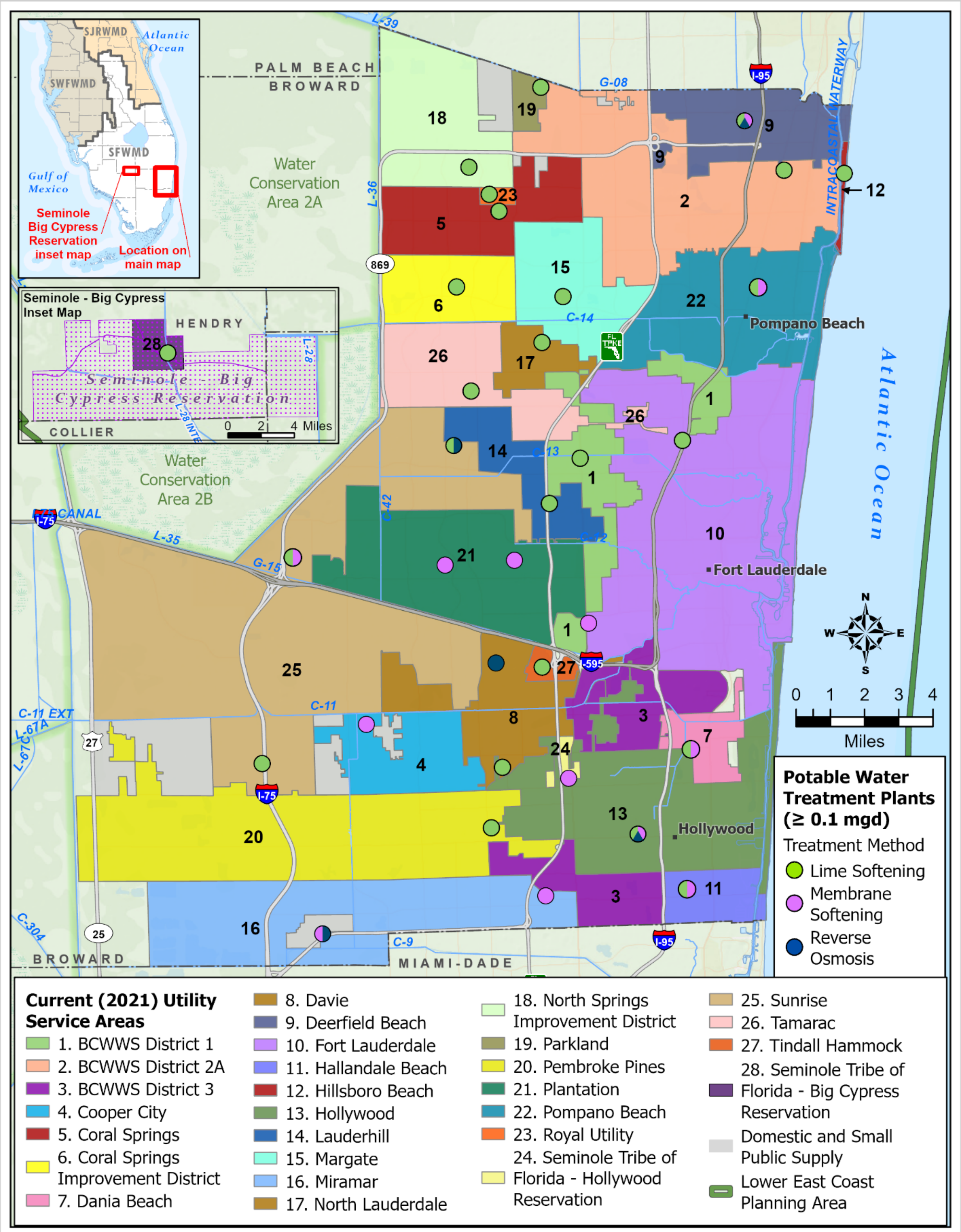
[a] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[b] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.



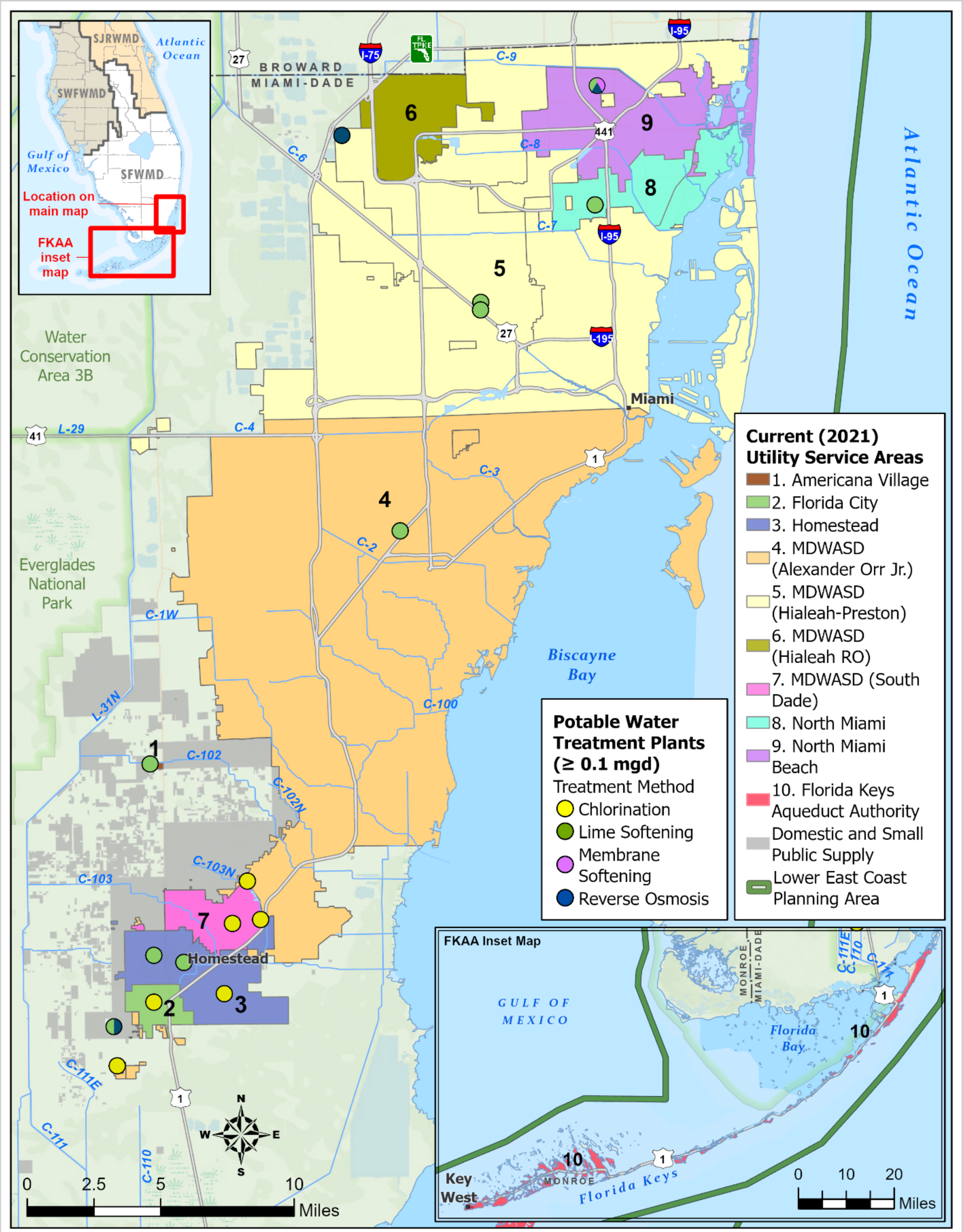
\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_PWS.aprx Layout Name: 20230505_SACurrent2021_PalmBeach_WTPs

Figure A-2. Potable water treatment plants and 2021 Public Supply utility service areas in Palm Beach County.



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_PWS.aprx Layout Name: 20230505_SACurrent2021_Broward_WTPs

Figure A-3. Potable water treatment plants and 2021 Public Supply utility service areas in Broward County.



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_PWS.aprx Layout Name: 20230705_SACurrent2021_MiamiDade_WTPs

Figure A-4. Potable water treatment plants and 2021 Public Supply utility service areas in Miami-Dade County.

(Note: Monroe County is served solely by the Florida Keys Aqueduct Authority, whose water treatment plant is located in Miami-Dade County.)

PS Projection Results

Average Rainfall Conditions

Gross (raw) demands for PS under average rainfall conditions for 2020 through 2045 are provided in **Table A-5**.

Table A-5. PS gross (raw) water demands under average rainfall conditions in the LEC Planning Area.

PS Utility	Gross (Raw) Water Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
BCWWS District 1	7.33	7.42	7.66	8.00	8.24	8.40	8.92
BCWWS District 2A	13.68	13.75	14.09	14.23	14.45	14.52	14.88
Cooper City	3.73	3.74	3.77	3.81	3.85	3.89	3.93
Coral Springs	6.26	6.32	6.76	6.97	7.32	7.47	7.54
CSID	4.81	4.84	4.89	4.96	4.98	5.01	5.02
Dania Beach	2.27	2.33	2.50	2.70	2.91	3.15	3.37
Davie	5.31	5.45	5.85	6.20	6.69	7.16	7.66
Deerfield Beach	10.13	10.20	10.53	10.95	11.39	11.85	12.09
Fort Lauderdale	38.52	39.16	40.83	48.22	50.59	53.59	54.37
Hallandale Beach	6.87	6.94	7.22	7.44	7.59	7.74	7.89
Hillsboro Beach	0.70	0.70	0.71	0.72	0.74	0.75	0.77
Hollywood	24.24	24.53	25.69	26.72	27.27	27.53	28.09
Lauderhill	6.12	6.15	6.47	6.67	6.80	6.94	7.08
Margate	6.70	6.76	7.04	7.32	7.54	7.69	7.84
Miramar	16.72	16.87	17.39	18.09	18.63	19.00	19.19
North Lauderdale	2.75	2.77	2.89	2.95	3.01	3.04	3.13
NSID	5.61	5.67	5.95	6.19	6.32	6.44	6.57
Parkland	0.27	0.28	0.29	0.31	0.32	0.34	0.36
Pembroke Pines	13.44	13.48	13.71	13.85	13.99	14.13	14.27
Plantation	12.89	13.03	13.28	13.68	13.95	14.23	14.51
Pompano Beach	16.04	16.33	16.68	17.35	18.04	18.61	18.94
Royal Waterworks	0.33	0.34	0.34	0.34	0.34	0.35	0.35
STOF – Hollywood[a]	0.96	1.03	1.69	1.77	1.85	1.94	2.85
Sunrise	25.45	25.65	25.95	26.47	27.00	27.27	27.82
Tamarac	6.77	6.83	6.87	7.01	7.15	7.29	7.36
Tindall Hammock	0.49	0.51	0.52	0.54	0.57	0.60	0.63
Broward County Total	**238.38**	**241.09**	**249.57**	**263.46**	**271.55**	**278.92**	**285.45**
Hendry County[b]							
STOF – Big Cypress[a]	0.26	0.28	0.36	0.42	0.43	0.48	0.56
Hendry County Total	**0.26**	**0.28**	**0.36**	**0.42**	**0.43**	**0.48**	**0.56**

Table A-5. Continued.

PS Utility	Gross (Raw) Water Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Miami-Dade County							
Americana Village	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Florida City	2.16	2.22	2.61	2.97	3.06	3.15	3.46
Homestead	12.09	13.72	14.22	14.80	15.34	15.83	16.31
MDWASD	331.53	331.89	343.34	355.52	367.94	379.64	389.17
North Miami	6.89	6.78	6.96	7.17	7.38	7.53	7.56
North Miami Beach	22.86	22.99	23.29	25.47	26.74	27.81	29.57
Miami-Dade County Total	**375.77**	**377.83**	**390.66**	**406.15**	**420.69**	**434.20**	**446.30**
Monroe County							
FKAA	19.20	19.31	19.44	19.59	19.69	19.74	19.79
Monroe County Total	**19.20**	**19.31**	**19.44**	**19.59**	**19.69**	**19.74**	**19.79**
Palm Beach County							
Boca Raton	38.52	38.97	39.67	40.46	41.07	41.48	42.72
Boynton Beach	15.04	15.49	15.95	16.42	17.08	17.59	17.76
Delray Beach	14.92	15.11	15.66	15.97	16.61	17.11	17.27
Golf	0.47	0.48	0.50	0.52	0.54	0.55	0.57
Highland Beach	1.63	1.66	1.79	1.86	1.90	1.95	1.99
Jupiter[c]	19.27	19.47	20.64	21.04	21.89	22.32	22.76
Lake Worth Beach	6.48	6.52	6.80	7.08	7.36	7.83	7.90
Lantana	2.29	2.31	2.41	2.50	2.60	2.68	2.76
Manalapan	1.46	1.23	1.26	1.31	1.37	1.41	1.45
Mangonia Park	0.42	0.42	0.44	0.46	0.47	0.49	0.50
Maralago Cay	0.26	0.26	0.26	0.26	0.26	0.26	0.26
PBCWUD	63.80	64.66	68.35	72.42	75.32	77.63	80.35
PBCWUD Western Region	8.50	8.58	8.76	8.93	9.11	9.29	9.48
Palm Springs	4.08	4.16	4.21	4.33	4.46	4.60	4.73
Riviera Beach	8.45	8.60	8.79	9.08	9.51	9.99	10.59
Seacoast	21.68	21.76	22.09	23.20	23.37	23.84	24.03
Tequesta[c]	4.14	4.21	4.27	4.38	4.46	4.53	4.58
Wellington	6.76	6.79	6.83	7.55	7.85	8.16	8.41
West Palm Beach	31.12	31.37	32.30	33.22	34.80	35.78	36.96
Palm Beach County Total	**249.29**	**252.05**	**260.98**	**270.99**	**280.03**	**287.49**	**295.07**
LEC Planning Area Total	**882.91**	**890.56**	**921.01**	**960.63**	**992.38**	**1,020.84**	**1,047.16**

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; mgd = million gallons per day; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PS = Public Supply; STOF = Seminole Tribe of Florida.

[a] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[b] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

[c] Values include Palm Beach and Martin counties.

1-in-10-Year Drought Conditions

Section 373.709, F.S., states that the level-of-certainty planning goal associated with identifying water demands shall be based on meeting demands during 1-in-10-year drought conditions. A 1-in-10-year drought is characterized by diminished rain and increased evapotranspiration relative to the historical record for a particular location. The increased PS demands during 1-in-10-year drought conditions were calculated using the method described in the *Districtwide Water Supply Assessment* (SFWMD 1998), which considers the increased demands on the irrigation portion of PS during droughts. Drought demand factors for each county (or portion of the county within the LEC Planning Area) are as follows:

- Broward County: 1.10
- Hendry County: 1.06
- Miami-Dade County: 1.07
- Monroe County: 1.03
- Palm Beach County: 1.10

INFO ✷

Average Rainfall and 1-in-10-Year Drought

An **average rainfall year** is defined as a year having rainfall with a 50% probability of being exceeded in any other year.

A **1-in-10-year drought** is defined as a year in which below normal rainfall occurs with a 90% probability of being exceeded in any other year. It has an expected return frequency of once in 10 years.

Average water demands were multiplied by the above ratios to calculate demands during 1-in-10-year drought conditions for both finished and raw demands (**Tables A-6** and **A-7**).

Table A-6. PS net (finished) water demands under 1-in-10-year drought conditions in the LEC Planning Area.

PS Utility	Net (Finished) Demand – 1-in-10-Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
BCWWS District 1	7.83	7.93	8.18	8.55	8.80	8.97	9.52
BCWWS District 2A	14.61	14.69	15.05	15.20	15.43	15.50	15.90
Cooper City	3.42	3.43	3.46	3.49	3.53	3.57	3.60
Coral Springs	6.69	6.75	7.22	7.45	7.82	7.98	8.06
CSID	4.27	4.29	4.33	4.40	4.42	4.44	4.46
Dania Beach	2.31	2.37	2.54	2.75	2.97	3.21	3.43
Davie	5.04	5.17	5.54	5.88	6.35	6.79	7.27
Deerfield Beach	9.86	9.93	10.25	10.66	11.09	11.53	11.76
Fort Lauderdale	39.97	40.64	42.37	45.34	47.57	50.39	51.12
Hallandale Beach	6.75	6.81	7.09	7.31	7.45	7.60	7.75
Hillsboro Beach	0.74	0.75	0.76	0.77	0.79	0.80	0.82
Hollywood	24.46	24.75	25.93	26.96	27.52	27.78	28.35
Lauderhill	6.53	6.56	6.73	6.93	7.07	7.21	7.35
Margate	6.30	6.36	6.62	6.88	7.09	7.23	7.37

Table A-6. Continued.

PS Utility	Net (Finished) Demand – 1-in-10- Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County (Continued)							
Miramar	14.71	14.85	15.30	15.92	16.39	16.72	16.89
North Lauderdale	2.94	2.96	3.09	3.15	3.22	3.25	3.35
NSID	4.64	4.69	4.92	5.12	5.22	5.33	5.44
Parkland	0.29	0.30	0.31	0.33	0.35	0.37	0.39
Pembroke Pines	14.35	14.39	14.64	14.79	14.94	15.09	15.24
Plantation	11.34	11.47	11.68	12.03	12.27	12.52	12.77
Pompano Beach	15.75	16.04	16.38	17.04	17.72	18.28	18.60
Royal Waterworks	0.36	0.36	0.36	0.36	0.37	0.37	0.38
STOF – Hollywood[a]	0.89	0.96	1.57	1.65	1.73	1.80	2.66
Sunrise	25.22	25.42	25.72	26.23	26.76	27.02	27.57
Tamarac	7.23	7.29	7.34	7.48	7.63	7.78	7.86
Tindall Hammock	0.52	0.54	0.55	0.58	0.61	0.64	0.67
Broward County Total	**237.02**	**239.71**	**247.95**	**257.25**	**265.10**	**272.18**	**278.56**
Hendry County[b]							
STOF – Big Cypress[a]	0.26	0.29	0.37	0.44	0.44	0.50	0.57
Hendry County Total	**0.26**	**0.29**	**0.37**	**0.44**	**0.44**	**0.50**	**0.57**
Miami-Dade County							
Americana Village	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Florida City	2.24	2.31	2.71	3.08	3.18	3.27	3.60
Homestead	12.56	14.25	14.77	15.37	15.93	16.45	16.94
MDWASD	328.46	328.82	340.16	352.23	364.53	376.12	385.56
North Miami	7.16	7.04	7.23	7.44	7.67	7.82	7.85
North Miami Beach	20.21	20.33	20.60	22.52	23.65	24.59	26.15
Miami-Dade County Total	**370.88**	**372.99**	**385.71**	**400.89**	**415.20**	**428.50**	**440.35**
Monroe County							
FKAA	18.84	18.94	19.07	19.22	19.32	19.36	19.41
Monroe County Total	**18.84**	**18.94**	**19.07**	**19.22**	**19.32**	**19.36**	**19.41**
Palm Beach County							
Boca Raton	37.83	38.28	38.96	39.74	40.33	40.74	41.96
Boynton Beach	15.18	15.63	16.10	16.57	17.23	17.75	17.92
Delray Beach	15.93	16.14	16.73	17.06	17.74	18.27	18.44
Golf	0.44	0.45	0.46	0.48	0.50	0.52	0.53
Highland Beach	1.35	1.37	1.48	1.54	1.57	1.62	1.65
Jupiter[c]	17.67	17.85	18.92	19.29	20.06	20.46	20.87
Lake Worth Beach	5.66	5.69	5.94	6.18	6.43	6.83	6.90
Lantana	2.14	2.16	2.24	2.33	2.43	2.50	2.58
Manalapan	1.21	1.02	1.04	1.09	1.13	1.16	1.20
Mangonia Park	0.45	0.45	0.47	0.49	0.51	0.52	0.54
Maralago Cay	0.28	0.28	0.28	0.28	0.28	0.28	0.28
PBCWUD	61.02	61.84	65.38	69.27	72.04	74.25	76.86
PBCWUD Western Region	7.03	7.10	7.24	7.39	7.53	7.68	7.84

Table A-6. Continued.

PS Utility	Net (Finished) Demand – 1-in-10- Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Palm Beach County (Continued)							
Palm Springs	4.28	4.36	4.41	4.54	4.68	4.82	4.96
Riviera Beach	9.03	9.18	9.39	9.69	10.15	10.67	11.31
Seacoast	19.88	19.95	20.25	21.27	21.42	21.86	22.03
Tequesta[c]	3.68	3.73	3.79	3.89	3.95	4.02	4.07
Wellington	6.47	6.50	6.53	7.22	7.51	7.81	8.04
West Palm Beach	33.24	33.50	34.50	35.48	37.16	38.21	39.48
Palm Beach County Total	**242.75**	**245.47**	**254.10**	**263.79**	**272.65**	**279.96**	**287.43**
LEC Planning Area Total	**869.75**	**877.41**	**907.22**	**941.59**	**972.71**	**1,000.49**	**1,026.33**

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; mgd = million gallons per day; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PS = Public Supply; STOF = Seminole Tribe of Florida.

[a] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[b] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

[c] Values include Palm Beach and Martin counties.

Table A-7. PS gross (raw) water demands under 1-in-10-year drought conditions in the LEC Planning Area.

PS Utility	Gross (Raw) Water Demand – 1-in10- Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
BCWWS District 1	8.06	8.16	8.42	8.80	9.07	9.24	9.81
BCWWS District 2A	15.05	15.13	15.50	15.66	15.89	15.97	16.37
Cooper City	4.11	4.12	4.15	4.19	4.24	4.28	4.33
Coral Springs	6.89	6.95	7.44	7.67	8.05	8.22	8.30
CSID	5.30	5.32	5.38	5.46	5.48	5.51	5.53
Dania Beach	2.49	2.56	2.75	2.97	3.21	3.46	3.70
Davie	5.85	5.99	6.43	6.82	7.36	7.88	8.43
Deerfield Beach	11.14	11.22	11.59	12.05	12.53	13.03	13.29
Fort Lauderdale	42.37	43.08	44.92	53.05	55.65	58.95	59.81
Hallandale Beach	7.56	7.63	7.94	8.18	8.35	8.51	8.68
Hillsboro Beach	0.77	0.77	0.78	0.80	0.81	0.83	0.85
Hollywood	26.66	26.98	28.26	29.39	30.00	30.28	30.90
Lauderhill	6.73	6.76	7.12	7.34	7.48	7.63	7.78
Margate	7.37	7.44	7.74	8.05	8.29	8.46	8.63
Miramar	18.39	18.56	19.13	19.89	20.49	20.90	21.11
North Lauderdale	3.03	3.05	3.18	3.25	3.31	3.34	3.45
NSID	6.17	6.24	6.55	6.81	6.95	7.09	7.23

Table A-7. Continued.

PS Utility	Gross (Raw) Water Demand – 1-in10- Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County (Continued)							
Parkland	0.30	0.31	0.32	0.34	0.36	0.38	0.40
Pembroke Pines	14.79	14.83	15.08	15.23	15.38	15.54	15.69
Plantation	14.18	14.33	14.60	15.04	15.34	15.65	15.96
Pompano Beach	17.64	17.96	18.35	19.08	19.84	20.47	20.83
Royal Waterworks	0.37	0.37	0.37	0.38	0.38	0.38	0.39
STOF – Hollywood[a]	1.05	1.14	1.86	1.95	2.04	2.13	3.14
Sunrise	27.99	28.22	28.55	29.12	29.70	29.99	30.60
Tamarac	7.44	7.51	7.56	7.71	7.86	8.02	8.10
Tindall Hammock	0.54	0.56	0.57	0.60	0.63	0.66	0.69
Broward County Total	**262.21**	**265.20**	**274.53**	**289.81**	**298.71**	**306.81**	**313.99**
Hendry County[b]							
STOF – Big Cypress[a]	0.27	0.30	0.38	0.45	0.46	0.51	0.59
Hendry County Total	**0.27**	**0.30**	**0.38**	**0.45**	**0.46**	**0.51**	**0.59**
Miami-Dade County							
Americana Village	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Florida City	2.31	2.38	2.79	3.18	3.27	3.37	3.70
Homestead	12.94	14.68	15.21	15.83	16.41	16.94	17.45
MDWASD	354.74	355.13	367.37	380.40	393.69	406.21	416.41
North Miami	7.37	7.25	7.44	7.67	7.90	8.05	8.09
North Miami Beach	24.46	24.60	24.93	27.25	28.61	29.76	31.64
Miami-Dade County Total	**402.07**	**404.28**	**418.00**	**434.58**	**450.14**	**464.59**	**477.54**
Monroe County							
FKAA	19.78	19.89	20.03	20.18	20.28	20.33	20.38
Monroe County Total	**19.78**	**19.89**	**20.03**	**20.18**	**20.28**	**20.33**	**20.38**
Palm Beach County							
Boca Raton	42.37	42.87	43.63	44.51	45.17	45.63	46.99
Boynton Beach	16.54	17.04	17.55	18.06	18.79	19.35	19.53
Delray Beach	16.41	16.62	17.23	17.57	18.27	18.82	18.99
Golf	0.52	0.53	0.55	0.57	0.59	0.61	0.63
Highland Beach	1.80	1.82	1.97	2.05	2.09	2.15	2.19
Jupiter[c]	21.20	21.42	22.70	23.15	24.07	24.55	25.04
Lake Worth Beach	7.13	7.17	7.49	7.78	8.10	8.61	8.69
Lantana	2.52	2.54	2.65	2.75	2.86	2.95	3.04
Manalapan	1.61	1.35	1.39	1.44	1.50	1.55	1.59
Mangonia Park	0.46	0.47	0.48	0.50	0.52	0.54	0.55
Maralago Cay	0.29	0.29	0.29	0.29	0.29	0.29	0.29
PBCWUD	70.18	71.12	75.19	79.66	82.85	85.39	88.38
PBCWUD Western Region	9.35	9.44	9.63	9.82	10.02	10.22	10.43

Table A-7. Continued.

PS Utility	Gross (Raw) Water Demand – 1-in10- Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Palm Beach County (Continued)							
Palm Springs	4.49	4.58	4.63	4.77	4.91	5.06	5.21
Riviera Beach	9.30	9.46	9.67	9.98	10.46	10.99	11.64
Seacoast	23.85	23.94	24.30	25.52	25.70	26.23	26.44
Tequesta[c]	4.56	4.63	4.69	4.82	4.90	4.98	5.04
Wellington	7.44	7.47	7.51	8.30	8.64	8.98	9.25
West Palm Beach	34.24	34.50	35.53	36.55	38.28	39.36	40.66
Palm Beach County Total	**274.25**	**277.26**	**287.07**	**298.10**	**308.00**	**316.23**	**324.60**
LEC Planning Area Total	**958.59**	**966.93**	**1,000.01**	**1,043.12**	**1,077.59**	**1,108.47**	**1,137.11**

BCWWS = Broward County Water and Wastewater Services; CSID = Coral Springs Improvement District; FKAA = Florida Keys Aqueduct Authority; LEC = Lower East Coast; MDWASD = Miami-Dade Water and Sewer Department; mgd = million gallons per day; NSID = North Springs Improvement District; PBCWUD = Palm Beach County Water Utilities Department; PS = Public Supply; STOF = Seminole Tribe of Florida.

[a] The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[b] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

[c] Values include Palm Beach and Martin counties.

DOMESTIC SELF-SUPPLY

The DSS category includes potable water used by households that are served by small utilities with permit allocations less than 0.10 mgd or that are self-supplied by private wells. Permanent resident populations within DSS areas were developed simultaneously with the PS population estimates and projections, as described earlier. All permanent residents outside of PS utility service area boundaries were considered DSS population. To determine the current and future DSS demands, the average PCUR of PS utilities in each county weighted by the population (**Table A-2**) was multiplied by the DSS permanent resident population in each county. Hendry County's DSS population PCUR published in the *2022 Lower West Coast Water Supply Plan Update* (SFWMD 2022) was used for the portion of the county's DSS population within the LEC Planning Area. DSS county PCURs remain constant through 2045. There are no DSS demands in Monroe County due to the lack of freshwater resources on the islands. For DSS demands, the finished-to-raw water ratio is assumed to be 1.00. Therefore, no distinction is made between gross (raw) and net (finished) water demands.

Tables A-8 and **A-9** contain the LEC Planning Area's DSS demand estimates and projections under average rainfall and 1-in-10-year drought conditions. The drought demand factors used for PS were also used to calculate 1-in-10-year drought demands for DSS. The average DSS demands in 2021 were 10.55 mgd for permanent residents (**Table A-8**) and are expected to grow to 14.45 mgd in 2045.

Table A-8. DSS gross (raw) water demands under average rainfall conditions in the LEC Planning Area.

County DSS	Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward	0.53	0.47	0.58	0.58	0.53	0.54	0.48
Hendry[a]	0.37	0.37	0.36	0.35	0.33	0.32	0.31
Miami-Dade	2.64	1.18	2.06	2.61	3.00	3.24	4.29
Monroe	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach	8.11	8.54	9.23	9.57	9.75	9.98	9.37
LEC Planning Area Total	**11.66**	**10.55**	**12.23**	**13.10**	**13.61**	**14.07**	**14.45**

DSS = Domestic Self- Supply; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Table A-9. DSS gross (raw) water demands under 1-in-10-year drought conditions in the LEC Planning Area.

County DSS	Demand – 1-in-10-Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward	0.59	0.52	0.64	0.64	0.59	0.59	0.53
Hendry[a]	0.39	0.39	0.38	0.37	0.35	0.34	0.33
Miami-Dade	2.83	1.26	2.20	2.79	3.21	3.47	4.59
Monroe	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach	8.92	9.39	10.16	10.52	10.72	10.98	10.30
LEC Planning Area Total	**12.73**	**11.56**	**13.38**	**14.32**	**14.87**	**15.37**	**15.76**

DSS = Domestic Self- Supply; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

AGRICULTURE

Water demands reported under AG include water used for agricultural production, such as farm irrigation, operation of greenhouses and nurseries, and raising livestock. Water used in the processing of agricultural commodities is accounted for under the CII category.

Previous LEC plan updates relied on various sources to develop agricultural acreage estimates and projections, including agricultural water use permits, parcel-level land use maps, and results from the United States Census of Agriculture. Irrigated acreages were translated to water volume (mgd) estimates using the Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) model (Smajstrla 1990).

Florida State legislation passed in 2013 prescribed a new approach for water management districts to consider for agricultural water demands. Section 570.93, F.S., directs the Florida Department of Agriculture and Consumer Services (FDACS) to develop annual statewide agricultural acreage and water demand projections based on the same 20-year planning horizon used in water supply planning. Under Section 373.709(2)(a), F.S., water management districts are required to consider FDACS projections, and any adjustments or deviations from the projections published by FDACS, "…must be fully described, and the original data must be presented along with the adjusted data."

AG Projection Methodology

FSAID IX Acreage and Demands Data

FDACS publishes 20-year agricultural acreage and associated water demand projections in annual Florida Statewide Agricultural Irrigation Demand (FSAID) reports. The ninth annual report (referred to as FSAID IX) was published in 2022 (FDACS 2022), and the projections included in this report were considered in this 2023–2024 LEC Plan. The FSAID IX acres (**Table A-10**) were used to calculate AG demands. For the purposes of this 2023–2024 LEC Plan Update, the 2020 acres in FSAID IX were considered representative of 2021 conditions. The FSAID IX demands, as calculated by FDACS (**Table A-11**), were not used in this plan update, and the deviation from using these demand projections is described below.

Table A-10. Irrigated agricultural acres in the LEC Planning Area (From FDACS 2022).

Crop	2020	2025	2030	2035	2040	2045
Sugarcane	459,986	442,530	442,654	442,787	442,800	442,922
Fresh Market Vegetables	40,256	39,794	39,242	39,180	39,159	39,362
Citrus	19,269	20,454	21,893	22,047	22,152	22,112
Hay/Pasture	19,795	19,795	19,877	19,920	19,996	20,253
Greenhouse/Nursery	15,213	14,623	14,011	13,737	13,201	12,841
Fruit (excluding citrus)	10,990	10,589	10,378	10,330	9,952	9,654
Sod	5,944	5,944	5,944	5,944	5,944	5,944
Potatoes	677	667	660	645	689	626
Field Crops	50	50	50	281	632	983
Total	**572,180**	**554,446**	**554,709**	**554,871**	**554,525**	**554,697**

FDACS = Florida Department of Agriculture and Consumer Services; LEC = Lower East Coast.

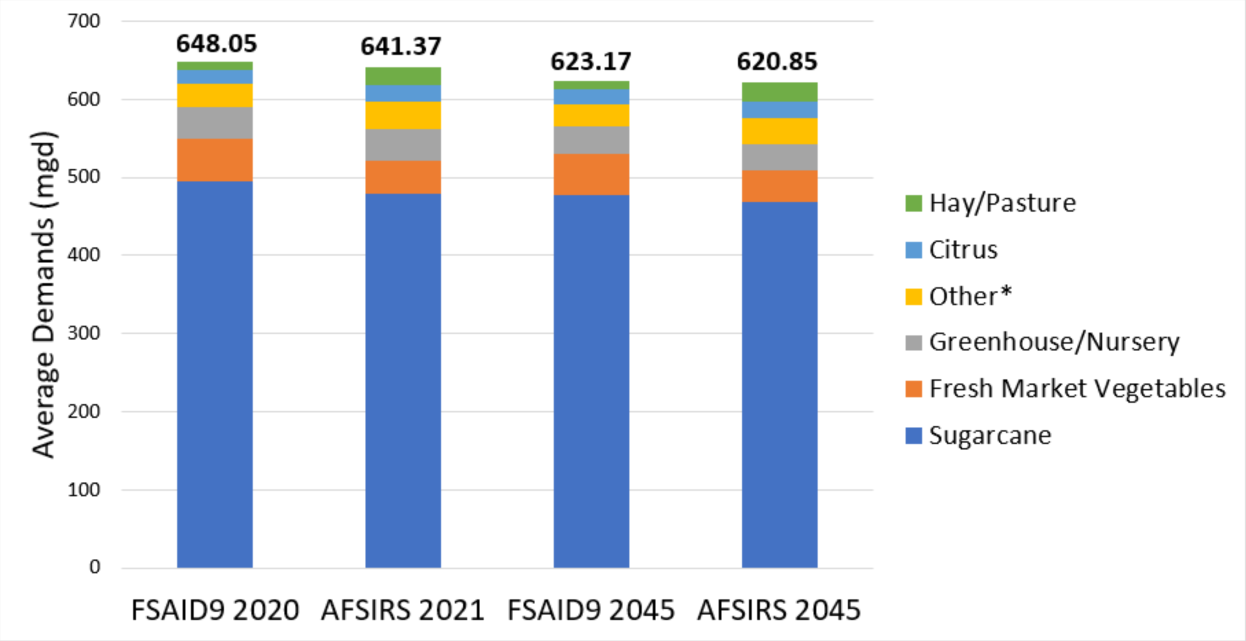
Table A-11. Agricultural gross water demands (in mgd) in the LEC Planning Area (From FDACS 2022).

Crop	2020	2025	2030	2035	2040	2045
Sugarcane	495.20	476.29	476.00	476.63	476.65	476.81
Fresh Market Vegetables	54.09	53.61	53.15	53.13	53.17	53.55
Citrus	17.02	18.14	19.47	19.60	19.69	19.65
Hay/Pasture	10.67	10.67	10.72	10.74	10.79	10.96
Greenhouse/Nursery	40.70	39.14	37.42	36.61	35.20	34.22
Fruit (excluding citrus)	23.24	22.29	21.86	21.59	20.80	20.12
Sod	6.38	6.38	6.38	6.38	6.38	6.37
Potatoes	0.71	0.72	0.71	0.70	0.75	0.69
Field Crops	0.04	0.05	0.05	0.24	0.52	0.80
Total	**648.05**	**627.29**	**625.76**	**625.62**	**623.95**	**623.17**

FDACS = Florida Department of Agriculture and Consumer Services; LEC = Lower East Coast; mgd = million gallons per day.

Comparison of FSAID IX and AFSIRS Demands

The estimated 2021 and projected 2045 demands from the AFSIRS model were compared to the demands in the FSAID IX report. Both sets of demands are based on the same irrigated acreages, established in the FSAID IX report. Despite being based on the same unadjusted irrigated footprint, the demand projections differed by 6.68 mgd in 2021 and 2.32 mgd in 2045 (**Figure A-5**).



* The Other category includes Fruit (excluding Citrus), Sod, Potatoes, and Field Crops.

Figure A-5. Comparison of average water demands from the ninth Florida Statewide Agricultural Irrigation Demand (FSAID IX) report and the Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS).

The SFWMD uses AFSIRS to estimate crop irrigation demands simulated in regional groundwater models, and the demands using AFSIRS resemble those obtained through the SFWMD's permitting methods. After reviewing water demands from FSAID IX and AFSIRS, the SFWMD chose to use water demand estimates and projections from AFSIRS based on irrigated acres published in the FSAID IX report. The decision to deviate from water demands published in the FSAID IX report was made to maintain a consistent approach with previous planning and regional modeling efforts.

Data for soil type, rainfall, and reference evapotranspiration are among the key inputs used with AFSIRS to calculate current and future demands. Soil input data were obtained from the Natural Resources Conservation Service's Soil Survey Geographic (SSURGO) database. Daily rainfall data were obtained from the SFWMD's Next Generation Radar (NEXRAD) rainfall data set. Reference evapotranspiration data were obtained from the United States Geological Survey's South Florida Information Access (SOFIA) database. The irrigation method for each irrigated parcel used with AFSIRS is part of the FSAID IX data set. Most citrus groves are irrigated via microspray. Flood irrigation is the most common method for all other crop categories.

Water demands associated with livestock and aquaculture production complete the demands for the AG category. The demands for these activities are taken directly from the FSAID IX report with adjustments made to the projected aquaculture demands in Miami-Dade County due to a permitted aquaculture operation.

AG Projection Results

Sugarcane

AG acres and water demands depend on the choices of individual agricultural producers from year to year. Those choices are affected by several factors, including weather, markets, disease, proprietary information, and urban development pressure. AG projections can be affected by population changes as well as future land use conversions.

The gross irrigation requirements for various crop types under the AG category are provided in **Tables A-12** to **A-20**. **Tables A-21** and **A-22** summarize the gross water requirements for livestock and aquaculture. **Table A-23** summarizes gross water demands for all agricultural acreage, livestock, and aquaculture in the LEC Planning Area by county, and **Table A-24** summarizes the gross water demands by commodity.

Sugarcane

Table A-12 presents the SFWMD's sugarcane acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions.

Table A-12. Gross irrigation demands (in mgd) for sugarcane acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – EAA[a]							
Irrigated acreage	36,773	36,781	36,805	36,892	36,985	36,994	37,080
Average rainfall	33.54	33.55	33.57	33.65	33.73	33.74	33.82
1-in-10-year drought	48.80	48.81	48.85	48.96	49.08	49.09	49.21
Hendry County – Western Basins[a]							
Irrigated acreage	15,760	15,763	15,774	15,811	15,851	15,854	15,891
Average rainfall	17.31	17.32	17.33	17.37	17.41	17.42	17.46
1-in-10-year drought	20.84	20.84	20.86	20.91	20.96	20.96	21.01
Miami-Dade County							
Irrigated acreage	164	164	164	164	164	164	164
Average rainfall	0.20	0.20	0.20	0.20	0.20	0.20	0.20
1-in-10-year drought	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	814	797	780	780	780	780	780
Average rainfall	1.18	1.16	1.13	1.13	1.13	1.13	1.13
1-in-10-year drought	1.42	1.39	1.36	1.36	1.36	1.36	1.36
Palm Beach County – EAA							
Irrigated acreage	406,474	400,652	389,007	389,007	389,007	389,007	389,007
Average rainfall	433.74	427.52	415.10	415.10	415.10	415.10	415.10
1-in-10-year drought	598.98	590.40	573.24	573.24	573.24	573.24	573.24
LEC Planning Area Total							
Irrigated acreage	**459,985**	**454,157**	**442,530**	**442,654**	**442,786**	**442,799**	**442,922**
Average rainfall	**485.97**	**479.74**	**467.33**	**467.45**	**467.57**	**467.59**	**467.71**
1-in-10-year drought	**670.34**	**661.75**	**644.61**	**644.77**	**644.94**	**644.96**	**645.13**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Fresh Market Vegetables

Table A-13 presents the SFWMD's fresh market vegetable acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions, assuming 2 plantings per year lasting 4 months each.

Table A-13. Gross irrigation demands (in mgd) for fresh market vegetable acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	705	675	615	615	615	615	615
Average rainfall	0.97	0.93	0.85	0.85	0.85	0.85	0.85
1-in-10-year drought	1.18	1.13	1.04	1.04	1.04	1.04	1.04
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	12,976	12,976	12,976	12,976	13,396	13,736	14,320
Average rainfall	10.46	10.46	10.46	10.46	10.79	11.07	11.54
1-in-10-year drought	12.72	12.72	12.72	12.72	13.12	13.46	14.03
Miami-Dade County							
Irrigated acreage	15,348	15,224	14,976	14,425	13,942	13,581	13,200
Average rainfall	16.03	15.90	15.64	15.06	14.56	14.12	13.78
1-in-10-year drought	18.58	18.43	18.13	17.46	16.88	16.37	15.97
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	10,935	10,935	10,935	10,935	10,935	10,935	10,935
Average rainfall	13.90	13.90	13.90	13.90	13.90	13.90	13.90
1-in-10-year drought	16.53	16.53	16.53	16.53	16.53	16.53	16.53
Palm Beach County – EAA							
Irrigated acreage	292	292	292	292	292	292	292
Average rainfall	0.25	0.25	0.25	0.25	0.25	0.25	0.25
1-in-10-year drought	0.36	0.36	0.36	0.36	0.36	0.36	0.36
LEC Planning Area Total							
Irrigated acreage	**40,256**	**40,102**	**39,794**	**39,243**	**39,180**	**39,159**	**39,362**
Average rainfall	**41.62**	**41.45**	**41.11**	**40.53**	**40.36**	**40.20**	**40.33**
1-in-10-year drought	**49.37**	**49.17**	**48.77**	**48.10**	**47.92**	**47.75**	**47.93**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Citrus

Table A-14 presents the SFWMD's citrus acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions.

Table A-14. Gross irrigation demands (in mgd) for citrus acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	18,929	19,225	20,114	21,570	21,765	21,869	21,869
Average rainfall	19.67	19.98	20.90	22.42	22.62	22.73	20.73
1-in-10-year drought	23.87	24.24	25.36	27.20	27.45	27.58	25.15
Miami-Dade County							
Irrigated acreage	245	245	245	228	188	188	149
Average rainfall	0.31	0.31	0.31	0.29	0.24	0.24	0.19
1-in-10-year drought	0.36	0.36	0.36	0.34	0.28	0.28	0.22
Monroe County							
Irrigated acreage	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	94	94	94	94	94	94	94
Average rainfall	0.12	0.12	0.12	0.12	0.12	0.12	0.12
1-in-10-year drought	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Palm Beach County – EAA							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total							
Irrigated acreage	**19,268**	**19,564**	**20,453**	**21,892**	**22,047**	**22,151**	**22,112**
Average rainfall	**20.10**	**20.41**	**21.33**	**22.83**	**22.98**	**23.09**	**21.04**
1-in-10-year drought	**24.24**	**24.62**	**25.74**	**27.56**	**27.74**	**27.88**	**25.39**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Hay/Pasture

Table A-15 presents the SFWMD's hay/pasture acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions. The FSAID acres for this category are labeled and modeled as hay/pasture. The associated demands calculated with AFSIRS are assumed to capture irrigation for hay/pasture and any irrigation used for improved pasture.

Table A-15. Gross irrigation demands (in mgd) for hay/pasture acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	19,632	19,632	19,632	19,714	19,757	19,833	20,090
Average rainfall	23.27	23.27	23.27	23.37	23.42	23.51	23.81
1-in-10-year drought	27.84	27.84	27.84	27.96	28.02	28.12	28.49
Miami-Dade County							
Irrigated acreage	163	163	163	163	163	163	163
Average rainfall	0.26	0.26	0.26	0.26	0.26	0.26	0.26
1-in-10-year drought	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – EAA							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total							
Irrigated acreage	**19,795**	**19,795**	**19,795**	**19,877**	**19,920**	**19,996**	**20,253**
Average rainfall	**23.53**	**23.53**	**23.53**	**23.63**	**23.68**	**23.77**	**24.07**
1-in-10-year drought	**28.15**	**28.15**	**28.15**	**28.27**	**28.33**	**28.44**	**28.80**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Greenhouse/Nursery

Table A-16 presents the SFWMD's greenhouse/nursery acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions.

Table A-16. Gross irrigation demands (in mgd) for greenhouse/nursery acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	510	497	472	409	360	305	249
Average rainfall	1.76	1.72	1.63	1.41	1.24	1.05	0.86
1-in-10-year drought	1.94	1.89	1.79	1.55	1.36	1.16	0.95
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	13	13	13	13	284	336	457
Average rainfall	0.03	0.03	0.03	0.03	0.66	0.78	1.05
1-in-10-year drought	0.05	0.05	0.05	0.05	0.69	0.81	1.08
Miami-Dade County							
Irrigated acreage	10,108	9,924	9,556	9,007	8,512	7,979	7,553
Average rainfall	27.76	27.26	26.25	24.74	23.38	21.91	20.74
1-in-10-year drought	29.40	28.87	27.80	26.20	24.76	23.21	21.97
Monroe County							
Irrigated acreage	5	5	5	5	5	5	5
Average rainfall	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1-in-10-year drought	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Palm Beach County – Coastal							
Irrigated acreage	3,423	3,423	3,423	3,423	3,423	3,423	3,423
Average rainfall	10.22	10.22	10.22	10.22	10.22	10.22	10.22
1-in-10-year drought	11.32	11.32	11.32	11.32	11.32	11.32	11.32
Palm Beach County – EAA							
Irrigated acreage	1,154	1,154	1,154	1,154	1,154	1,154	1,154
Average rainfall	1.04	1.04	1.04	1.04	1.04	1.04	1.04
1-in-10-year drought	1.47	1.47	1.47	1.47	1.47	1.47	1.47
LEC Planning Area Total							
Irrigated acreage	**15,213**	**15,016**	**14,623**	**14,011**	**13,738**	**13,202**	**12,841**
Average rainfall	**40.82**	**40.27**	**39.18**	**37.45**	**36.55**	**35.01**	**33.92**
1-in-10-year drought	**44.18**	**43.60**	**42.44**	**40.60**	**39.61**	**37.97**	**36.79**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Fruit (Excluding Citrus)

Table A-17 presents the SFWMD's fruit (excluding citrus) acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions.

Table A-17. Gross irrigation demands (in mgd) for fruit (excluding citrus) acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	15	15	15	15	6	6	6
Average rainfall	0.04	0.04	0.04	0.04	0.01	0.01	0.01
1-in-10 -ear drought	0.06	0.06	0.06	0.06	0.02	0.02	0.02
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	0	0	0	0	266	367	515
Average rainfall	0.00	0.00	0.00	0.00	0.48	0.66	0.92
1-in-10-year drought	0.00	0.00	0.00	0.00	0.51	0.69	0.95
Miami-Dade County							
Irrigated acreage	10,919	10,785	10,517	10,307	10,002	9,523	9,077
Average rainfall	25.28	24.97	24.35	23.86	23.15	22.05	21.01
1-in-10-year drought	27.97	27.62	26.94	26.40	25.61	24.39	23.24
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	56	56	56	56	56	56	56
Average rainfall	0.08	0.08	0.08	0.08	0.08	0.08	0.08
1-in-10-year drought	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Palm Beach County – EAA							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total							
Irrigated acreage	**10,990**	**10,856**	**10,588**	**10,378**	**10,330**	**9,952**	**9,654**
Average rainfall	**25.40**	**25.09**	**24.47**	**23.98**	**23.72**	**22.80**	**22.02**
1-in-10-year drought	**28.15**	**27.80**	**27.12**	**26.58**	**26.26**	**25.22**	**24.33**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Sod

Table A-18 presents the SFWMD's sod acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions.

Table A-18. Gross irrigation demands (in mgd) for sod acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	9	9	9	9	9	9	9
Average rainfall	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1-in-10-year drought	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miami-Dade County							
Irrigated acreage	174	174	174	174	174	174	174
Average rainfall	0.44	0.44	0.44	0.44	0.44	0.44	0.44
1-in-10-year drought	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	415	415	415	415	415	415	415
Average rainfall	0.97	0.97	0.97	0.97	0.97	0.97	0.97
1-in-10-year drought	1.19	1.19	1.19	1.19	1.19	1.19	1.19
Palm Beach County – EAA							
Irrigated acreage	5,346	5,346	5,346	5,346	5,346	5,346	5,346
Average rainfall	8.79	8.79	8.79	8.79	8.79	8.79	8.79
1-in-10-year drought	11.75	11.75	11.75	11.75	11.75	11.75	11.75
LEC Planning Area Total							
Irrigated acreage	**5,944**	**5,944**	**5,944**	**5,944**	**5,944**	**5,944**	**5,944**
Average rainfall	**10.21**	**10.21**	**10.21**	**10.21**	**10.21**	**10.21**	**10.21**
1-in-10-year drought	**13.45**	**13.45**	**13.45**	**13.45**	**13.45**	**13.45**	**13.45**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Potatoes

Table A-19 presents the SFWMD's potatoes acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions.

Table A-19. Gross irrigation demands (in mgd) for potatoes acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	0	0	0	0	0	44	44
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.05	0.05
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.08	0.08
Miami-Dade County							
Irrigated acreage	677	677	667	660	645	645	582
Average rainfall	0.66	0.66	0.65	0.65	0.63	0.63	0.57
1-in-10-year drought	0.78	0.78	0.77	0.77	0.74	0.74	0.67
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – EAA							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total							
Irrigated acreage	**677**	**677**	**667**	**660**	**645**	**689**	**626**
Average rainfall	**0.66**	**0.66**	**0.65**	**0.65**	**0.63**	**0.68**	**0.62**
1-in-10-year drought	**0.78**	**0.78**	**0.77**	**0.77**	**0.74**	**0.82**	**0.75**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Field Crops

Table A-20 presents the SFWMD's field crops acreage and gross irrigation requirement (water withdrawal demand) projections under average rainfall and 1-in-10-year drought conditions. The field crops category includes soybeans, field corn, peanuts, dried beans, lentils, and other grains.

Table A-20. Gross irrigation demands (in mgd) for field crops acreage in the LEC Planning Area.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – EAA[a]							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]							
Irrigated acreage	0	0	0	0	232	582	933
Average rainfall	0.00	0.00	0.00	0.00	0.23	0.58	0.93
1-in-10-year drought	0.00	0.00	0.00	0.00	0.28	0.70	1.12
Miami-Dade County							
Irrigated acreage	50	50	50	50	50	50	50
Average rainfall	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1-in-10-year drought	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Monroe County							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – EAA							
Irrigated acreage	0	0	0	0	0	0	0
Average rainfall	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1-in-10-year drought	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total							
Irrigated acreage	**50**	**50**	**50**	**50**	**282**	**632**	**983**
Average rainfall	**0.01**	**0.01**	**0.01**	**0.01**	**0.24**	**0.59**	**0.94**
1-in-10-year drought	**0.02**	**0.02**	**0.02**	**0.02**	**0.30**	**0.72**	**1.14**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Livestock

Table A-21 presents the FSAID IX water demand projections for livestock. Livestock demands published in the FSAID IX report were developed with assumed water requirements per head of livestock. Livestock demands are assumed to be the same under average rainfall and 1-in-10-year drought conditions.

Table A-21. Gross water demands (in mgd) for livestock in the LEC Planning Area.

2020	2021	2025	2030	2035	2040	2045
Broward County						
0.04	0.04	0.04	0.04	0.04	0.04	0.04
Hendry County – EAA[a]						
0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]						
0.31	0.31	0.31	0.31	0.31	0.31	0.31
Miami-Dade County						
0.12	0.12	0.12	0.12	0.12	0.12	0.12
Monroe County						
0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach County – Coastal						
0.17	0.17	0.17	0.17	0.17	0.17	0.17
Palm Beach County – EAA						
0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total						
0.64	**0.64**	**0.64**	**0.64**	**0.64**	**0.64**	**0.64**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Note: Water demands for livestock were obtained from the ninth Florida Statewide Agricultural Irrigation Demand (FSAID IX) report, not calculated using the Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) model.

Livestock

Aquaculture

Table A-22 presents the FSAID IX water demand projections for aquaculture based on reported water use. Demands were adjusted in Miami-Dade County to reflect a new aquaculture project that is expected to require 15.88 mgd by 2025. Aquaculture demands are assumed to be the same under average rainfall and 1-in-10-year drought conditions.

Table A-22. Gross water demands (in mgd) for aquaculture in the LEC Planning Area.

2020	2021	2025	2030	2035	2040	2045
Broward County						
0.08	0.08	0.08	0.08	0.08	0.08	0.08
Hendry County – EAA[a]						
0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County – Western Basins[a]						
0.14	0.14	0.14	0.14	0.14	0.14	0.14
Miami-Dade County						
2.91	2.91	15.88	15.88	15.88	15.88	15.88
Monroe County						
0.01	0.01	0.01	0.01	0.01	0.01	0.01
Palm Beach County – Coastal						
0.05	0.05	0.05	0.05	0.05	0.05	0.05
Palm Beach County – EAA						
0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEC Planning Area Total						
3.19	**3.19**	**16.16**	**16.16**	**16.16**	**16.16**	**16.16**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Note: Water demands for aquaculture were obtained from the ninth Florida Statewide Agricultural Irrigation Demand (FSAID IX) report.

Salmon Tanks

Summary of Agricultural Results

Irrigated agricultural acres are projected to decrease 2% over the planning horizon, from 566,162 in 2021 to 554,697 acres by 2045 (**Tables A-23** and **A-24**). The largest declines in acreage are expected in Palm Beach County, partly due to the conversion of 18,571 acres of sugarcane to the planned A-2 Reservoir and stormwater treatment area. The Palm Beach County portion of the Everglades Agricultural Area will continue to account for the majority of AG acres and demands in the LEC Planning Area (**Table A-23**). Sugarcane also will continue to dominate AG demands, accounting for 80% of the 2045 total AG demand (**Table A-24**). Relatively little change is anticipated in AG water demands for nearly all crops within the LEC Planning Area. The largest percent reductions in demands are projected for the greenhouse/nursery category. Aquaculture is projected to have the largest increase in demands (additional 15.88 mgd) due to a new aquaculture facility under expansion in Miami-Dade County. Overall, LEC Planning Area total gross water demands under average rainfall conditions for AG are projected to decrease approximately 1%, from 645.20 mgd in 2021 to 637.65 mgd in 2045.

Sugarcane Harvest

Table A-23. Summary of gross water demands (in mgd) for all agricultural acreage, livestock, and aquaculture in the LEC Planning Area by county.

	2020	2021	2025	2030	2035	2040	2045
Broward County							
Irrigated acres	1,239	1,196	1,111	1,048	990	935	879
Average rainfall	2.90	2.82	2.65	2.43	2.23	2.04	1.85
1-in-10-year drought	3.31	3.22	3.03	2.78	2.55	2.34	2.13
Hendry County – EAA[a]							
Irrigated acres	36,773	36,781	36,805	36,892	36,985	36,994	37,080
Average rainfall	33.54	33.55	33.57	33.65	33.73	33.74	33.82
1-in-10-year drought	48.80	48.81	48.85	48.96	49.08	49.09	49.21
Hendry County – Western Basins[a]							
Irrigated acres	67,310	67,610	68,509	70,084	71,551	72,621	74,119
Average rainfall	71.19	71.50	72.44	74.09	76.06	77.24	76.94
1-in-10-year drought	85.76	86.14	87.27	89.28	91.47	92.86	92.36
Miami-Dade County							
Irrigated acres	37,848	37,406	36,512	35,178	33,840	32,467	31,112
Average rainfall	73.98	73.03	84.11	81.51	78.87	75.86	73.20
1-in-10-year drought	81.24	80.22	91.12	88.28	85.40	82.11	79.20
Monroe County							
Irrigated acres	5	5	5	5	5	5	5
Average rainfall	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1-in-10-year drought	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Palm Beach County – Coastal							
Irrigated acres	15,737	15,720	15,702	15,702	15,702	15,702	15,702
Average rainfall	26.69	26.67	26.64	26.64	26.64	26.64	26.64
1-in-10-year drought	30.82	30.79	30.76	30.76	30.76	30.76	30.76
Palm Beach County – EAA							
Irrigated acres	413,266	407,444	395,800	395,800	395,800	395,800	395,800
Average rainfall	443.82	437.61	425.18	425.18	425.18	425.18	425.18
1-in-10-year drought	612.55	603.96	586.81	586.81	586.81	586.81	586.82
LEC Planning Area Total							
Irrigated acres	**572,178**	**566,162**	**554,444**	**554,709**	**554,872**	**554,524**	**554,697**
Average rainfall	**652.14**	**645.20**	**644.61**	**643.52**	**642.73**	**640.72**	**637.65**
1-in-10-year drought	**862.50**	**853.17**	**847.87**	**846.90**	**846.10**	**844.00**	**840.51**

EAA = Everglades Agricultural Area; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Table A-24. Summary of gross water demands (in mgd) for all agricultural acreage, livestock, and aquaculture in the LEC Planning Area by commodity.

	2020	2021	2025	2030	2035	2040	2045
Citrus							
Irrigated acres	19,268	19,564	20,453	21,892	22,047	22,151	22,112
Average rainfall	20.1	20.41	21.33	22.83	22.98	23.09	21.04
1-in-10-year drought	24.24	24.62	25.74	27.56	27.74	27.88	25.39
Sugarcane							
Irrigated acres	459,985	454,157	442,530	442,654	442,786	442,799	442,922
Average rainfall	485.97	479.74	467.33	467.45	467.57	467.59	467.71
1-in-10-year drought	670.34	661.75	644.61	644.77	644.94	644.96	645.13
Fresh Market Vegetables							
Irrigated acres	40,256	40,102	39,794	39,243	39,180	39,159	39,362
Average rainfall	41.62	41.45	41.11	40.53	40.36	40.2	40.33
1-in-10-year drought	49.37	49.17	48.77	48.1	47.92	47.75	47.93
Hay/Irrigated Pasture							
Irrigated acres	19,795	19,795	19,795	19,877	19,920	19,996	20,253
Average rainfall	23.53	23.53	23.53	23.63	23.68	23.77	24.07
1-in-10-year drought	28.15	28.15	28.15	28.27	28.33	28.44	28.8
Greenhouse/Nursery							
Irrigated acres	15,213	15,016	14,623	14,011	13,738	13,202	12,841
Average rainfall	40.82	40.27	39.18	37.45	36.55	35.01	33.92
1-in-10-year drought	44.18	43.6	42.44	40.6	39.61	37.97	36.79
Sod							
Irrigated acres	5,944	5,944	5,944	5,944	5,944	5,944	5,944
Average rainfall	10.21	10.21	10.21	10.21	10.21	10.21	10.21
1-in-10-year drought	13.45	13.45	13.45	13.45	13.45	13.45	13.45
Potatoes							
Irrigated acres	677	677	667	660	645	689	626
Average rainfall	0.66	0.66	0.65	0.65	0.63	0.68	0.62
1-in-10-year drought	0.78	0.78	0.77	0.77	0.74	0.82	0.75
Field Crop							
Irrigated acres	50	50	50	50	282	632	983
Average rainfall	0.01	0.01	0.01	0.01	0.24	0.59	0.94
1-in-10-year drought	0.02	0.02	0.02	0.02	0.30	0.72	1.14
Fruit (excluding citrus)							
Irrigated acres	10,990	10,856	10,588	10,378	10,330	9,952	9,654
Average rainfall	25.40	25.09	24.47	23.98	23.72	22.80	22.02
1-in-10-year drought	28.15	27.80	27.12	26.58	26.26	25.22	24.33

Table A-24. Continued.

	2020	2021	2025	2030	2035	2040	2045
Livestock							
Irrigated acres	--		--	--	--	--	--
Average rainfall	0.64	0.64	0.64	0.64	0.64	0.64	0.64
1-in-10-year drought	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Aquaculture							
Irrigated acres	--		--	--	--	--	--
Average rainfall	3.19	3.19	16.16	16.16	16.16	16.16	16.16
1-in-10-year drought	3.19	3.19	16.16	16.16	16.16	16.16	16.16
LEC Planning Area Total							
Irrigated acres	**572,178**	**566,162**	**554,444**	**554,709**	**554,872**	**554,524**	**554,697**
Average rainfall	**652.15**	**645.20**	**644.62**	**643.54**	**642.74**	**640.74**	**637.66**
1-in-10-year drought	**862.50**	**853.17**	**847.87**	**846.90**	**846.10**	**844.00**	**840.51**

LEC = Lower East Coast; mgd = million gallons per day.

COMMERCIAL/INDUSTRIAL/INSTITUTIONAL

The CII water use category includes demands associated with commercial and industrial operations for processing, manufacturing, and technical needs (e.g., concrete production, citrus and vegetable processing, and mining operations). Commercial, industrial, or institutional users that receive water from PS utilities or use recirculated water in closed-loop geothermal heating and cooling systems are not included in CII demand calculations. Although a large portion of CII water used by the mining industry for activities such as rock washing is returned to the source, all mining water use is included in demand estimates and projections. All CII demand estimates and projections are presumed to be the same for average rainfall and 1-in-10-year drought conditions.

CII Projection Methodology

CII estimates and projections are based on water use data from the SFWMD's Water Use Permit database. If an active CII permit holder did not report water use, demand estimates were calculated as described in the *2021 Estimated Water Use Report* (SFWMD 2023).

Increases in the CII category are expected to be driven by growth of the regional economy and permanent resident population. Therefore, CII projections are anticipated to increase steadily as county permanent resident populations increase. Previous analyses of the relationship between CII demands and population growth support this approach.

CII Projection Results

Table A-25 summarizes the current and projected CII demands in the LEC Planning Area in 5-year increments through 2045. Miami-Dade County maintains a dominant share of the region's CII demands over the planning horizon.

Table A-25. CII demand projections in the LEC Planning Area.

County	Demand (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward	2.82	2.85	2.94	3.04	3.13	3.20	3.27
Hendry[a]	1.69	1.69	1.69	1.69	1.69	1.69	1.69
Miami-Dade	73.25	73.92	75.92	79.02	81.91	84.56	87.09
Monroe	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Palm Beach	8.77	8.89	9.24	9.64	9.98	10.27	10.52
LEC Planning Area Total	**86.53**	**87.35**	**89.79**	**93.39**	**96.70**	**99.72**	**102.56**

CII = Commercial/Industrial/Institutional; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

LANDSCAPE/RECREATIONAL

L/R water demands include irrigation for golf courses and other landscaped areas, such as parks, sports fields, and common areas of residential developments. L/R acreages reflect only the acres under water use permits and do not include acres irrigated solely with reclaimed water that do not have a water use permit for a supplemental or backup supply. Demands under the L/R category include areas permitted by the SFWMD including those that use reclaimed water that have a water use permit for supplemental or backup supply and areas not permitted that rely solely on reclaimed water. L/R demands were calculated using a combination of water use reported to the SFWMD as part of its regulatory compliance program and reclaimed water use reported by wastewater utilities to the FDEP.

There are two types of irrigated landscaped areas outside those permitted by the SFWMD that are excluded from the L/R demands. The first type includes landscaped areas irrigated with potable water provided by PS utilities. These demands are accounted for in PS estimates and projections. The second type is irrigated landscaped areas served by individual residential wells and surface water pumps permitted by rule (Rule 40E-2.061, Florida Administrative Code).

L/R Projection Methodology

L/R 2021 water use data reported to the SFWMD and estimated data for those not required to report are available in the *2021 Estimated Water Use Report* (SFWMD 2023). The individual reuse inventory reports for the year 2021 (unless otherwise noted for individual facilities) filed by each wastewater utility to the FDEP (FDEP 2022) provided actual wastewater and reclaimed water use data. The use data from both sources were considered representative of demands under average rainfall conditions for 2021.

Both the SFWMD's reported water use and the individual reuse inventory reports filed by wastewater utilities allow for the disaggregation of L/R demands into the landscape and golf irrigation subcategories. Irrigated landscape and golf course acres indicated in **Table A-26** were calculated using the permitted L/R acreage from the SFWMD's Water Use Permit database. L/R acreages reflect only the acres under water use permits and do not include acres irrigated solely with reclaimed water that do not have a water use permit for supplemental or backup supply.

Table A-26. L/R permitted acres in the LEC Planning Area.

Land Use	L/R permitted acres in the LEC Planning Area						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
Landscape	17,165	17,345	17,886	18,508	19,028	19,476	19,877
Golf	3,624	3,624	3,624	3,624	3,624	3,624	3,624
Broward County Total	**20,789**	**20,969**	**21,510**	**22,132**	**22,652**	**23,100**	**23,501**
Hendry County[a]							
Landscape	0	0	0	0	0	0	0
Golf	0	0	0	0	0	0	0
Hendry County Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Miami-Dade County							
Landscape	5,954	6,013	6,192	6,440	6,697	6,914	7,121
Golf	2,619	2,619	2,619	2,619	2,619	2,619	2,619
Miami-Dade County Total	**8,573**	**8,632**	**8,811**	**9,059**	**9,316**	**9,533**	**9,740**
Monroe County							
Landscape	322	322	322	322	322	322	322
Golf	301	301	301	301	301	301	301
Monroe County Total	**623**	**623**	**623**	**623**	**623**	**623**	**623**
Palm Beach County							
Landscape	25,971	26,318	27,361	28,553	29,553	30,410	31,146
Golf	14,443	14,488	14,623	14,803	14,803	14,803	14,803
Palm Beach County Total	**40,414**	**40,806**	**41,984**	**43,356**	**44,356**	**45,213**	**45,949**
LEC Planning Area Total							
Landscape	**49,412**	**49,998**	**51,761**	**53,823**	**55,600**	**57,122**	**58,466**
Golf	**20,987**	**21,032**	**21,167**	**21,347**	**21,347**	**21,347**	**21,347**
LEC Planning Area Total	**70,399**	**71,030**	**72,927**	**75,171**	**76,948**	**78,469**	**79,813**

L/R = Landscape/Recreational; LEC = Lower East Coast.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

The distinction is made between the acres and demands for golf courses and landscaped areas because they are projected to grow at different rates. Landscape irrigation was assumed to increase at the same rate as the counties' permanent resident populations. Golf course acreage and associated water demands are projected to remain stable through 2045. This approach is used in other planning areas within the SFWMD and by other water management districts in Florida.

L/R Projection Results

Gross water demands for L/R were met with a combination of traditional water sources (groundwater and surface water), brackish groundwater (with reverse osmosis treatment), and reclaimed water. **Table A-27** shows that groundwater and surface water supply sources met approximately 76% of the 2021 L/R water demands, with reclaimed water supplementing the remaining 24%.

Table A-27. L/R gross water demands in the LEC Planning Area by county and source.

Source	Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
Groundwater/Surface Water	37.11	37.38	38.18	39.10	39.87	40.53	41.13
Reclaimed Water	7.94	8.02	8.27	8.56	8.80	9.01	9.19
Broward County Total	**45.05**	**45.40**	**46.45**	**47.66**	**48.67**	**49.54**	**50.32**
Hendry County[a]							
Groundwater/Surface Water	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Reclaimed Water	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Miami-Dade County							
Groundwater/Surface Water	14.64	14.74	15.05	15.52	15.96	16.36	16.74
Reclaimed Water	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miami-Dade County Total	**14.64**	**14.74**	**15.05**	**15.52**	**15.96**	**16.36**	**16.74**
Monroe County							
Groundwater/Surface Water	2.28	2.28	2.28	2.28	2.28	2.28	2.28
Reclaimed Water	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Monroe County Total	**2.58**	**2.58**	**2.58**	**2.58**	**2.58**	**2.58**	**2.58**
Palm Beach County							
Groundwater/Surface Water	76.83	77.23	78.92	80.78	81.92	82.90	83.74
Reclaimed Water	38.19	38.70	40.23	41.99	43.46	44.72	45.80
Palm Beach County Total	**115.02**	**115.93**	**119.15**	**122.77**	**125.38**	**127.62**	**129.54**
LEC Planning Area Total							
Groundwater/Surface Water	**130.86**	**131.63**	**134.43**	**137.68**	**140.03**	**142.07**	**143.89**
Reclaimed Water	**46.43**	**47.02**	**48.80**	**50.85**	**52.56**	**54.03**	**55.29**
LEC Planning Area Total	**177.29**	**178.65**	**183.23**	**188.53**	**192.59**	**196.10**	**199.18**

L/R = Landscape Recreational; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

L/R gross irrigation demand projections under average rainfall conditions including reclaimed water are presented in **Table A-28**. The volume of reclaimed water meeting future L/R demands was increased at the same rate as the counties' permanent resident populations from 2021. This volume was then apportioned into landscape and golf by maintaining 2021 golf course utilization volumes (since acreage was relatively constant), and the remainder was assigned to landscape irrigation. **Table A-29** shows the estimated quantity of water needed to meet projected demands during 1-in-10-year drought conditions including reclaimed water.

Table A-28. L/R gross irrigation demands under average rainfall conditions in the LEC Planning Area.

Land Use	Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
Landscape	33.25	33.60	34.65	35.86	36.87	37.74	38.52
Golf	11.80	11.80	11.80	11.80	11.80	11.80	11.80
Broward County Total	**45.05**	**45.40**	**46.45**	**47.66**	**48.67**	**49.54**	**50.32**
Hendry County[a]							
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Golf	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Miami-Dade County							
Landscape	11.13	11.23	11.54	12.01	12.45	12.85	13.23
Golf	3.51	3.51	3.51	3.51	3.51	3.51	3.51
Miami-Dade County Total	**14.64**	**14.74**	**15.05**	**15.52**	**15.96**	**16.36**	**16.74**
Monroe County							
Landscape	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Golf	2.36	2.36	2.36	2.36	2.36	2.36	2.36
Monroe County Total	**2.58**	**2.58**	**2.58**	**2.58**	**2.58**	**2.58**	**2.58**
Palm Beach County							
Landscape	67.93	68.84	71.56	74.68	77.29	79.53	81.45
Golf	47.09	47.09	47.59	48.09	48.09	48.09	48.09
Palm Beach County Total	**115.02**	**115.93**	**119.15**	**122.77**	**125.38**	**127.62**	**129.54**
LEC Planning Area Total							
Landscape	**112.53**	**113.89**	**117.97**	**122.77**	**126.83**	**130.34**	**133.42**
Golf	**64.76**	**64.76**	**65.26**	**65.76**	**65.76**	**65.76**	**65.76**
LEC Planning Area Total	**177.29**	**178.65**	**183.23**	**188.53**	**192.59**	**196.10**	**199.18**

L/R = Landscape/Recreational; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Table A-29. L/R gross irrigation demands under 1-in-10-year drought conditions in the LEC Planning Area.

Land Use	Demand – 1-in-10 Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
Landscape	41.90	42.34	43.66	45.18	46.46	47.55	48.54
Golf	15.34	15.34	15.34	15.34	15.34	15.34	15.34
Broward County Total	**57.24**	**57.68**	**59.00**	**60.52**	**61.80**	**62.89**	**63.88**
Hendry County[a]							
Landscape	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Golf	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Miami-Dade County							
Landscape	14.02	14.15	14.54	15.13	15.69	16.19	16.67
Golf	4.56	4.56	4.56	4.56	4.56	4.56	4.56
Miami-Dade County Total	**18.59**	**18.71**	**19.10**	**19.70**	**20.25**	**20.75**	**21.23**
Monroe County							
Landscape	0.28	0.28	0.28	0.28	0.15	0.15	0.15
Golf	3.07	3.07	3.07	3.07	3.07	3.07	3.07
Monroe County Total	**3.35**	**3.35**	**3.35**	**3.35**	**3.22**	**3.22**	**3.22**
Palm Beach County							
Landscape	85.59	86.74	90.17	94.10	97.39	100.21	102.63
Golf	61.22	61.22	61.87	62.52	62.52	62.52	62.52
Palm Beach County Total	**146.81**	**147.96**	**152.03**	**156.61**	**159.90**	**162.72**	**165.14**
LEC Planning Area Total							
Landscape	**141.79**	**143.50**	**148.64**	**154.69**	**159.68**	**164.10**	**167.98**
Golf	**84.19**	**84.19**	**84.84**	**85.49**	**85.49**	**85.49**	**85.49**
LEC Planning Area Total	**225.98**	**227.69**	**233.48**	**240.18**	**245.17**	**249.59**	**253.47**

L/R = Landscape/Recreational; LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

POWER GENERATION

Demands under the PG category include use of groundwater, fresh surface water, or reclaimed water by thermoelectric power generation facilities. There are 12 power generation facilities operating in the LEC Planning Area (**Figure 2-2**). However, only seven of these facilities have demands that are addressed in this plan update: Florida Power & Light (FPL) Riviera Beach Next Generation Clean Energy Center, FPL Turkey Point Clean Energy Center, FPL West County Energy Center, Homestead G.W. Ivey Power Plant, Miami-Dade County Resources Recovery Facility, Okeelanta Cogeneration Facility, and Palm Beach County Solid Waste Authority Renewable Energy Park.

The FPL Riviera Beach Next Generation Clean Energy Center mainly uses surface water from Lake Worth Lagoon for its once-through cooling before the water is returned to the lagoon. As a result, this is not considered as part of the demands, only the facility's groundwater use is considered. Groundwater from the surficial aquifer system (SAS) is used for steam generators, inlet spray coolers, and other industrial uses. Demands decreased from 0.09 mgd in 2020 to 0.02 mgd in 2021 due to the installation of new, more efficient pumps. The FPL Riviera Beach Next Generation Clean Energy Center has an estimated demand of 0.10 mgd from 2025 through 2045.

The FPL Turkey Point Clean Energy Center currently uses groundwater from the Upper Floridan aquifer (UFA) for cooling and process water demands. Reclaimed water is expected to be used as the primary cooling water source for Unit 5 by 2025. In 2021, Turkey Point used 9.64 mgd of UFA water for cooling at Unit 5 and process water for Units 1 through 5. In addition, 12.22 mgd of UFA water was used to freshen the cooling canal system for Units 3 and 4. From 2025 through 2045, a maximum combined annual average of 12.6 mgd of UFA and reclaimed water is allocated for cooling water for Unit 5 and process water for Units 1 through 5. Additionally, a maximum annual average of 30 mgd of UFA water is allocated to continue freshening the cooling canal system for Units 3 and 4. The actual UFA water demand for freshening will depend on environmental conditions (e.g., rainfall, temperature). Turkey Point's PG demand was 21.86 mgd in 2021, and the facility may use up to 42.60 mgd (the permitted allocation) between 2025 to 2045.

The FPL West County Energy Center primarily uses reclaimed water from Palm Beach County to meet its cooling water demands. Potable water from Palm Beach County is used for makeup water for other industrial uses, and groundwater from the UFA and surface water from the L-10/L-12 canals can be utilized as a backup supply when reclaimed water is unavailable. Only reclaimed water is considered as part of the demands. The FPL West County Energy Center used 14.22 mgd in 2021. The demand is expected to decrease to 13.53 mgd from 2025 through 2045.

The Homestead G.W. Ivey Power Plant and the Miami-Dade County Resources Recovery Facility utilize groundwater from the SAS. The Okeelanta Cogeneration Facility uses a combination of groundwater from the SAS and UFA as well as surface water to meet its cooling system demands. Overall, the combined PG demands of these three facilities remain constant at 4.33 mgd from 2021 to 2045.

The Palm Beach County Solid Waste Authority Renewable Energy Park mainly uses groundwater from the SAS to meet demands for industrial processes. Potable water from

Palm Beach County, harvested rainwater, and reclaimed water are utilized for processing water and cooling tower blowdown. The expected PG demand for the Palm Beach County Solid Waste Authority Renewable Energy Park remains constant at 1.77 mgd from 2021 through 2045.

In the LEC Planning Area, PG demands could increase from approximately 42.20 mgd in 2021 to 62.33 mgd in 2045 (**Table A-30**). This increase is primarily due to the potentially higher demand of UFA water for cooling canal freshening at the Turkey Point Clean Energy Center, which is highly dependent on environmental conditions. All other facility demands remain relatively stable over the planning period.

Table A-30. PG water demands in the LEC Planning Area between 2020 and 2045.

Facilities	Gross Demand (mgd)[a]						
	2020	2021	2025	2030	2035	2040	2045
FPL – Riviera Beach Clean Energy Center	0.09	0.02	0.10	0.10	0.10	0.10	0.10
FPL – Turkey Point Clean Energy Center[b,c]	17.49	21.86	42.60	42.60	42.60	42.60	42.60
FPL – West County Energy Center[d]	13.02	14.22	13.53	13.53	13.53	13.53	13.53
Homestead G.W. Ivey Power Plant	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Miami-Dade County Resources Recovery Facility	1.76	1.76	1.76	1.76	1.76	1.76	1.76
Okeelanta Cogeneration Facility	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Palm Beach County SWA Renewable Energy Park	1.08	1.77	1.77	1.77	1.77	1.77	1.77
LEC Planning Area Total	**36.01**	**42.20**	**62.33**	**62.33**	**62.33**	**62.33**	**62.33**

FPL = Florida Power & Light; LEC = Lower East Coast; mgd = million gallons per day; PG = Power Generation; SWA=Solid Waste Authority.

[a] Includes groundwater from the surficial and Floridan aquifer systems, reclaimed water, and surface water; Does not include harvested rainwater, seawater, city water, or surface water returned to the source.

[b] The FPL Turkey Point Clean Energy Center has an allocation of 12.6 mgd from the Upper Floridan aquifer and reclaimed water, combined. Additionally, there is an allocation of 30 mgd from the UFA for cooling canal freshening. Actual demand will depend on environmental conditions.

[c] FPL and Miami-Dade Water and Sewer Department are coordinating future use of reclaimed water at the Turkey Point Clean Energy Center.

[d] The West County Energy Center has a backup allocation from the Upper Floridan aquifer and the L-10/L-12 canals when reclaimed water is unavailable.

SUMMARY OF DEMAND PROJECTIONS

Total demands for the LEC Planning Area are anticipated to increase approximately 208.85 mgd (11%), largely due to increasing demands for the PS category. AG demands are projected to have a 1% decline from 2021 to 2045, from 645.20 mgd to 637.65 mgd. PS and DSS are expected to increase due to the projected population growth from 6,222,707 to 7,294,265 permanent residents, reaching a combined demand of 1,061.62 mgd by 2045. Also driven by population growth, L/R demands are projected to reach 199.18 mgd by 2045. The demands for all remaining categories (CII and PG) are relatively small and projected to be 164.89 mgd, combined, in 2045. Gross water demands in 5-year increments, by county and water use category, are provided in **Table A-31** for average rainfall conditions and **Table A-32** for 1-in-10-year drought conditions.

Table A-31. Summary of gross water demands under average rainfall conditions in the LEC Planning Area by water use category.

Water Use Category	Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
Public Supply	238.38	241.09	249.57	263.46	271.55	278.92	285.45
Domestic Self-Supply	0.53	0.47	0.58	0.58	0.53	0.54	0.48
Agriculture	2.90	2.82	2.65	2.43	2.23	2.04	1.85
Commercial/Industrial/Institutional	2.82	2.85	2.94	3.04	3.13	3.20	3.27
Landscape/Recreational	45.05	45.4	46.45	47.66	48.67	49.54	50.32
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Broward County Total	**289.68**	**292.63**	**302.19**	**317.17**	**326.11**	**334.24**	**341.37**
Hendry County[a]							
Public Supply	0.26	0.28	0.36	0.42	0.43	0.48	0.56
Domestic Self-Supply	0.37	0.37	0.36	0.35	0.33	0.32	0.31
Agriculture	104.73	105.05	106.01	107.74	109.79	110.98	110.76
Commercial/Industrial/Institutional	1.69	1.69	1.69	1.69	1.69	1.69	1.69
Landscape/Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County Total	**107.05**	**107.39**	**108.42**	**110.20**	**112.24**	**113.47**	**113.32**
Miami-Dade County							
Public Supply	375.77	377.83	390.66	406.15	420.69	434.20	446.30
Domestic Self-Supply	2.64	1.18	2.06	2.61	3.00	3.24	4.29
Agriculture	73.98	73.03	84.11	81.51	78.87	75.86	73.20
Commercial/Industrial/Institutional	73.25	73.92	75.92	79.02	81.91	84.56	87.09
Landscape/Recreational	14.64	14.74	15.05	15.52	15.96	16.36	16.74
Power Generation	20.65	25.02	45.76	45.76	45.76	45.76	45.76
Miami-Dade County Total	**560.93**	**565.72**	**613.56**	**630.57**	**646.19**	**659.98**	**673.38**
Monroe County							
Public Supply	19.20	19.31	19.44	19.59	19.69	19.74	19.79
Domestic Self-Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agriculture	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Commercial/Industrial/Institutional	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape/Recreational	2.58	2.58	2.58	2.58	2.58	2.58	2.58
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monroe County Total	**21.80**	**21.91**	**22.04**	**22.19**	**22.29**	**22.34**	**22.39**
Palm Beach County							
Public Supply	249.29	252.05	260.98	270.99	280.03	287.49	295.07
Domestic Self-Supply	8.11	8.54	9.23	9.57	9.75	9.98	9.37
Agriculture	470.51	464.28	451.83	451.83	451.83	451.83	451.83
Commercial/Industrial/Institutional	8.77	8.89	9.24	9.64	9.98	10.27	10.52
Landscape/Recreational	115.02	115.93	119.15	122.77	125.38	127.62	129.54
Power Generation	15.36	17.18	16.57	16.57	16.57	16.57	16.57
Palm Beach County Total	**867.06**	**866.87**	**867.00**	**881.37**	**893.54**	**903.76**	**912.90**

Table A-31. Continued.

Water Use Category	Demand – Average Rainfall Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
LEC Planning Area Total							
Public Supply	**882.90**	**890.56**	**921.01**	**960.61**	**992.39**	**1,020.83**	**1,047.17**
Domestic Self-Supply	**11.66**	**10.55**	**12.23**	**13.10**	**13.61**	**14.07**	**14.45**
Agriculture	**652.14**	**645.20**	**644.61**	**643.52**	**642.73**	**640.72**	**637.65**
Commercial/Industrial/Institutional	**86.53**	**87.35**	**89.79**	**93.39**	**96.70**	**99.72**	**102.56**
Landscape/Recreational	**177.29**	**178.65**	**183.23**	**188.53**	**192.59**	**196.10**	**199.18**
Power Generation	**36.01**	**42.20**	**62.33**	**62.33**	**62.33**	**62.33**	**62.33**
LEC Planning Area Total	**1,846.52**	**1,854.52**	**1,913.21**	**1,961.50**	**2,000.37**	**2,033.79**	**2,063.36**

LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

Table A-32. Summary of gross water demands under 1-in-10-year drought conditions in the LEC Planning Area by water use category.

Water Use Category	Demand – 1-in-10-Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Broward County							
Public Supply	262.21	265.20	274.53	289.81	298.71	306.81	313.99
Domestic Self-Supply	0.59	0.52	0.64	0.64	0.59	0.59	0.53
Agriculture	3.31	3.22	3.03	2.78	2.55	2.34	2.13
Commercial/Industrial/Institutional	2.82	2.85	2.94	3.04	3.13	3.20	3.27
Landscape/Recreational	57.24	57.68	59.00	60.52	61.80	62.89	63.88
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Broward County Total	**326.17**	**329.47**	**340.14**	**356.79**	**366.78**	**375.83**	**383.80**
Hendry County[a]							
Public Supply	0.27	0.30	0.38	0.45	0.46	0.51	0.59
Domestic Self-Supply	0.39	0.39	0.38	0.37	0.35	0.34	0.33
Agriculture	134.56	134.95	136.12	138.24	140.55	141.95	141.57
Commercial/Industrial/Institutional	1.69	1.69	1.69	1.69	1.69	1.69	1.69
Landscape/Recreational	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hendry County Total	**136.91**	**137.33**	**138.57**	**140.75**	**143.05**	**144.49**	**144.18**
Miami-Dade County							
Public Supply	402.07	404.28	418.00	434.58	450.14	464.59	477.54
Domestic Self-Supply	2.83	1.26	2.20	2.79	3.21	3.47	4.59
Agriculture	81.24	80.22	91.12	88.28	85.40	82.11	79.20
Commercial/Industrial/Institutional	73.25	73.92	75.92	79.02	81.91	84.56	87.09
Landscape/Recreational	18.59	18.71	19.1	19.7	20.25	20.75	21.23
Power Generation	20.65	25.02	45.76	45.76	45.76	45.76	45.76
Miami-Dade County Total	**598.63**	**603.41**	**652.10**	**670.13**	**686.67**	**701.24**	**715.41**

Table A-32. Continued.

Water Use Category	Demand – 1-in10-Year Drought Conditions (mgd)						
	2020	2021	2025	2030	2035	2040	2045
Monroe County							
Public Supply	19.78	19.89	20.03	20.18	20.28	20.33	20.38
Domestic Self-Supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agriculture	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Commercial/Industrial/Institutional	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape/Recreational	3.35	3.35	3.35	3.35	3.22	3.22	3.22
Power Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monroe County Total	**23.16**	**23.27**	**23.41**	**23.56**	**23.53**	**23.58**	**23.63**
Palm Beach County							
Public Supply	274.25	277.26	287.07	298.10	308.00	316.23	324.60
Domestic Self-Supply	8.92	9.39	10.16	10.52	10.72	10.98	10.30
Agriculture	643.37	634.75	617.57	617.57	617.57	617.57	617.58
Commercial/Industrial/Institutional	8.77	8.89	9.24	9.64	9.98	10.27	10.52
Landscape/Recreational	146.81	147.96	152.03	156.61	159.9	162.72	165.14
Power Generation	15.36	17.18	16.57	16.57	16.57	16.57	16.57
Palm Beach County Total	**1,097.48**	**1,095.43**	**1,092.64**	**1,109.01**	**1,122.74**	**1,134.34**	**1,144.71**
LEC Planning Area Total							
Public Supply	**958.59**	**966.93**	**1,000.01**	**1,043.12**	**1,077.59**	**1,108.47**	**1,137.11**
Domestic Self-Supply	**12.73**	**11.56**	**13.38**	**14.32**	**14.87**	**15.37**	**15.76**
Agriculture	**862.50**	**853.17**	**847.87**	**846.90**	**846.10**	**844.00**	**840.52**
Commercial/Industrial/Institutional	**86.53**	**87.35**	**89.79**	**93.39**	**96.70**	**99.72**	**102.56**
Landscape/Recreational	**225.99**	**227.70**	**233.48**	**240.18**	**245.17**	**249.58**	**253.47**
Power Generation	**36.01**	**42.20**	**62.33**	**62.33**	**62.33**	**62.33**	**62.33**
LEC Planning Area Total	**2,182.35**	**2,188.91**	**2,246.86**	**2,300.24**	**2,342.76**	**2,379.47**	**2,411.75**

LEC = Lower East Coast; mgd = million gallons per day.

[a] Values listed for Hendry County are only for the areas within the LEC Planning Area boundaries.

REFERENCES

FDACS. 2022. *Florida Statewide Agricultural Irrigation Demand Estimated Agricultural Water Demand, 2020-2045*. Prepared by The Balmoral Group, Winter Park, FL, for the Florida Department of Agriculture and Consumer Services, Tallahassee, FL. June 30, 2022.

FDEP. 2022. *OCULUS Electronic Document Management System*. Florida Department of Environmental Protection, Tallahassee, FL. Available online at https://depedms.dep.state.fl.us/Oculus/servlet/login.

Rayer, S. and Y. Wang. 2021. *Projections of Florida Population by County, 2025-2045, with Estimates for 2020*. Florida Population Studies, Volume 54, Bulletin 189. Bureau of Economic and Business Research, University of Florida, Gainesville, FL. April 2021.

SFWMD. 1998. *Districtwide Water Supply Assessment.* South Florida Water Management District, West Palm Beach, FL. July 1998.

SFWMD. 2022. *2022 Lower West Coast Water Supply Plan Update*. South Florida Water Management District, West Palm Beach, FL. December 2022.

SFWMD. 2023. *2021 Estimated Water Use Report*. South Florida Water Management District, West Palm Beach, FL. March 2023.

Smajstrla, A.G. 1990. *Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) Model*, Version 5.5. Agricultural Engineering Department, University of Florida, Gainesville, FL.

United States Census Bureau. 2020. *2020 Decennial Census Redistricting Data* (Public Law 94-171). United States Department of Commerce, Washington, DC.

B

Public Supply Utility Summaries

Table of Contents

List of Tables

List of Figures

PUBLIC SUPPLY UTILITY SUMMARIES

This appendix includes summaries of the Public Supply (PS) utilities that have an allocation of 0.10 million gallons per day (mgd) or greater of gross (raw) water in the Lower East Coast (LEC) Planning Area (**Table B-1**). The utility summaries were updated with data from the Florida Department of Environmental Protection (FDEP) Drinking Water Database (FDEP 2022a), population estimates from the 2020 Decennial Census (United States Census Bureau 2020), the FDEP OCULUS database (FDEP 2022b), and the South Florida Water Management District (SFWMD or District) Water Use Permit database. In addition, proposed water supply projects were updated based on utility reports provided to the SFWMD in November 2022 and through direct contact with utilities in 2022–2023. To help understand the information in the utility summaries, a sample profile with descriptions is provided. The utility summaries are alphabetical by county for easy navigation. **Figures B-1** through **B-6** show the current (2021) and future (2045) PS service areas and wellfields. A discussion of utilities and the local governments they serve is provided at the end of the appendix. Potential future water conservation savings are not included in the utility summaries. **Chapter 3** of this plan update addresses conservation and potential water savings.

INFO ⓘ

Acronyms and Abbreviations

ASR – aquifer storage and recovery

BCWWS – Broward County Water and Wastewater Services

CSID – Coral Springs Improvement District

FAS – Floridan aquifer system

FDEP – Florida Department of Environmental Protection

FKAA – Florida Keys Aqueduct Authority

FPL – Florida Power & Light

LTA – Lower Tamiami aquifer

MDWASD – Miami-Dade Water and Sewer Department

mgd – million gallons per day

NSID – North Springs Improvement District

PBCWUD – Palm Beach County Water Utilities Department

PS – Public Supply

PWS ID – Public Water System Identification Number

RO – reverse osmosis

SAS – surficial aquifer system

SRW –South Regional Wellfield

STOF – Seminole Tribe of Florida

WTP – water treatment plant

WWTF – wastewater treatment facility

Table B-1. Summary of the Public Supply utilities with a capacity of 0.10 mgd or greater in the LEC Planning Area.

Supply Entity/Facility	SFWMD Permit Number	Gross (Raw) Water (mgd)			FDEP PWS ID	Rated Net (Finished) Capacity (mgd)
		Annual Allocation	SAS	FAS		
Broward County						
BCWWS District 1	06-00146-W	10.04[a,b]	10.04[b]	2.86	4060167	16.00
BCWWS District 2A	06-01634-W	17.41[a]	17.50[b]	4.56	4060163	30.00
BCWWS District 3[c]	06-01474-W	11.62[b]	11.62[b]	0.00	N/A[c]	N/A[c]
Cooper City	06-00365-W	4.55	4.55	0.00	4060282	7.00
Coral Springs	06-00102-W	9.44	9.44	0.00	4060290	16.00
CSID	06-00100-W	5.42	5.42	0.00	4060291	7.40
Dania Beach	06-00187-W	1.30[b]	1.30[b]	0.00	4060253	5.02
Davie	06-00134-W	19.85	5.02	14.83	4060344	10.00
Deerfield Beach	06-00082-W	14.15[a]	11.91	4.00	4060254	23.60
Fort Lauderdale	06-00123-W	63.82	52.55[b]	11.27	4060486	82.75
Hallandale Beach	06-00138-W	4.03[b]	4.03[b]	0.00	4060573	16.00
Hillsboro Beach	06-00101-W	0.88	0.88	0.00	4060615	2.25
Hollywood	06-00038-W	39.38[a]	24.80	8.68	4060642	59.50
Lauderhill	06-00129-W	8.72	7.70	1.02	4060787	16.00
Margate	06-00121-W	10.10[b]	10.10[b]	0.00	4060845	13.50
Miramar	06-00054-W	18.30	15.15	3.15	4060925	17.75
North Lauderdale	06-00004-W	3.24	3.24	0.00	4060976	7.50
NSID	06-00274-W	5.76[a]	5.20	1.40	4064390	6.80
Parkland	06-00242-W	0.39	0.39	0.00	4061957	0.58
Pembroke Pines	06-00135-W	15.60	15.60	0.00	4061083	18.00
Plantation	06-00103-W	17.24	17.24	0.00	4061121	24.00
Pompano Beach	06-00070-W	18.39[b]	18.39[b]	0.00	4061129	50.00
Royal Waterworks	06-00003-W	0.48	0.48	0.00	4061517	1.00
STOF – Hollywood[d]	N/A[d]	3.53	3.53	0.00	N/A[d]	3.53[d]
Sunrise	06-00120-W	31.09	29.09[b]	2.00	4061408[e]	51.50
Tamarac	06-00071-W	8.47	8.47	0.00	4061429	16.00
Tindall Hammock	06-00170-W	0.74	0.74	0.00	4060419	1.00
Broward County Total		**343.94**	**294.38**	**53.77**		**502.68**
Hendry County						
STOF – Big Cypress[d]	N/A[d]	2.00	2.00	0.00	N/A[d]	2.00[d]
Hendry County Total		**2.00**	**2.00**	0.00		
Miami-Dade County						
Americana Village	13-02004-W	0.26	0.26	0.00	4131403	0.50
Florida City	13-00029-W	2.00	2.00	0.00	4130255	4.00
Homestead	13-00046-W	11.00[f]	11.00	0.00	4130645	19.20
MDWASD	13-00017-W	386.07[b]	349.50[b]	36.57[b]	4130871[g]	459.43
North Miami	13-00059-W	17.27	9.30	7.97	4130977	9.30
North Miami Beach	13-00060-W	38.38	26.31	12.07	4131618	41.50
Miami-Dade County Total		**454.98**	**398.37**	**56.61**		**533.93**

Table B-1. Continued.

Supply Entity/Facility	SFWMD Permit Number	Gross (Raw) Water (mgd)			FDEP PWS ID	Rated Net (Finished) Capacity (mgd)
		Annual Allocation	SAS	FAS		
Monroe County						
FKAA[h]	13-00005-W	23.97[a]	17.79	6.97	4134357	29.80
Monroe County Total		**23.97**	**17.79**	**6.97**		**29.80**
Palm Beach County						
Boca Raton	50-00367-W	51.54	51.54	0.00	4500130	70.00
Boynton Beach	50-00499-W	20.86	16.58	6.42	4500145	34.4
Delray Beach	50-00177-W	19.10[a]	19.10	1.50	4500351	26.00
Golf	50-00612-W	0.69	0.69	0.00	4501528	0.86
Highland Beach	50-00346-W	3.15	0.00	3.15	4500609	3.00
Jupiter	50-00010-W	24.41[a]	18.80	11.71	4501491	30.00
Lake Worth Beach	50-00234-W	11.25	5.25	6.00	4500773	17.40
Lantana	50-00575-W	2.48	2.48	0.00	4500784	3.84
Manalapan	50-00506-W	1.70	0.58	1.12	4500840	2.35
Mangonia Park	50-00030-W	0.58	0.58	0.00	4500841	1.08
Maralago Cay	50-01283-W	0.27	0.27	0.00	4500062	0.42
PBCWUD	50-00135-W	97.40	97.40	7.00	4504393	103.28
PBCWUD Western Region	50-06857-W	9.43	0.00	9.43	4505005	10.00
Palm Springs	50-00036-W	4.62	4.62	0.00	4501058	10.00
Riviera Beach	50-00460-W	9.08	9.08	0.00	4501229	17.50
Seacoast	50-00365-W	26.92[a]	22.30	8.90	4501124	30.50
Tequesta	50-00046-W	4.37[a]	1.10	3.43	4501438	6.33
Wellington	50-00464-W	10.37	10.37	0.00	4500014	12.30
West Palm Beach	50-00615-W	41.20[i]	41.20	0.00	4501559	47.00
Palm Beach County Total		**339.42**	**301.94**	**58.66**		**426.26**
LEC Planning Area Total		**1,165.20**	**1,014.48**	**176.01**		**1,492.67**

[a] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[b] The annual allocation listed is the base condition allocation. See the utility profile and the SFWMD water use permit for increased allocations enabled by implementation of C-51Reservoir Phase 1 offset water deliveries.

[c] This facility does not treat water. It provides raw water to the City of Hollywood for treatment before delivery to BCWWS District 3, which serves a population but does not have a wellfield or water treatment plant and thus does not have a permit or FDEP PWS ID.

[d] The allocation was established in the Water Rights Compact of 1987 not through an SFWMD water use permit, and there is no FDEP PWS ID for the Seminole Tribe of Florida. The Seminole Tribe of Florida is a sovereign Indian Tribe and an independent Tribal Government separate from Broward and Hendry counties. However, for discussion purposes, information relating to the Seminole Tribe of Florida Hollywood Reservation and the Seminole Tribe of Florida Big Cypress Basin Reservation is included in the calculations for Broward and Hendry counties, respectively.

[e] This system has two FDEP PWS IDs: 4061408 and 4061410.

[f] The value is the base condition allocation. See the utility profile and the SFWMD water use permit for increased allocations enabled by implementation of alternative water projects providing SAS offsets.

[g] This system has two FDEP PWS IDs: 4130871 and 4131202.

[h] Withdrawals are located in Miami-Dade County.

[i] Withdrawal source is surface water from Clear Lake.

SAMPLE UTILITY COMPANY

Service Area: Sample city and portions of unincorporated county.

Description: This description includes water sources, type of WTP, and other issues of concern to the utility. If the utility produces reclaimed water, information regarding the quantity and customers may be included. If the utility sells or purchases bulk water, that information is listed.

Population and Finished Water Demand				
[1] [2]	Existing	Projected		
	2021	2025	2035	2045
Population	100,000	110,000	120,000	130,000
Average 2017-2021 Per Capita (gallons per day finished water)	100			
Potable Water Demands (daily average annual finished water in mgd)	**10.00**	**11.00**	**12.00**	**13.00**

[3] SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	[4] Permit Number 12-34567-W (expires 2045)
Surface Water	2.00
Surficial Aquifer System	14.00
Floridan Aquifer System	0.00
Total Allocation	[5] **16.00**

FDEP Potable Water Treatment Capacity (mgd) (PWS ID # 1234567)				
Permitted Capacity by Source	[6] Cumulative Facility & Project Capacity (mgd)			
	Existing	[7] Projected		
	2021	2025	2035	2045
Surficial Aquifer System/Surface Water	18.00	18.00	18.00	18.00
Floridan Aquifer System	0.00	2.00	3.00	3.00
[8] **Total Potable Treatment Capacity**	**18.00**	**20.00**	**21.00**	**21.00**
[9] Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	1.00	1.00	4.00	4.00
Total Nonpotable Treatment Capacity	**1.00**	**1.00**	**1.00**	**1.00**

Project Summary						
Water Supply Project	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
[10] Potable Water						
2.00 mgd Expansion of Floridan RO Treatment Plant	FAS	2021	$14.00	2.00	2.00	2.00
Floridan Wells and RO Treatment Plant Expansion	FAS	2029	$4.00	0.00	1.00	1.00
[11] **Total Potable Water**			**$18.00**	[12] **[illegible]0**	**3.00**	**3.00**
Nonpotable Water						
3.00 mgd Reclaimed Water Facility	Reclaimed	2029	$5.00	0.00	3.00	3.00
ASR and Irrigation Supply	Stormwater	2034	$2.00	0.00	1.00	1.00
[13] **Total Nonpotable Water**			**$7.00**	**0.00**	**4.00**	**4.00**
[14] **Total New Water**			**$25.00**	**2.00**	**7.00**	**7.00**

1 **Population** – The 2021 permanent resident populations were determined by assigning 2020 United States Census Bureau (2020) block data to 2023 PS utility service areas. To project permanent resident populations to 2045, the relative growth rates for PS utility service areas were developed from county population projections. (See **Appendix A** for more information.)

2 **Average 2017-2021 Per Capita** (gallons per day finished water) – A PS utility's per capita is calculated by dividing total net (finished) water produced each year from monthly operating reports submitted by utilities to the FDEP (2022a) by the utility's permanent service area population for that year. Each utility's per capita was calculated for 2017 to 2021, then averaged over the 5 years.

3 **Potable Water Demands** (daily average annual finished water in mgd) – The 2021 base year demand was calculated using the PS utility's average 2017 to 2021 per capita multiplied by the 2021 service area permanent resident population. The projected demands for 2021 to 2045 were calculated using the utility's average 2017 to 2021 per capita multiplied by the utility's projected populations for those years.

4 **Allocation from the SFWMD Water Use Permit** – The total allocation is composed of gross (raw) surface water and groundwater (from the SAS and FAS) allocations, as described in the utility's water use permit. The 2021 allocation is assumed to continue through 2045 unless noted otherwise.

5 **Total Allocation** – The total gross (raw) water allocation in the water use permit. For utilities with multiple sources, total allocation may be less than the sum of the individual source allocations; this is indicated in the appropriate profiles.

6 **FDEP Permitted Capacity** – The total net (finished) water treatment capacity of the WTP(s), as provided by the FDEP (2022a). The treatment capacity is split into the capacity available to process raw water from surface water as well as groundwater.

7 **Future Projected Treatment Capacity** – The net (finished) water treatment capacity created by projects listed in the Project Summary (Item 10). Project treatment capacity to be completed by 2025 is shown in the 2025 column, treatment capacity to be completed between 2026 and 2035 is in the 2035 column, and treatment capacity to be completed between 2036 and 2045 is in the 2045 column.

8 **Total Potable Capacity** – The existing net (finished) water capacity of the WTP(s) owned/operated by the utility in addition to the volumes of net (finished) water produced by future planned projects.

9 **Reclaimed Water** – The capacity of the WWTF(s) to produce reclaimed water, as provided by the FDEP (2022b). Additional capacity is from projects planned by the utility (listed under Item 12).

10 **Potable Water Projects Summary** – A description of the potable water supply projects the utility is proposing to construct. Only projects that produce additional potable water (e.g., wells, WTPs) are included; maintenance or replacement projects are not included. Each project has a water source, anticipated completion date, estimated total capital cost, and projected volume of treatment capacity. Proposed projects have been screened at a planning level but must meet permit issuance criteria.

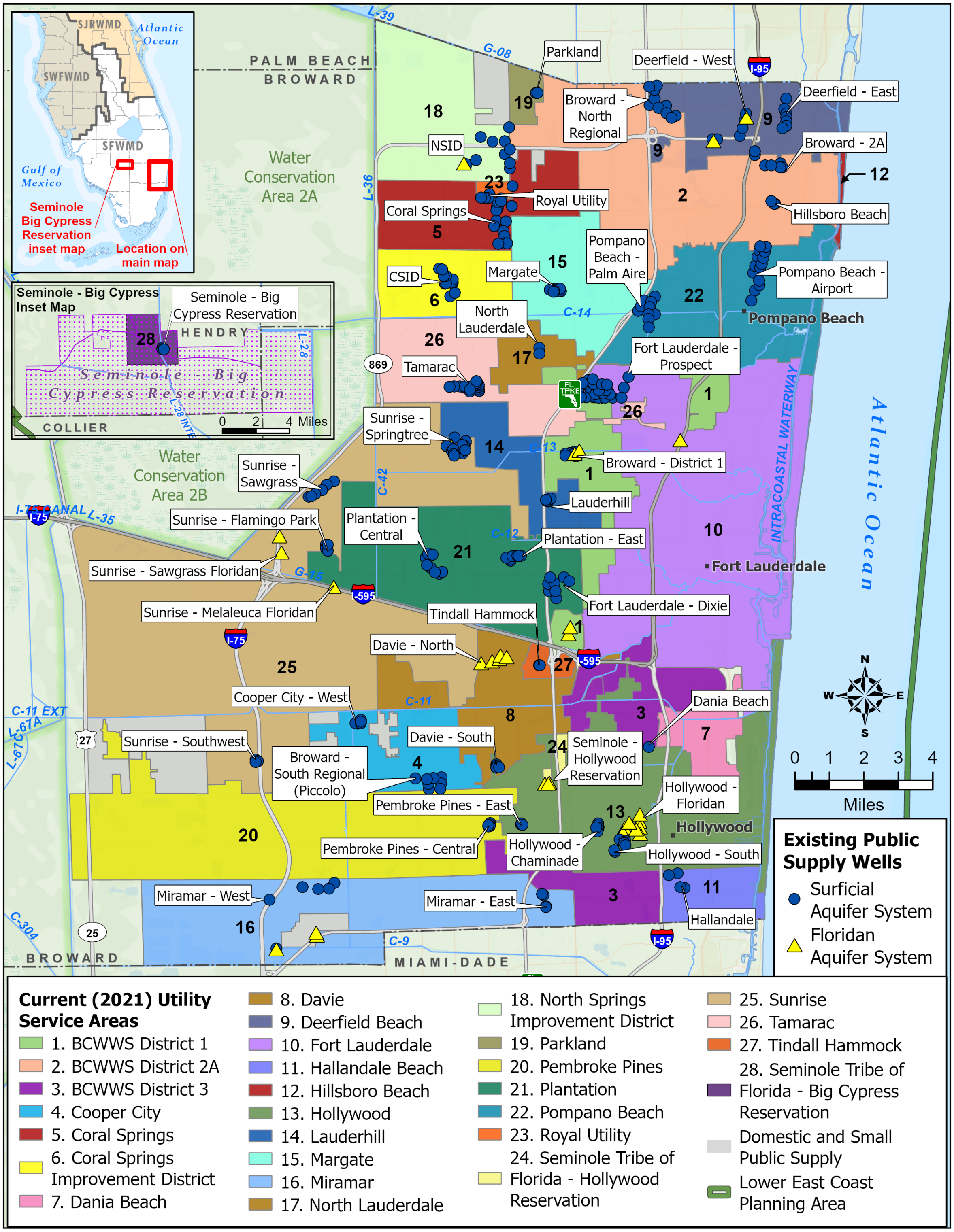
11 **Total Projected Cumulative Design Capacity for Potable Water for 2025, 2035, and 2045** – The total volume of potable water supply projects expected to be completed by 2025, 2035, and 2045, respectively. The totals are added to the appropriate projected capacities in Item 7.

12 **Nonpotable Water Projects Summary** – A description of the nonpotable water supply projects the utility is proposing to construct. Only projects that produce additional nonpotable water are included; maintenance or replacement projects are not included. Each project has a water source, anticipated completion date, estimated total capital cost, and projected volume of treatment capacity.

13 **Total Projected Cumulative Design Capacity for Nonpotable Water for 2025, 2035, and 2045** – The total volume of nonpotable water supply projects expected to be completed by 2025, 2035, and 2045, respectively. If the project provides reclaimed water, totals are added to the appropriate projected capacities in Item 9.

14 **Total Projected Cumulative Design Capacity for New Water for 2025, 2035, and 2045** – The total projected cost and capacity of potable and nonpotable water supply projects the utility is proposing to construct between 2021 and 2045.

BROWARD AND HENDRY COUNTIES



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_PWS.aprx Layout Name: 20230505_SACurrent2021_Broward_Wellfields_E

Figure B-1. Existing (2021) Public Supply utility service areas and wellfields in Broward County and the Seminole Tribe of Florida Big Cypress Reservation in a portion of Hendry County.

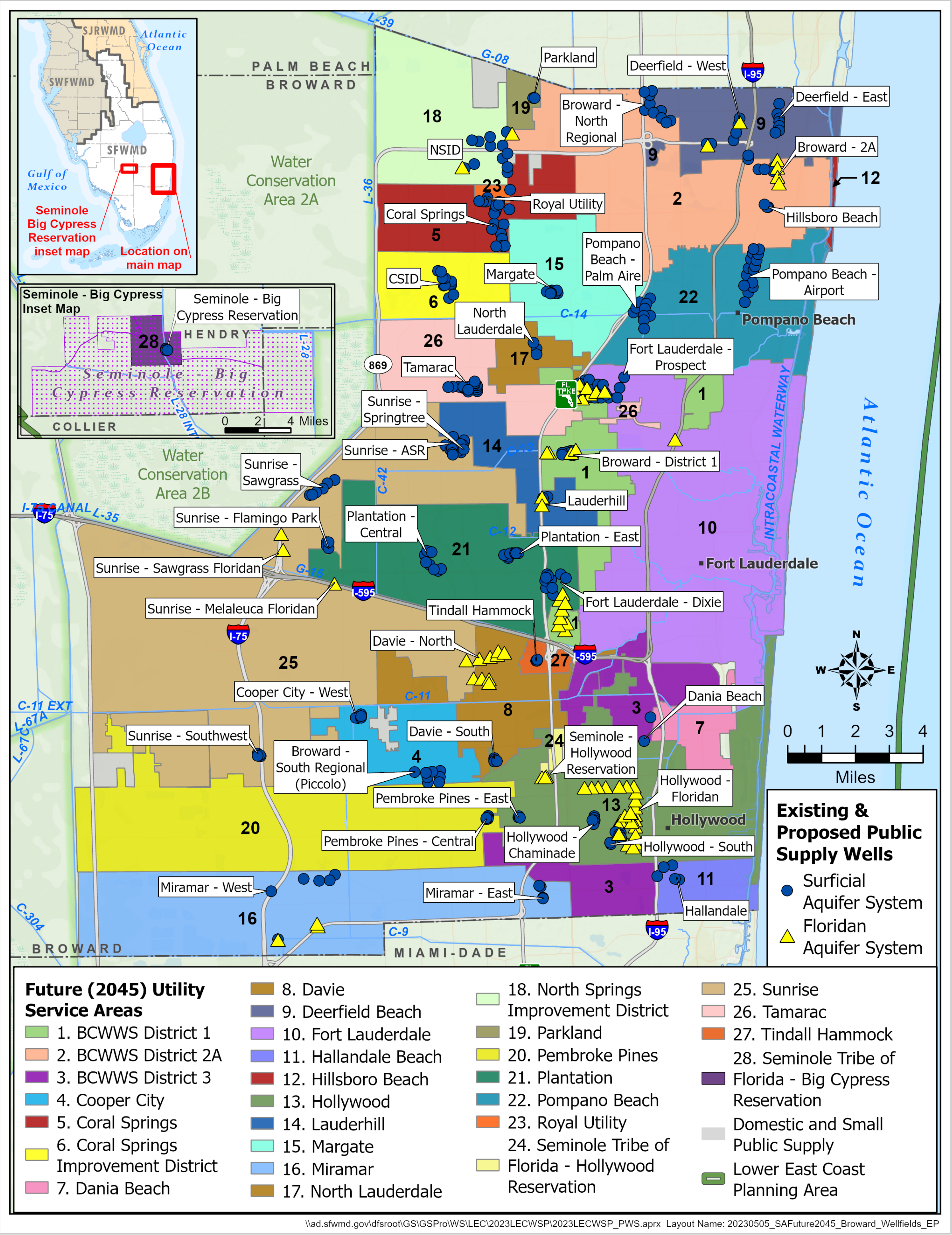


Figure B-2. Projected (2045) Public Supply utility service areas and wellfields in Broward County and the Seminole Tribe of Florida Big Cypress Reservation in a portion of Hendry County.

BROWARD COUNTY WATER AND WASTEWATER SERVICES DISTRICT 1

Service Area: All or portions of the cities of Fort Lauderdale, Lauderdale Lakes, Lauderhill, North Lauderdale, Oakland Park, Plantation, Pompano Beach, Tamarac, and unincorporated areas of Broward County.

Description: Potable water supplies are obtained from the Broward County District 1 SAS wellfield, and water is treated at one WTP using lime softening. Two FAS wells were constructed but are inactive. The utility has postponed plans to develop the FAS as an alternative water supply.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	86,812	89,584	96,430	104,299
Average 2017-2021 Per Capita (gallons per day finished water)	83			
Potable Water Demands (daily average annual finished water in mgd)	**7.21**	**7.44**	**8.00**	**8.66**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00146-W (expires 2065[a])
SAS	10.04
SAS w/C-51	10.93
FAS	2.86
Total Allocation	**10.04**
Total Allocation w/C-51	**10.93[b]**

FDEP Potable Water Treatment Capacity (PWS ID # 4060167)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	16.00	16.00	16.00	16.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**16.00**	**16.00**	**16.00**	**16.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
C-51 Reservoir Phase 1 – BCWWS D1	Surface Water	2023	$4.60	1.00	1.00	1.00
Total Nonpotable Water			**$4.60**	**1.00**	**1.00**	**1.00**
Total New Water			**$4.60**	**1.00**	**1.00**	**1.00**

---

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (1 mgd). The base condition SAS allocation expires in 2040, and the FAS allocation expires in 2040. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

BROWARD COUNTY WATER AND WASTEWATER SERVICES DISTRICT 2A/NORTH REGIONAL WELLFIELD

Service Area: All or portions of the cities of Coconut Creek, Deerfield Beach, Lighthouse Point, Parkland, and Pompano Beach, including unincorporated areas of Broward County.

Bulk Water: The utility provides up to 0.59 mgd of raw water to the City of Deerfield Beach.

Description: Potable water supplies are obtained from two SAS wellfields (2A and North Regional). Water is treated at the 2A WTP using lime softening, and the North Regional Wellfield provides approximately 6.20 mgd of additional raw water to the 2A WTP.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	121,376	124,391	127,520	131,374
Average 2017-2021 Per Capita (gallons per day finished water)	110			
Potable Water Demands (daily average annual finished water in mgd)	**13.35**	**13.68**	**14.03**	**14.45**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-01634-W (expires 2065[a])
SAS	17.41
SAS w/C-51	19.50[a]
FAS	4.56
Bulk Raw Water Demands (daily average annual raw water in mgd delivered directly to City of Deerfield Beach)	(0.59)
Total Allocation	**17.41[b]**
Total Allocation w/C-51	**19.50[a]**

FDEP Potable Water Treatment Capacity (PWS ID # 4060163)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	30.00	30.00	30.00	30.00
FAS	0.00	0.00	6.00[c]	6.00[c]
Total Potable Treatment Capacity	**30.00**	**30.00**	**36.00**	**36.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	6.40	22.40	22.40	22.40
Total Nonpotable Treatment Capacity	**6.40**	**22.40**	**22.40**	**22.40**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
District 2A 6 mgd RO WTP Expansion	FAS	2035[c]	$33.34	0.00	6.00	6.00
Total Potable Water			**$33.34**	**0.00**	**6.00**	**6.00**
Nonpotable Water						
C-51 Reservoir Phase 1 – BCWWS D2	Surface Water	2023	$9.20	2.00	2.00	2.00
North Regional WWTF 16 mgd Reclaimed Expansion	Reclaimed	2023	$54.20	16.00	16.00	16.00
Total Nonpotable Water			**$63.40**	**18.00**	**18.00**	**18.00**
Total New Water			**$96.74**	**18.00**	**24.00**	**24.00**

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (2 mgd). The base condition SAS allocation expires in 2040, and the FAS allocation expires in 2040. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[c] The expansion of the 2A WTP is postponed pending the status of the C-51 Reservoir Phase 1 project.

BROWARD COUNTY WATER AND WASTEWATER SERVICES DISTRICT 3/SOUTH REGIONAL WELLFIELD

Service Area: The District 3 service area includes the City of West Park and the Town of Pembroke Park and portions of the cities of Fort Lauderdale, Dania Beach, Hollywood, Miramar, Pembroke Pines, the Town of Davie, and unincorporated areas of Broward County.

Description: Raw water is obtained from the SAS via the SRW and is distributed to multiple end users. The BCWWS-SRW supplies bulk raw water to the cities of Dania Beach, Hallandale Beach, and Hollywood to supplement existing raw water supplies. Raw water from the SRW provided to the City of Hollywood is treated and sold back to BCWWS to serve the District 3 service area demand. The SRW also provides bulk raw water to the FPL Dania Beach Clean Energy Center for industrial use.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	0[a]	0[a]	0[a]	0[a]
Average 2017-2021 Per Capita (gallons per day finished water)	0			
Potable Water Demands (daily average annual finished water in mgd)	**0.00**	**0.00**	**0.00**	**0.00**

SFWMD Water Use Permitted Allocation (mgd)		
Potable Water Source	Permit Number 06-01474-W (expires 2065)[b]	
	SAS Allocation Without C-51	SAS Allocation With C-51
SAS	11.62	16.62
FAS	0.00	0.00
Bulk Raw Water Withdrawals (to City of Dania Beach)	(1.58)[b]	(2.58)[c]
Bulk Raw Water Withdrawals (to City of Hallandale Beach)	(3.26)[c]	(4.26)[d]
Bulk Raw Water Withdrawals (to City of Hollywood for use and for BCWWS District 3)	(5.78)[d]	(8.78)[e]
Bulk Raw Water Withdrawals (to FPL)	(1.00)	(1.00)
Total Allocation Demands	**11.62[e]**	**16.62[f]**

FDEP Potable Water Treatment Capacity (PWS ID # N/A)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.00	0.00	0.00	0.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**

Broward County Water and Wastewater Services South Regional Wellfield (Continued)

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Nonpotable Water						
C-51 Reservoir Phase 1 – BCWWS D3	Surface Water	2023	$13.80	3.00	3.00	3.00
Total Nonpotable Water			**$13.80**	**3.00**	**3.00**	**3.00**
Total New Water			**$13.80**	**3.00**	**3.00**	**3.00**

[a] The BCWWS-SRW supplies raw water and is not associated with dedicated treatment or storage facilities.

[b] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1. The base condition SAS allocation expires in 2038. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[c] Dania Beach's maximum demand supplied by BCWWS-SRW will be 1.58 mgd with 1.00 mgd from C-51 Reservoir Phase 1 offset between 2023 and 2038. Dania Beach will be responsible for obtaining an alternative water supply to meet additional demand above the 1.58 mgd base condition plus 1.00 mgd of C-51 Reservoir Phase 1 offset allocated from BCWWS-SRW.

[d] Hallandale Beach's maximum demand supplied by BCWWS-SRW will be 3.26 mgd with 1.00 mgd from C-51 Reservoir Phase 1 offset between 2023 and 2038. Hallandale Beach will be responsible for obtaining an alternative water supply to meet additional demand above the 3.26 mgd base condition plus 1.00 mgd of C-51 Reservoir Phase 1 offset allocated from BCWWS-SRW.

[e] Hollywood's maximum demand supplied by BCWWS-SRW will be 5.78 mgd with 3.00 mgd from C-51 Reservoir Phase 1 offset between 2023 and 2038. Hollywood will be responsible for obtaining an alternative water supply to meet additional demand above the 5.78 mgd base condition plus 3.00 mgd of C-51 Reservoir Phase 1 offset allocated from BCWWS-SRW.

[f] The base condition raw water allocation for the BCWWS-SRW is 11.62 mgd between 2023 and 2038, which must be renewed every 20 years. The completion of the C-51 Reservoir Phase 1 project will provide an additional SAS offset allocation of 5.00 mgd for BCWWS-SRW (3.00 mgd for BCWWS District 3, 1.00 mgd for Dania Beach, and 1.00 mgd for Hallandale Beach). If the base condition is renewed in 2038 and the C-51 Reservoir Phase 1 project is operational, then the total allocation for BCWWS-SRW will be 16.62 mgd.

COOPER CITY

Service Area: City of Cooper City and the towns of Davie and Southwest Ranches.

Description: Potable water supplies are obtained from one SAS wellfield (Cooper City West), and water is treated at the Cooper City West WTP using membrane softening.

<table>
<tr><th colspan="16">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">Population</td><td colspan="3">34,653</td><td colspan="3">34,924</td><td colspan="3">35,658</td><td colspan="3">36,407</td></tr>
<tr><td colspan="4">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="12">90</td></tr>
<tr><td colspan="4">**Potable Water Demands** (daily average annual finished water in mgd)</td><td colspan="3">**3.12**</td><td colspan="3">**3.14**</td><td colspan="3">**3.21**</td><td colspan="3">**3.28**</td></tr>
<tr><th colspan="16">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="12">Permit Number 06-00365-W (expires 2030)</td></tr>
<tr><td colspan="4">SAS</td><td colspan="12">4.55</td></tr>
<tr><td colspan="4">FAS</td><td colspan="12">0.00</td></tr>
<tr><td colspan="4">**Total Allocation**</td><td colspan="12">**4.55**</td></tr>
<tr><th colspan="16">FDEP Potable Water Treatment Capacity (PWS ID # 4060282)</th></tr>
<tr><td colspan="4" rowspan="3">Permitted Capacity by Source</td><td colspan="12">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">SAS</td><td colspan="3">7.00</td><td colspan="3">7.00</td><td colspan="3">7.00</td><td colspan="3">7.00</td></tr>
<tr><td colspan="4">FAS</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">**Total Potable Treatment Capacity**</td><td colspan="3">**7.00**</td><td colspan="3">**7.00**</td><td colspan="3">**7.00**</td><td colspan="3">**7.00**</td></tr>
<tr><th colspan="16">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed Water</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">**Total Nonpotable Treatment Capacity**</td><td colspan="3">**0.00**</td><td colspan="3">**0.00**</td><td colspan="3">**0.00**</td><td colspan="3">**0.00**</td></tr>
<tr><th colspan="16">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="12">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="4">2025</td><td colspan="4">2035</td><td colspan="4">2045</td></tr>
<tr><td colspan="16">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">**Total Potable Water**</td><td>**$0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td></tr>
<tr><td colspan="16">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">**Total Nonpotable Water**</td><td>**$0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td></tr>
<tr><td colspan="3">**Total New Water**</td><td>**$0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td></tr>
</table>

CORAL SPRINGS

Service Area: A portion of the City of Coral Springs.

Description: Potable water supplies are obtained from one SAS wellfield, and water is treated at one WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	64,604	69,116	74,832	77,092
Average 2017-2021 Per Capita (gallons per day finished water)	95			
Potable Water Demands (daily average annual finished water in mgd)	**6.14**	**6.57**	**7.12**	**7.32**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00102-W (expires 2031)			
SAS	9.44			
FAS	0.00			
Total Allocation	**9.44**			
FDEP Potable Water Treatment Capacity (PWS ID # 4060290)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	16.00	16.00	16.00	16.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**16.00**	**16.00**	**16.00**	**16.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
		Total Potable Water	**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
		Total Nonpotable Water	**$0.00**	**0.00**	**0.00**	**0.00**
		Total New Water	**$0.00**	**0.00**	**0.00**	**0.00**

CORAL SPRINGS IMPROVEMENT DISTRICT

Service Area: A portion of the City of Coral Springs.

Description: Potable water supplies are obtained from one SAS wellfield, and water is treated at one WTP using RO.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	40,227	40,626	41,442	41,774
Average 2017-2021 Per Capita (gallons per day finished water)	97			
Potable Water Demands (daily average annual finished water in mgd)	**3.90**	**3.94**	**4.02**	**4.05**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00100-W (expires 2030)			
SAS	5.42			
FAS	0.00			
Total Allocation	**5.42**			
FDEP Potable Water Treatment Capacity (PWS ID # 4060291)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	7.40	7.40	7.40	7.40
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**7.40**	**7.40**	**7.40**	**7.40**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

DANIA BEACH

Service Area: A portion of the City of Dania Beach.

Bulk Water: The city purchases bulk raw water from BCWWS-SRW.

Description: Raw Water from BCWWS-SRW and the Dania SAS Wellfield is treated at the Dania WTP using lime softening and membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	19,088	20,470	23,876	27,591
Average 2017-2021 Per Capita (gallons per day finished water)	113			
Potable Water Demands (daily average annual finished water in mgd)	**2.16**	**2.31**	**2.70**	**3.12**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00187-W (expires 2042)			
SAS	1.30			
FAS	0.00			
Bulk Raw Water Purchase (from BCWWS-SRW)	2.58[a]			
Total Allocation (including bulk water purchase)	**3.88**			
FDEP Potable Water Treatment Capacity (PWS ID # 4060253)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	5.00	5.00	5.00	5.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**5.00**	**5.00**	**5.00**	**5.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
		Total Potable Water	**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
C-51 Reservoir Phase 1 – Dania	Surface Water	2023	$4.60	1.00	1.00	1.00
		Total Nonpotable Water	**$4.60**	**1.00**	**1.00**	**1.00**
		Total New Water	**$4.60**	**1.00**	**1.00**	**1.00**

[a] Dania Beach maintains a bulk water agreement to purchase up to 1.58 mgd from BCCWS-SRW and entered into a capacity allocation agreement with Palm Beach Aggregates, LLC for an additional 1.00 mgd from the C-51 Reservoir Phase 1 to be used to offset water pumped from the BCCWS-SRW, making the total raw water available from BCCWS-SRW 2.58 mgd. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

DAVIE

Service Area: A portion of the Town of Davie.

Bulk Water: Fort Lauderdale provides a small quantity of bulk finished water and Davie sells a small quantity of bulk water to Tindall Hammock Soil and Water Conservation District.

Description: Potable water supplies are obtained from two SAS wellfields (Davie North and Davie South) and one FAS wellfield (Davie RO). SAS water is treated at two WTPs (System I and System III) using lime softening. FAS water is treated at the System V WTP using RO.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	34,034	36,513	41,814	47,873
Average 2017-2021 Per Capita (gallons per day finished water)	138			
Potable Water Demands (daily average annual finished water in mgd)	**4.70**	**5.04**	**5.77**	**6.61**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00134-W (expires 2030)
SAS	5.02
FAS	14.83
Total Allocation	**19.85**

FDEP Potable Water Treatment Capacity (PWS ID # 4060344)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	4.00	4.00	4.00	4.00
FAS	6.00	6.00	6.00	6.00
Total Potable Treatment Capacity	**10.00**	**10.00**	**10.00**	**10.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	1.67	1.67	1.67	1.67
Total Nonpotable Treatment Capacity	**1.67**	**1.67**	**1.67**	**1.67**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
Reclaimed Water Main Extension – Bamford Sports Complex and along University Drive between SW 36th Street and SW 30th Street	Reclaimed	2023	$1.40	0.20[a]	0.20[a]	0.20[a]
Reclaimed Water System Extension along SW 92nd Avenue from SW 36th Avenue to Griffin Road	Reclaimed	2025	$2.00	1.00[a]	1.00[a]	1.00[a]
Reclaimed Water System Extension along SW 30th Street from 75th Avenue to College Avenue	Reclaimed	2025	$0.64	0.30[a]	0.30[a]	0.30[a]
Total Nonpotable Water			**$4.04**	**1.50**	**1.50**	**1.50**
Total New Water			**$4.04**	**1.50**	**1.50**	**1.50**

[a] The project increases distribution capacity but does not add to reclaimed water treatment capacity.

DEERFIELD BEACH

Service Area: City of Deerfield Beach.

Bulk Water: The city purchases raw water from the BCWWS District 2A/North Regional Wellfield.

Description: Potable water supplies are obtained from two wellfields: the East Wellfield withdraws from the SAS, and the West Wellfield withdraws from the SAS and FAS. Water is treated at the West WTP using lime softening, membrane softening, and RO (for brackish FAS water).

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	55,047	56,838	61,475	65,213
Average 2017-2021 Per Capita (gallons per day finished water)	164			
Potable Water Demands (daily average annual finished water in mgd)	**9.03**	**9.32**	**10.08**	**10.69**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00082-W (expires 2029)
SAS	11.91
FAS	4.00
Bulk Water Purchase (from BCWWS District 2A/North Regional Wellfield)	0.59
Total Allocation	**14.15**[a]

FDEP Potable Water Treatment Capacity (PWS ID # 4060254)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	20.60	20.60	20.60	20.60
FAS	3.00	3.00	3.00	3.00
Total Potable Treatment Capacity	**23.60**	**23.60**	**23.60**	**23.60**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
Reclaimed Water Distribution Line and Purchase Agreement with BCWWS	Reclaimed	2030	$11.00	0.00	1.00[b]	1.00[b]
Total Nonpotable Water			**$11.00**	**0.00**	**1.00**	**1.00**
Total New Water			**$11.00**	**0.00**	**1.00**	**1.00**

[a] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[b] The project increases distribution capacity but does not add to reclaimed water treatment capacity.

FORT LAUDERDALE

Service Area: Cities of Fort Lauderdale, Lauderdale Lakes, North Lauderdale, Oakland Park, and Wilton Manors; portions of unincorporated Broward County; cities of Hollywood, and Lauderhill; Port Everglades; towns of Lauderdale-By-The-Sea and Davie; and villages of Lazy Lake and Sea Ranch Lakes.

Bulk Water: Fort Lauderdale sells a small amount of bulk finished water to Davie. The bulk water agreement to sell approximately 0.17 mgd of bulk water to Tamarac will not be renewed in 2024.

Description: Potable water supplies are obtained from the Prospect and Dixie wellfields, and water is treated at two WTPs: Fiveash WTP uses lime softening and Peele-Dixie WTP uses membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	243,077	253,429	284,492	305,742
Average 2017-2021 Per Capita (gallons per day finished water)	152			
Potable Water Demands (daily average annual finished water in mgd)	36.95	38.52	43.24	46.47

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00123-W (expires 2065[a])
SAS	52.55
SAS w/C-51	55.55
FAS	11.27
Total Allocation	**63.82**
Total Allocation w/C-51	**66.82**

FDEP Potable Water Treatment Capacity (PWS ID # 4060486)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	82.75	82.75	82.75	82.75
FAS	0.00	0.00	6.00	6.00
Total Potable Treatment Capacity	**82.75**	**82.75**	**88.75**	**88.75**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Construct New 6.00 mgd RO at Dixie WTP and FAS Wellfield	FAS	2034	$49.10	0.00	6.00	6.00
Total Potable Water			**$49.10**	**0.00**	**6.00**	**6.00**
Nonpotable Water						
C-51 Reservoir Phase 1 – Fort Lauderdale	Surface Water	2023	$13.80	3.00	3.00	3.00
Total Nonpotable Water			**$13.80**	**3.00**	**3.00**	**3.00**
Total New Water			**$62.90**	**3.00**	**9.00**	**9.00**

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (3 mgd). The base condition SAS allocation expires in 2041, and the FAS allocation expires in 2051. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

HALLANDALE BEACH

Service Area: City of Hallandale Beach.

Bulk Water: The city purchases raw water from the BCWWS-SRW.

Description: Potable water supplies are obtained from the SAS via the Hallandale Wellfield, and water is treated at the Hallandale WTP using lime softening and membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	41,282	42,987	45,162	46,987
Average 2017-2021 Per Capita (gallons per day finished water)	150			
Potable Water Demands (daily average annual finished water in mgd)	**6.19**	**6.45**	**6.77**	**7.05**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00138-W (expires 2039)			
SAS	4.03			
FAS	0.00			
Bulk Raw Water Purchase (from BCWWS-SRW)	4.26[a]			
Total Allocation (including bulk water purchase)	**8.29**			
FDEP Potable Water Treatment Capacity (PWS ID # 4060573)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	16.00	16.00	16.00	16.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**16.00**	**16.00**	**16.00**	**16.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
SAS Well 9	SAS	2023	$1.80	3.03[b]	3.03[b]	3.03[b]
Total Potable Water			**$1.80**	**3.03[b]**	**3.03[b]**	**3.03[b]**
Nonpotable Water						
C-51 Reservoir Phase 1 – Hallandale	Surface Water	2023	$4.60	1.00	1.00	1.00
Total Nonpotable Water			**$4.60**	**1.00**	**1.00**	**1.00**
Total New Water			**$6.40**	**4.03[b]**	**4.03[b]**	**4.03[b]**

[a] The Hallandale maintains a bulk water agreement to purchase up to 3.26 mgd from BCCWS-SRW and entered into a capacity allocation agreement with Palm Beach Aggregates, LLC for an additional 1.00 mgd from the C-51 Reservoir Phase 1 to be used to offset water pumped from the BCCWS-SRW, making the total raw water available from BCCWS-SRW 4.26 mgd. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The Hallandale installed Well #9, which became operational 2/10/23 to increase its SAS allocation up to its base condition of 4.03 mgd. Well #9 does not increase potable water treatment capacity.

HILLSBORO BEACH

Service Area: Town of Hillsboro Beach.

Description: Potable water supplies are obtained from the SAS via the Hillsboro Beach Wellfield, and water is treated at the Hillsboro Beach WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	2,087	2,108	2,194	2,282
Average 2017-2021 Per Capita (gallons per day finished water)	327			
Potable Water Demands (daily average annual finished water in mgd)	**0.68**	**0.69**	**0.72**	**0.75**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00101-W (expires 2030)			
SAS	0.88			
FAS	0.00			
Total Allocation	**0.88**			
FDEP Potable Water Treatment Capacity (PWS ID # 4060615)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	2.25	2.25	2.25	2.25
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**2.25**	**2.25**	**2.25**	**2.25**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

HOLLYWOOD

Service Area: City of Hollywood, portions of the City of Dania Beach, Town of Davie, and City of Fort Lauderdale.

Bulk Water: Hollywood purchases bulk raw water from the BCWWS-SRW and provides treated (finished) water to BCWWS District 3, which includes the Town of Pembroke Park and the City of West Park, and the western portions of the City of Dania Beach.

Description: Potable water supplies are obtained from the SAS via the Chaminade and South wellfields and the FAS via the Floridan Wellfield. Water is treated at the City of Hollywood WTP using lime softening, membrane softening, and RO.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population (City of Hollywood service area)	155,905	163,304	171,521	175,603
Bulk Population (BCWWS District 3 service area)	54,394	56,972	62,325	65,235
Total Population (City of Hollywood and bulk)	210,299	220,276	233,846	240,838
Average 2017-2021 Per Capita (gallons per day finished water)	107			
Potable Water Demands (daily average annual finished water in mgd)	**22.50**	**23.57**	**25.02**	**25.77**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00038-W (expires 2028)			
SAS	24.80			
FAS	8.68			
Bulk Raw Water from BCWWS-SRW	5.78[a]			
Total Allocation (including bulk water purchase)	**39.38**[b]			
FDEP Potable Water Treatment Capacity (PWS ID # 4060642)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	55.50	55.50	55.50	55.50
FAS	4.00	4.00	4.00	8.00
Total Potable Treatment Capacity	**59.50**	**59.50**	**59.50**	**63.50**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	8.00	8.00	8.00	8.00
Total Nonpotable Treatment Capacity	**8.00**	**8.00**	**8.00**	**8.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Hollywood RO WTP 2.00 mgd Expansion Train E and FAS Wells F14 and F15	FAS	2034	$5.00	0.00	2.00	2.00
Hollywood RO WTP 2.00 mgd Expansion Train F and FAS Wells F16 and F17	FAS	2042	$5.00	0.00	0.00	2.00
Total Potable Water			**$10.00**	**0.00**	**2.00**	**4.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$10.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$10.00**	**0.00**	**2.00**	**4.00**

[a] BCWWS-SRW has purchased 3.00 mgd of C-51 Reservoir Phase 1 storage capacity to offset additional raw water withdrawals above the base condition. Once the required volume of offset water is delivered, the BCWWS-SRW can withdraw up to 8.65 mgd (5.78 mgd of base condition and 2.87 mgd of offset water) for Hollywood.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

LAUDERHILL

Service Area: City of Lauderhill.

Description: Potable water supplies are obtained from the SAS via the Lauderhill Wellfield, and water is treated at the Lauderhill WTP using lime softening. The city anticipates construction of FAS wells and an RO WTP to meet future demands.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	63,484	65,053	68,345	71,106
Average 2017-2021 Per Capita (gallons per day finished water)	94			
Potable Water Demands (daily average annual finished water in mgd)	**5.97**	**6.11**	**6.42**	**6.68**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00129-W (expires 2030)
SAS	7.70
FAS	1.02
Total Allocation	**8.72**

FDEP Potable Water Treatment Capacity (PWS ID # 4060787)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	16.00	16.00	16.00	16.00
FAS	0.00	0.00	3.00	3.00
Total Potable Treatment Capacity	**16.00**	**16.00**	**19.00**	**19.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Lauderhill New 1.00 mgd RO Facility and FAS Wells – Phase 1	FAS	2028	$25.00	0.00	1.00	1.00
Lauderhill 2.00 mgd Expansion of RO Facility – Phase 2	FAS	2030	$30.00	0.00	2.00	2.00
Total Potable Water			**$55.00**	**0.00**	**3.00**	**3.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$55.00**	**0.00**	**3.00**	**3.00**

MARGATE

Service Area: City of Margate and a portion of the City of Coconut Creek.

Description: Potable water supplies are obtained from the SAS via the Margate Wellfield, and water is treated at the Margate WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	64,915	67,586	72,398	75,323
Average 2017-2021 Per Capita (gallons per day finished water)	89			
Potable Water Demands (daily average annual finished water in mgd)	**5.78**	**6.02**	**6.44**	**6.70**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00121-W (expires 2065)[a]
SAS	8.53
SAS w/C-51	10.10[b]
FAS	0.00
Total Allocation	**8.53**
Total Allocation w/ C-51	**10.10[b]**

FDEP Potable Water Treatment Capacity (PWS ID # 4060845)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	13.50	13.50	13.50	13.50
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**13.50**	**13.50**	**13.50**	**13.50**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
C-51 Reservoir Phase 1 – Margate	Surface Water	2023	$9.20	2.00	2.00	2.00
Total Nonpotable Water			**$9.20**	**2.00**	**2.00**	**2.00**
Total New Water			**$9.20**	**2.00**	**2.00**	**2.00**

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (2 mgd). The base condition SAS allocation expires in 2040. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The 10.10 mgd allocation is contingent upon the C-51 Reservoir Phase 1 project being fully operational and offset water being delivered.

MIRAMAR

Service Area: City of Miramar.

Description: Potable water supplies are obtained from The Eastern SAS Wellfield and the Western SAS and FAS Wellfield, each with its own WTP. The Eastern WTP treats SAS water using membrane softening. The Western WTP treats FAS water via RO and SAS water via membrane softening.

<table>
<tr><th colspan="5">Population and Finished Water Demand</th></tr>
<tr><th rowspan="2"></th><th>Existing</th><th colspan="3">Projected</th></tr>
<tr><th>2021</th><th>2025</th><th>2035</th><th>2045</th></tr>
<tr><td>Population</td><td>128,539</td><td>132,496</td><td>141,930</td><td>146,216</td></tr>
<tr><td>Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="4">105</td></tr>
<tr><td>**Potable Water Demands** (daily average annual finished water in mgd)</td><td>**13.50**</td><td>**13.91**</td><td>**14.90**</td><td>**15.35**</td></tr>
<tr><th colspan="5">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><th>Potable Water Source</th><th colspan="4">Permit Number 06-00054-W (expires 2036)</th></tr>
<tr><td>SAS</td><td colspan="4">15.15</td></tr>
<tr><td>FAS</td><td colspan="4">3.15</td></tr>
<tr><td>**Total Allocation**</td><td colspan="4">**18.30**[a]</td></tr>
<tr><th colspan="5">FDEP Potable Water Treatment Capacity (PWS ID # 4060925)</th></tr>
<tr><th rowspan="3">Permitted Capacity by Source</th><th colspan="4">Cumulative Facility & Project Capacity (mgd)</th></tr>
<tr><th>Existing</th><th colspan="3">Projected</th></tr>
<tr><th>2021</th><th>2025</th><th>2035</th><th>2045</th></tr>
<tr><td>SAS</td><td>15.25</td><td>15.25</td><td>15.25</td><td>15.25</td></tr>
<tr><td>FAS</td><td>2.50</td><td>5.50</td><td>7.50</td><td>7.50</td></tr>
<tr><td>**Total Potable Treatment Capacity**</td><td>**17.75**</td><td>**20.25**</td><td>**22.75**</td><td>**22.75**</td></tr>
<tr><th colspan="5">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td>Reclaimed Water</td><td>7.50</td><td>7.50</td><td>7.50</td><td>7.50</td></tr>
<tr><td>**Total Nonpotable Treatment Capacity**</td><td>**7.50**</td><td>**7.50**</td><td>**7.50**</td><td>**7.50**</td></tr>
</table>

<table>
<tr><th colspan="7">Project Summary</th></tr>
<tr><th rowspan="2">Water Supply Projects</th><th rowspan="2">Source</th><th rowspan="2">Completion Date</th><th rowspan="2">Total Capital Cost ($ million)</th><th colspan="3">Projected Cumulative Design Capacity (mgd)</th></tr>
<tr><th>2025</th><th>2035</th><th>2045</th></tr>
<tr><th colspan="7">Potable Water</th></tr>
<tr><td>RO Train No. 2 (West WTP) for Standby</td><td>FAS</td><td>2025</td><td>$7.59</td><td>2.50[b]</td><td>2.50[b]</td><td>2.50[b]</td></tr>
<tr><td>RO Train No. 3 (West WTP) for Standby and FAS Wells 4 and 5</td><td>FAS</td><td>2030</td><td>$15.00</td><td>0.00</td><td>2.50[b]</td><td>2.50[b]</td></tr>
<tr><td colspan="3">**Total Potable Water**</td><td>**$22.59**</td><td>**2.50**</td><td>**5.00**</td><td>**5.00**</td></tr>
<tr><th colspan="7">Nonpotable Water</th></tr>
<tr><td>Reclaimed Water System Extension West of I-75</td><td>Reclaimed</td><td>2025</td><td>$8.60</td><td>3.50[c]</td><td>3.50[c]</td><td>3.50[c]</td></tr>
<tr><td colspan="3">**Total Nonpotable Water**</td><td>**$8.60**</td><td>**3.50**</td><td>**3.50**</td><td>**3.50**</td></tr>
<tr><td colspan="3">**Total New Water**</td><td>**$31.19**</td><td>**6.00**</td><td>**8.50**</td><td>**8.50**</td></tr>
</table>

[a] The annual allocation may be increased to 18.87 mgd if Miramar provides documentation that the minimum city wide average use of reclaimed water is 4.00 mgd.

[b] The increased treatment capacity of this proposed project was identified as planned for redundancy.

[c] The project expands distribution capacity only and includes "virtual" reuse arrangements between the City of Cooper City and the City of Hollywood to meet Ocean Outfall Law obligations under provisions of Section 163.01, Florida Statute.

NORTH LAUDERDALE

Service Area: City of North Lauderdale.

Description: Potable water supplies are obtained from the SAS via the North Lauderdale Wellfield, and water is treated at the North Lauderdale WTP using lime softening.

<table>
<tr><th colspan="5">Population and Finished Water Demand</th></tr>
<tr><td rowspan="2"></td><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td>Population</td><td>36,893</td><td>38,494</td><td>40,049</td><td>41,667</td></tr>
<tr><td>Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="4">73</td></tr>
<tr><td>Potable Water Demands (daily average annual finished water in mgd)</td><td>2.69</td><td>2.81</td><td>2.92</td><td>3.04</td></tr>
<tr><th colspan="5">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td>Potable Water Source</td><td colspan="4">Permit Number 06-00004-W (expires 2025)</td></tr>
<tr><td>SAS</td><td colspan="4">3.24</td></tr>
<tr><td>FAS</td><td colspan="4">0.00</td></tr>
<tr><td>Total Allocation</td><td colspan="4">3.24</td></tr>
<tr><th colspan="5">FDEP Potable Water Treatment Capacity (PWS ID # 4060976)</th></tr>
<tr><td rowspan="3">Permitted Capacity by Source</td><td colspan="4">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td>SAS</td><td>7.50</td><td>7.50</td><td>7.50</td><td>7.50</td></tr>
<tr><td>FAS</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Total Potable Treatment Capacity</td><td>7.50</td><td>7.50</td><td>7.50</td><td>7.50</td></tr>
<tr><th colspan="5">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td>Reclaimed</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Total Nonpotable Treatment Capacity</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
</table>

<table>
<tr><th colspan="7">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="3">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td colspan="7">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="7">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
</table>

NORTH SPRINGS IMPROVEMENT DISTRICT

Service Area: A portion of the City of Coral Springs and the City of Parkland.

Bulk Water: PBCWUD provides NSID bulk finished water intermittently on an as-needed basis.

Description: Potable water supplies are obtained from the SAS via the NSID Wellfield, and water is treated at the NSID WTP using lime softening. The utility is proposing an FAS wellfield and RO WTP to meet future demand.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	39,134	41,075	43,573	45,333
Average 2017-2021 Per Capita (gallons per day finished water)	109			
Potable Water Demands (daily average annual finished water in mgd)	**4.27**	**4.48**	**4.75**	**4.94**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00274-W (expires 2039)
SAS	5.20
FAS	1.40
Total Allocation	**5.76**[a]

FDEP Potable Water Treatment Capacity (PWS ID # 4064390)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	6.80	6.80	6.80	6.80
FAS	0.00	2.00	2.00	2.00
Total Potable Treatment Capacity	**6.80**	**8.80**	**8.80**	**8.80**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
New 2.00 mgd RO WTP – NSID	FAS	2023	$2.45	2.00	2.00	2.00
Total Potable Water			**$2.45**	**2.00**	**2.00**	**2.00**
Nonpotable Water						
No Projects			$0.00	0.00	0.00	0.00
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$2.45**	**2.00**	**2.00**	**2.00**

[a] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

PARKLAND

Service Area: City of Parkland.

Bulk Water: PBCWUD provides Parkland bulk finished water intermittently on an as-needed basis.

Description: Potable water supplies are obtained from the SAS via the Parkland Wellfield, and water is treated at the Parkland WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	2,730	2,798	3,144	3,533
Average 2017-2021 Per Capita (gallons per day finished water)	100			
Potable Water Demands (daily average annual finished water in mgd)	**0.27**	**0.28**	**0.31**	**0.35**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00242-W (expires 2024)			
SAS	0.39			
FAS	0.00			
Total Allocation	**0.39**			
FDEP Potable Water Treatment Capacity (PWS ID # 4061957)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.58	0.58	0.58	0.58
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**0.58**	**0.58**	**0.58**	**0.58**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

PEMBROKE PINES

Service Area: City of Pembroke Pines and a portion of the Town of Southwest Ranches.

Description: Potable water supplies are obtained from two SAS wellfields (Central and Eastern), and water is treated at the Pembroke Pines WTP using lime softening.

<table>
<tr><th colspan="10">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td>Existing</td><td colspan="5">Projected</td></tr>
<tr><td>2021</td><td colspan="2">2025</td><td colspan="2">2035</td><td>2045</td></tr>
<tr><td colspan="4">Population</td><td>163,564</td><td colspan="2">166,381</td><td colspan="2">169,725</td><td>173,137</td></tr>
<tr><td colspan="4">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="6">80</td></tr>
<tr><td colspan="4">Potable Water Demands (daily average annual finished water in mgd)</td><td>13.09</td><td colspan="2">13.31</td><td colspan="2">13.58</td><td>13.85</td></tr>
<tr><th colspan="10">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="6">Permit Number 06-00135-W (expires 2030)</td></tr>
<tr><td colspan="4">SAS</td><td colspan="6">15.60</td></tr>
<tr><td colspan="4">FAS</td><td colspan="6">0.00</td></tr>
<tr><td colspan="4">Total Allocation</td><td colspan="6">15.60</td></tr>
<tr><th colspan="10">FDEP Potable Water Treatment Capacity (PWS ID # 4061083)</th></tr>
<tr><td colspan="4" rowspan="3">Permitted Capacity by Source</td><td colspan="6">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td>Existing</td><td colspan="5">Projected</td></tr>
<tr><td>2021</td><td colspan="2">2025</td><td colspan="2">2035</td><td>2045</td></tr>
<tr><td colspan="4">SAS</td><td>18.00</td><td colspan="2">18.00</td><td colspan="2">18.00</td><td>18.00</td></tr>
<tr><td colspan="4">FAS</td><td>0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="4">Total Potable Treatment Capacity</td><td>18.00</td><td colspan="2">18.00</td><td colspan="2">18.00</td><td>18.00</td></tr>
<tr><th colspan="10">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed</td><td>0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="4">Total Nonpotable Treatment Capacity</td><td>0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><th colspan="10">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="6">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="2">2025</td><td colspan="2">2035</td><td colspan="2">2045</td></tr>
<tr><td colspan="10">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td></tr>
<tr><td colspan="10">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td><td colspan="2">0.00</td></tr>
</table>

PLANTATION

Service Area: City of Plantation.

Description: Potable water supplies are obtained from the Plantation East and Plantation Central SAS wellfields, and water is treated at the Plantation East and Plantation Central WTPs using membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	94,764	96,558	101,444	105,542
Average 2017-2021 Per Capita (gallons per day finished water)	110			
Potable Water Demands (daily average annual finished water in mgd)	**10.42**	**10.62**	**11.16**	**11.61**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 06-00103-W (expires 2024)			
SAS	17.24			
FAS	0.00			
Total Allocation	**17.24**			
FDEP Potable Water Treatment Capacity (PWS ID # 4061121)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	24.00	24.00	24.00	24.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**24.00**	**24.00**	**24.00**	**24.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	2.00	2.00	2.00	2.00
Total Nonpotable Treatment Capacity	**2.00**	**2.00**	**2.00**	**2.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

POMPANO BEACH

Service Area: Cities of Pompano Beach and Lighthouse Point, and the Town of Lauderdale-By-The-Sea.

Description: Potable water supplies are obtained from two SAS wellfields Eastern (Airport) and Western (Palm-Aire). The Eastern Wellfield has seasonal pumpage limits due to water quality issues caused by saltwater intrusion. Water is treated at the Pompano WTP using lime softening and membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	92,870	94,849	102,589	107,706
Average 2017-2021 Per Capita (gallons per day finished water)	157			
Potable Water Demands (daily average annual finished water in mgd)	**14.58**	**14.89**	**16.11**	**16.91**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00070-W (expires 2065)[a]
SAS	18.39
SAS w/C-51	19.73
FAS	0.00
Total Allocation	**18.39**
Total Allocation w/C-51	**19.73**

FDEP Potable Water Treatment Capacity (PWS ID # 4061129)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	50.00	50.00	50.00	50.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**50.00**	**50.00**	**50.00**	**50.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	7.50	7.50	12.50	12.50
Total Nonpotable Treatment Capacity	**7.50**	**7.50**	**12.50**	**12.50**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects			$0.00	0.00	0.00	0.00
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
Pompano – Broward Reclaimed Water Main Interconnect	Reclaimed	2025	$50.00	10.00[b]	10.00[b]	10.00[b]
Pompano WRF 5.00 mgd Expansion	Reclaimed	2035	$15.00	0.00	5.00	5.00
Reclaimed Water System Extension Phase VI+	Reclaimed	2030	$7.80	0.00	6.90[b]	6.90[b]
3.5-million-gallon Reuse Storage Tank with Booster Station	Reclaimed	2027	$15.00	0.00	3.50[b]	3.50[b]
3.5-million-gallon Reuse Storage Tank	Reclaimed	2035	$5.00	0.00	3.50[b]	3.50[b]
C-51 Reservoir Phase 1 – Pompano	Surface Water	2023	$9.20	2.00	2.00	2.00
Total Nonpotable Water			**$102.00**	**12.00**	**30.90**	**30.90**
Total New Water			**$102.00**	**12.00**	**30.90**	**30.90**

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (2 mgd). The base condition SAS allocation expires in 2040. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The project does not increase overall treatment capacity.

ROYAL WATERWORKS

Service Area: A portion of the City of Coral Springs.

Description: Potable water supplies are obtained from the SAS via the Royal Utility Wellfield, and water is treated at the Royal Utility WTP using lime softening.

<table>
<tr><th colspan="16">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">Population</td><td colspan="3">3,596</td><td colspan="3">3,602</td><td colspan="3">3,674</td><td colspan="3">3,748</td></tr>
<tr><td colspan="4">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="12">91</td></tr>
<tr><td colspan="4">Potable Water Demands (daily average annual finished water in mgd)</td><td colspan="3">0.33</td><td colspan="3">0.33</td><td colspan="3">0.33</td><td colspan="3">0.34</td></tr>
<tr><th colspan="16">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="12">Permit Number 06-00003-W (expires 2026)</td></tr>
<tr><td colspan="4">SAS</td><td colspan="12">0.48</td></tr>
<tr><td colspan="4">FAS</td><td colspan="12">0.00</td></tr>
<tr><td colspan="4">Total Allocation</td><td colspan="12">0.48</td></tr>
<tr><th colspan="16">FDEP Potable Water Treatment Capacity (PWS ID # 4061517)</th></tr>
<tr><td colspan="4" rowspan="3">Permitted Capacity by Source</td><td colspan="12">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">SAS</td><td colspan="3">1.00</td><td colspan="3">1.00</td><td colspan="3">1.00</td><td colspan="3">1.00</td></tr>
<tr><td colspan="4">FAS</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">Total Potable Treatment Capacity</td><td colspan="3">1.00</td><td colspan="3">1.00</td><td colspan="3">1.00</td><td colspan="3">1.00</td></tr>
<tr><th colspan="16">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">Total Nonpotable Treatment Capacity</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><th colspan="16">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="12">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="4">2025</td><td colspan="4">2035</td><td colspan="4">2045</td></tr>
<tr><td colspan="16">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="16">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
</table>

SEMINOLE TRIBE OF FLORIDA – HOLLYWOOD

Service Area: Seminole Tribe of Florida Hollywood Reservation.

Description: Potable water supplies are obtained from the SAS via the STOF – Hollywood Wellfield and treated at the STOF – Hollywood WTP using RO. The tribe has the capability to purchase bulk treated water from the cities of Hollywood and Davie. Utility and demand information are based on data in the Seventh Amendment to the 28th Annual Work Plan.[a]

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	1,227	2,097	2,983	3,884
Per Capita (gallons per day finished water)	714	682	526	622
Potable Water Demands (daily average annual finished water in mgd)	**0.88**	**1.43**	**1.57**	**2.42**
Water Use Rights (mgd)				
Potable Water Source				
SAS	3.53			
FAS	0.00			
Total Water Use Rights	**3.53**			
Potable Water Treatment Capacity				
Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2016	2020	2030	2040
SAS	3.53	3.53	3.53	3.53
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**3.53**	**3.53**	**3.53**	**3.53**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	0.00	0.00	0.00	0.00

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2020	2030	2040
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	
Total New Water			**$0.00**	**0.00**	**0.00**	

[a] The Seminole Tribe of Florida submits an Annual Work Plan to the SFWMD per the Water Rights Compact of 1987.

SUNRISE

Service Area: Cities of Sunrise and Weston, a portion of the Town of Southwest Ranches, a portion of the Town of Davie, and unincorporated Broward County.

Description: Potable water supplies are obtained from four SAS wellfields (Springtree, Sawgrass, Flamingo Park, and Southwest), and from the FAS ASR well at the Springtree Wellfield. Water is treated at the Springtree WTP using lime softening and RO, at the Sawgrass WTP using membrane softening, and at the Southwest WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	233,430	236,183	245,725	253,146
Average 2017-2021 Per Capita (gallons per day finished water)	99			
Potable Water Demands (daily average annual finished water in mgd)	**23.11**	**23.38**	**24.33**	**25.06**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 06-00120-W (expires 2065)[a]
SAS	29.09
SAS w/C-51	34.09
FAS	2.00
Total Allocation	**31.09[b]**
Total Allocation w/C-51	**34.09[b]**

FDEP Potable Water Treatment Capacity (PWS ID # 4061410/4061408)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	50.00	50.20	51.90	51.90
FAS	1.50	0.00	0.00	0.00
Total Potable Treatment Capacity	**51.50**	**50.20**	**51.90**	**51.90**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	2.99	2.99	2.99	2.99
Total Nonpotable Treatment Capacity	**2.99**	**2.99**	**2.99**	**2.99**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Springtree RO Conversion to Membrane-Softening Phase 1	SAS	2025	$1.00	0.20	0.20	0.20
Springtree RO Conversion to Membrane-Softening Phase 2	SAS	2028	$7.00	0.00	1.70	1.70
Total Potable Water			**$8.00**	**0.20**	**1.90**	**1.90**
Nonpotable Water						
C-51 Reservoir Phase 1 – Sunrise	Surface Water	2023	$23.00	5.00	5.00	5.00
Total Nonpotable Water			**$23.00**	**5.00**	**5.00**	**5.00**
Total New Water			**$31.00**	**5.20**	**6.90**	**6.90**

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (5 mgd). The base condition SAS allocation expires in 2040. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

TAMARAC

Service Area: City of Tamarac and portions of the City of Fort Lauderdale, and the City of Oakland Park.

Bulk Water: The bulk water agreement to purchase approximately 0.17 mgd of bulk water from the City of Fort Lauderdale will not be renewed in 2024.

Description: Potable water supplies are obtained from the SAS via the Tamarac Wellfield, and water is treated at the Tamarac West WTP using lime softening.

<table>
<tr><th colspan="16">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">Population</td><td colspan="3">66,280</td><td colspan="3">66,685</td><td colspan="3">69,379</td><td colspan="3">71,474</td></tr>
<tr><td colspan="4">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="12">100</td></tr>
<tr><td colspan="4">**Potable Water Demands** (daily average annual finished water in mgd)</td><td colspan="3">**6.63**</td><td colspan="3">**6.67**</td><td colspan="3">**6.94**</td><td colspan="3">**7.15**</td></tr>
<tr><th colspan="16">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="12">Permit Number 06-00071-W (expires 2042)</td></tr>
<tr><td colspan="4">SAS</td><td colspan="12">8.47</td></tr>
<tr><td colspan="4">FAS</td><td colspan="12">0.00</td></tr>
<tr><td colspan="4">**Total Allocation**</td><td colspan="12">**8.47**</td></tr>
<tr><th colspan="16">FDEP Potable Water Treatment Capacity (PWS ID # 4061429)</th></tr>
<tr><td colspan="4" rowspan="3">Permitted Capacity by Source</td><td colspan="12">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">SAS</td><td colspan="3">16.00</td><td colspan="3">16.00</td><td colspan="3">16.00</td><td colspan="3">16.00</td></tr>
<tr><td colspan="4">FAS</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">**Total Potable Treatment Capacity**</td><td colspan="3">**16.00**</td><td colspan="3">**16.00**</td><td colspan="3">**16.00**</td><td colspan="3">**16.00**</td></tr>
<tr><th colspan="16">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">**Total Nonpotable Treatment Capacity**</td><td colspan="3">**0.00**</td><td colspan="3">**0.00**</td><td colspan="3">**0.00**</td><td colspan="3">**0.00**</td></tr>
<tr><th colspan="16">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="12">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="4">2025</td><td colspan="4">2035</td><td colspan="4">2045</td></tr>
<tr><td colspan="16">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">**Total Potable Water**</td><td>**$0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td></tr>
<tr><td colspan="16">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">**Total Nonpotable Water**</td><td>**$0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td></tr>
<tr><td colspan="3">**Total New Water**</td><td>**$0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td><td colspan="4">**0.00**</td></tr>
</table>

TINDALL HAMMOCK

Service Area: A portion of the Town of Davie.

Bulk Water: Tindall Hammock purchases a small amount of bulk finished water from the Town of Davie.

Description: Potable water supplies are obtained from the SAS via the Tindall Hammock Wellfield, and water is treated at the Ferncrest WTP using lime softening.

<table>
<tr><th colspan="5">Population and Finished Water Demand</th></tr>
<tr><td rowspan="2"></td><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td>Population</td><td>3,437</td><td>3,480</td><td>3,837</td><td>4,230</td></tr>
<tr><td>Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="4">144</td></tr>
<tr><td>**Potable Water Demands** (daily average annual finished water in mgd)</td><td>**0.49**</td><td>**0.50**</td><td>**0.55**</td><td>**0.61**</td></tr>
<tr><th colspan="5">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td>Potable Water Source</td><td colspan="4">Permit Number 06-00170-W (expires 2026)</td></tr>
<tr><td>SAS</td><td colspan="4">0.74</td></tr>
<tr><td>FAS</td><td colspan="4">0.00</td></tr>
<tr><td>**Total Allocation**</td><td colspan="4">**0.74**</td></tr>
<tr><th colspan="5">FDEP Potable Water Treatment Capacity (PWS ID # 4060419)</th></tr>
<tr><td rowspan="3">Permitted Capacity by Source</td><td colspan="4">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td>SAS</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td></tr>
<tr><td>FAS</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td>**Total Potable Treatment Capacity**</td><td>**1.00**</td><td>**1.00**</td><td>**1.00**</td><td>**1.00**</td></tr>
<tr><th colspan="5">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td>Reclaimed Water</td><td>0.60</td><td>0.60</td><td>0.60</td><td>0.00[a]</td></tr>
<tr><td>**Total Nonpotable Treatment Capacity**</td><td>**0.60**</td><td>**0.60**</td><td>**0.60**</td><td>**0.00**</td></tr>
</table>

<table>
<tr><th colspan="7">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="3">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td colspan="7">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">**Total Potable Water**</td><td>**$0.00**</td><td>**0.00**</td><td>**0.00**</td><td>**0.00**</td></tr>
<tr><td colspan="7">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">**Total Nonpotable Water**</td><td>**$0.00**</td><td>**0.00**</td><td>**0.00**</td><td>**0.00**</td></tr>
<tr><td colspan="3">**Total New Water**</td><td>**$0.00**</td><td>**0.00**</td><td>**0.00**</td><td>**0.00**</td></tr>
</table>

[a] Tindall Hammock plans to abandon the reclaimed capacity in favor of deep well injection.

SEMINOLE TRIBE OF FLORIDA – BIG CYPRESS

Service Area: Seminole Tribe of Florida Big Cypress Reservation.

Description: Potable water supplies are obtained from one LTA wellfield and treated at the STOF – Big Cypress WTP using RO. Population and demand information are based on the Seminole Tribe of Florida Public Works Department 2016 Water and Wastewater Systems Master Plan. Utility information is based on Annual Work Plans.[a]

<table>
<tr><th colspan="16">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">Population</td><td colspan="3">948</td><td colspan="3">1,004</td><td colspan="3">1,398</td><td colspan="3">1,729</td></tr>
<tr><td colspan="4">Per Capita (gallons per day finished water)</td><td colspan="3">287</td><td colspan="3">349</td><td colspan="3">300</td><td colspan="3">312</td></tr>
<tr><td colspan="4">Potable Water Demands (daily average annual finished water in mgd)</td><td colspan="3">0.27</td><td colspan="3">0.35</td><td colspan="3">0.42</td><td colspan="3">0.54</td></tr>
<tr><th colspan="16">Water Use Rights (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="12"></td></tr>
<tr><td colspan="4">SAS</td><td colspan="12">0.17</td></tr>
<tr><td colspan="4">FAS</td><td colspan="12">0.00</td></tr>
<tr><td colspan="4">Total Water Use Rights</td><td colspan="12">0.17</td></tr>
<tr><th colspan="16">Potable Water Treatment Capacity</th></tr>
<tr><td colspan="4" rowspan="3">Capacity by Source</td><td colspan="12">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2016</td><td colspan="3">2020</td><td colspan="3">2030</td><td colspan="3">2040</td></tr>
<tr><td colspan="4">SAS</td><td colspan="3">2.00</td><td colspan="3">2.00</td><td colspan="3">2.00</td><td colspan="3">2.00</td></tr>
<tr><td colspan="4">FAS</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">Total Potable Treatment Capacity</td><td colspan="3">2.00</td><td colspan="3">2.00</td><td colspan="3">2.00</td><td colspan="3">2.00</td></tr>
<tr><th colspan="16">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed Water</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">Total Nonpotable Treatment Capacity</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><th colspan="16">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="12">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="4">2020</td><td colspan="4">2030</td><td colspan="4">2040</td></tr>
<tr><td colspan="16">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="16">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
</table>

[a] The Seminole Tribe of Florida submits an Annual Work Plan to the SFWMD per the Water Rights Compact of 1987.

MIAMI-DADE AND MONROE COUNTIES

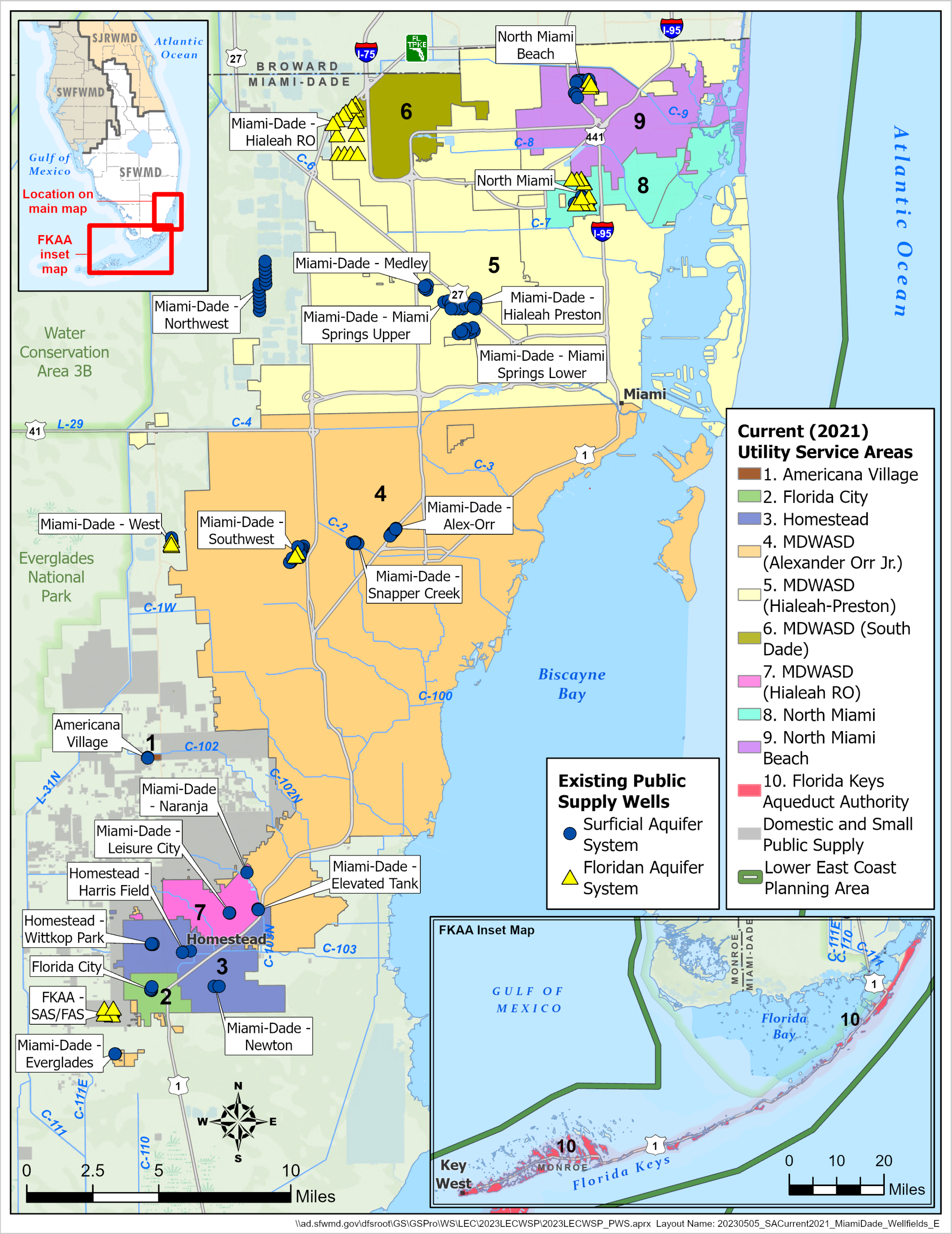


Figure B-3. Existing (2021) Public Supply utility service areas and wellfields in Miami-Dade County. (Note: Monroe County is served solely by the Florida Keys Aqueduct Authority, whose wellfield is located in Miami-Dade County.)

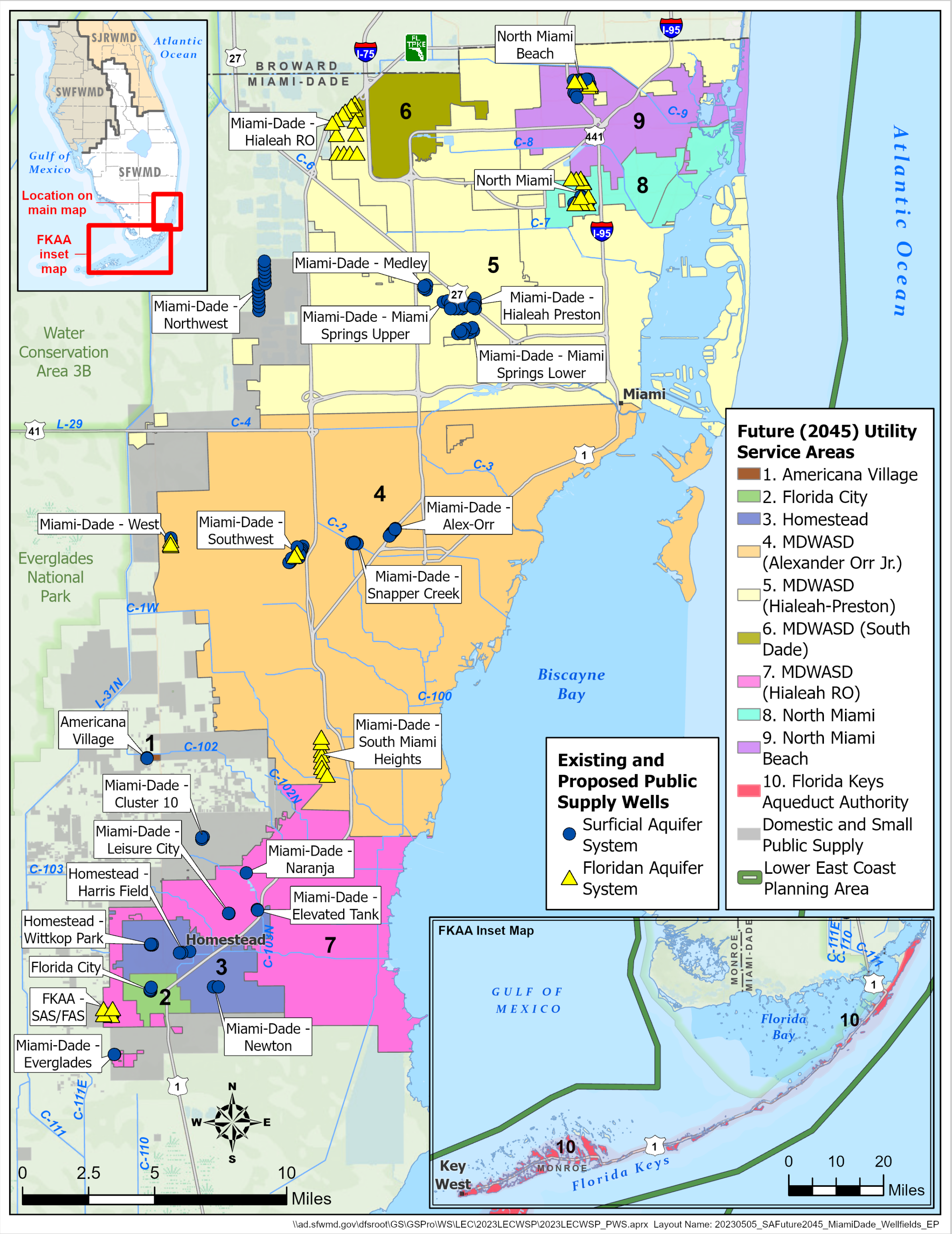


Figure B-4. Projected (2045) Public Supply utility service areas and wellfields in Miami-Dade County. (Note: Monroe County is served solely by the Florida Keys Aqueduct Authority, whose wellfield is located in Miami-Dade County.)

AMERICANA VILLAGE

Service Area: A mobile home community in unincorporated area of Miami-Dade County.

Description: Potable water supplies are obtained from the SAS via the Americana Village Wellfield, and water is treated at the Americana Village WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	1,588	1,587	1,595	1,595
Average 2017-2021 Per Capita (gallons per day finished water)	145			
Potable Water Demands (daily average annual finished water in mgd)	**0.23**	**0.23**	**0.23**	**0.23**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 13-02004-W (expires 2029)			
SAS	0.26			
FAS	0.00			
Total Allocation	**0.26**			
FDEP Potable Water Treatment Capacity (PWS ID # 4131403)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.50	0.50	0.50	0.50
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**0.50**	**0.50**	**0.50**	**0.50**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

FLORIDA CITY

Service Area: City of Florida City and unincorporated portions of Miami-Dade County.

Description: Potable water supplies are obtained from one SAS wellfield, and water is treated at one WTP using chlorination.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	14,191	16,680	19,531	22,110
Average 2017-2021 Per Capita (gallons per day finished water)	152			
Potable Water Demands (daily average annual finished water in mgd)	**2.16**	**2.54**	**2.97**	**3.36**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 13-00029-W (expires 2034)			
SAS	2.00			
FAS	0.00			
Total Allocation	**2.00**[a]			
FDEP Potable Water Treatment Capacity (PWS ID # 4130255)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	4.00	4.00	4.00	4.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**4.00**	**4.00**	**4.00**	**4.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

[a] The Florida City Water and Sewer Department will need to choose to implement a project or determine an alternative source to meet 2025 to 2045 demands.

HOMESTEAD

Service Area: Cities of Homestead and unincorporated areas of Miami-Dade County.

Bulk Water: Up to 3.00 mgd of bulk finished water is purchased from the MDWASD. Homestead provides a small amount of bulk finished water to Redavo, a residential development with approximately 310 residents within the MDWASD service area.

Description: Potable water supplies are obtained from two SAS wellfields (Wittkop Park and Harris Field) and treated with chlorination.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	80,218	83,146	89,697	95,372
Average 2017-2021 Per Capita (gallons per day finished water)	166			
Potable Water Demands (daily average annual finished water in mgd)	**13.32**	**13.80**	**14.89**	**15.83**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 13-00046-W (expires 2042)
SAS	11.00[a]
FAS	0.00
Bulk Potable Water from MDWASD	3.00
Total Allocation (including bulk water)	**14.00**

FDEP Potable Water Treatment Capacity (PWS ID # 4130645)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	19.20	19.20	19.20	19.20
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**19.20**	**19.20**	**19.20**	**19.20**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	5.00	9.00	9.00	9.00
Total Nonpotable Treatment Capacity	**5.00**	**9.00**	**9.00**	**9.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
JD Redd Park 1.67 mgd SAS Recharge for Offset	SAS Recharge	2024	$0.40	1.67[b]	1.67[b]	1.67[b]
Total Potable Water			**$0.40**	**1.67**	**1.67**	**1.67**
Nonpotable Water						
Homestead WWTF 4.00 mgd Reclaimed Water Treatment Expansion	Reclaimed	2030	$45.00	0.00	4.00	4.00
Total Nonpotable Water			**$45.00**	**0.00**	**4.00**	**4.00**
Total New Water			**$45.40**	**0.00**	**5.67**	**5.67**

[a] The annual allocation for withdrawals from the SAS will be the base condition water use of 11.0 mgd until the reduction of the base condition for the Homestead Power Plant water use permit to 1.67 mgd is finalized. After the formal reduction of the base condition for the Homestead Power Plant water use permit, an interim allocation of 12.79 mgd is authorized. Once the JD Redd Park recharge project is operational, the full requested allocation of 16.28 mgd is authorized.

[b] The 1.67 mgd is the anticipated volume of water delivered to the recharge trenches which does not add to the potable water treatment capacity.

MIAMI-DADE WATER AND SEWER DEPARTMENT

Service Area: Cities of Aventura, Coral Gables, Doral, Hialeah, Hialeah Gardens, Homestead, Miami, Miami Beach, Miami Gardens, Miami Springs, North Bay Village, North Miami Beach, Opa-Locka, South Miami, Sweetwater, and West Miami; towns of Bay Harbor Islands, Cutler Bay, Medley, Miami Lakes, and Surfside; villages of Bal Harbour, El Portal, Indian Creek, Key Biscayne, Miami Shores, Palmetto Bay, Pinecrest, and Virginia Gardens; and unincorporated areas of Miami-Dade County.

Bulk Water: The MDWASD provides bulk finished water to the City of Homestead, the City of North Miami, and the Port of Miami. MDWASD receives a small amount of bulk finished water from Homestead for Redavo, a residential development with approximately 310 residents within the MDWASD service area.

Description: Potable water supplies are obtained from 15 SAS and FAS wellfields. The northern system includes six wellfields and two WTPs (Hialeah and John E. Preston), which treat SAS water using lime softening and FAS using RO (Hialeah). The central system includes four wellfields and one WTP (Alexander Orr Jr.), which treats water using lime softening. The southern system consists of five wellfields, each with its own WTP that treats water using chlorination only. The water use permit modification in March 2022 included the proposed construction of a new 15 mgd SAS wellfield (Cluster 10) located in south central Miami-Dade County.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	2,333,917	2,414,642	2,587,960	2,738,390
Bulk Population (North Miami)	29,997	30,794	32,669	33,463
Total Population (North Miami and Miami-Dade)	2,363,914	2,445,436	2,620,629	2,771,853
Average 2017-2021 Per Capita (gallons per day finished water)	130			
Potable Water Demands (daily average annual finished water in mgd)	**307.31**	**317.91**	**340.68**	**360.34**
Bulk Potable Water Demands (daily average annual finished water in mgd delivered directly to City of Homestead)	3.00	3.00	3.00	3.00
Bulk Potable Water Demands (daily average annual finished water in mgd delivered directly to Port of Miami)	0.00	1.00	1.00	1.00
Total Potable Water Demands (daily average annual finished water in mgd)	**310.31**	**321.91**	**344.68**	**364.34**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 13-00017-W (expires 2065)[a]			
SAS	349.50			
SAS w/C-51	392.23			
FAS	36.57			
FAS w/C-51	36.60			
Total Allocation	**386.07**[b]			
Total Allocation w/C-51	**405.53**[b]			
FDEP Potable Water Treatment Capacity (PWS ID # 4130871/4131202/4130604)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	451.93	451.93	454.48	454.48
FAS	7.50	10.00	27.45	27.45
Total Potable Treatment Capacity	**459.43**	**461.93**	**481.93**	**481.93**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	124.82	124.82	124.82	125.22
ASR Storage Capacity	25.00[c]	25.00[c]	25.00[c]	25.00[b]
Total Nonpotable Treatment Capacity	**149.82**	**149.82**	**149.82**	**150.22**

Miami-Dade Water and Sewer Department (Continued)

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Hialeah 2.50 mgd RO WTP Expansion and 4 FAS Wells – Phase 1b	FAS	2023	$2.45	2.50	2.50	2.50
South Miami Heights New WTP, 2.55 mgd SAS	SAS	2026	$25.00	0.00	2.55	2.55
New 12.45 mgd RO for FAS Back-up to C-51 Reservoir – Phase 1 South Miami Heights	FAS	2026	$264.25	0.00	12.45	12.45
RO 5.00 mgd Expansion for Back-up to C-51 Reservoir – Phase 2 South Miami Heights	FAS	2029	$0.00[c]	0.00	5.00	5.00
Cluster 10 Wellfield	SAS	2031	$10.00	0.00	15.00[d]	15.00[d]
Total Potable Water			**$301.70**	**2.50**	**37.50**	**37.50**
Nonpotable Water						
Reclaimed Water Main Extension to FPL Turkey Point	Reclaimed	2025	$315.00	15.00[d]	15.00[d]	15.00[d]
C-51 Reservoir Phase 1 – MDWASD	Surface Water	2023	$69.00	15.00	15.00	15.00
South District WWTP Effluent Energy Recovery System	Reclaimed	2045	$22.00	0.00	0.00	50.00[d]
Central District WWTP Effluent Energy Recovery System	Reclaimed	2045	$19.50	0.00	0.00	24.00[d]
North District WWTP Effluent Energy Recovery System	Reclaimed	2045	$15.00	0.00	0.00	35.00[d]
Zoo Miami Water Resource Recovery Facility[e]	Reclaimed	2045	$24.00	0.00	0.00	0.40
Total Nonpotable Water			**$464.50**	**30.00**	**30.00**	**139.40**
Total New Water			**$766.20**	**32.50**	**67.50**	**176.90**

[a] The 2065 expiration date is for the portion of the allocation above the base condition water use served by offset water from the C-51 Reservoir Phase 1 (15 mgd). The base condition SAS allocation expires in 2042. The C-51 reservoir water will provide an offset by recharging groundwater withdrawals; no direct surface water withdrawals will be made by the utilities.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[c] Total project costs for both phases are included in South Miami Heights WTP–Phase 1.

[d] Does not increase FDEP permitted treatment capacity.

[e] This reclaimed water project proposed by Zoo Miami reduces wastewater flows to MDWASD and offsets a portion of the demand from a traditional source at Zoo Miami.

NORTH MIAMI

Service Area: City of North Miami, Village of Biscayne Park, Village of Miami Shores, and unincorporated areas of Miami-Dade County.

Bulk Water: The city purchases bulk finished water from the MDWASD.

Description: Potable water supplies are obtained from the SAS via the North Miami Wellfield, and water is treated at the North Miami WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	69,994	71,852	76,227	78,081
Average 2017-2021 Per Capita (gallons per day finished water)	94			
Potable Water Demands (daily average annual finished water in mgd)	**6.58**	**6.75**	**7.17**	**7.34**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 13-00059-W (expires 2030)			
SAS	9.30			
FAS	7.97			
Total Allocation	**17.27**			
FDEP Potable Water Treatment Capacity (PWS ID # 4130977)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	9.30	9.30	9.30	9.30
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**9.30**	**9.30**	**9.30**	**9.30**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

NORTH MIAMI BEACH

Service Area: Cities of North Miami Beach, Aventura, Miami Gardens, and Sunny Isles Beach; Town of Golden Beach; and unincorporated areas of Miami-Dade County.

Bulk Water: North Miami Beach provides a small quantity of bulk finished water to MDWASD to serve Point East Aventura.

Description: Potable water supplies are obtained from the SAS and FAS via the North Miami Beach Wellfield, and water is treated at the Norwood WTP using a combination of lime softening, membrane softening, and RO.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	163,784	165,964	190,520	210,647
Average 2017-2021 Per Capita (gallons per day finished water)	116			
Potable Water Demands (daily average annual finished water in mgd)	**19.00**	**19.25**	**22.10**	**24.44**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 13-00060-W (expires 2027)			
SAS	26.31			
FAS	12.07			
Total Allocation	**38.38**			
FDEP Potable Water Treatment Capacity (PWS ID # 4131618)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	32.00	32.00	32.00	32.00
FAS	9.50	9.50	9.50	9.50
Total Potable Treatment Capacity	**41.50**	**41.50**	**41.50**	**41.50**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Norwood WTP – SAS Well, Lines, Mains – Phase II	SAS	2026	$1.75	0.00	3.70[a]	3.70[a]
Norwood WTP – FAS Wells, Lines, Mains – Phase II	FAS	2026	$1.75	0.00	3.70[a]	3.70[a]
Total Potable Water			**$42.00**	**0.00**	**7.40**	**7.40**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$42.00**	**0.00**	**7.40**	**7.40**

[a] The project does not increase overall treatment capacity.

FLORIDA KEYS AQUEDUCT AUTHORITY

Service Area: Cities of Key Colony Beach, Key West, Layton, and Marathon; Islamorada, Village of Islands; and unincorporated areas of Monroe County. The FKAA also has a contract to provide up to 2.40 mgd to the United States Navy.

Description: Potable water supplies are obtained from one SAS wellfield and one FAS wellfield, and water is treated at the J. Robert Dean WTP using lime softening and RO. Seawater is capable of being treated at two emergency backup RO desalination plants in Marathon and Stock Island.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population (permanent)	78,267	78,800	79,800	80,200
Average 2017-2021 Per Capita (gallons per day finished water)	235			
Potable Water Demands (daily average annual finished water in mgd)	**18.39**	**18.52**	**18.75**	**18.85**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 13-00005-W (expires 2028)			
SAS	17.79[a]			
FAS	6.97			
Total Allocation	**23.97**			
FDEP Potable Water Treatment Capacity (PWS ID # 4134357)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	23.80	23.80	23.80	23.80
FAS	6.00	6.00	6.00	6.00
Seawater	3.00	5.00	10.00	10.00
Total Potable Treatment Capacity	**32.80**	**34.80**	**39.80**	**39.80**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water[b]	1.93	1.93	7.28	7.28
Reclaimed Water/ASR	0.00	0.00	1.40	1.40
Total Nonpotable Treatment Capacity	**1.93**	**3.33**	**8.68**	**8.68**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Stock Island RO WTP	Seawater	2025	$50.00	4.00	4.00	4.00
Crawl Key RO WTP	Seawater	2028	$70.00	0.00	4.00	4.00
Rehab Existing Stock Island RO WTP	Seawater	2034	$14.00	0.00	2.00[c]	2.00[c]
		Total Potable Water	**$134.00**	**0.00**	**10.00**	**10.00**
Nonpotable Water						
Key Largo Wastewater Treatment District – Initial Direct Potable Reuse Demonstration Project	Reclaimed	2026	$2.00	0.00	0.50	0.50
Key Largo Wastewater Treatment District – Direct Potable Reuse Demonstration Project Expansion	Reclaimed	2030	$6.00	0.00	3.45	3.45
City of Marathon – Reuse System Reactivation and Expansion	Reclaimed	2024	$3.00	0.00	1.40	1.40
City of Marathon – Direct Potable Reuse RO	Reclaimed	2030	$16.00			
City of Marathon and FKAA – Indirect Potable Reuse with ASR and RO	Reclaimed /ASR	2030	$14.00			

Florida Keys Aqueduct Authority (Continued)

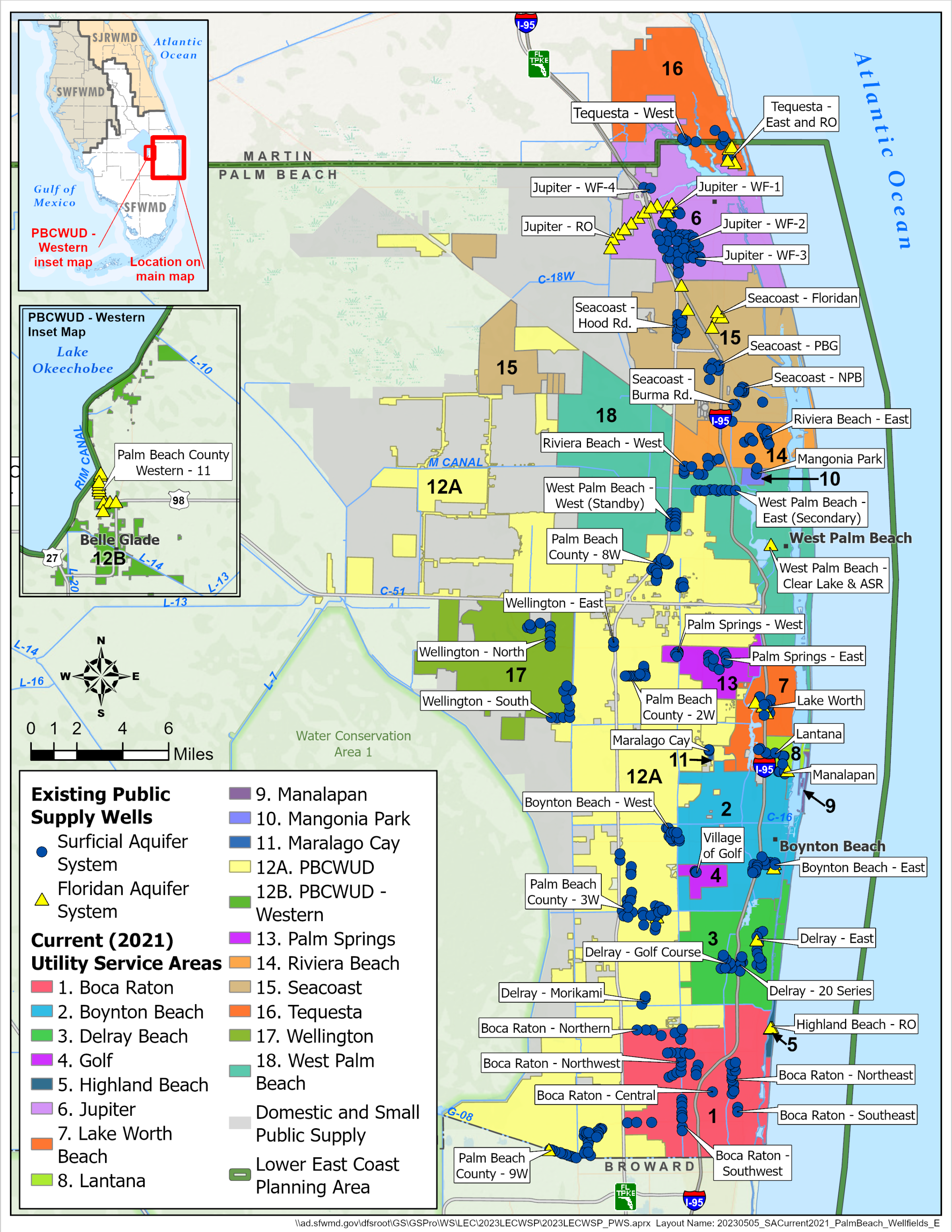
Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Nonpotable Water (Continued)						
Key West Resort Utilities – Reuse Distribution Mains and Irrigation Systems	Reclaimed	2027	$3.00	0.00	0.85[c]	0.85[c]
Key West Resort Utilities and FKAA – Direct Potable Reuse Distribution Line	Reclaimed	2026	$1.00	0.00	0.50[c]	0.50[c]
Total Nonpotable Water			**$45.00**	**0.00**	**9.50**	**9.50**
Total New Water			**$179.00**	**4.00**	**19.50**	**19.50**

[a] If the water level in United States Geological Survey Well G-613 falls below 1.25 feet National Geodetic Vertical Datum of 1929 (December 1 to April 30 of each dry season), the allocation is reduced to 17.00 mgd to ensure consistency with the Everglades Minimum Flow and Minimum Water Level criteria.

[b] The total estimated reclaimed water treatment capacity of all WWTFs located within the FKAA service area.

[c] Does not increase FDEP permitted treatment capacity.

PALM BEACH COUNTY



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_PWS.aprx Layout Name: 20230505_SACurrent2021_PalmBeach_Wellfields_E

Figure B-5. Existing (2021) Public Supply utility service areas and wellfields in Palm Beach County.

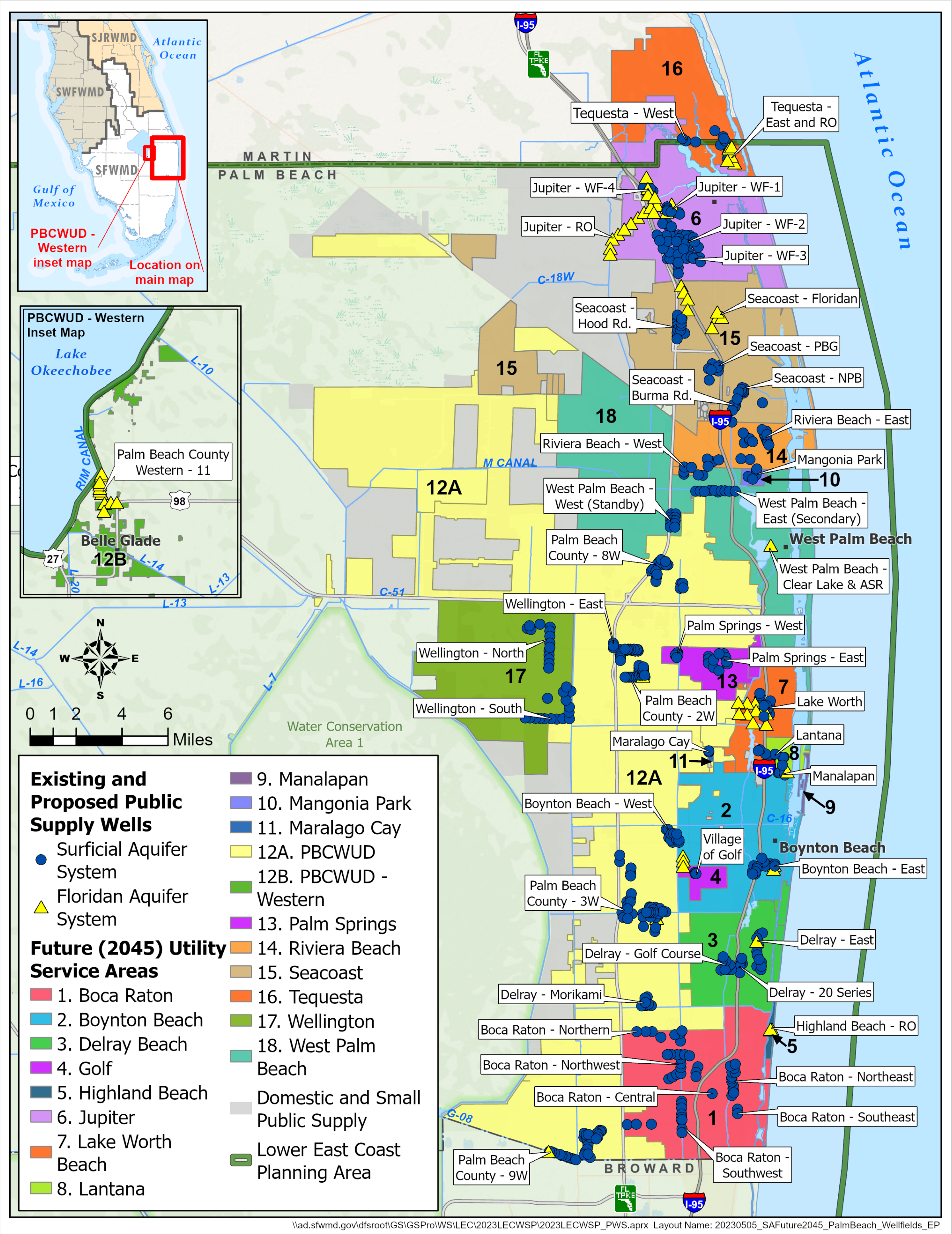


Figure B-6. Projected (2045) Public Supply utility service areas and wellfields in Palm Beach County.

BOCA RATON

Service Area: City of Boca Raton and unincorporated areas of Palm Beach County.

Description: Potable water supplies are obtained from six SAS wellfields (Boca Northern, Northeast, Northwest, Central, Southeast, and Southwest) and water is treated at the Glades Road WTP using lime softening and membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	119,994	122,126	126,437	131,533
Average 2017-2021 Per Capita (gallons per day finished water)	290			
Potable Water Demands (daily average annual finished water in mgd)	**34.80**	**35.42**	**36.67**	**38.14**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00367-W (expires 2028)			
SAS	51.54			
FAS	0.00			
Total Allocation	**51.54**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500130)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	70.00	70.00	70.00	70.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**70.00**	**70.00**	**70.00**	**70.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water[a]	17.50	17.50	17.50	17.50
Total Nonpotable Treatment Capacity	**17.50**	**17.50**	**17.50**	**17.50**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

[a] In 2015, the city achieved designation as a 100% Reuse Facility from the Florida Department of Environmental Protection.

BOYNTON BEACH

Service Area: City of Boynton Beach; towns of Briny Breezes, Hypoluxo, and Ocean Ridge; and unincorporated areas of Palm Beach County.

Bulk Water: PBCWUD provides bulk water to Boynton Beach intermittently as needed.

Description: Potable water supplies are obtained from two SAS wellfields (East and West), and water is treated at two WTPs (East and West) using lime softening and membrane softening. The water supply system is augmented by two ASR wells that provide water and reduce pumping of the eastern wellfield during the dry season.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	119,413	122,995	131,665	136,890
Average 2017-2021 Per Capita (gallons per day finished water)	119			
Potable Water Demands (daily average annual finished water in mgd)	**14.21**	**14.64**	**15.67**	**16.29**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 50-00499-W (expires 2029)
SAS	16.58[a]
FAS/ASR	6.42[b]
Total Allocation	**20.86[c]**

FDEP Potable Water Treatment Capacity (PWS ID # 4500145)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	34.40	34.40	34.40	34.40
FAS	0.00	0.00	8.00	8.00
Total Potable Treatment Capacity	**34.40**	**34.40**	**42.40**	**42.40**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water[d, e]	14.00	14.00	14.00	14.00
ASR	4.00	4.00	4.00	4.00
Total Nonpotable Treatment Capacity	**18.00**	**18.00**	**18.00**	**18.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
New RO Plant and 3 FAS Wells	FAS	2029	$20.00	0.00	8.00	8.00
Total Potable Water			**$20.00**	**0.00**	**8.00**	**8.00**
Nonpotable Water						
Reclaimed Water System Extension – Phases 1-4	Reclaimed	2030	$40.00	0.00	3.30[f]	3.30[f]
Total Nonpotable Water			**$40.00**	**0.00**	**5.16**	**5.16**
Total New Water			**$60.00**	**0.00**	**13.16**	**13.16**

[a] The city's baseline SAS allocation is 16.58 mgd. Please refer to the current water use permit for additional allocation information.

[b] Includes 1.42 mgd for proposed FAS withdrawals. The remaining 5.00 mgd are from ASR wells during the dry season.

[c] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[d] Estimated portion of reclaimed water produced by the 24.00 mgd South Central Regional WWTF attributable to Boynton Beach.

[e] The 2020 FDEP Ocean Outfall Report states that the Boynton Beach plans to construct an additional 4.27 mgd of transmission to new end users prior to December 31, 2025 to meet the reuse requirements. The reclaimed water treatment capacity is not increased by these distribution projects.

[f] The project does not increase the reclaimed water treatment capacity.

DELRAY BEACH

Service Area: City of Delray Beach, Town of Gulf Stream, and unincorporated areas of Palm Beach County.

Description: Potable water supplies are obtained from four SAS wellfileds (Eastern, Morikami, 20-Series, GolfCourse) and one FAS wellfield, and water is treated at one lime softening WTP near the Eastern Wellfield. The water use permit contains limits on the Eastern, Morikami, 20-Series, and Golf Course wellfields. The city has converted an ASR well to an FAS well for backup supply of brackish water for blending with fresh groundwater, but withdrawals may not exceed 1.50 mgd. The city is committed to replacing permitted SAS irrigation withdrawals with reclaimed water.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	71,922	74,542	79,043	82,180
Average 2017-2021 Per Capita (gallons per day finished water)	204			
Potable Water Demands (daily average annual finished water in mgd)	**14.67**	**15.21**	**16.12**	**16.76**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00177-W (expires 2030)			
SAS	19.10			
FAS	1.50[a]			
Total Allocation	**19.10[b]**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500351)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	26.00	26.00	26.00	26.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**26.00**	**26.00**	**26.00**	**26.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water[c]	10.00	10.00	10.00	10.00
Total Nonpotable Treatment Capacity	**10.00**	**10.00**	**10.00**	**10.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
Reclaimed Water Expansion Area 9	Reclaimed	2026	$1.50	0.00	0.20[d]	0.20[d]
Reclaimed Water Expansion Area 10	Reclaimed	2023	$2.70	0.10[d]	0.10[d]	0.10[d]
Reclaimed Water Expansion Area 15	Reclaimed	2028	$1.70	0.00	0.16[d]	0.16[d]
Reclaimed Water Expansion Areas 2, 3, 5	Reclaimed	2026	$1.00	0.00	0.42[d]	0.42[d]
Total Nonpotable Water			**$6.90**	**0.10**	**0.88**	**0.88**
Total New Water			**$6.90**	**0.10**	**0.88**	**0.88**

[a] The city's FAS well is a backup source for blending limited to 1.50 mgd.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[c] Estimated portion of reclaimed water produced by the 24.00 mgd South Central Regional WWTF attributable to Delray Beach.

[d] The project increases distribution capacity but does not add to reclaimed water treatment capacity.

GOLF

Service Area: Village of Golf and unincorporated areas of Palm Beach County.

Description: Potable water supplies are obtained from the SAS via the Village of Golf Wellfield, and water is treated at the Village of Golf WTP using membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	2,801	2,905	3,142	3,334
Average 2017-2021 Per Capita (gallons per day finished water)	145			
Potable Water Demands (daily average annual finished water in mgd)	**0.41**	**0.42**	**0.46**	**0.48**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 50-00612-W (expires 2033)
SAS	0.69
FAS	0.00
Total Allocation	**0.69**

FDEP Potable Water Treatment Capacity (PWS ID # 4501528)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.86	0.86	0.86	0.86
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**0.86**	**0.86**	**0.86**	**0.86**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

HIGHLAND BEACH

Service Area: Town of Highland Beach.

Description: Potable water supplies are obtained from one FAS wellfiled (Highland Beach RO), and water is treated at the Highland Beach WTP using RO.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	4,143	4,467	4,738	4,978
Average 2017-2021 Per Capita (gallons per day finished water)	301			
Potable Water Demands (daily average annual finished water in mgd)	**1.25**	**1.34**	**1.43**	**1.50**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00346-W (expires 2026)			
SAS	0.00			
FAS	3.15			
Total Allocation	**3.15**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500609)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.00	0.00	0.00	0.00
FAS	3.00	3.00	3.00	3.00
Total Potable Treatment Capacity	**3.00**	**3.00**	**3.00**	**3.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

JUPITER

Service Area: Town of Jupiter and a portion of the Town of Juno Beach, and unincorporated areas of Martin and Palm Beach counties.

Description: Potable water supplies are obtained from three SAS wellfields (Jupiter WF-2, WF-3, and WF-4) and one FAS wellfield (Jupiter RO). FAS water is treated using RO, and SAS water is treated using membrane softening at the same location, the Jupiter Public Water System WTP.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population (Palm Beach County)	74,581	79,099	83,820	87,133
Population (Martin County)	2,311	2,416	2,617	2,770
Average 2017-2021 Per Capita (gallons per day finished water)	211			
Potable Water Demands (Palm Beach County)	**15.74**	**16.69**	**17.69**	**18.39**
Potable Water Demands (Martin County)	**0.49**	**0.51**	**0.55**	**0.58**
Total Potable Water Demands (daily average annual finished water in mgd)	**16.23**	**17.20**	**18.24**	**18.97**

SFWMD Water Use Permitted Allocation (mgd)	
Potable Water Source	Permit Number 50-00010-W (expires 2030)
SAS	18.80
FAS	11.71
Total Allocation	**24.41**[a]

FDEP Potable Water Treatment Capacity (PWS ID # 4501491)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	16.30	16.30	16.30	16.30
FAS	13.70	13.70	13.70	13.70
Total Potable Treatment Capacity	**30.00**	**30.00**	**30.00**	**30.00**

Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed[b]	11.50	11.50	11.50	11.50
Total Nonpotable Treatment Capacity	**11.50**	**11.50**	**11.50**	**11.50**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
FAS Wells 14,15,16	FAS	2024	$10.56	4.53[c]	4.53[c]	4.53[c]
FAS Wells 17,18	FAS	2028	$4.20	0.00	1.44[c]	1.44[c]
Total Potable Water			**$14.76**	**4.53**	**5.97**	**5.97**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

[a] The SAS and FAS allocations do not always total exactly. See the SFWMD water use permit for further information.

[b] Estimated portion of reclaimed water produced by the Loxahatchee River District WWTF attributable to Jupiter.

[c] The project does not increase overall treatment capacity.

LAKE WORTH BEACH

Service Area: City of Lake Worth Beach, portion of the Town of Lake Clarke Shores, and unincorporated areas of Palm Beach County.

Bulk Water: Lake Worth Beach provides small quantities of bulk water intermittently on an as-needed basis to the Town of Lake Clarke Shores.

Description: Potable water supplies are obtained from the SAS and FAS via the Lake Worth Beach Wellfield. Water is treated using lime softening and RO at the Lake Worth Beach WTP.

<table>
<tr><th colspan="5">Population and Finished Water Demand</th></tr>
<tr><td rowspan="2"></td><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td>Population</td><td>48,806</td><td>50,951</td><td>55,108</td><td>59,176</td></tr>
<tr><td>Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="4">106</td></tr>
<tr><td>Potable Water Demands (daily average annual finished water in mgd)</td><td>5.17</td><td>5.40</td><td>5.84</td><td>6.27</td></tr>
<tr><th colspan="5">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td>Potable Water Source</td><td colspan="4">Permit Number 50-00234-W (expires 2032)</td></tr>
<tr><td>SAS</td><td colspan="4">5.25</td></tr>
<tr><td>FAS</td><td colspan="4">6.00</td></tr>
<tr><td>Total Allocation</td><td colspan="4">11.25</td></tr>
<tr><th colspan="5">FDEP Potable Water Treatment Capacity (PWS ID # 4500773)</th></tr>
<tr><td rowspan="3">Permitted Capacity by Source</td><td colspan="4">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td>SAS</td><td>12.90</td><td>12.90</td><td>12.90</td><td>12.90</td></tr>
<tr><td>FAS</td><td>4.50</td><td>4.50</td><td>4.50</td><td>4.50</td></tr>
<tr><td>Total Potable Treatment Capacity</td><td>17.40</td><td>17.40</td><td>17.40</td><td>17.40</td></tr>
<tr><th colspan="5">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td>Reclaimed</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Total Nonpotable Treatment Capacity</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
</table>

<table>
<tr><th colspan="7">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="3">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td colspan="7">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="7">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
</table>

LANTANA

Service Area: Town of Lantana.

Description: Potable water supplies are obtained from the SAS via the Lantana Wellfield, and water is treated at the Lantana WTP using membrane softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	10,656	11,088	11,993	12,723
Average 2017-2021 Per Capita (gallons per day finished water)	184			
Potable Water Demands (daily average annual finished water in mgd)	**1.96**	**2.04**	**2.21**	**2.34**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00575-W (expires 2028)			
SAS	2.48			
FAS	0.00			
Total Allocation	**2.48**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500784)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2016	2020	2030	2040
SAS	3.84	3.84	3.84	3.84
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**3.84**	**3.84**	**3.84**	**3.84**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

MANALAPAN

Service Area: Town of Manalapan.

Description: Potable water supplies are obtained from the SAS and FAS via the Manalapan Wellfield, and water is treated at the Leroy C. Paslay WTP using RO.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	429	440	476	505
Average 2017-2021 Per Capita (gallons per day finished water)	2,157[a]			
Potable Water Demands (daily average annual finished water in mgd)	**0.93**	**0.95**	**1.03**	**1.09**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00506-W (expires 2023)			
SAS	0.58			
FAS	1.12			
Total Allocation	**1.70**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500840)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.65	0.65	0.65	0.65
FAS	1.70	1.70	1.70	1.70
Total Potable Treatment Capacity	**2.35**	**2.35**	**2.35**	**2.35**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

[a] Manalapan discontinued providing water to the Town of Hypoluxo in November of 2020. The per capita is based on an average of 2021 and 2022 for Manalapan only.

MANGONIA PARK

Service Area: Town of Mangonia Park.

Description: Potable water supplies are obtained from the SAS via the Mangonia Park Wellfield, and water is treated at the Mangonia Park WTP using lime softening.

<table>
<tr><th colspan="7">Population and Finished Water Demand</th></tr>
<tr><td colspan="3" rowspan="2"></td><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td colspan="3">Population</td><td>2,180</td><td>2,249</td><td>2,433</td><td>2,581</td></tr>
<tr><td colspan="3">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="4">189</td></tr>
<tr><td colspan="3">Potable Water Demands (daily average annual finished water in mgd)</td><td>0.41</td><td>0.43</td><td>0.46</td><td>0.49</td></tr>
<tr><th colspan="7">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="3">Potable Water Source</td><td colspan="4">Permit Number 50-00030-W (expires 2027)</td></tr>
<tr><td colspan="3">SAS</td><td colspan="4">0.58</td></tr>
<tr><td colspan="3">FAS</td><td colspan="4">0.00</td></tr>
<tr><td colspan="3">Total Allocation</td><td colspan="4">0.58</td></tr>
<tr><th colspan="7">FDEP Potable Water Treatment Capacity (PWS ID # 4500841)</th></tr>
<tr><td colspan="3" rowspan="3">Permitted Capacity by Source</td><td colspan="4">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td>Existing</td><td colspan="3">Projected</td></tr>
<tr><td>2021</td><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td colspan="3">SAS</td><td>1.08</td><td>1.08</td><td>1.08</td><td>1.08</td></tr>
<tr><td colspan="3">FAS</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Total Potable Treatment Capacity</td><td>1.08</td><td>1.08</td><td>1.08</td><td>1.08</td></tr>
<tr><th colspan="7">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="3">Reclaimed</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Total Nonpotable Treatment Capacity</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><th colspan="7">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="3">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td>2025</td><td>2035</td><td>2045</td></tr>
<tr><td colspan="7">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="7">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr>
</table>

MARALAGO CAY

Service Area: Unincorporated area of Palm Beach County.

Description: Potable water supplies are obtained from the SAS via the Maralago Cay Wellfield, and water is treated at the Maralago Cay Mobile Home Park WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	1,240	1,240	1,240	1,240
Average 2017-2021 Per Capita (gallons per day finished water)	205			
Potable Water Demands (daily average annual finished water in mgd)	**0.25**	**0.25**	**0.25**	**0.25**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-01283-W (expires 2035)			
SAS	0.27			
FAS	0.00			
Total Allocation	**0.27**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500062)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	0.42	0.42	0.42	0.42
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**0.42**	**0.42**	**0.42**	**0.42**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

PALM BEACH COUNTY WATER UTILITIES DEPARTMENT

Service Area: Cities of Atlantis and West Lake (via Seminole Improvement District), towns of Cloud Lake and Glen Ridge, and portions of the cities of Boca Raton, Greenacres, West Lake, and West Palm Beach; towns of Haverhill, Lake Clarke Shores, and Loxahatchee Groves; villages of Palm Springs, Royal Palm Beach, and Wellington; and unincorporated areas of Palm Beach County.

Bulk Water: PBCWUD provides small quantities of bulk water intermittently on an as-needed basis to the cities of Boynton Beach and West Palm Beach as well as the NSID. Additionally, up to 5.00 mgd of bulk water is provided to Seacoast Utility Authority.

Description: Potable water supplies are obtained from four SAS wellfields (Palm Beach County 2W, 3W, 8W, and 9W), and water is treated at four WTPs using lime softening with ion exchange (WTPs 2 and 8) and membrane softening (WTPs 3 and 9).

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	545,848	577,044	635,840	678,344
Average 2017-2021 Per Capita (gallons per day finished water)	103			
Potable Water Demands (daily average annual finished water in mgd)	**56.22**	**59.44**	**65.49**	**69.87**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00135-W (expires 2053)			
SAS	97.40[a]			
FAS (for blending with SAS)	7.00			
Bulk Finished Water (to Seacoast)	(5.00)			
Total Allocation	**104.4[b]**			
FDEP Potable Water Treatment Capacity (PWS ID # 4504393)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	103.28	103.28	115.78	115.78
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**103.28**	**103.28**	**115.78**	**115.78**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	25.89[c]	27.89[c]	27.89[c]	27.89[c]
Total Nonpotable Treatment Capacity	**25.89**	**27.89**	**27.89**	**27.89**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Expansion of WTP 2 to add 12.50 mgd Membrane Softening	SAS	2028	$65.00	0.00	12.50	12.50
Total Potable Water			**$65.00**	**0.00**	**12.50**	**12.50**

Palm Beach County Water Utilities Department (Continued)

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Nonpotable Water						
Green Cay Wetlands 2.00 mgd Indirect Potable Reuse Project – WTP, 2.3 miles Purified Water Pipeline, and SAS Wells	Reclaimed	2025	$47.50	2.00	2.00	2.00
Palm Beach – Broward Interconnect Phase 1B: South Reclaimed Water Transmission and System Extension in Southern Palm Beach County	Reclaimed	2028	$58.50	0.00	10.51[d,e]	10.51[d,e]
Total Nonpotable Water			**$153.50**	**2.00**	**12.51**	**12.51**
Total New Water			**$218.5**	**2.00**	**25.01**	**25.01**

[a] The SAS allocation of 97.40 mgd expires in 2042. The base condition allocation for the SAS is 86.99 mgd.

[b] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

[c] The PBCWUD is contracted to provide FPL with up to 22.00 mgd of reclaimed water for cooling purposes at the West County Energy Center. FPL currently uses approximately 14.00 mgd of that amount. This is in addition to the reclaimed capacity listed (25.89 mgd).

[d] The project does not increase overall treatment capacity.

[e] The PBCWUD is contracted to receive up to 10.51 mgd of reclaimed water from BCWWS.

PALM BEACH COUNTY WATER UTILITIES DEPARTMENT WESTERN REGION

Service Area: Cities of Belle Glade, Pahokee, and South Bay and unincorporated areas of Palm Beach County.

Description: Potable water supplies are obtained from one FAS wellfield (Palm Beach County 11) , and water is treated at the Lake Region WTP using RO.

<table>
<tr><th colspan="16">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">Population</td><td colspan="3">36,660</td><td colspan="3">37,405</td><td colspan="3">38,916</td><td colspan="3">40,488</td></tr>
<tr><td colspan="4">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="12">176</td></tr>
<tr><td colspan="4">Potable Water Demands (daily average annual finished water in mgd)</td><td colspan="3">6.45</td><td colspan="3">6.58</td><td colspan="3">6.85</td><td colspan="3">7.13</td></tr>
<tr><th colspan="16">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="12">Permit Number 50-06857-W (expires 2025)</td></tr>
<tr><td colspan="4">SAS</td><td colspan="12">0.00</td></tr>
<tr><td colspan="4">FAS</td><td colspan="12">9.43</td></tr>
<tr><td colspan="4">Total Allocation</td><td colspan="12">9.43</td></tr>
<tr><th colspan="16">FDEP Potable Water Treatment Capacity (PWS ID # 4505005)</th></tr>
<tr><td colspan="4" rowspan="3">Permitted Capacity by Source</td><td colspan="12">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">SAS</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td><td colspan="3">0.00</td></tr>
<tr><td colspan="4">FAS</td><td colspan="3">10.00</td><td colspan="3">10.00</td><td colspan="3">10.00</td><td colspan="3">10.00</td></tr>
<tr><td colspan="4">Total Potable Treatment Capacity</td><td colspan="3">10.00</td><td colspan="3">10.00</td><td colspan="3">10.00</td><td colspan="3">10.00</td></tr>
<tr><th colspan="16">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed</td><td colspan="3">0.68</td><td colspan="3">0.68</td><td colspan="3">0.68</td><td colspan="3">0.68</td></tr>
<tr><td colspan="4">Total Nonpotable Treatment Capacity</td><td colspan="3">0.68</td><td colspan="3">0.68</td><td colspan="3">0.68</td><td colspan="3">0.68</td></tr>
<tr><th colspan="16">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="12">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="4">2025</td><td colspan="4">2035</td><td colspan="4">2045</td></tr>
<tr><td colspan="16">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="16">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
</table>

PALM SPRINGS

Service Area: Village of Palm Springs, Town of Lake Clarke Shores, and unincorporated areas of Palm Beach County.

Description: Potable water supplies are obtained from two SAS wellfields (Palm Springs East and West), and water is treated at the Davis Road and Robert L. Pratt interconnected WTPs utilizing ion exchange and lime softening.

Population and Finished Water Demand						
			Existing	Projected		
			2021	2025	2035	2045
Population			52,857	53,422	56,675	60,127
Average 2017-2021 Per Capita (gallons per day finished water)			75			
Potable Water Demands (daily average annual finished water in mgd)			**3.96**	**4.01**	**4.25**	**4.51**
SFWMD Water Use Permitted Allocation (mgd)						
Potable Water Source			Permit Number 50-00036-W (expires 2029)			
SAS			4.62			
FAS			0.00			
Total Allocation			**4.62**			
FDEP Potable Water Treatment Capacity (PWS ID # 4501058)						
Permitted Capacity by Source			Cumulative Facility & Project Capacity (mgd)			
			Existing	Projected		
			2021	2025	2035	2045
SAS			10.00	10.00	10.00	10.00
FAS			0.00	0.00	0.00	0.00
Total Potable Treatment Capacity			**10.00**	**10.00**	**10.00**	**10.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)						
Reclaimed			0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity			**0.00**	**0.00**	**0.00**	**0.00**
Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Purchase Bulk Water from PBCWUD[a]	Bulk Water	2045	$1.75	0.00	0.00	0.15[a]
Total Potable Water			**$1.75**	**0.00**	**0.00**	**0.15[a]**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$1.75**	**0.00**	**0.00**	**0.15[a]**

[a] This project is suggested by the SFWMD for Palm Springs to have adequate water supply to meet 2045 demands. Palm Springs can choose to implement this project or determine an alternative source to meet the 2045 demands.

RIVIERA BEACH

Service Area: City of Riviera Beach and Town of Palm Beach Shores.

Description: Potable water supplies are obtained from the SAS via the West Riviera Beach and East Riviera Beach wellfields, and water is treated at the Riviera Beach WTP using lime softening.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	43,485	44,442	48,069	53,531
Average 2017-2021 Per Capita (gallons per day finished water)	192			
Potable Water Demands (daily average annual finished water in mgd)	**8.35**	**8.53**	**9.23**	**10.28**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00460-W (expires 2054[a])			
SAS	9.26			
FAS	4.95			
Total Allocation	**13.22[c]**			
FDEP Potable Water Treatment Capacity (PWS ID # 4501229)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	17.50	17.50	8.52	8.52
FAS	0.00	0.00	7.48	7.48
Total Potable Treatment Capacity	**17.50**	**17.50**	**16.00**	**16.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed	0.00	0.00	0.00	0.00
Total Nonpotable Treatment Capacity	**0.00**	**0.00**	**0.00**	**0.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
9 FAS Wells and New 7.48 mgd RO WTP	FAS	2027	$150.00	0.00	7.48	7.48
New Membrane Softening WTP[b]	SAS	2027	$100.00	0.00	8.52	8.52
Total Potable Water			**$250.00**	**0.00**	**16.00**	**16.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$250.00**	**0.00**	**16.00**	**16.00**

[a] 2054 is the FAS expiration date, and 2044 is the SAS expiration date.

[b] The existing lime softening WTP will be decommissioned and replaced with the proposed 8.52 mgd membrane softening WTP.

[c] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

SEACOAST

Service Area: Towns of Juno Beach and Lake Park, Village of North Palm Beach, City of Palm Beach Gardens, and unincorporated areas of Palm Beach County.

Bulk Water: Seacoast has an interlocal agreement with PBCWUD to purchase up to 5.00 mgd of bulk finished water.

Description: Potable water supplies are obtained from four SAS wellfields (North Palm Beach, Burma Road, Palm Beach Gardens, Hood Road) and one FAS wellfield (Seacoast Floridian), and water is treated using a combination of RO and membrane softening at the Hood Road WTP. The water use permit includes an overlap in allocations from SAS and FAS sources to provide operational flexibility on a seasonal basis, but the permit has a maximum annual allocation from the two sources combined along with specific wellfield withdrawal limitations.

<table>
<tr><th colspan="16">Population and Finished Water Demand</th></tr>
<tr><td colspan="4" rowspan="2"></td><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">Population</td><td colspan="3">96,473</td><td colspan="3">97,911</td><td colspan="3">103,569</td><td colspan="3">106,537</td></tr>
<tr><td colspan="4">Average 2017-2021 Per Capita (gallons per day finished water)</td><td colspan="12">188</td></tr>
<tr><td colspan="4">Potable Water Demands (daily average annual finished water in mgd)</td><td colspan="3">18.14</td><td colspan="3">18.41</td><td colspan="3">19.47</td><td colspan="3">20.03</td></tr>
<tr><th colspan="16">SFWMD Water Use Permitted Allocation (mgd)</th></tr>
<tr><td colspan="4">Potable Water Source</td><td colspan="12">Permit Number 50-00365-W (expires 2032)</td></tr>
<tr><td colspan="4">SAS</td><td colspan="12">22.30</td></tr>
<tr><td colspan="4">FAS</td><td colspan="12">8.90</td></tr>
<tr><td colspan="4">Bulk finished water from PBCWUD</td><td colspan="12">5.00</td></tr>
<tr><td colspan="4">Total Allocation</td><td colspan="12">26.92[a]</td></tr>
<tr><th colspan="16">FDEP Potable Water Treatment Capacity (PWS ID # 4501124)</th></tr>
<tr><td colspan="4" rowspan="3">Permitted Capacity by Source</td><td colspan="12">Cumulative Facility & Project Capacity (mgd)</td></tr>
<tr><td colspan="3">Existing</td><td colspan="9">Projected</td></tr>
<tr><td colspan="3">2021</td><td colspan="3">2025</td><td colspan="3">2035</td><td colspan="3">2045</td></tr>
<tr><td colspan="4">SAS</td><td colspan="3">27.50</td><td colspan="3">27.50</td><td colspan="3">27.50</td><td colspan="3">27.50</td></tr>
<tr><td colspan="4">FAS</td><td colspan="3">3.00</td><td colspan="3">3.00</td><td colspan="3">3.00</td><td colspan="3">3.00</td></tr>
<tr><td colspan="4">Total Potable Treatment Capacity</td><td colspan="3">30.50</td><td colspan="3">30.50</td><td colspan="3">30.50</td><td colspan="3">30.50</td></tr>
<tr><th colspan="16">Nonpotable Alternative Water Source Treatment Capacity (mgd)</th></tr>
<tr><td colspan="4">Reclaimed Water</td><td colspan="3">14.67</td><td colspan="3">14.67</td><td colspan="3">14.67</td><td colspan="3">14.67</td></tr>
<tr><td colspan="4">Total Nonpotable Treatment Capacity</td><td colspan="3">14.67</td><td colspan="3">14.67</td><td colspan="3">14.67</td><td colspan="3">14.67</td></tr>
<tr><th colspan="16">Project Summary</th></tr>
<tr><td rowspan="2">Water Supply Projects</td><td rowspan="2">Source</td><td rowspan="2">Completion Date</td><td rowspan="2">Total Capital Cost ($ million)</td><td colspan="12">Projected Cumulative Design Capacity (mgd)</td></tr>
<tr><td colspan="4">2025</td><td colspan="4">2035</td><td colspan="4">2045</td></tr>
<tr><td colspan="16">Potable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Potable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="16">Nonpotable Water</td></tr>
<tr><td>No Projects</td><td></td><td></td><td></td><td colspan="4"></td><td colspan="4"></td><td colspan="4"></td></tr>
<tr><td colspan="3">Total Nonpotable Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
<tr><td colspan="3">Total New Water</td><td>$0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td><td colspan="4">0.00</td></tr>
</table>

[a] The permitted source allocations do not always total exactly. See the SFWMD water use permit for further information.

TEQUESTA

Service Area: Village of Tequesta, towns of Jupiter Inlet Colony and Jupiter Island, and portions of unincorporated Palm Beach and Martin counties.

Description: Potable water supplies are obtained from the SAS via the Tequesta East and West wellfields and the FAS via the Tequesta RO Wellfield. SAS water is treated using sand filtration, and FAS water is treated using RO at the Tequesta Water Department WTP.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population (Palm Beach County)	9,777	9,922	10,424	10,805
Population (Martin County)	3,629	3,679	3,777	3,804
Average 2017-2021 Per Capita (gallons per day finished water)	253			
Potable Water Demands (Palm Beach County)	2.47	2.51	2.64	2.73
Potable Water Demands (Martin County)	0.92	0.93	0.96	0.96
Total Potable Water Demands (daily average annual finished water in mgd)	**3.39**	**3.44**	**3.59**	**3.70**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00046-W (expires 2031)			
SAS	1.10			
FAS	3.43			
Total Allocation	**4.37**[a]			
FDEP Potable Water Treatment Capacity (PWS ID # 4501438)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	2.73	2.73	2.73	2.73
FAS	3.60	3.60	3.60	3.60
Total Potable Treatment Capacity	**6.33**	**6.33**	**6.33**	**6.33**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed[b]	2.50	2.50	2.50	2.50
Total Nonpotable Treatment Capacity	**2.50**	**2.50**	**2.50**	**2.50**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
No Projects						
Total Potable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Nonpotable Water						
No Projects						
Total Nonpotable Water			**$0.00**	**0.00**	**0.00**	**0.00**
Total New Water			**$0.00**	**0.00**	**0.00**	**0.00**

[a] The SAS and FAS allocations do not always total exactly. See the SFWMD water use permit for further information.
[b] Estimated portion of reclaimed water produced by the Loxahatchee River District WWTF attributable to Tequesta.

WELLINGTON

Service Area: Villages of Wellington and Royal Palm Beach, and unincorporated areas of Palm Beach County.

Description: Potable water supplies are obtained from three SAS wellfields (North, South, and East). Water from the North Wellfield is slightly brackish and treated using membrane softening. Water from the South and East wellfields is treated with lime softening at the same location. Lime softening is scheduled to be decommissioned and replaced with membrane softening by 2028.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	56,777	57,105	65,640	70,314
Average 2017-2021 Per Capita (gallons per day finished water)	104			
Potable Water Demands (daily average annual finished water in mgd)	**5.90**	**5.94**	**6.83**	**7.31**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00464-W (expires 2039)			
SAS	10.37			
FAS	0.00			
Total Allocation	**10.37**			
FDEP Potable Water Treatment Capacity (PWS ID # 4500014)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
SAS	12.30	12.30	13.00	13.00
FAS	0.00	0.00	0.00	0.00
Total Potable Treatment Capacity	**12.30**	**12.30**	**13.00**	**13.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
Reclaimed Water	6.42	6.42	6.62	6.62
Total Nonpotable Treatment Capacity	**6.42**	**6.42**	**6.62**	**6.62**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
Membrane Softening Expansion and Decommissioning of Lime Softening WTP	SAS	2028	$10.40	0.00	0.70[a]	0.70[a]
Total Potable Water			**$10.40**	**0.00**	**0.70**	**0.70**
Nonpotable Water						
WRF 0.20 mgd Expansion – Phase 2	Reclaimed	2030	$1.30	0.00	0.20	0.20
Total Nonpotable Water			**$1.30**	**0.00**	**0.20**	**0.20**
Total New Water			**$11.70**	**0.00**	**0.90**	**0.90**

[a] The project sequence shifts treatment capacity from lime softening treatment to membrane softening treatment, and there is a 0.7 mgd net increase to overall treatment capacity.

WEST PALM BEACH

Service Area: City of West Palm Beach and towns of Palm Beach, South Palm Beach, and unincorporated areas of Palm Beach County.

Bulk Water: The city provides finished bulk water to the Solid Waste Authority of Palm Beach County (SWAPBC) and Bay Hill Estates. West Palm Beach and PBCWUD exchange a small amount of bulk finished water intermittently on an as-needed basis.

Description: Potable water supplies are obtained from surface water and the SAS from the Eastern and Western wellfields, and water is treated at one WTP using lime softening. When used, typically during drought conditions, the SAS wells discharge to the M Canal for conveyance to Clear Lake. The city is authorized to capture excess stormwater from the C-17 and C-51 canals for storage using Grassy Waters Preserve, Lake Mangonia, Clear Lake, and ASR.

Population and Finished Water Demand				
	Existing	Projected		
	2021	2025	2035	2045
Population	132,402	136,361	146,885	156,033
Average 2017-2021 Per Capita (gallons per day finished water)	230			
Potable Water Demands (daily average annual finished water in mgd)	**30.45**	**31.36**	**33.78**	**35.89**
SFWMD Water Use Permitted Allocation (mgd)				
Potable Water Source	Permit Number 50-00615-W (expires 2033)			
SAS	38.83[a]			
FAS	0.00			
Surface Water (Clear Lake)	41.20[b]			
Surface Water (SFWMD L-8 Canal, M Canal, and Grassy Waters Preserve)	66.98[c]			
Bulk Raw Water (finished water sale to SWAPBC)	(.35)			
Bulk Raw Water (finished water sale to Bay Hill Estates)	(.15)			
Total Allocation	**41.20**			
FDEP Potable Water Treatment Capacity (PWS ID # 4501559)				
Permitted Capacity by Source	Cumulative Facility & Project Capacity (mgd)			
	Existing	Projected		
	2021	2025	2035	2045
Surface Water/SAS	47.00	47.00	47.00	47.00
FAS	0.00	0.00	0.00	30.00
Total Potable Treatment Capacity	**47.00**	**47.00**	**47.00**	**77.00**
Nonpotable Alternative Water Source Treatment Capacity (mgd)				
ASR	8.00	8.00	8.00	8.00
Reclaimed Water	28.00	28.00	28.00	28.00
Stormwater (Storage)	10.00	10.00	13.00	13.00
Total Nonpotable Treatment Capacity	**46.00**	**46.00**	**49.00**	**49.00**

Project Summary						
Water Supply Projects	Source	Completion Date	Total Capital Cost ($ million)	Projected Cumulative Design Capacity (mgd)		
				2025	2035	2045
Potable Water						
New 30.00 mgd RO WTP and FAS Wells	FAS	2043	$750.00	0.00	0.00	30.00
Total Potable Water			**$750.00**	**0.00**	**0.00**	**30.00**
Nonpotable Water						
Grassy Waters Preserve Storage Improvements	Stormwater	2028	$6.00	3.00	3.00	3.00
Total Nonpotable Water			**$6.00**	**3.00**	**3.00**	**3.00**
Total New Water			**$756.00**	**3.00**	**3.00**	**33.00**

[a] Withdrawals from the Eastern and Western (SAS) wellfields are limited to 60 days per year on a rolling 12-month basis.
[b] Public Supply portion of permit; surface water is withdrawn from Clear Lake.
[c] Diversion and Impoundment portion of permit; surface water from L-8 Canal is conveyed via M-Canal into Grassy Waters and/or Clear Lake.

UTILITIES SERVING LOCAL GOVERNMENTS

Table B-2 identifies the local governments within the LEC Planning Area and the PS utilities with treatment capacity and water use of 0.10 mgd or greater. The first column in **Table B-2** lists the name of the local government, and the second column identifies the local government(s) or private PS utility, or utilities, providing gross (raw) or net (finished) water to the local government.

Table B-3 identifies the PS utilities providing gross (raw) or net (finished) water to the local governments within the LEC Planning Area. The first column of **Table B-3** lists the name of the PS utility, the second column provides the type of utility, and the third column identifies the incorporated and unincorporated areas of the LEC Planning Area within that PS utility's service area.

Table B-2. Local and tribal governments served by utilities/entities in the LEC Planning Area.

Local and Tribal Governments	Utilities/Entities Serving Local and Tribal Governments
Broward County	
Broward County (unincorporated)	BCWWS Districts 1, 2, and 3, Fort Lauderdale, Hollywood, and Sunrise
Coconut Creek, City of	BCWWS District 2A and Margate
Cooper City, City of	Cooper City
Coral Springs, City of	Coral Springs, CSID, NSID, Royal Waterworks, Inc., and BCWWS District 2A
Dania Beach, City of	Dania Beach, Hollywood, and BCWWS District 3
Davie, Town of	Cooper City, Hollywood, Davie, Fort Lauderdale, Sunrise, Tindall Hammock, and BCWWS District 1
Deerfield Beach, City of	Deerfield Beach and BCWWS District 2A
Fort Lauderdale, City of	Fort Lauderdale, BCWWS Districts 1 and 3, Hollywood, and Tamarac
Hallandale Beach, City of	Hallandale Beach and BCWWS District 3
Hillsboro Beach, Town of	Hillsboro Beach
Hollywood, City of	Fort Lauderdale, Hollywood, and BCWWS District 3
Lauderdale-By-The-Sea, Town of	Fort Lauderdale and Pompano Beach
Lauderdale Lakes, City of	BCWWS District 1 and Fort Lauderdale
Lauderhill, City of	Lauderhill, Fort Lauderdale, and BCWWS District 1
Lazy Lake, Village of	Fort Lauderdale
Lighthouse Point, City of	Pompano Beach and BCWWS District 2A
Margate, City of	Coral Springs, Margate, and BCWWS District 2A
Miramar, City of	Miramar and BCWWS District 3
North Lauderdale, City of	North Lauderdale, Fort Lauderdale, Tamarac, and BCWWS District 1
Oakland Park, City of	Oakland Park, Fort Lauderdale, BCWWS District 1, and Tamarac
Parkland, City of	Parkland, NSID, Coral Springs, Coconut Creek, and BCWWS District 2A
Pembroke Park, Town of	BCWWS District 3
Pembroke Pines, City of	Pembroke Pines and BCWWS District 3
Plantation, City of	Plantation and BCWWS District 1
Pompano Beach, City of	Pompano Beach and BCWWS Districts 1 and 2A
Sea Ranch Lakes, Village of	Fort Lauderdale
Seminole Tribe of Florida	STOF – Hollywood
Southwest Ranches, Town of	Pembroke Pines, Cooper City, and Sunrise

Table B-2. Continued.

Local and Tribal Governments	Utilities/Entities Serving Local and Tribal Governments
Broward County (Continued)	
Sunrise, City of	Sunrise
Tamarac, City of	Tamarac, Fort Lauderdale, and BCWWS District 1
Weston, City of	Sunrise
West Park, City of	BCWWS District 3
Wilton Manors, City of	Fort Lauderdale
Hendry County	
Seminole Tribe of Florida	STOF – Big Cypress
Miami-Dade County	
Miami-Dade County (unincorporated)	Homestead, North Miami Beach, North Miami, and MDWASD
Aventura, City of	North Miami Beach, Opa-Locka, and MDWASD
Bal Harbour Village, City of	MDWASD
Bay Harbor Islands, Town of	MDWASD
Biscayne Park, Village of	North Miami
Coral Gables, City of	MDWASD
Cutler Bay, Town of	MDWASD
Doral, City of	MDWASD
El Portal, Village of	MDWASD
Florida City, City of	Florida City and Homestead
Golden Beach, Town of	North Miami Beach
Hialeah, City of	MDWASD
Hialeah Gardens, City of	MDWASD
Homestead, City of	Homestead and MDWASD
Indian Creek, Village of	MDWASD
Key Biscayne, Village of	MDWASD
Medley, Town of	MDWASD
Miami, City of	MDWASD
Miami Beach, City of	MDWASD
Miami Gardens, City of	North Miami Beach, Opa-Locka, and MDWASD
Miami Lakes, Town of	MDWASD
Miami Shores, Village of	North Miami and MDWASD
Miami Springs, City of	MDWASD
Miccosukee Tribe of Indians	MDWASD
North Bay Village, City of	MDWASD
North Miami, City of	North Miami
North Miami Beach, City of	North Miami Beach and MDWASD
Opa-Locka, City of	MDWASD
Palmetto Bay, Village of	MDWASD
Pinecrest, Village of	MDWASD
South Miami, City of	MDWASD
Sunny Isles Beach, City of	North Miami Beach
Surfside, Town of	MDWASD
Sweetwater, City of	MDWASD
Virginia Gardens, Village of	MDWASD
West Miami, City of	MDWASD

Table B-2. Continued.

Local and Tribal Governments	Utilities/Entities Serving Local and Tribal Governments
Monroe County	
Monroe County (unincorporated)	FKAA
Islamorada, Village of Islands	FKAA
Key Colony Beach, City of	FKAA
Key West, City of	FKAA
Layton, City of	FKAA
Marathon, City of	FKAA
Palm Beach County	
Palm Beach County (unincorporated)	Boca Raton, Boynton Beach, Delray, Golf, Jupiter, Lake Worth Beach, Maralago Cay, PBCWUD, PBCWUD Western Region, Palm Springs, Seacoast, Tequesta, and Wellington
Atlantis, City of	PBCWUD
Belle Glade, City of	PBCWUD Western Region
Boca Raton, City of	Boca Raton and PBCWUD
Boynton Beach, City of	Boynton Beach and PBCWUD[a]
Briny Breezes, Town of	Boynton Beach
Cloud Lake, Town of	PBCWUD
Delray Beach, City of	Delray Beach
Golf, Village of	Golf
Glenn Ridge, Town of	PBCWUD
Green Acres, City of	PBCWUD
Gulfstream, Town of	Delray Beach
Haverhill, Town of	PBCWUD
Highland Beach, Town of	Highland Beach
Hypoluxo, Town of	Boynton Beach
Juno Beach, Town of	Jupiter and Seacoast
Jupiter, Town of	Jupiter
Jupiter Inlet Colony, Town of	Tequesta
Jupiter Island, Town of	Tequesta
Lake Clarke Shores, Town of	Lake Worth Beach,[b] Palm Springs, and PBCWUD
Lantana, Town of	Lantana
Loxahatchee Groves, Town of	PBCWUD
Lake Park, Town of	Seacoast
Lake Worth Beach, Town of	Lake Worth
Manalapan, Town of	Manalapan
Mangonia Park, Town of	Mangonia Park
North Palm Beach, Village of	Seacoast
Ocean Ridge, Town of	Boynton Beach
Pahokee, City of	BCWUD Western Region
Palm Beach, Town of	West Palm Beach
Palm Beach Gardens, City of	Seacoast
Palm Beach Shores, Town of	Riviera Beach
Palm Springs, Village of	Palm Springs and PBCWUD
Riviera Beach, City of	Riviera Beach
Royal Palm Beach, Village of	PBCWUD and Wellington

Table B-2. Continued.

Local and Tribal Governments	Utilities/Entities Serving Local and Tribal Governments
Palm Beach County (Continued)	
South Bay, City of	PBCWUD Western Region
South Palm Beach, Town of	West Palm Beach
Tequesta, Village of	Tequesta
Wellington, Village of	Wellington and PBCWUD
Westlake, City of	Seminole Improvement District and PBCWUD[a]
West Palm Beach, City of	West Palm Beach and PBCWUD[a]

[a] Utility serves local government through bulk water agreement.

Table B-3. Types of utilities/entities serving local and tribal governments in the LEC Planning Area.

Utilities/Entities	Utilities/Entities Type	Local and Tribal Governments Served
Broward County		
BCWWS District 1	Local Government	City of Fort Lauderdale, City of Lauderdale Lakes, City of Lauderhill, City of North Lauderdale, City of Oakland Park, City of Plantation, City of Pompano Beach, City of Tamarac, and unincorporated Broward County
BCWWS District 2A	Local Government	City of Coconut Creek[b] (Coconut Creek distributes to the City of Parkland), City of Deerfield Beach, City of Lighthouse Point, City of Parkland, City of Pompano Beach, and unincorporated Broward County
BCWWS District 3	Local Government	City of Dania Beach, Town of Davie, City of Fort Lauderdale, City of Hallandale Beach, City of West Park, City of Hollywood, City of Miramar, Town of Pembroke Park, City of Pembroke Pines, and unincorporated Broward County
Cooper City	Local Government	City of Cooper City, Town of Davie, and Town of Southwest Ranches
Coral Springs	Local Government	City of Coral Springs
CSID	Special District	City of Coral Springs
Dania Beach	Local Government	City of Dania Beach
Davie	Local Government	Town of Davie
Deerfield Beach	Local Government	City of Deerfield Beach
Fort Lauderdale	Local Government	Town of Davie, City of Fort Lauderdale, City of Hollywood, Town of Lauderdale-By-The-Sea, Village of Lazy Lake, City of Lauderhill, City of Oakland Park, Village of Sea Ranch Lakes, City of Wilton Manors, City of Lauderdale Lakes, City of North Lauderdale, and unincorporated Broward County
Hallandale Beach	Local Government	City of Hallandale Beach
Hillsboro Beach	Local Government	Town of Hillsboro Beach
Hollywood	Local Government	City of Hollywood, City of Dania Beach, City of West Park, Town of Davie, City of Fort Lauderdale, and unincorporated Broward County
Lauderhill	Local Government	City of Lauderhill
Margate	Local Government	City of Margate and City of Coconut Creek
Miramar	Local Government	City of Miramar
North Lauderdale	Local Government	City of North Lauderdale
NSID	Special District	City of Parkland and City of Coral Springs

Table B-3. Continued.

Utilities/Entities	Utilities/Entities Type	Local and Tribal Governments Served
Broward County (Continued)		
Oakland Park	Local Government	City of Oakland Park
Parkland	Privately Owned	City of Parkland
Pembroke Pines	Local Government	City of Pembroke Pines and Town of Southwest Ranches
Plantation	Local Government	City of Plantation
Pompano Beach	Local Government	City of Pompano Beach, City of Lighthouse Point, and Town of Lauderdale-By-The-Sea
Royal Waterworks, Inc.	Privately Owned	City of Coral Springs
STOF	Tribal Government	Seminole Tribe of Florida's Hollywood Reservation
Sunrise	Local Government	City of Sunrise, Town of Davie, Town of Southwest Ranches, City of Weston, and unincorporated Broward County
Tamarac	Local Government	City of Tamarac and City of North Lauderdale
Tindall Hammock	Special District	Town of Davie
Hendry County		
STOF	Tribal Government	Seminole Tribe of Florida's Big Cypress Reservation
Miami-Dade County		
Americana Village	Privately Owned	Unincorporated Miami-Dade County
Florida City	Local Government	City of Florida City
Homestead	Local Government	City of Homestead, and unincorporated Miami-Dade County
MDWASD	Local Government	City of Aventura, Village of Bal Harbour, Town of Bay Harbor Islands, City of Coral Gables, Town of Cutler Bay, City of Doral, Village of El Portal, City of Hialeah Gardens, City of Hialeah, City of Homestead (as needed), Village of Indian Creek, Village of Key Biscayne, Town of Medley, City of Miami Beach, City of Miami Gardens, Town of Miami Lakes, Village of Miami Shores, City of Miami, City of Miami Springs, Miccosukee Tribe of Indians, City of North Bay Village, City of North Miami Beach (as needed), City of Opa-Locka, Village of Palmetto Bay, Village of Pinecrest, City of South Miami, Town of Surfside, City of Sweetwater, Village of Virginia Gardens, and City of West Miami, and unincorporated Miami-Dade County.
North Miami	Local Government	City of North Miami, Village of Biscayne Park, Village of Miami Shores, and unincorporated Miami-Dade County
North Miami Beach	Local Government	City of North Miami Beach, City of Aventura, Town of Golden Beach, City of Miami Gardens, City of Sunny Isles Beach, and unincorporated Miami-Dade County
Opa-Locka	Local Government	City of Opa-Locka, City of Aventura (Miami-Dade Water and Sewer Department through City of Opa-Locka), and City of Miami Gardens (Miami-Dade Water and Sewer Department through City of Opa-Locka)

Table B-3. Continued.

Utilities/Entities	Utilities/Entities Type	Local and Tribal Governments Served
Monroe County		
FKAA	Special District	Village of Islands - Islamorada, City of Key Colony Beach, City of Key West, City of Layton, City of Marathon, and unincorporated Monroe County
Palm Beach County		
Boca Raton	Local Government	City of Boca Raton and unincorporated Palm Beach County
Boynton Beach	Local Government	City of Boynton Beach, Town of Briny Breezes, Town of Hypoluxo, Town of Ocean Ridge, and unincorporated Palm Beach County
Delray Beach	Local Government	City of Delray Beach, Town of Gulf Stream, and unincorporated Palm Beach County
Golf	Local Government	Village of Golf and unincorporated Palm Beach County
Highland Beach	Local Government	Town of Highland Beach
Jupiter	Local Government	Town of Jupiter, Town of Juno Beach, and unincorporated Martin[a] and Palm Beach counties
Lake Worth Beach	Local Government	City of Lake Worth Beach, Town of Lake Clarke Shores,[b] and unincorporated Palm Beach County
Lantana	Local Government	Town of Lantana
Manalapan	Local Government	Town of Manalapan
Mangonia Park	Local Government	Town of Mangonia Park
Maralago Cay	Privately Owned	Unincorporated Palm Beach County
PBCWUD	Local Government	City of Atlantis, City of Boca Raton, City of Boynton Beach,[b] Town of Cloud Lake, Town of Glen Ridge, City of Greenacres, Town of Haverhill, Town of Lake Clarke Shores, Town of Loxahatchee Groves, Village of Palm Springs, Village of Royal Palm Beach, Village of Wellington, City of Westlake (via Seminole Improvement District), City of West Palm Beach,[b] and unincorporated Palm Beach County
PBCWUD Western Region	Local Government	City of Belle Glade, City of Pahokee, City of South Bay, and unincorporated Palm Beach County
Palm Springs	Local Government	Village of Palm Springs, Town of Lake Clarke Shores, and unincorporated Palm Beach County
Riviera Beach	Local Government	City of Riviera Beach and Town of Palm Beach Shores
Seacoast	Special District	Town of Juno Beach, Town of Lake Park, Village of North Palm Beach, City of Palm Beach Gardens, and unincorporated Palm Beach County
Seminole Improvement District	Special District	Unincorporated Palm Beach County and City of Westlake
Tequesta	Local Government	Village of Tequesta, Town of Jupiter Inlet Colony, Town of Jupiter Island, and unincorporated Palm Beach and Martin[a] counties
Tropical Breeze Estates	Privately Owned	Unincorporated Palm Beach County
Wellington	Local Government	Village of Royal Palm Beach, Village of Wellington, and unincorporated Palm Beach County
West Palm Beach	Local Government	City of West Palm Beach, Town of Palm Beach, and Town of South Palm Beach

[a] Unincorporated Martin County is outside of the LEC Planning Area.

[b] Local government served through bulk water agreement.

REFERENCES

FDEP. 2022a. *Flow Data and Treatment Data from the Drinking Water Database*. Florida Department of Environmental Protection, Tallahassee, FL. Available online at https://floridadep.gov/water/source-drinking-water/content/information-drinking-water-database.

FDEP. 2022b. *OCULUS Electronic Document Management System*. Florida Department of Environmental Protection, Tallahassee, FL. Available online at https://depedms.dep.state.fl.us/Oculus/servlet/login.

United States Census Bureau. 2020. *2020 Decennial Census Redistricting Data* (Public Law 94-171). United States Department of Commerce, Washington, DC.

C

MFLs and Prevention and Recovery Strategies

Table of Contents

List of Tables

List of Figures

MINIMUM FLOWS AND MINIMUM WATER LEVELS

The South Florida Water Management District (SFWMD or District) adopts minimum flows and minimum water levels (MFLs) to establish the point at which water resources, or the ecology of the area, will experience significant harm from further withdrawals. Additionally, the SFWMD adopts prevention and recovery strategies with MFLs to prevent the MFL from being violated in the future or to recover the waterbody to meet the MFL as soon as practicable. In the Lower East Coast (LEC) Planning Area, the SFWMD has adopted MFLs and prevention/recovery strategies for six water bodies (**Table C-1** and **Figure C-1**).

Table C-1. MFL waterbodies in the LEC Planning Area.

MFL Waterbody	MFL Status	Reference
Lake Okeechobee	Recovery	Subsection 40E-8.221(1), F.A.C. Subsection 40E-8.421(2), F.A.C.
Everglades	Recovery	Subsection 40E-8.221(3), F.A.C. Subsection 40E-8.421(2), F.A.C.
Northwest Fork of the Loxahatchee River	Recovery	Subsection 40E-8.221(4), F.A.C. Subsection 40E-8.421(6), F.A.C.
Florida Bay	Prevention	Subsection 40E-8.221(5), F.A.C. Subsection 40E-8.421(8), F.A.C.
Biscayne aquifer	Prevention	Rule 40E-8.231, F.A.C. Subsection 40E-8.421(3), F.A.C.
Lower West Coast aquifers	Prevention	Rule 40E-8.331, F.A.C. Subsection 40E-8.421(4), F.A.C.

F.A.C. = Florida Administrative Code; MFL = minimum flow and minimum water level.

The MFL criteria and prevention and recovery strategies adopted for all but one of these MFLs are discussed in this appendix. The MFL and prevention strategy for the Lower West Coast aquifers affect a portion of the LEC Planning Area but are included in the Lower West Coast water supply plan updates. Further information on MFLs and prevention and recovery strategies can be found in the *2021–2024 Support Document for Water Supply Plan Updates* (2021–2024 Support Document; SFWMD 2021) and on the District's webpage (http://www.sfwmd.gov/lecplan).

All criteria for the six MFLs listed in **Table C-1** remain unchanged. However, the Lake Okeechobee MFL recovery strategy has been updated due to completion of Herbert Hoover Dike (HHD) repairs and updated operational schedule for Lake Okeechobee, which necessitated analyses and updates to only the capital projects component. Capital projects that provide support for MFL water bodies in the LEC Planning Area are listed in **Table C-2**.

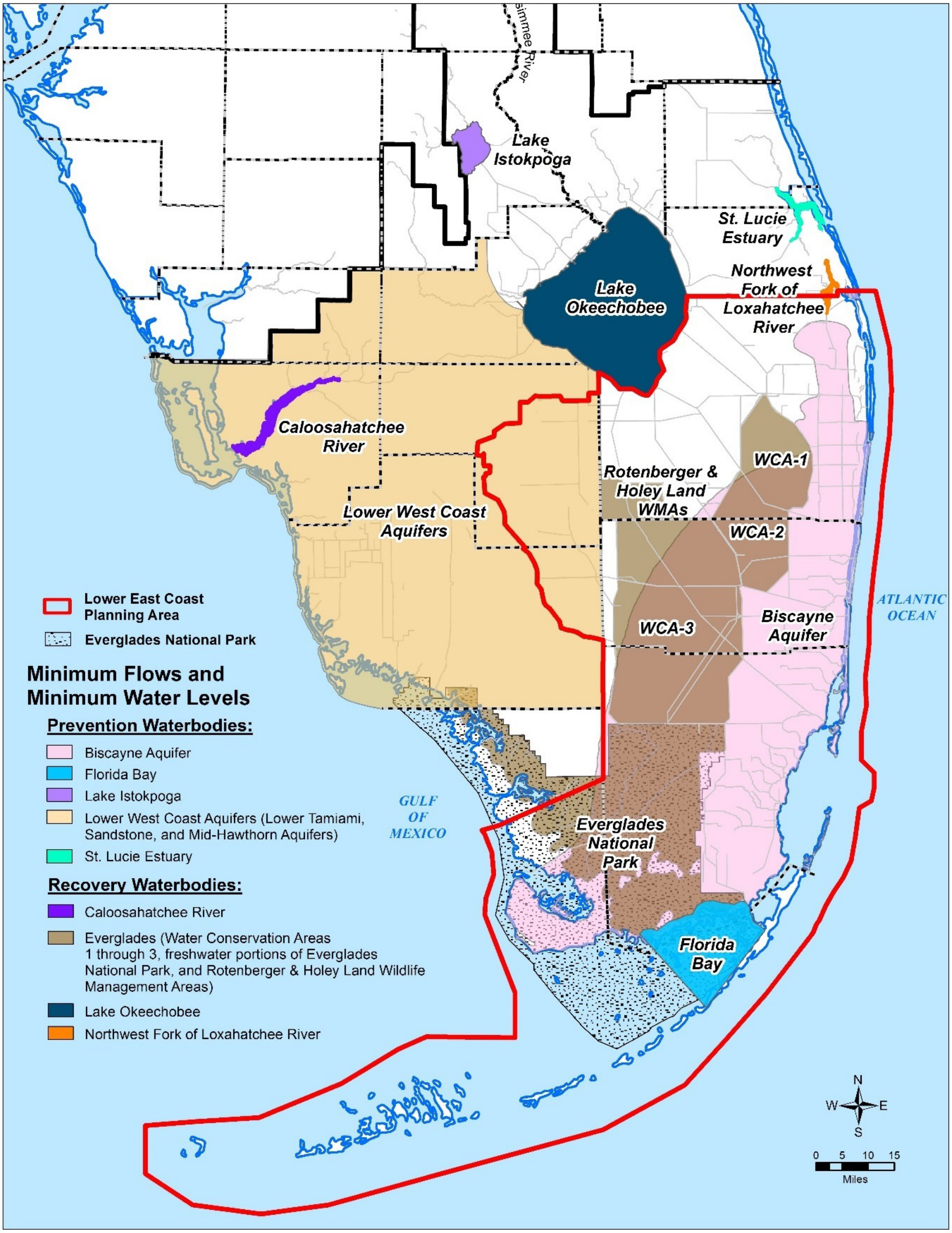


Figure C-1. Adopted MFLs in the South Florida Water Management District.

Table C-2. Capital projects that provide water supplies supporting minimum flow and minimum water level water bodies in the LEC Planning Area.

MFL Water Body	Capital Project	Project Objectives and Description	Lead Agency	Lead Program	Project Partners	2023–2024 Status
Biscayne Aquifer	Broward County Secondary Canal System	Reduce water shortages in local wellfields and stabilize the saltwater interface by pumping excess water from the C-9, C-12, and C-13 canal basins into the coastal canal systems to maintain canal stages at optimum levels. Includes drawing water from other sources such as the North Lake Belt Storage Area, Lake Okeechobee, and the WCAs when basin water is insufficient. Also includes a series of water control structures, pumps, and canal improvements in the C-9, C-12, and C-13 canal basins and the east basin of the North New River Canal in central and southern Broward County.	SFWMD	CERP	USACE; Broward County	Project inactive.
Everglades	Western Everglades Restoration Project	Improve the quantity, quality, timing, and distribution of water in the western Everglades. Includes active and passive features and alterations to existing canals and levees to re-establish connectivity of wetland and upland habitats in the western Everglades with restored freshwater flow paths, flow volumes and timing, seasonal hydroperiods, and historical distributions of sheetflow across a portion of the Seminole Tribe of Florida Big Cypress Reservation and into Big Cypress National Preserve.	USACE	CERP	SFWMD	Planning design complete. Final PIR is anticipated to be completed in 2024.
Everglades and Biscayne Aquifer	Broward County Water Preserve Areas: C-11 Impoundment, C-9 Impoundment, and WCA-3A/3B Seepage Management Projects	Capture and store rainwater; reduce phosphorus and other nutrients entering the Everglades; reduce seepage out of the Everglades; increase urban drinking water supplies; reduce saltwater intrusion, and increase the spatial extent of wetlands in South Florida. Project area is in Broward County, at the eastern extent of WCA-3A/3B, and within the limits of Weston, Pembroke Pines, Miramar, and Southwest Ranches.	USACE	CERP	SFWMD; Broward County	The C-11 Impoundment design is anticipated to be completed and a construction contract awarded in 2024. The C-11 Impoundment construction will be completed in 2027. The C-9 Impoundment design is expected in 2024, and construction is expected to begin in 2030. WCA-3A/3B Seepage Management Area construction is anticipated to begin in 2027.

Table C-2. Continued.

MFL Water Body	Capital Project	Project Objectives and Description	Lead Agency	Lead Program	Project Partners	2023–2024 Status
Everglades and Florida Bay	C-111 South Dade Project	Improve hydrologic conditions in Taylor Slough, its headwaters (Rocky Glades), and the eastern panhandle of ENP and increase freshwater flows to northeastern Florida Bay. Includes construction of a detention and buffer system with three pump stations (S-332B, S-332C, and S-332D) and three detention areas, and acquisition of required land in the Rocky Glades, Frog Pond, and Southern Glades areas.	USACE	South Florida Ecosystem Restoration Program	SFWMD	Construction of detention areas and buffer system complete and S-332B and S-332C pump replacement ongoing.
Everglades and Florida Bay	C-111 Spreader Canal Project – Phase 1 (Western)	Improve the quantity, timing, and distribution of freshwater flows to Florida Bay and restore wetland habitat functions to freshwater wetlands and estuaries adjoining Florida Bay by reducing seepage from Taylor Slough. Includes a 530-acre infiltrating detention area in the Frog Pond area, a 225-cfs pump station (S-200) downstream of S-176, a second linear infiltration feature, a 225-cfs pump station (S-199) immediately upstream of S-177, a plug in the L-31E Canal near S-20A, 10 plugs in the C-110 Canal, weirs in the Aerojet Road Canal, and potential operational modifications at the S-18C and S-20 structures.	USACE	CERP	SFWMD	Requires Project Partnership Agreement (PPA) to be reconciled with BBSEER.
Everglades, Florida Bay, and Biscayne Aquifer	C-111 Spreader Canal Project – Phase 2 (Eastern)	Rehydrate and improve ecological conditions in the Southern Glades and Model Lands at shallow depth and low velocity; improve sheetflow to ENP, northeastern Florida Bay, and the Biscayne Bay Aquatic Preserve; and maintain a barrier to saltwater intrusion into the Biscayne aquifer. Alternatives include backfilling the lower C-111 Canal and/or replacing existing portions of the lower C-111 Canal with a spreader canal.	USACE	CERP	SFWMD	In planning and land acquisition; pending additional congressional authorization.
Everglades, Lake Okeechobee, and Florida Bay	Central Everglades Planning Project (CEPP)[a]	Capture water lost to tide and improve the quantity, quality, timing, and distribution of water flows south to the central Everglades (WCA-3A/3B), ENP, and Florida Bay. Includes water storage, treatment, and conveyance south of Lake Okeechobee; removal of canals and levees; and construction of seepage management features to protect developed areas from the increased flow of water through the central portion of the system.	USACE	CERP	SFWMD	Anticipated completion of A-2 Reservoir construction is 2034. Construction of the A-2 STA is ongoing and initial hydration date is scheduled for December of 2024. North New River Canal Conveyance improvements will be completed by November 2025 and Miami Canal improvements by 2027.

Table C-2. Continued.

MFL Water Body	Capital Project	Project Objectives and Description	Lead Agency	Lead Program	Project Partners	2023–2024 Status
Everglades and Florida Bay	Modified Water Deliveries to ENP	Deliver more water to Northeast Shark River Slough in ENP from WCA-3. Includes conveyance and seepage control features, Tamiami Trail modifications, and an 8.5-square-mile flood mitigation plan.	USACE	N/A	USDOI	Constructed and operational.
Lake Okeechobee	Lake Okeechobee Watershed Restoration Project	Capture, store, and redistribute water entering the northern part of Lake Okeechobee to improve lake levels and the quantity and timing of discharges to the Caloosahatchee and St. Lucie estuaries; restore wetlands and re-establish connections among natural areas that have become spatially and/or hydrologically fragmented; increase the quantity and quality of native wildlife habitat and vegetation; and improve existing and future water supply. The project benefits five sub-basins (approximately 950,000 acres) within the Lake Okeechobee watershed, Lake Okeechobee, and the Caloosahatchee and St. Lucie estuaries in Okeechobee, Glades, Highlands, and Martin counties.	USACE	CERP	SFWMD	Paradise Run Wetland Feature is in Planning Status. Ongoing technical review of scientific testing and analyses to support ASR systems.
Lake Okeechobee	Lake Okeechobee Component A Storage Reservoir (LOCAR)	Identify storage north of Lake Okeechobee. Includes construction of a 200,000-acre-foot reservoir to store water north of Lake Okeechobee for later use during dry periods. Provide for better management of lake water levels; reduce high flows to the estuaries and improve operational flexibility.	SFWMD	N/A	SFWMD	Section 203 Final Feasibility Study and Report complete. Final EIS was prepared by USACE and posted in Federal Register in January of 2024.
Northwest Fork of Loxahatchee River	G-160 and G-161 Structure Projects	Restore the natural hydroperiod and provide additional water to Loxahatchee Slough. Includes construction of the G-160 and G-161 structures.	USACE	CERP	SFWMD	Constructed and operational.

Table C-2. Continued.

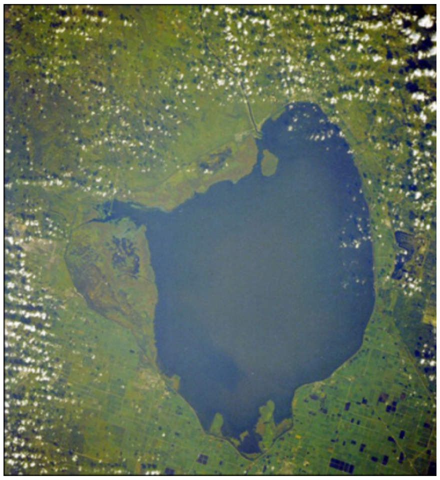
MFL Water Body	Capital Project	Project Objectives and Description	Lead Agency	Lead Program	Project Partners	2023–2024 Status
Northwest Fork of Loxahatchee River	Loxahatchee River Watershed Restoration Project	Restore connectivity of the headwaters and provide restoration flows to the Northwest Fork of the Loxahatchee River. Includes the Pal Mar and J.W. Corbett Wildlife Management Area Hydropattern Restoration project; L-8 Basin modifications; the C-51 Reservoir and L-8 flow equalization basin; flow-way features in the L-8, C-18, and Loxahatchee tributary basins (Cypress, Kitching, and Moonshine creeks); and ASR technology. The L-8 Reservoir has been repurposed to address water quality issues and though it may be made available on an interim basis to provide deliveries to the river, permanent storage solutions such as the designated C-18 Impoundment replacement feature and/or Alternative L-8 Basin storage will be considered.	USACE	CERP	SFWMD	Loxahatchee Slough Natural Area hydrological restoration is ongoing. Additional restoration activities are expected to occur at Culpepper and Nine Gems sites.

ASR = aquifer storage and recovery; BBSEER = Biscayne Bay and Southeastern Everglades Ecosystem Restoration; CEPP = Central Everglades Planning Project; CERP = Comprehensive Everglades Restoration Plan; cfs = cubic feet per second; EIS = Environmental Impact Statement; ENP = Everglades National Park; LOCAR = Lake Okeechobee Component A Storage Reservoir; MFL = minimum flow and minimum water level; N/A = not applicable; PIR = Project Implementation Report; PPA = Project Partnership Agreement; SFWMD = South Florida Water Management District; STA = stormwater treatment area; USACE = United States Army Corps of Engineers; USDOI = United States Department of the Interior; WCA = water conservation area.

[a] CEPP includes four phases each requiring its own PPA: CEPP PPA Everglades Agricultural Area stores, treats, and sends new water to the Everglades. CEPP PPA North provides inflow needed to restore northern WCA-3A and move additional water south. CEPP PPA South removes water flow barriers in the southern portion of the project’s footprint to allow natural flow of water south into ENP. CEPP PPA New Water (Seepage Barrier) eliminates losses due to levee seepage to the East Coast. Specific CEPP projects within these phases can be found in the CEPP Project Fact Sheet (USACE 2023).

LAKE OKEECHOBEE

MFL Criteria



Lake Okeechobee

In 2001, the SFWMD adopted an MFL of 11 feet National Geodetic Vertical Datum of 1929 (NGVD29) for Lake Okeechobee as set forth in Subsection 40E-8.221(1), Florida Administrative Code (F.A.C.). The MFL criteria were based on the relationship between water levels in the lake and the lake's ability to 1) protect the coastal portion of the surficial aquifer system against saltwater intrusion, 2) supply water to Everglades National Park, 3) provide littoral zone habitat for fish and wildlife, and 4) ensure navigational and recreational access (SFWMD 2000a). Consideration was given to the lake's function as a storage area for supplying water to adjacent areas such as the Everglades Agricultural Area (EAA), the Seminole Tribe of Florida reservations, and the Lake Okeechobee Service Area (LOSA).

An MFL exceedance occurs when the water level in Lake Okeechobee falls below 11 feet NGVD29 for more than 80 consecutive or nonconsecutive days during an 18-month period. The MFL compliance assessment period starts after the lake level falls below 11 feet NGVD29 or once an existing exceedance period ends while still below 11 feet and cannot include more than one wet season (May 31 through October 31) of any given calendar year. An MFL violation occurs when an exceedance occurs more than once every 6 years.

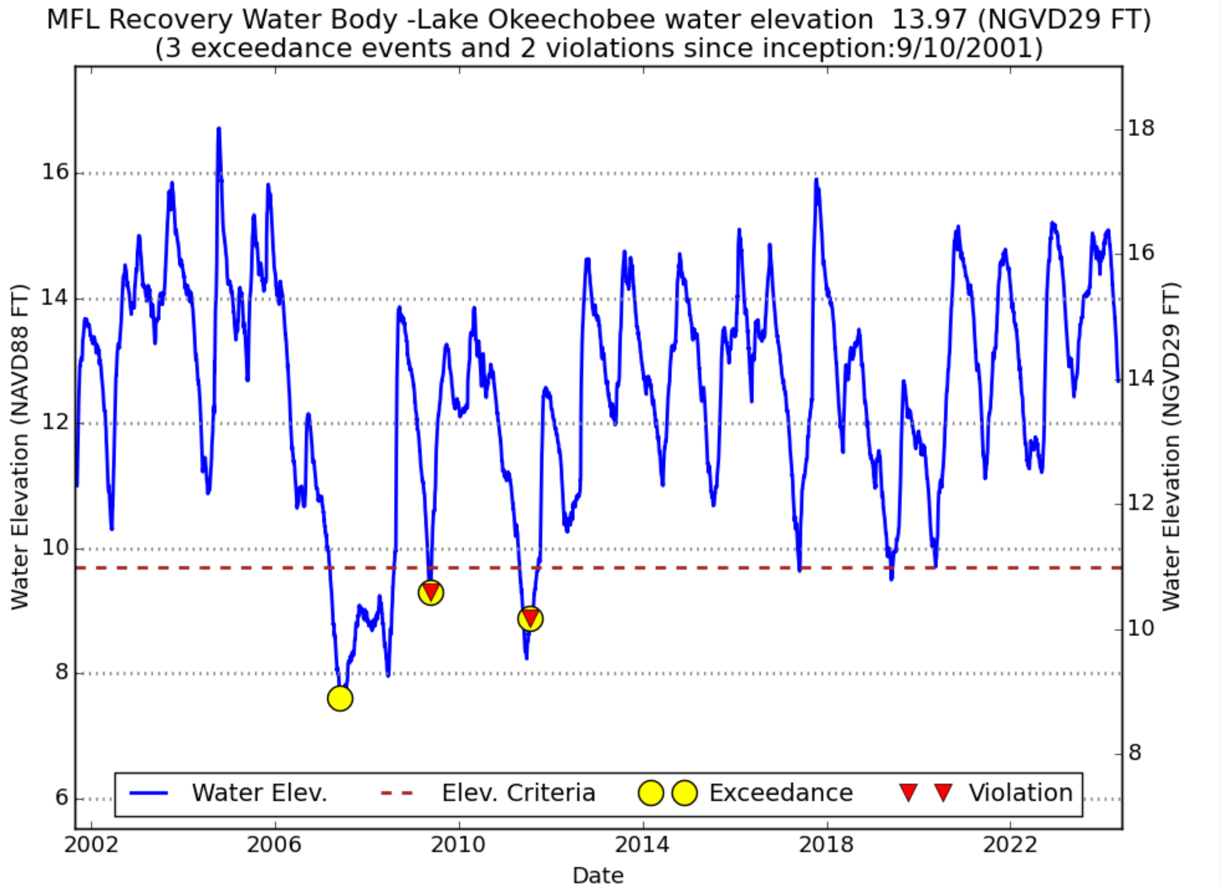
MFL History

An analysis was conducted in 2000 by the United States Army Corps of Engineers (USACE) and the SFWMD to determine whether the proposed Lake Okeechobee MFL criteria could be expected to be violated over the next 20 years. This information was needed to assess whether a prevention or recovery strategy would be needed for Lake Okeechobee. The South Florida Water Management Model (SFWMM or 2X2 Model) was used to evaluate the proposed MFL criteria in 5-year increments through 2020. The analysis considered projected growth in water use demands on the lake, the scheduled delivery and performance of the Central and Southern Florida (C&SF) Project components (USACE and SFWMD 1999), and the Water Supply and Environment (WSE) regulation schedule proposed for the lake. Details regarding the modeling analysis are available in the *2000 Lower East Coast Regional Water Supply Plan* (SFWMD 2000b).

Under these assumptions, the SFWMD determined the proposed Lake Okeechobee MFL criteria would not be violated despite the water shortage trigger line for Lake Okeechobee that existed in 2000 (Chapter 40E-22, F.A.C.) was lowered 0.50 feet. The proposed WSE regulation schedule was approved by the USACE in July 2000. A prevention strategy for Lake Okeechobee was approved simultaneously with MFL adoption in 2001.

However, in response to a series of hurricanes, high lake level events, and resulting high discharges to the Caloosahatchee and St. Lucie estuaries in 2004 and 2005, the USACE initiated a process to revise the WSE regulation schedule to improve management of Lake Okeechobee during high water conditions. In July 2007, after extensive public participation, the USACE published the *Final Environmental Impact Statement Including Appendices A through G: Lake Okeechobee Regulation Schedule* (USACE 2007). The goals of the Lake Okeechobee Regulation Schedule were later amended to address public health and safety concerns related to the structural integrity of the HHD. The USACE approved the Lake Okeechobee Regulation Schedule 2008 (LORS08) on April 28, 2008.

As a result of LORS08, water levels within Lake Okeechobee were being managed at a lower overall elevation. Accordingly, MFL violations were projected to occur, and it became necessary to change the prevention strategy for the lake to a recovery strategy. See Order No. SFWMD 2008 – 364-DAO-WU (SFWMD 2008) for background information. **Figure C-2** shows the number of MFL exceedances and violations since the inception of the MFL in 2001.



Exceedance Criteria: 80 consecutive or non-consecutive days with daily water elevation below MFL Criteria: <11.0 (NGVD29 FT)
during a check window of up to eighteen months

Figure C-2. Lake Okeechobee MFL exceedances and violations since the inception of the MFL in 2001.

The rehabilitation of the HHD was completed in 2023. In anticipation of the completion of the HHD repairs, the USACE initiated a re-evaluation of the regulation schedule for Lake Okeechobee in 2019, referred to as the Lake Okeechobee System Operating Manual (LOSOM) effort. The purpose of the LOSOM effort was to re-examine the opportunities to better balance the congressionally authorized project purposes. The goals of the revised lake schedule are to send more water south, reduce damaging discharges to the Caloosahatchee and St. Lucie estuaries, and improve water supply performance.

The USACE made available the Final Draft LOSOM Water Control Plan in 2023, and a final Record of Decision was signed in August of 2024. The USACE's water control plan for LOSOM includes operational flexibility reflecting the multiple objectives of managing Lake Okeechobee water levels. The Environmental Impact Statement (EIS) upon which LOSOM is based showed water supply performance improvements over LORS08. The SFWMD will provide operational guidance to the USACE on a weekly basis and use available storage and conveyance capacity to achieve water supply performance consistent with the state's water supply authority.

The USACE's mandate for LOSOM to balance multiple federal objectives for the lake resulted in improvements to water supply. The SFWMD's analyses indicate that these improvements were insufficient to return the lake to prevention status; therefore, the lake will remain in recovery status. The environmental enhancement, regulatory criteria, and water shortage components of the previously approved MFL recovery strategy will not change. The SFWMD will continue to allocate water for existing and future reasonable-beneficial uses pursuant to its regulatory rules and criteria. The LOSA restricted allocation area (RAA) criteria adopted by the District in Section 3.2.1F 1-5 of the *Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District* (Applicant's Handbook; SFWMD 2022) for the Lake Okeechobee Service Area and the water shortage restrictions as described in Chapter 40E-21 F.A.C. comprise the regulatory component of the Lake Okeechobee MFL recovery strategy. Applications that meet the criteria contained in Section 3.2.1F 1-5 of the Applicant's Handbook satisfy the minimum flow and level implementation strategy.

The capital projects component has been revised. Capital projects contemplated in the Comprehensive Everglades Restoration Plan (CERP) are still being planned and constructed within the lake's watershed. The analyses conducted to support this conclusion and an updated Lake Okeechobee MFL recovery strategy are presented below.

Summary of Analyses Supporting Revised MFL Recovery Strategy

Regional Modeling of Past Climactic Conditions

The Lake Okeechobee stage, subject to rainfall and other stresses between 1965 to 2016 (52 years), was modeled under four scenarios using the Regional Simulation Model Basin (RSMBN). The RSMBN is a specific application of the Regional Simulation Model (RSM) that covers the spatial extent of the Lake Okeechobee watershed, including the EAA and Northern Estuaries (Caloosahatchee and St Lucie). The four scenarios represent four incremental components of restoration applied during the 1965 to 2016 climactic conditions beginning with the LOSOM regulation schedule, then adding the Central Everglades Planning Project (CEPP) EAA A-2 Reservoir and Stormwater Treatment Area (STA), the Lake Okeechobee

Component A Storage Reservoir (LOCAR), and finally, the Lake Okeechobee Watershed Restoration Project (LOWRP) consisting of 55 aquifer storage and recovery (ASR) wells. The RSMBN modeling scenarios were reviewed from the perspective of ensuring that localized effects of project implementations were observed as expected and that regional performance was considered reasonable. Specific checks on RSMBN outputs included the following:

- Lake Okeechobee performance relative to LOSOM baseline is shown in **Figure C-3**. The figure shows Lake Okeechobee stage duration, illustrating that the added water management features help to maintain more desirable stages within Lake Okeechobee.
- Lake Okeechobee MFL exceedances for the specific simulated 1965 to 2016 hydrology (deterministic method) are shown in **Figure C-4**. This shows that added water management features would have reduced the potential number of MFL exceedances within Lake Okeechobee.

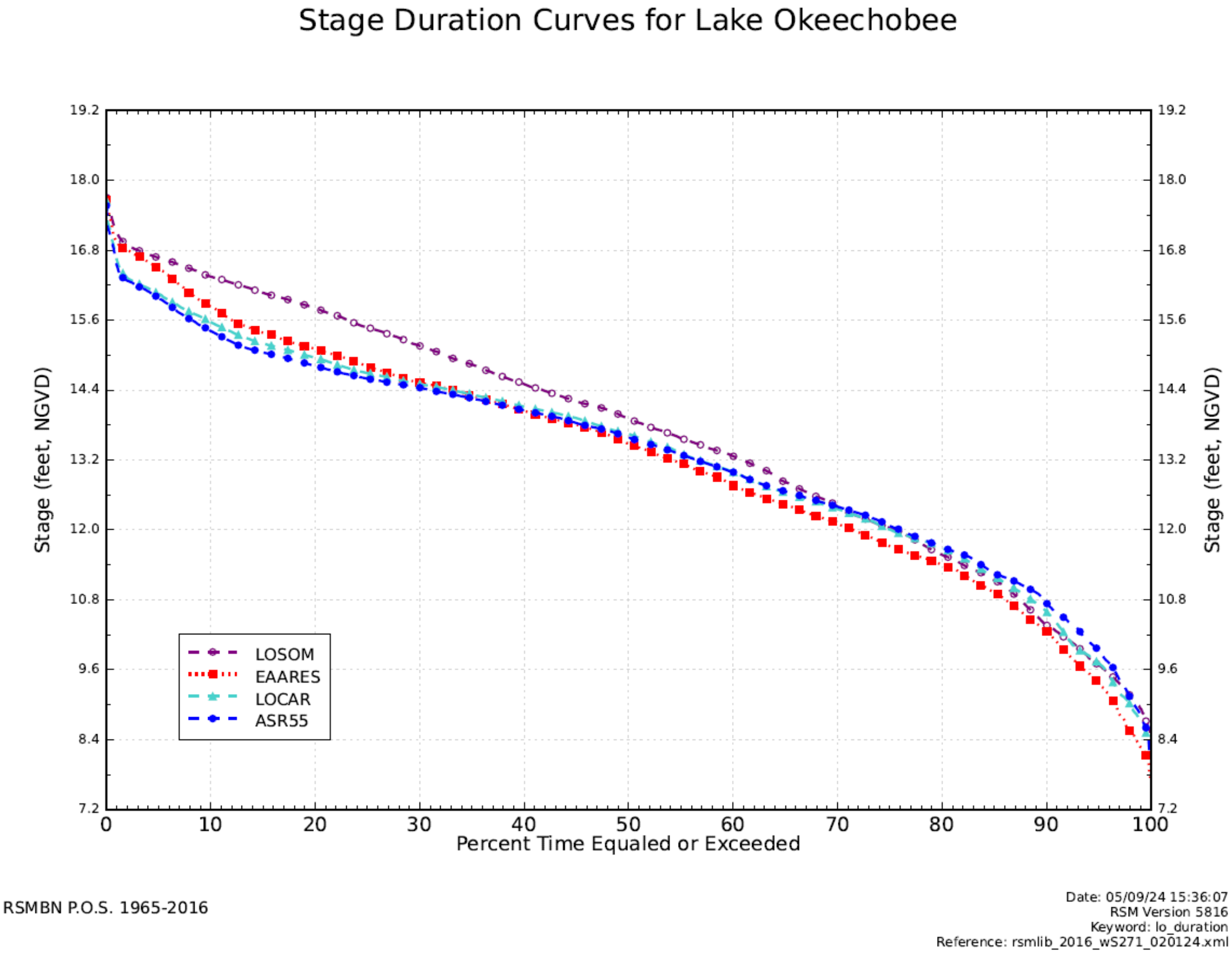
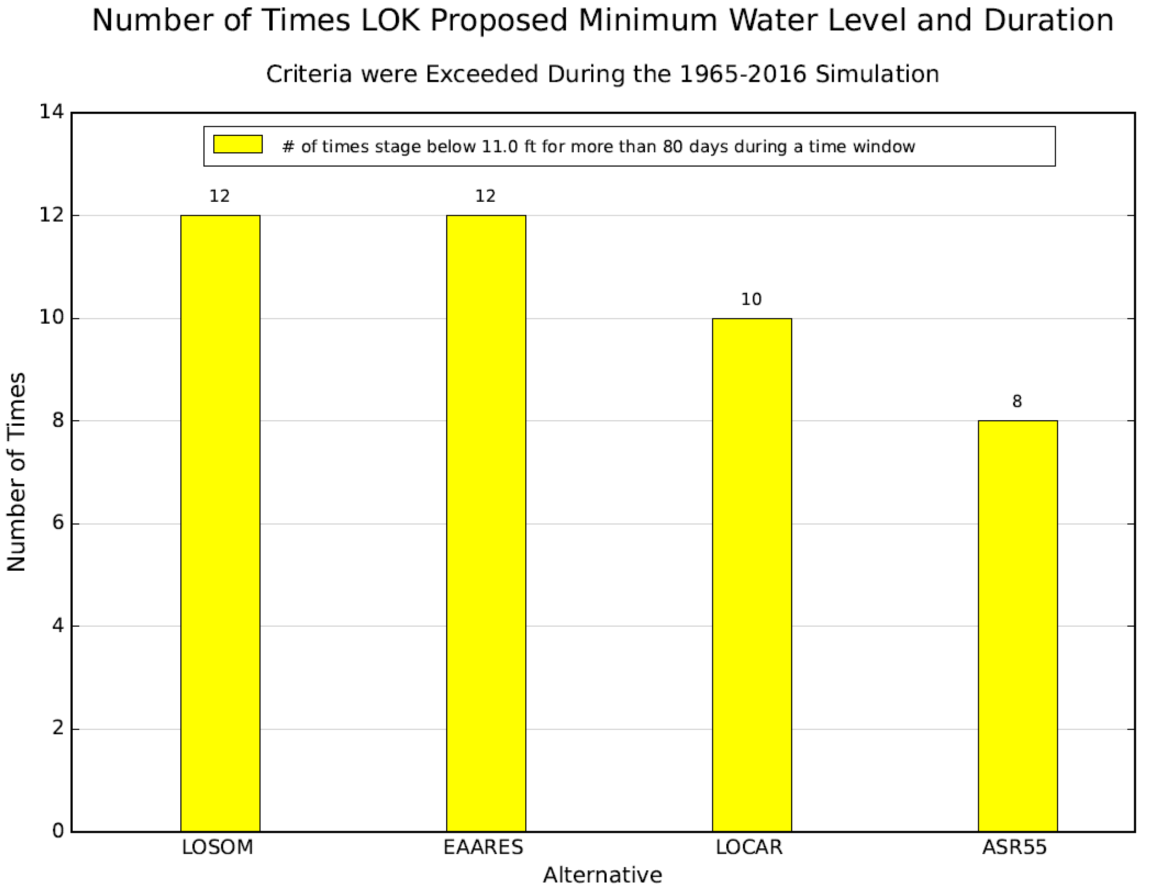


Figure C-3. Lake Okeechobee stage duration curve comparing all scenarios (EAARES is LOSOM + EAA Reservoir; LOCAR is LOSOM + EAA Reservoir + LOCAR; ASR55 is LOSOM + EAA Reservoir + LOCAR + ASR55).



Note: Target: Minimum Level, Duration and Return Frequency - Water levels in Lake Okeechobee should not fall below 11.0 ft NGVD for greater than 80 days for a checking window more often than once every six years (Target derived from 1952-1995 historical stage data for Lake Okeechobee).

RSMBN P.O.S. 1965-2016

Date: 05/09/24 15:36:22
RSM Version 5816
Keyword: lo_mfl_v3
Reference: rsmlib_2016_wS271_020124.xml

Figure C-4. Lake Okeechobee MFL exceedance comparison for all scenarios (EAARES is LOSOM + EAA Reservoir; LOCAR is LOSOM + EAA Reservoir + LOCAR; ASR55 is LOSOM + EAA Reservoir + LOCAR + ASR55).

The model, subject to historical climatic data for each scenario, resulted in a single, stage time series for each simulation. The model simulation results are summarized below and were evaluated using two analytical methods: deterministic and probabilistic. Additional details on the analyses are available in the modeling technical document (SFWMD 2024a) and the analytical methods document (SFWMD 2024b).

Analyses of Simulated MFL Exceedances and Violations

Deterministic Modeling Analysis

The traditional (deterministic) approach applied the MFL exceedance and violation criteria from the MFL rule to the single, stage time series for each simulation that was subjected to historical climatic data. The sum of MFL criteria for exceedances and violations of each scenario was then calculated to evaluate MFL performance across the proposed set of projects.

Using the LOSOM regulation schedule and adding the EAA Reservoir (**Figure C-5**) component to the model resulted in a modeled output of 12 exceedances and 7 violations over the 52-year period of simulation (POS). The scenario with LOCAR implementation (**Figure C-6**) resulted in a modeled output of 10 exceedances and 5 violations over the 52-year POS (a 29% reduction). With the addition of the ASR component to the model (**Figure C-7**), modeled violations were further reduced to 3 (57%) and indicated no violation for the years 2009 and 2011 when violations actually did occur. Several sensitivity runs were conducted, and model results indicated more storage would be required beyond the proposed storage projects to eliminate violations over the 52-year POS.

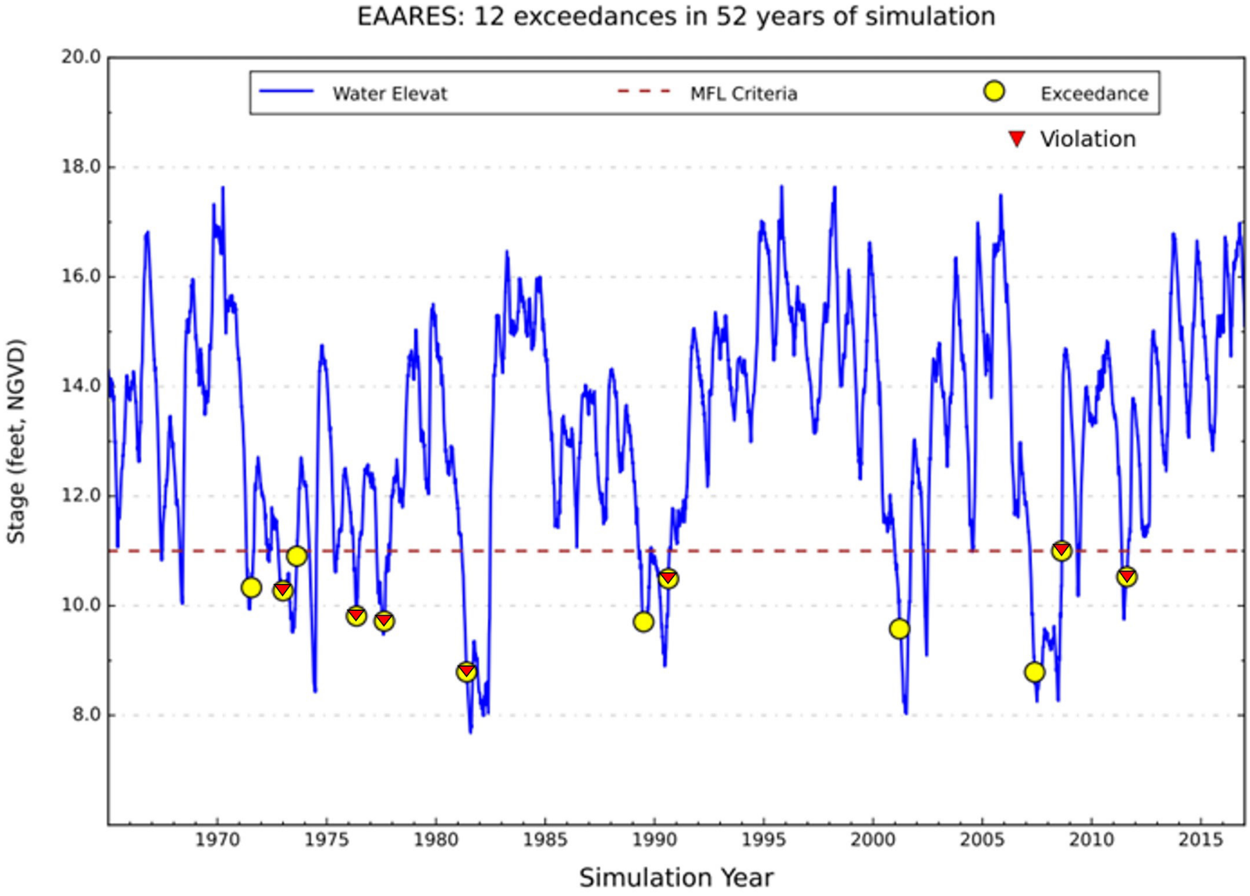


Figure C-5. MFL simulated exceedances and violations under LOSOM + EAA Reservoir (1965 to 2016).

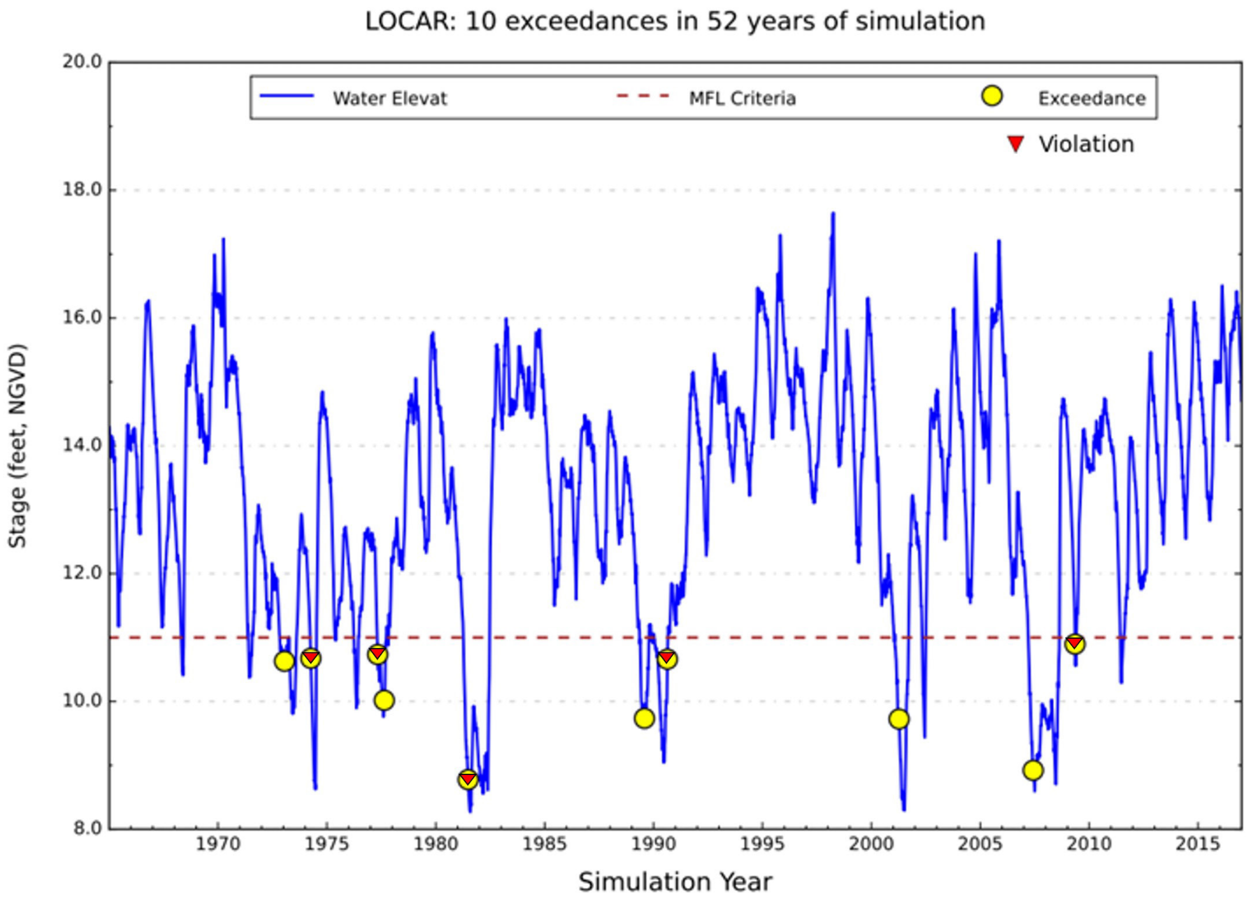


Figure C-6. MFL simulated exceedances and violations under LOSOM + EAA Reservoir + LOCAR (1965 to 2016).

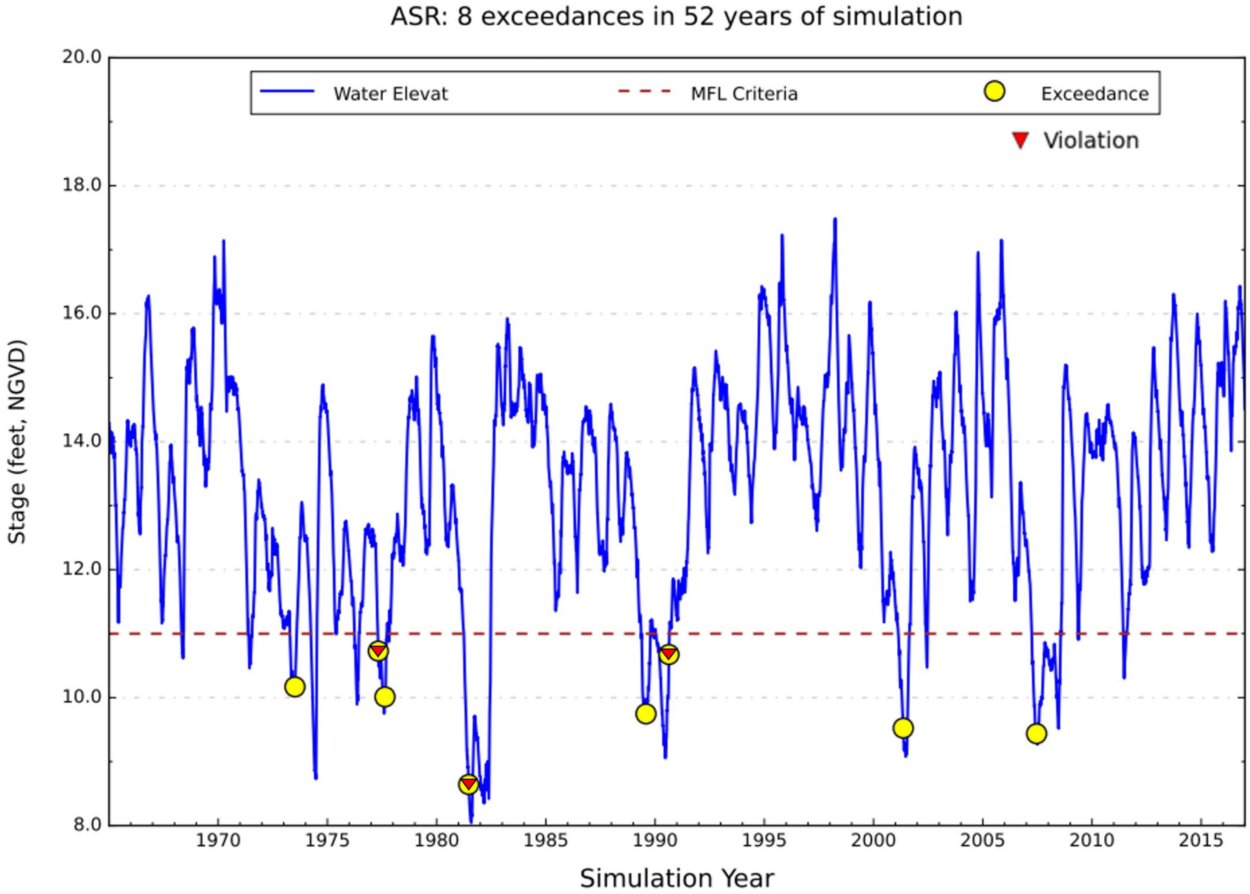


Figure C-7. MFL simulated exceedances and violations under LOSOM + EAA Reservoir + LOCAR + ASR (1965 to 2016).

Probabilistic Modeling Analysis

The deterministic approach, as applied above, bases the likelihood of experiencing a violation in the next 20 years on one simulation using historical rainfall conditions. A probabilistic approach, however, uses the characteristics of historical rainfall but introduces a randomization of the sequence of the rainfall time series, that when simulated a large number of times, can generate a risk profile of a violation occurring into the future. Section 373.0421, Florida Statutes (F.S.), Establishment and Implementation of Minimum Flows and Minimum Water Levels, specifies that evaluation of an MFL waterbody should be prospective, meaning that analysis is conducted into the future, in this case 20 years. The probabilistic approach complies with statutory requirements of the 20-year prospective evaluation and incorporates uncertainty in rainfall conditions.

Figure C-8 represents the Atlantic Multidecadal Oscillation (AMO) index and global average temperature of the North Atlantic Ocean. The positive numbers represent the warm phases, and the negative numbers are the cool phases. Since the mid-1990s, the AMO has been in the warm phase, which historically has meant more plentiful rainfall in Central and South Florida when the North Atlantic Ocean is in its warm phase and conversely more persistent droughts and wildfires than in the cool phase. Climate scientists at the National Oceanic and Atmospheric Administration (NOAA) have noted that the 20-year switch back to the cool phase is overdue (2015); however, climate change may extend the duration of the warm phase indefinitely due to the warmer global ocean waters (Mann et al. 2020). For the 20-year projection of the probabilistic method, it has been assumed that the AMO warm phase will continue during this period.

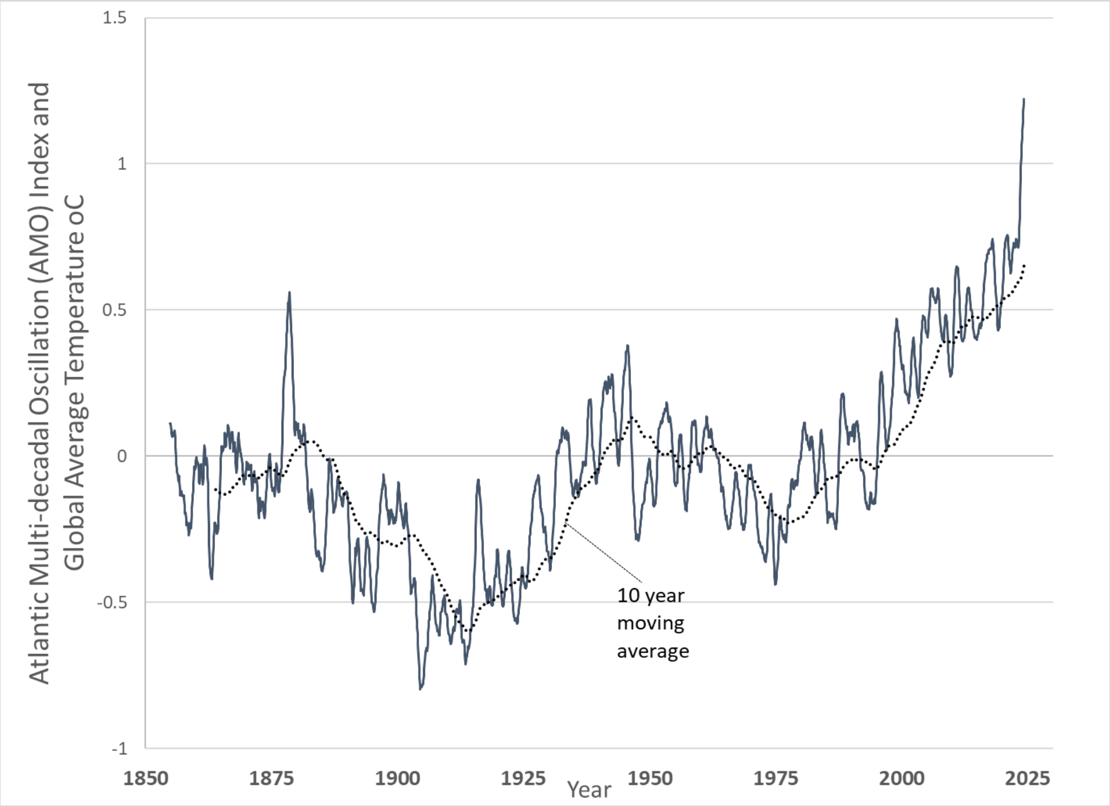


Figure C-8. Atlantic Multidecadal Oscillation phases from the mid-1800s to present.

Using the same input, assumptions, and scenarios as the deterministic method (i.e., the 52--year POS), the probabilistic method defined exceedance and violation events distributed via a Monte Carlo routine to generate 1,000 simulated event sequences over the next 20 years by sampling the waiting time between events. The results (**Figure C-9**) indicated comparable statistics between the probabilistic and deterministic methods.

Using the complete model record and ignoring the changing climate (**Figure C-9a**), there is a 6% chance of zero violations under LOCAR, and a 12% chance of zero violations (>50% probability of having at least 2 violations) with the addition of ASR. Under the assumption of an AMO warm phase continuation using just the 1995 to 2016 period of record (**Figure C-9b**), the probability of zero violations is increased to 43% and 67% with the LOCAR and ASR scenarios, respectively.

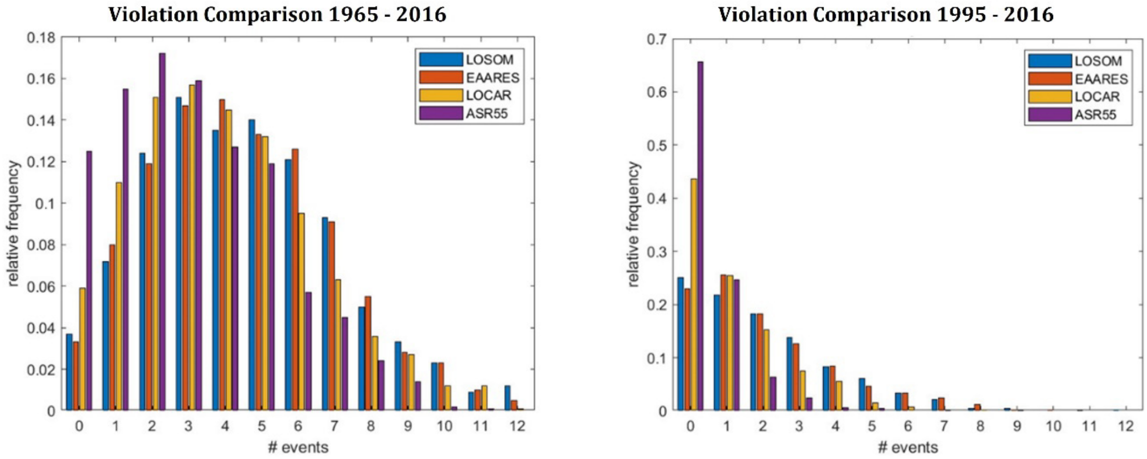


Figure C-9. Summary of simulated MFL violations for the (a) 52-year period of simulation (1965 to 2016) and (b) Atlantic Multidecadal Oscillation warm phase (1995 to 2016) using the probabilistic method.

All these lines of evidence inform the overall approach to a recovery strategy for the Lake Okeechobee MFL. During the 20-year planning horizon of the *2023–2024 Lower East Coast Water Supply Plan Update* (2023–2024 LEC Plan Update), meaningful projects will be constructed under CERP and state law ultimately leading to the adoption of Component F in CERP. Component F of CERP changes the Lake Okeechobee Regulation Schedule with consideration of additional storage components, which will improve MFL performance. While there is growing evidence that rainfall conditions under the foreseeable warm phase of the AMO will result in fewer MFL violations, including the possibility of zero violations after CERP, it remains prudent to maintain the RAA within LOSA. This means that the District will not grant additional allocations in LOSA above the established base condition. Absent any offsets, existing legal users will continue to be able to meet the conditions for permit issuance for only their existing allocations.

Additional Considerations

- Additional projects are being constructed and operated as part of the Northern Everglades and Estuaries Protection Program in the Lake Okeechobee watershed that provide approximately 80,000 acre-feet of storage in the basin.

- The USACE has the authority for development and implementation of the Lake Okeechobee Regulation Schedule; therefore, the SFWMD does not have the exclusive authority to implement operational changes to lake stage management that might optimize the lake's MFL performance.
- Climate uncertainty affects the ability to accurately develop projections of the potential for MFL violations.
- Chapter 40E-8, F.A.C., Minimum Flows and Levels, is not intended to drought-proof a water body, so there is an expectation that MFLs may still be violated during extreme drought or water shortage events despite the best efforts contained in the recovery strategy.
- Most MFL waterbodies in the State of Florida have been established with the intent of limiting the negative effects of water withdrawals on the established threshold MFL water levels or flows. The LOSA RAA Rule has been in place since 2008 and serves a similar function—to limit additional allocations to a maximum base condition amount established in 2008.
- The RSMBN model has been peer reviewed and certified for use in CERP planning projects by the USACE. The model for the CERP LOWRP simulates similar storage features, and uncertainties have been analyzed and documented.

Recovery Strategy

The Lake Okeechobee MFL recovery strategy consists of four components as set forth in Subsection 40E-8.421(2), F.A.C.:

1. Environmental enhancement projects to be implemented during extreme low lake stages
2. Regulatory criteria for consumptive uses of lake water (i.e., LOSA RAA Rule)
3. Water shortage restrictions as described in Chapter 40E-21, F.A.C.
4. Capital projects that improve storage capacity both within and adjacent to the lake

For this updated version of the recovery strategy, there are no changes to the first three components. Several large-scale CERP storage projects are included in the capital projects component and will be constructed and implemented during the 20-year planning horizon (**Table C-3**).

Table C-3. Large-scale CERP storage projects that are components of the Lake Okeechobee MFL recovery strategy.

Name	Storage Capacity
CEPP EAA A-2 Reservoir and STA	240,000 ac-ft
Lake Okeechobee Component A Storage Reservoir (LOCAR)	200,000 ac-ft
Lake Okeechobee Watershed Restoration Project (LOWRP, 55 ASR Wells)	308,000 ac-ft*

ac-ft = acre-feet; ASR = aquifer storage and recovery; CEPP = Central Everglades Planning Project; EAA = Everglades Agricultural Area; LOCAR = Lake Okeechobee Component A Storage Reservoir; LOWRP = Lake Okeechobee Watershed Restoration Project; STA = stormwater treatment area.

* Note: Assuming year-round operation.

These projects represent a significant capital investment that, among other things, will incrementally improve MFL performance. Once construction is completed, each of these projects will require development of project-specific operating manuals that will describe operational protocols. These protocols will need to be recognized and incorporated into the RSMBN model to best reflect how these operations affect Lake Okeechobee stages and, therefore, their effect on MFL performance. In addition, CERP Component F, described above, recognizes that as CERP project components are implemented, the Lake Okeechobee Regulation Schedule would be updated. Changes in the Lake Okeechobee Regulation Schedule will have an effect on reducing the potential for Lake Okeechobee MFL violations.

Environmental Enhancement Component

Environmental enhancements (**Table C-4**) in and around the lake, such as native vegetation planting, controlled burns, and sediment scraping, are conducted during low water conditions.

Table C-4. Environmental enhancement components of the Lake Okeechobee MFL recovery strategy.

Lake Level	Activity	Benefits
At 11 feet NGVD29 and stage is falling	Conduct sediment scraping and other habitat enhancements, including removal of tussocks and other aggregations of organic material.	Promote natural compaction, removal, and/or oxidation of accumulated organic muck sediments. Remove barriers to fish migration in and out of the western littoral zone.
At or below 11 feet NGVD29	Conduct controlled burns if fuel load and weather conditions permit.	Facilitate removal of exotic species, such as torpedograss (*Panicum repens*).
Below 11 feet NGVD29	Allow maintenance and repair work on public boat ramps and docking as well as marina facilities.	Restore original design depth of the waterways and provide navigable access.
At 10.5 feet NGVD29 and stage is falling	Plant native terrestrial and emergent vegetation, such as bulrush (*Scirpus* spp.) (if a method for re-establishment proves to be feasible), native pond apples (*Annona glabra*), and cypress trees (*Taxodium distichum*) on the southern shore islands and rim canal spoil islands.	Re-establish native trees on the islands to prevent expansion of exotic and invasive vegetation; provide essential habitat for wading birds, raptors, and endangered species, such as the snail kite (*Rostrhamus sociabilis*) and Okeechobee gourd (*Cucurbita okeechobeensis*).
Between 10 and 11 feet NGVD29 and stage is rising	Plant native submerged and emergent vegetation species, such as bulrush.	Re-establish native plant species, which can prevent the expansion of exotic and invasive vegetation; assist in restoring fish and wildlife habitats; prevent uprooting of emergent and submerged plants; and reduce turbidity, which promotes and maintains submerged aquatic vegetation growth.
At 11 feet NGVD29 and stage is rising	Assess the feasibility of introducing apple snail (*Pomacea paludosa*) populations via an apple snail hatchery or other techniques.	Supplement native apple snail populations for the endangered Everglades snail kite.
Lake stage independent components	Investigate sediment management strategies in the tributaries and pelagic zone of the lake.	Remove phosphorus-laden sediment that could be resuspended; reduce light transparency, which discourages submerged vegetation growth and encourages phytoplankton bloom activity.

NGVD29 = National Geodetic Vertical Datum of 1929.

Regulatory Criteria Component

The regulatory criteria component of the Lake Okeechobee MFL recovery strategy is twofold and consists of the LOSA RAA and the SFWMD's Water Shortage Rules. The establishment of the LOSA RAA in 2008 was designed to protect existing legal users and prevent additional allocations of surface water from the regional system. Accordingly, while the base condition allocations are maintained for existing legal users, net increases in the volume of surface water withdrawn from the LOSA RAA are prohibited over that resulting from base condition water uses occurring from April 1, 2001 to January 1, 2008. Increased demands over the base condition water use within LOSA may be accommodated through reallocation of retired permits, use of alternative sources (e.g., groundwater), and implementation of offsets to recharge volumes equal to increased withdrawals in accordance with the rule's provisions in Section 3.2.1F of the Applicant's Handbook (SFWMD 2022).

Water Shortage Component

Implementation of LORS08 was anticipated to result in more frequent and severe lake-based water shortages. To address this, the SFWMD changed the water shortage rules pertaining to Lake Okeechobee (Chapter 40E-21, F.A.C.) in November 2007 to clarify how water deliveries would be calculated and applied to agricultural uses within the Lake Okeechobee basin. Water shortage restrictions, Phases I through III or greater, may be imposed by the District Governing Board based on water shortage trigger levels for Lake Okeechobee (Rule 40E-22.332, F.A.C.). These water shortage restrictions apply to withdrawals of surface water from 1) the Lake Okeechobee region as described in Rule 40E-21.691, F.A.C., and 2) the Brighton and Big Cypress reservations, in accordance with the terms of the 1987 Water Rights Compact among the Seminole Tribe of Florida, the State of Florida, and the SFWMD ("Seminole Compact") per Rules 40E-22.312 and 40E-22.322, F.A.C.

Capital Projects Component

The CERP capital projects that support the Lake Okeechobee MFL recovery strategy are described below and summarized in **Table C-2**. Once construction is completed, each of these projects will require development of project-specific operating manuals that will describe operational protocols. These protocols will need to be recognized and incorporated into the RSMBN model to best reflect how these operations affect Lake Okeechobee stages and, therefore, their effect on MFL performance. CERP Component F recognizes that as CERP project components come online, the Lake Okeechobee Regulation Schedule would be updated. Capital projects that support the Lake Okeechobee MFL recovery strategy include the following and their status is described below:

1. Lake Okeechobee Watershed Restoration Project (LOWRP)
2. Lake Okeechobee Component A Storage Reservoir (LOCAR)
3. Central Everglades Planning Project (CEPP) A-2 Reservoir and STA

Project Status

CERP Lake Okeechobee Watershed Restoration Project

In 2016, the USACE and SFWMD began planning efforts for the LOWRP to increase storage north of Lake Okeechobee with a reservoir and ASR well systems with the following goals and objectives:

- Improve the quantity, timing, and distribution of flows into Lake Okeechobee to maintain ecologically desirable lake stages more often.
- Improve the quantity and timing of discharges to the Caloosahatchee and St. Lucie estuaries.
- Restore wetlands.
- Improve water supply for existing legal users.

The Florida Legislature appropriated more than $150 million to the SFWMD for the design, engineering and construction of specific LOWRP components. The recommended plan consists of underground storage via 55 ASR wells and wetland restoration of 5,900 acres including Paradise Run and the Kissimmee River Center. Planning is ongoing to increase storage and to design and construct exploratory ASR wells. Design of a demonstration facility with a capacity of 10 million gallons per day at the C-38S location is under way. The USACE Chief of Engineers Report for the first phase of the LOWRP, including only the wetland restoration components, is expected to be considered in the Water Resources Development Act (WRDA) of 2024.

Lake Okeechobee Component A Storage Reservoir

In 2023, SFWMD began a feasibility study pursuant to Section 203 of the WRDA of 1986, as amended, for the LOCAR project to explore opportunities for aboveground storage north of Lake Okeechobee. After evaluating various project options, the LOCAR team identified a Tentatively Selected Plan that includes a reservoir with a storage capacity of 200,000 acre-feet. The LOCAR Section 203 Feasibility Study Report and the final Environmental Impact Statement were finalized and submitted in February 2024 to the Assistant Secretary of the Army Civil Works for consideration by Congress in the WRDA of 2024.

CERP Central Everglades Planning Project

Authorized by Congress in 2016, CEPP combines a series of CERP components into one Project Implementation Report (PIR). The purpose of CEPP is to improve the quantity, quality, timing, and distribution of water flows to the northern estuaries, central Everglades (Water Conservation Area [WCA]-3A, WCA-3B, and Everglades National Park), and Florida Bay while increasing water supply for municipal, industrial, and agricultural users.

The authorized project is divided into four phases: CEPP EAA, CEPP North, CEPP South, and CEPP New Water, which are all currently under construction. Due to the size and complexity of the project, the overall CEPP will occur over multiple years with various completion dates for each phase.

Completion of the EAA A-2 STA and A-2 Reservoir construction is anticipated in December 2024 and 2034, respectively. The North New River Conveyance and Miami Canal improvements will be completed by November of 2025 and 2027. Other components are in the final planning (validation report for CEPP North), design (CEPP South S-356E Pump Station/S-334E Gated Spillway and S-355W Gated Spillway) and construction phases (L-6 Diversion Structure for CEPP North and Seepage Barrier Wall for CEPP New Water).

EVERGLADES

MFL Criteria

In 2001, the SFWMD adopted an MFL rule for the Everglades as set forth in Subsection 40E-8.221(3), F.A.C. The Everglades MFL covers the lands and waters of the WCAs, Holey Land and Rotenberger wildlife management areas, and the freshwater portions of Everglades National Park pursuant to Subsection 40E-8.021(7), F.A.C., (**Figure C-2**). The MFL criteria for the Everglades are a set of minimum levels that 1) are based on changes and structural alterations to the pre-drainage conditions of the Everglades that existed at the time of MFL adoption; 2) are specific to the peat- and marl-forming wetlands of the WCAs, Holey Land and Rotenberger wildlife management areas, Shark River Slough, wetlands east and west of Shark River Slough, Rocky Glades, and Taylor Slough; and 3) specify limits on the decline of water levels below ground, under specific conditions and at specific return frequencies, as measured at the locations shown in **Figure C-10** interpreted from Subsection 40E-8.221(3), F.A.C., and listed in **Table C-5**.

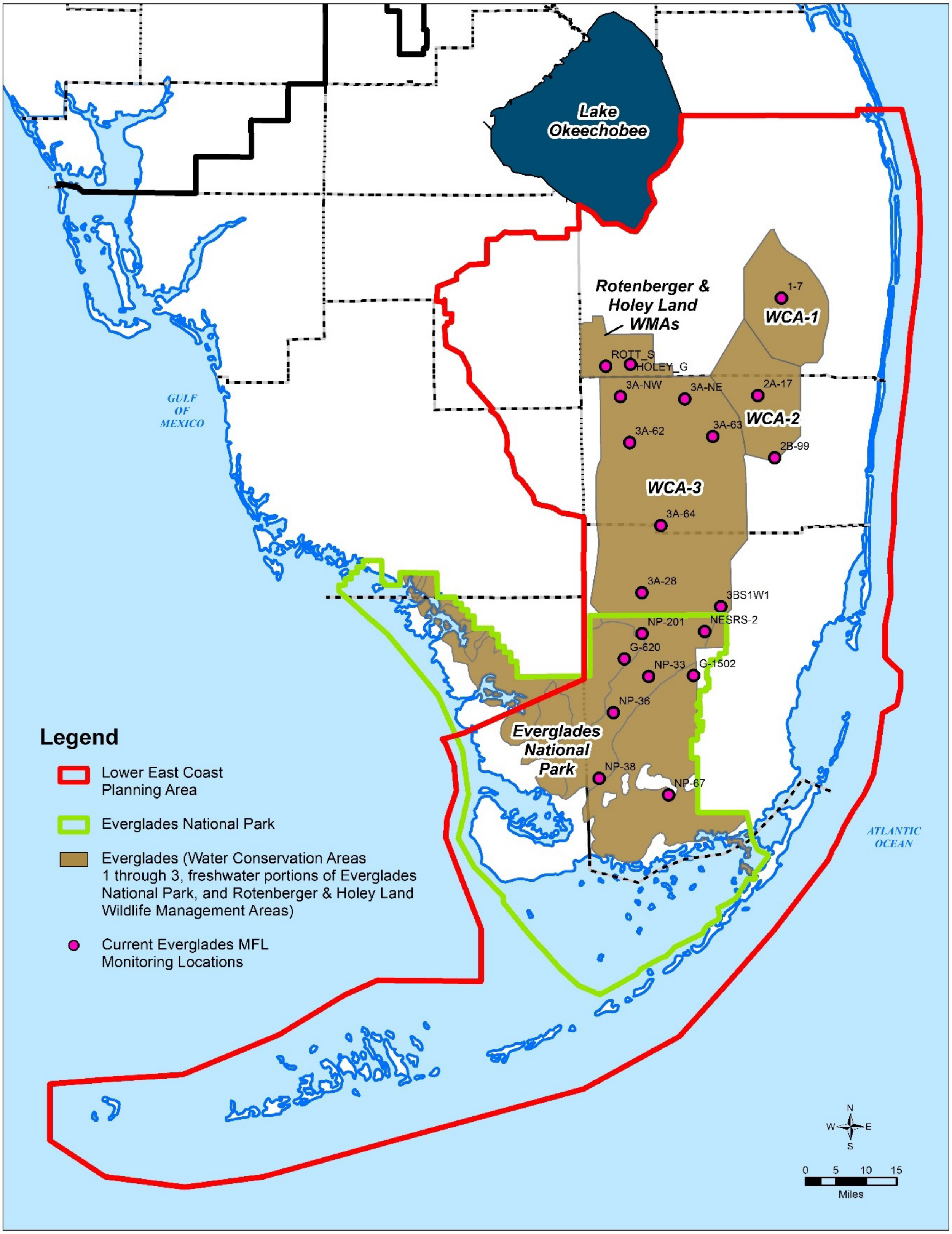


Figure C-10. Everglades MFL monitoring locations (current key gauges).

Table C-5. Minimum water levels, duration, and return frequencies for key water management gauges within the Everglades (Adapted from Table 1 of Chapter 40E-8, F.A.C.).

Area	Current Key Gauge	Original Key Gauge	Soil Type	Minimum Depth and Duration	Return Frequency
WCA-1	1-7	1-7	Peat	-1.0 foot > 30 days	1-in-4 years
WCA-2A	2A-17	2A-17	Peat	-1.0 foot > 30 days	1-in-4 years
WCA-2B	2B-99a	2B-21	Peat	-1.0 foot > 30 days	1-in-3 years
WCA-3A North	3A-NE	3A-NE	Peat	-1.0 foot > 30 days	1-in-2 years
WCA-3A North	3A-NW	3A-NW	Peat	-1.0 foot > 30 days	1-in-4 years
WCA-3A North	3A-62a	3A-2	Peat	-1.0 foot > 30 days	1-in-4 years
WCA-3A North	3A-63a	3A-3	Peat	-1.0 foot > 30 days	1-in-3 years
WCA-3A Central	3A-64a	3A-4	Peat	-1.0 foot > 30 days	1-in-4 years
WCA-3A South	3A-28	3A-28	Peat	-1.0 foot > 30 days	1-in-4 years
WCA-3B	3BS1W1a	3B-SE	Peat	-1.0 foot > 30 days	1-in-7 years
Rotenberger Wildlife Management Area	Rotts	Rotts	Peat	-1.0 foot > 30 days	1-in-2 years
Holey Land Wildlife Management Area	HoleyG	HoleyG	Peat	-1.0 foot > 30 days	1-in-3 years
Northeast Shark River Slough	NESRS-2	NESRS-2	Peat	-1.0 foot > 30 days	1-in-10 years
Central Shark Slough	NP-33	NP-33	Peat	-1.0 foot > 30 days	1-in-10 years
Central Shark Slough	NP-36	NP-36	Peat	-1.0 foot > 30 days	1-in-7 years
Marl wetlands east of Shark River Slough	NP-38	NP-38	Marl	-1.5 foot > 90 days	1-in-3 years
Marl wetlands west of Shark River Slough	NP-201	NP-201	Marl	-1.5 foot > 90 days	1-in-5 years
Marl wetlands west of Shark River Slough	G-620	G-620	Marl	-1.5 foot > 90 days	1-in-5 years
Rockland marl marsh	G-1502	G-1502	Marl	-1.5 foot > 90 days	1-in-2 years
Taylor Slough	NP-67	NP-67	Marl	-1.5 foot > 90 days	1-in-2 years

WCA = water conservation area.

[a] Monitoring locations have been updated to alternative gauges since rule adoption due to changed conditions at the original gauge or location making continued monitoring impossible there.

MFL exceedances (**Table C-5**, Minimum Depth and Duration) and violations (**Table C-5**, Return Frequency) occur when the MFL criteria, regarding water levels below ground at the monitoring locations depicted in **Table C-5** and **Figure C-10**, are not met. Pursuant to Subsection 40E-8.221(3), F.A.C, the SFWMD is implementing measures contained in the LEC water supply plan updates and CERP to achieve minimum hydropattern return frequencies that approximate CERP-compatible pre-drainage conditions in the Everglades.

Recovery Strategy

At the time of MFL adoption, the Everglades did not meet the MFL criteria due to the regulation schedule, a lack of regional water storage, and ineffective water drainage and distribution infrastructure in the watershed. Although not all locations within the Everglades were in violation of the MFL, a recovery strategy was adopted simultaneously with the MFL in accordance with Subsection 40E-8.421(2), F.A.C.

The Everglades MFL recovery strategy includes the following components as described in Subsection 40E-8.421(2), F.A.C., as follows:

1. Capital projects, including CERP projects, to restore more natural water movement within the ecosystem
2. The Lower East Coast Everglades Waterbodies RAA

Capital Projects Component

Since 2001 and the initiation of CERP, many structural and nonstructural remedies necessary for the recovery of the Everglades have been completed, are ongoing, or are planned. CERP has a critical relationship with water supply planning and includes capital projects needed for the restoration and recovery of the Everglades (**Table C-2**). CEPP includes projects on publicly owned land, which direct more water south to WCA-3, Everglades National Park, and Florida Bay, while providing for other water-related needs of the region. **Chapter 7** of this 2023–2024 LEC Plan Update describes capital (structural) projects supporting the Everglades recovery strategy. Capital projects include the following:

1. Western Everglades Restoration Project
2. Broward County Water Preserve Areas: C 11 Impoundment, C 9 Impoundment, and WCA 3A/3B Seepage Management Projects
3. C-111 South Dade Project
4. C-111 Spreader Canal Project – Phase 1 (Western)
5. C-111 Spreader Canal Project – Phase 2 (Eastern)
6. Central Everglades Planning Project (CEPP)
7. Modified Water Deliveries to Everglades National Park

Lower East Coast Everglades Waterbodies RAA

An RAA can serve as a nonstructural component of an MFL prevention or recovery strategy. An RAA was established in 2007 for the Lower East Coast Everglades Waterbodies (**Chapter 4** of this 2023–2024 LEC Plan Update) and is a component of the Everglades recovery strategy. Net increases in the volume or changes in timing on a monthly basis of direct surface water and indirect groundwater withdrawals from the RAA are prohibited over that resulting from base condition uses permitted as of April 1, 2006.

NORTHWEST FORK OF THE LOXAHATCHEE RIVER

MFL Criteria

In 2003, an MFL was adopted for the Northwest Fork of the Loxahatchee River (Northwest Fork) (**Figure C-11**) as set forth in Subsection 40E-8.221(4), F.A.C. The MFL criteria are a minimum flow of 35 cubic feet per second (cfs) over Lainhart Dam and an average daily salinity of less than 2 at river mile 9.2. An MFL exceedance occurs when 1) flows decline below 35 cfs for more than 20 consecutive days; or 2) salinity, expressed as a 20-day rolling average, is greater than 2 at river mile 9.2. An MFL violation occurs when an exceedance occurs more than once in a 6-year period.

The MFL criteria protect the freshwater floodplain swamp of the Northwest Fork. The designation of the Northwest Fork as a National Wild and Scenic River identified the floodplain swamp and its associated cypress forest as a resource of outstanding value that needs to be protected. Because cypress trees tolerate a wide range of salinity conditions and are slow to respond to salinity stress, an assemblage of six freshwater tree species that, as a group, are a more sensitive indicator of adverse salinity conditions was identified as characterizing the floodplain swamp (SFWMD 2002).

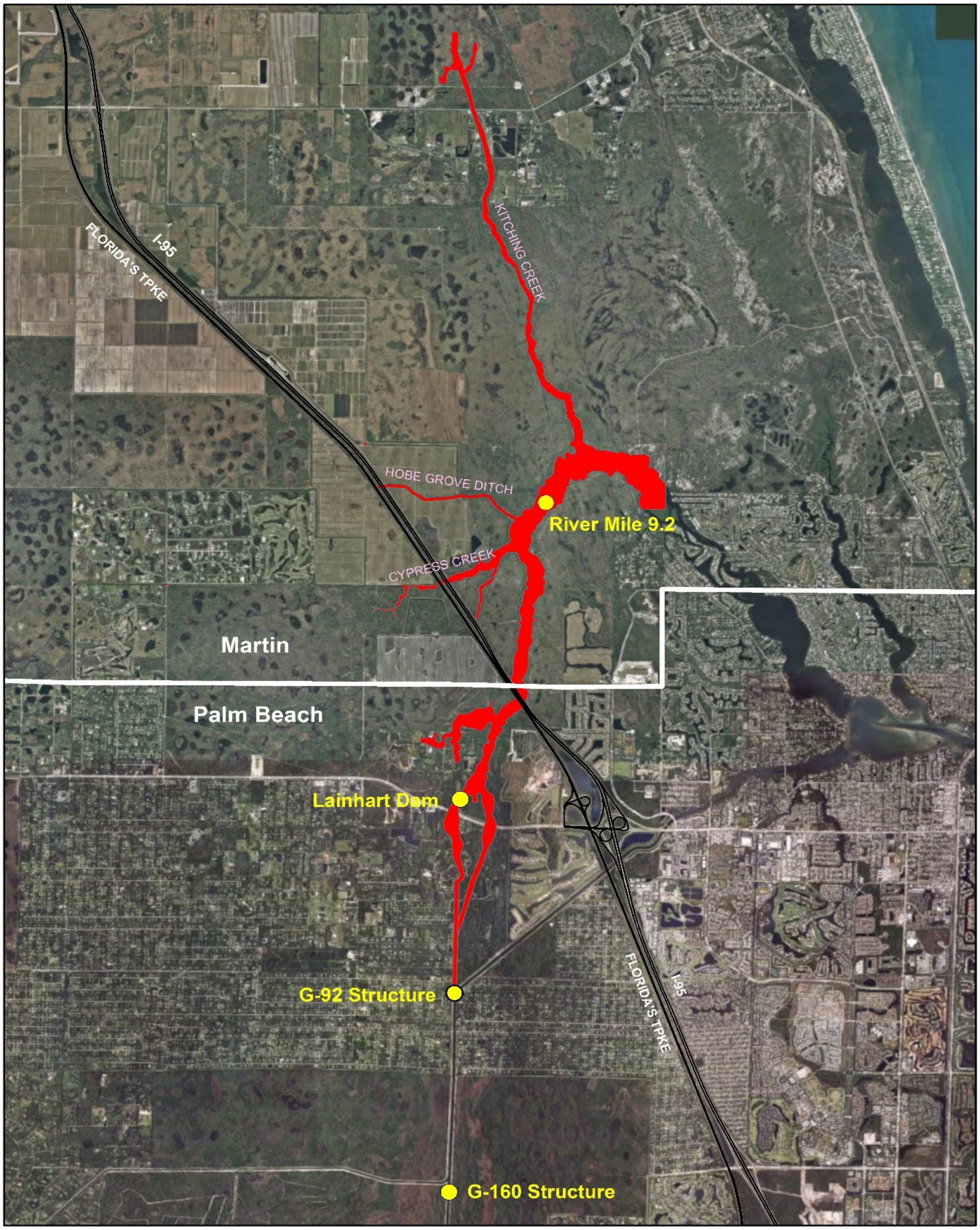


Figure C-11. Northwest Fork of the Loxahatchee River MFL area (shown in red).

Recovery Strategy

The Northwest Fork of the Loxahatchee River was not meeting the MFL criteria at the time of adoption. Therefore, an MFL recovery strategy in accordance with Subsection 40E-8.421(6), F.A.C., was adopted simultaneously with the MFL adoption. The recovery strategy includes the following components:

1. Structural Improvements – Construction of projects and facilities to increase water storage and delivery capabilities

2. Operational Protocols – Providing flows from Lainhart Dam and other sources to meet the MFL (35 cfs) as well as restorative flows greater than 50 cfs

3. Regulatory Activities – SFWMD regulatory program and water shortage plans to ameliorate low flow conditions

Structural Improvements and Operational Protocols

Structural and operational features of the recovery strategy are implemented through ongoing water resource development projects. Current projects that support the Northwest Fork MFL are listed in **Table C-2**. The Northwest Fork MFL criteria are anticipated to be met when these projects are completed and fully operational (**Chapter 7**). The capital projects include the following:

1. G 160 and G-161 Structure Projects

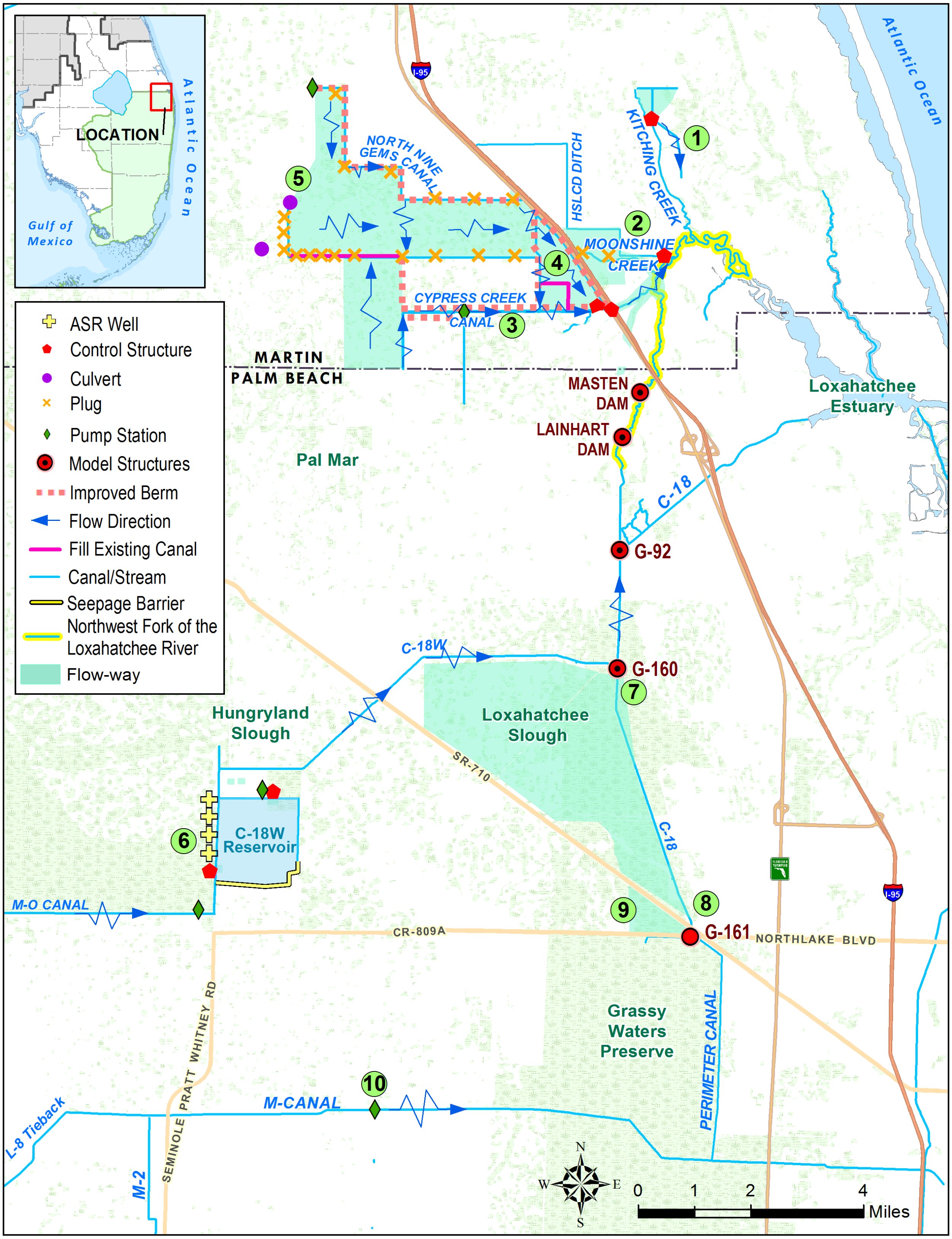
2. Loxahatchee River Watershed Restoration Project

Key components for managing the Loxahatchee River are continuous salinity monitoring at river mile 9.2 (**Figure C-11**), measuring flow across Lainhart Dam, and assessing vegetative communities in the floodplain. This information is used in the operation of water control facilities to deliver a flow of 50 cfs to the river when sufficient water is available from the regional system. This operational strategy is meant to reduce the upstream migration of salt water into the Northwest Fork of the river.

A major step towards restoration of the Northwest Fork, the Loxahatchee River Watershed Restoration Project is a CERP project jointly conducted by the USACE and SFWMD through a project partnership agreement (**Figure C-12**). The project is expected to help 1) restore more natural water deliveries; 2) promote improved health and functionality of wetland and upland areas; and 3) increase the quantity and quality of habitat available for native wildlife and vegetation by improving water distribution and timing, rehydrating hydrologically impacted natural areas, and re-establishing connections among natural areas that have become fragmented. The project area encompasses approximately 481,920 acres of central and northern Palm Beach County and southern Martin County, including Jonathan Dickinson State Park, Pal Mar East/Cypress Creek, Dupuis Wildlife and Environmental Management Areas, J.W. Corbett Wildlife Management Area, Grassy Waters Preserve, Loxahatchee Slough (the last remaining riverine cypress stands in southeastern Florida), and the Loxahatchee River Estuary.

Regulatory Criteria Component

To ensure the water needed for restoration of the Loxahatchee River is available, an RAA was established in 2007 and updated in 2022 for the North Palm Beach County/Loxahatchee River Watershed Waterbodies (**Chapter 4**). Net increases in the volume or changes in timing on a monthly basis of direct surface water and indirect groundwater withdrawals from the RAA are prohibited over that resulting from base condition uses permitted as of April 1, 2006 or April 1, 2022, whichever is applicable. In addition to amending this RAA, a new RAA was established to protect the project water stored via ASR wells at the C-18W Reservoir (**Chapter 4**). Additional regulatory measures include permit duration criteria in Section 1.5.2.B of the Applicant's Handbook (SFWMD 2022) for applications that request allocations of water from sources of limited availability.



\\ad.sfwmd.gov\dfsroot\GS\GSBiz\WS\LEC\2018LECWSP\mxd\LRWRProj_20180731.mxd

Figure C-12. Loxahatchee River Watershed Restoration Project authorized plan components.

FLORIDA BAY

MFL Criteria


Florida Bay

In 2006, the SFWMD adopted an MFL for Florida Bay in accordance with Subsection 40E-8.221(5), F.A.C., to protect this unique water body and the salinity regimes needed for its flora and fauna. The Florida Bay MFL applies to the bays, basins, and sounds within Taylor Slough and the C-111 Canal basin watersheds, including Long Sound, Little Blackwater Sound, Blackwater Sound, Buttonwood Sound, Joe Bay, Little Madeira Bay, Madeira Bay, Terrapin Bay, Eagle Key Basin, and other open waters of Florida Bay northeast of a boundary line between Terrapin Bay and Plantation Key as described in Subsection 40E-8.021(8), F.A.C., (**Figure C-1**). The resulting footprint encompasses the area most directly affected by freshwater inflow, or lack thereof, from upstream regional canals. The boundary encompasses the southern Everglades freshwater marsh, the mangrove transition zone between the marsh and Florida Bay, and the northern and central sections of open water Florida Bay influenced by Taylor Slough and the C-111 Canal basin.

Submerged aquatic vegetation is a critical component of the Florida Bay ecosystem. The MFL criteria were based on the flow needs and salinity tolerances of submerged aquatic vegetation in the Taylor River/Little Madeira Bay/Eagle Key gradient. Freshwater discharges from the regional water management system directly affect salinity conditions in the Everglades–Florida Bay Transition Zone and influence adjacent waters in northeastern Florida Bay. The proper salinity regime is important to the function of the estuarine ecosystem. Freshwater inflow is a potentially controllable parameter that could maintain the salinity regime, both spatially and temporally.

The MFL is a flow criteria that includes a net minimum flow of 105,000 acre-feet into Florida Bay over a 365-day period with a salinity performance indicator. Analysis determined the minimum flow is necessary to maintain a salinity of no greater than 30 at the Taylor River salinity monitoring station (**Figure C-13**).

An MFL exceedance occurs when the average salinity over 30 or more consecutive days exceeds 30 at the Taylor River salinity monitoring station. Multiple events of 30-day or more periods with salinity greater than 30, occurring within a single calendar year, are considered a single exceedance. An MFL violation occurs when an exceedance occurs during each of 2 consecutive years, more often than once in a 10-year period. By this definition, 3 consecutive years of exceedances constitute a violation.

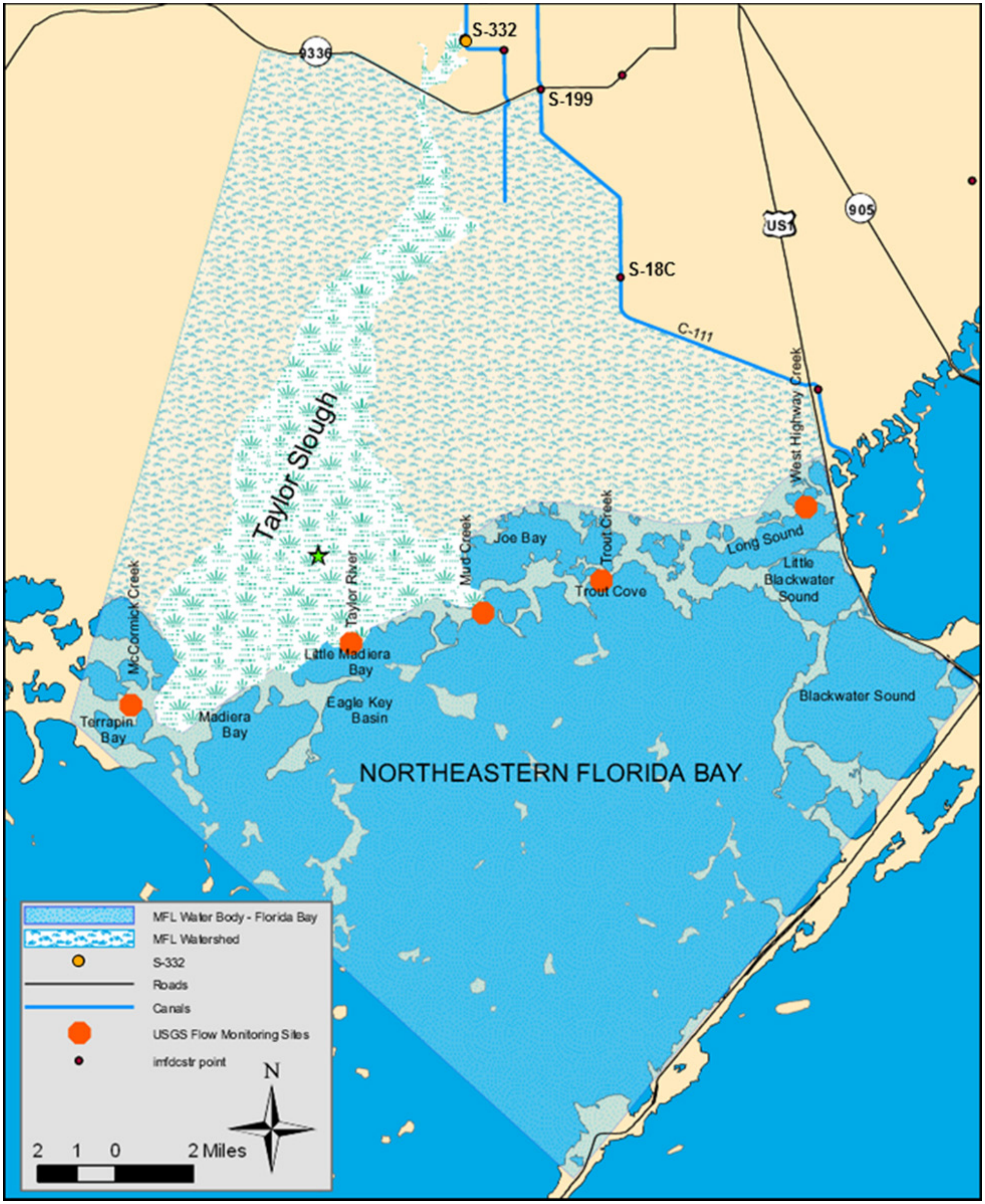


Figure C-13. Florida Bay MFL water body and watershed. (Note: Green star marks the location of the Taylor River salinity monitoring station.)

The Florida Bay MFL was re-evaluated in 2014 based on additional research, modeling, and monitoring (SFWMD 2014). Results of the re-evaluation indicated the existing MFL criteria were an adequate threshold of significant harm to Florida Bay.

Prevention Strategy

At the time of MFL adoption, Florida Bay was meeting the MFL and no violations were anticipated to occur in the next 20 years. Therefore, a prevention strategy according to Subsection 40E-8.421(8), F.A.C., was adopted for it simultaneously with MFL adoption. The prevention strategy for Florida Bay includes two main components:

1. Current projects for delivering more water to Florida Bay are listed in **Table C-2**, and described in **Chapter 7**, as follows:
    a. C-111 South Dade Project
    b. C-111 Spreader Canal Project – Phase 1 (Western)
    c. C-111 Spreader Canal Project – Phase 2 (Eastern)
    d. Central Everglades Planning Project (CEPP)
    e. Modified Water Deliveries to Everglades National Park

2. Continued field monitoring and research to assess salinity, water level, flow conditions, and biological resource response in the region

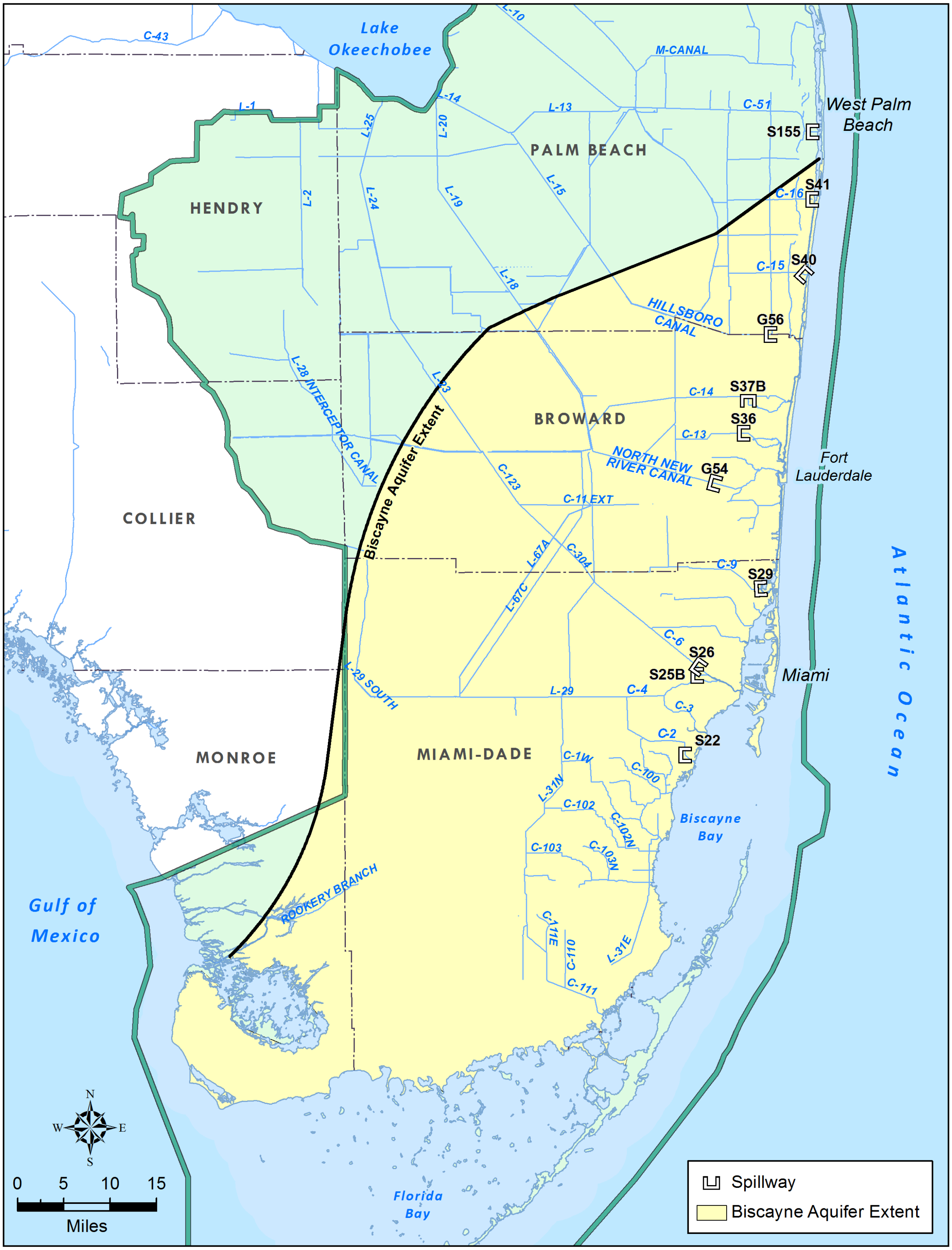
Portions of the aforementioned projects have been completed and are operational, while other portions are still under construction.

BISCAYNE AQUIFER

MFL Criteria

The Biscayne aquifer extends beneath Monroe, Miami-Dade, Broward, and Palm Beach, counties, across an area of approximately 2.56 million acres (**Figure C-14**). It is a highly permeable, wedge-shaped, unconfined aquifer more than 200 feet thick in coastal Broward County, thinning to an edge 35 to 40 miles inland in the Everglades (Klein and Hull 1978). The Biscayne aquifer supplies all, or a large portion of, municipal water supply systems from southern Palm Beach County southward, including the system for the Florida Keys, which is primarily supplied via pipeline from mainland Miami-Dade County.

Due to its widespread use, protecting the Biscayne aquifer from saltwater intrusion is important. An MFL and a prevention strategy were adopted for the Biscayne aquifer in 2001 pursuant to Rule 40E-8.231, F.A.C., based on analysis of the relationships between groundwater and canal water levels, and the potential for saltwater intrusion (SFWMD 2000a). The MFL criterion is the water level in the aquifer that results in movement of the saltwater interface landward to the extent that groundwater quality at an established withdrawal point is insufficient to serve as a water supply source. An MFL violation occurs when water levels within the aquifer produce this degree of saltwater movement at any point in time. The MFL criterion does not address the groundwater base flows to Biscayne Bay.



\\ad.sfwmd.gov\dfsroot\GS\GSBiz\WS\LEC\2018LECWSP\mxd\BiscayneAquiferMFL_20180523.mxd

Figure C-14. Biscayne aquifer MFL water management structures.

Prevention Strategy

Maintaining sufficient water levels (stages) in coastal canals is crucial for recharging the Biscayne aquifer and maintaining the water level in the aquifer needed to meet the MFL. An MFL prevention strategy following Subsection 40E-8.421(3), F.A.C., was adopted for the aquifer simultaneously with the MFL adoption. The prevention strategy includes specific canal stages, which are specified in the *2000 Lower East Coast Regional Water Supply Plan* (SFWMD 2000b), for meeting the MFL criterion.

According to Subsection 40E-8.421, F.A.C, the LEC Plan contains an approved prevention strategy for the Biscayne Aquifer pursuant to Section 373.0421, F.S., which consists of the following:

a. Maintain coastal canal stages at the minimum operation levels shown in Table J-2 of the LEC Plan.

b. Apply conditions for permit issuance in Chapter 40E-2, F.A.C., to prevent the harmful movement of saltwater intrusion up to a 1-in-10-year level of certainty.

c. Maintain a groundwater monitoring network and utilize data to initiate water shortage actions pursuant to Rule 40E-8.441, F.A.C., and Chapters 40E-21 and 40E-22, F.A.C.

d. Construct and operate water resource and water supply development projects.

e. Conduct research in high-risk areas to identify where the portions of the saltwater front is adjacent to existing and future potable water sources.

Table C-6 provides the minimum water levels at 11 primary water management structures maintained by the SFWMD in canals that overlie the Biscayne aquifer (**Figure C-7**). To meet the MFL, canal stages cannot fall below the levels shown in Table J-2 of the *2000 Lower East Coast Regional Water Supply Plan* for more than 180 days, and the average annual stage must be sufficient to allow water levels and chloride concentrations in the aquifer to recover to levels that existed before a drought or discharge event occurred (SFWMD 2000b).

The SFWMD is conducting projects and studies as well as providing incentives to local water users to develop alternative water supplies, including the use of reclaimed water, to maintain optimum water levels in coastal canals, provide aquifer recharge, combat saltwater intrusion, and thereby reduce the potential for MFL violations in the Biscayne aquifer. More information on these additional measures is provided in **Table C-2**, which includes the C-111 Spreader Canal Project – Phase 2 (Eastern) project.

Table C-6. Minimum canal operation levels of coastal canals (From SFWMD 2000b, Volume II, Appendix J).

Canal/Structure	Minimum Canal Operation Levels to Protect Against MFL Violations (feet NGVD29)
C-51/S-155	7.80
C-16/S-41	7.80
C-15/S-40	7.80
Hillsboro/G-56	6.75
C-14/S-37B	6.50
C-13/S-36	4.00
North New River/G-54	3.50
C-9/S-29	2.00
C-6/S-26	2.50
C-4/S-25B	2.50
C-2/S-22	2.50

MFL = minimum flow and minimum water level; NGVD29 = National Geodetic Vertical Datum of 1929; SFWMD = South Florida Water Management District.

Further information about the MFLs and prevention and recovery strategies adopted for water bodies in the LEC Planning Area can be found in Chapter 40E-8, F.A.C., and on the SFWMD webpage (http://www.sfwmd.gov/mfls). More information on the RAAs mentioned in this appendix is provided in **Chapter 4** and in Section 3.2.1 of the Applicant's Handbook (SFWMD 2022).

REFERENCES

Klein, H. and J.E. Hull. 1978. *Biscayne Aquifer, Southeast Florida.* Water-Resources Investigations 78-107. Prepared in cooperation with the United States Environmental Protection Agency, Washington, DC. United States Geological Survey, Miami, FL. September 1978.

Mann, M.E., B.A. Steinman, and S.K. Miller. 2020. Absence of internal multidecadal and interdecadal oscillations in climate model simulations. *Nature Communications* 11(1):49. doi: 10.1038/s41467-019-13823-w.

SFWMD. 2000a. *Minimum Flows and Levels for Lake Okeechobee, the Everglades, and the Biscayne Aquifer*. February 29, 2000 Draft. South Florida Water Management District, West Palm Beach, FL.

SFWMD. 2000b. *2000 Lower East Coast Regional Water Supply Plan*. South Florida Water Management District, West Palm Beach, FL. May 2000.

SFWMD. 2002. *Final Draft Technical Documentation to Support Development of Minimum Flows and Levels for the Northwest Fork of the Loxahatchee River*. South Florida Water Management District, West Palm Beach, FL. November 2002.

SFWMD. 2008. *Final Order on 2008 Amendment to Appendix H of the Lower East Coast Water Supply Plan*. Order No. SFWMD 2008-364 DAO WU. South Florida Water Management District, West Palm Beach, FL. August 2008.

SFWMD. 2014. *A Review and Evaluation of the Minimum Flow and Level Criteria for Northeastern Florida Bay*. Final Report. South Florida Water Management District, West Palm Beach, FL. June 2014.

SFWMD. 2021. *2021–2024 Support Document for Water Supply Plan Updates.* South Florida Water Management District, West Palm Beach, FL. November 2021.

SFWMD. 2022. *Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District*. South Florida Water Management District, West Palm Beach, FL. June 2022.

SFWMD. 2024a. *Model Documentation Report: Lake Okeechobee Minimum Flows and Minimum Levels (MFL) Recovery Strategy Storage Assessment.* South Florida Water Management District, West Palm Beach, FL. March 2024.

SFWMD. 2024b. *Poisson Point Process for Lake Okeechobee Minimum Flow and Level Exceedance and Violation Events*. South Florida Water Management District, West Palm Beach, FL. May 2024.

USACE. 2007. *Final Supplemental Environmental Impact Statement Including Appendices A through G – Lake Okeechobee Regulation Schedule*. United States Army Corps of Engineers, Jacksonville, FL.

USACE. 2023. *CEPP Project Fact Sheet*. United States Army Corps of Engineers, Jacksonville, FL. January 2023.

USACE and SFWMD. 1999. *Central and Southern Florida Flood Control Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement*. United States Army Corps of Engineers, Jacksonville, FL, and South Florida Water Management District, West Palm Beach, FL.

D

Groundwater Monitoring, Saltwater Intrusion, Groundwater Modeling, and Climate Change

Table of Contents

List of Tables

List of Figures

Several sources of data were reviewed during development of this *2023–2024 Lower East Coast Water Supply Plan Update* (2023–2024 LEC Plan Update). **Chapter 6** provides an assessment of historical and current conditions of the region's water resources using water availability and hydrologic data (e.g., water level, water quality) from surface water and groundwater from the surficial and Floridan aquifer systems (SAS and FAS) monitoring sites throughout the LEC Planning Area. Monitoring data and maps in the chapter also show the current location of the saltwater interface in relation to water supply sources. **Appendix D** provides analyses and interpretation of the following data:

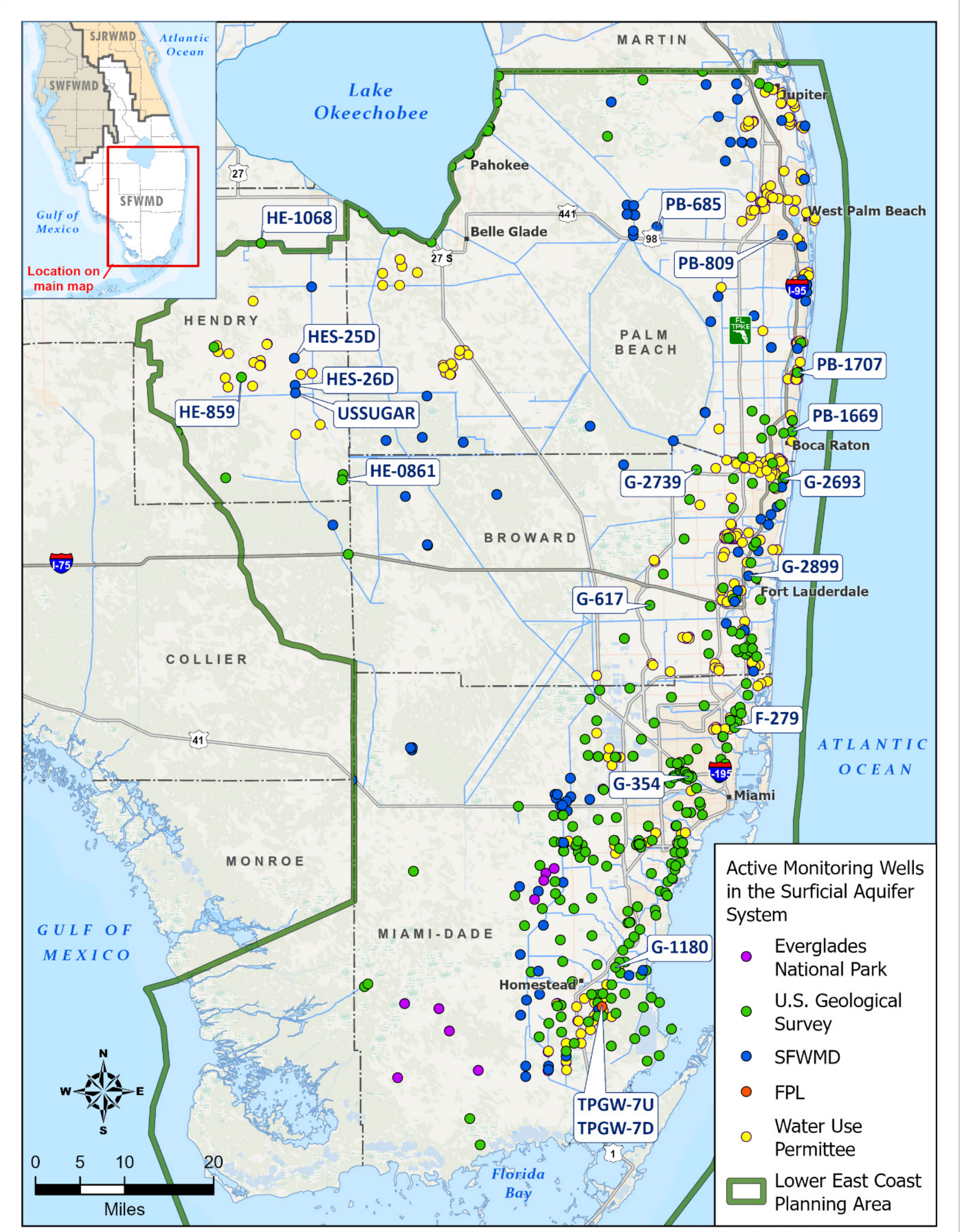
- Hydrographs of select monitor wells in the SAS and FAS
- Saltwater interface monitoring data and maps
- Electromagnetic induction logs
- Coastal utilities vulnerable to saltwater intrusion during dry periods
- Broward and Miami-Dade SAS models analyzing potential impacts of sea level rise
- Historical water quality trends for Public Supply (PS) utilities with FAS wells and the regional FAS monitoring network
- Climate change and sea level rise

Historical and current hydrologic, meteorologic, hydrogeologic, and water quality data for the 16 counties within the South Florida Water Management District (SFWMD or District) are available through the SFWMD's corporate environmental database, DBHYDRO, at https://www.sfwmd.gov/science-data/dbhydro.

GROUNDWATER MONITORING

Surficial Aquifer System Groundwater Elevations

As mentioned in **Chapter 6**, 12 monitor wells in the LEC Planning Area were chosen as representative of long-term trends in regional water levels (**Table D-1; Figure D-1**, included here for reference, and in **Chapter 6**). These representative monitor wells generally show an annual wet-to-dry-season variation in groundwater elevations of approximately 2 to 4 feet, which is typical in rainfall-driven aquifers like the SAS that are recharged by infiltration from rainfall and seepage from local canals and other surface water bodies. While the magnitude of these fluctuations may vary from year to year, the historical groundwater elevation time-series data shown in the hydrographs from these wells indicate relatively stable groundwater elevation trends and varying chloride concentration trends over time.



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_WUPandMON.aprx Layout Name: 20230623_SAS_MON_Well

Figure D-1. Surficial aquifer system monitor well locations and monitoring entities in the LEC Planning Area.

Table D-1. Minimum, maximum, and average groundwater levels for select surficial aquifer system monitor wells in the LEC Planning Area (1/01/2000 to 12/31/2022).

County	Well Name	Total Depth (ft bls)	Minimum Groundwater Elevation	Maximum Groundwater Elevation	Average Groundwater Elevation
Broward	G-617	29	2.98	4.85	3.89
	G-2693	229	1.94	7.13	4.50
	G-2739	21	5.60	9.16	7.80
	G-2899	165	0.65	3.74	1.82
Hendry	**HES-25D**	92	15.55	20.65	17.87
	HE-859	59	15.50	25.00	21.55
	HE-861	70	8.90	14.08	12.20
	HE-1068	160	15.73	18.77	15.73
	USSUGAR	100	-16.02	20.04	7.82
	HES-26D	100	-20.43	20.47	12.2
Miami-Dade	**F-279**	117	0.99	3.91	1.65
	G-354	90	0.68	3.03	1.86
	G-1180	67	0.75	3.18	2.06
	TPGW-7D	114	-4.14	2.05	0.42
Palm Beach	PB-685	17	11.61	16.79	13.67
	PB-809	150	7.37	12.01	10.23
	PB-1669	131	2.84	9.17	4.95
	PB-1707	183	-0.90	5.25	2.42

bls = below land surface; ft = feet.
Notes: Groundwater elevations are in feet NGVD29 (National Geodetic Vertical Datum of 1929). Hydrographs for the bolded wells are included in **Appendix D**. Remaining wells are presented in **Chapter 6**.

Figures D-2 to **D-9** are long-term hydrographs for eight SAS monitor wells located in Palm Beach, Broward, and Miami-Dade counties (**Figure D-1**). These time-series hydrographs illustrate seasonal fluctuations in groundwater elevations between each wet and dry season, as well as long-term groundwater elevation trends. None of the hydrographs included in this section show long-term or recent declining groundwater elevation trends. Additional groundwater data are available at the SFWMD's Resilience Metrics Hub (SFWMD 2023).

Well PB-1707 (**Figure D-9**) is the only well that shows a significant change in groundwater elevations over time. Between December 2018 and April 2021, the groundwater elevation at PB-1707 declined a total of approximately 5 feet before rising 2.3 feet by December 2022.

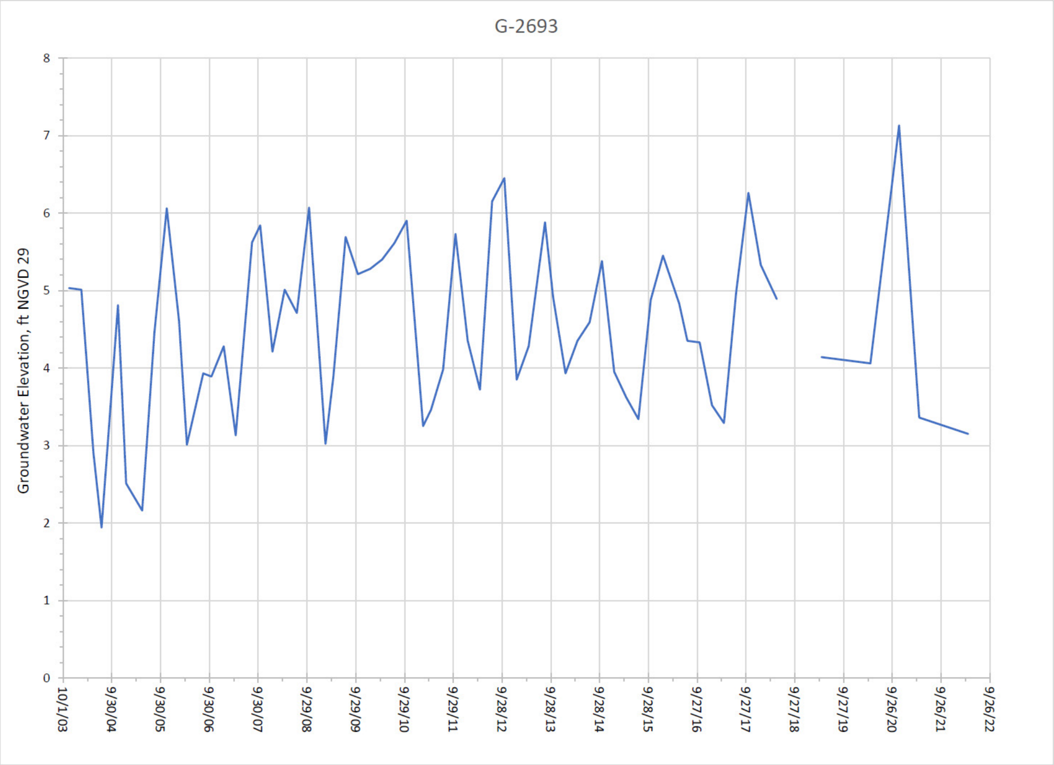


Figure D-2. Groundwater elevations at surficial aquifer system well G-2693 (229 feet deep) in Broward County.

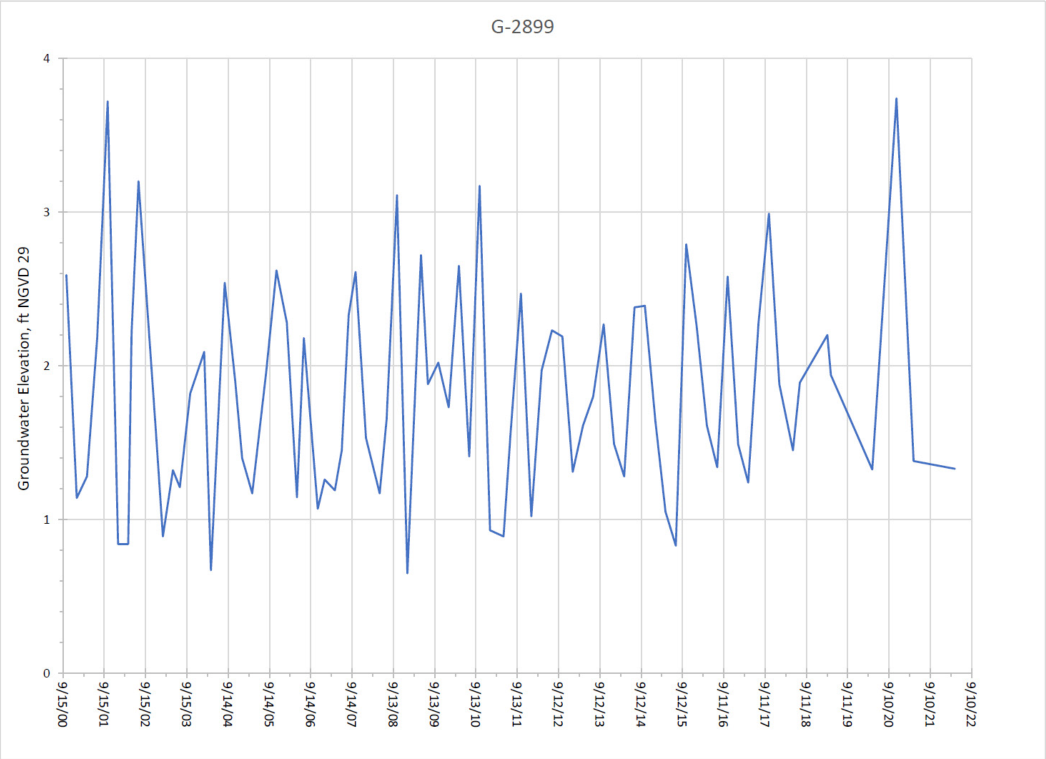


Figure D-3. Groundwater elevations at surficial aquifer system well G-2899 (165 feet deep) in Broward County.

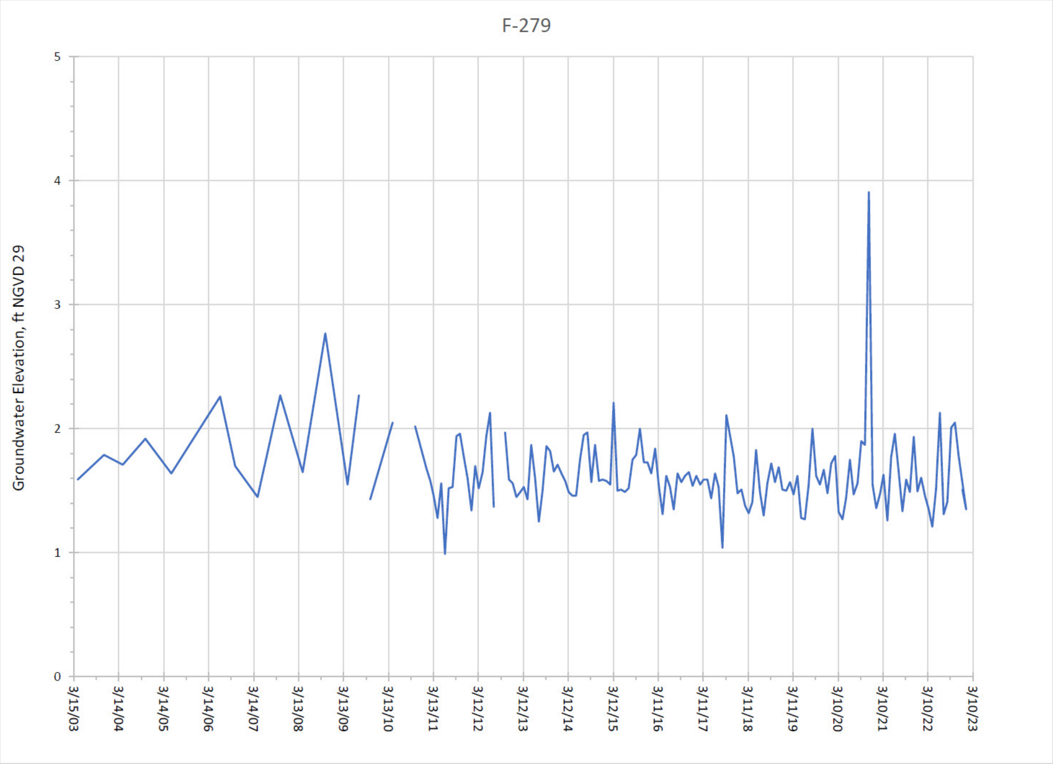


Figure D-4. Groundwater elevations at surficial aquifer system well F-279 (117 feet deep) in Miami-Dade County.

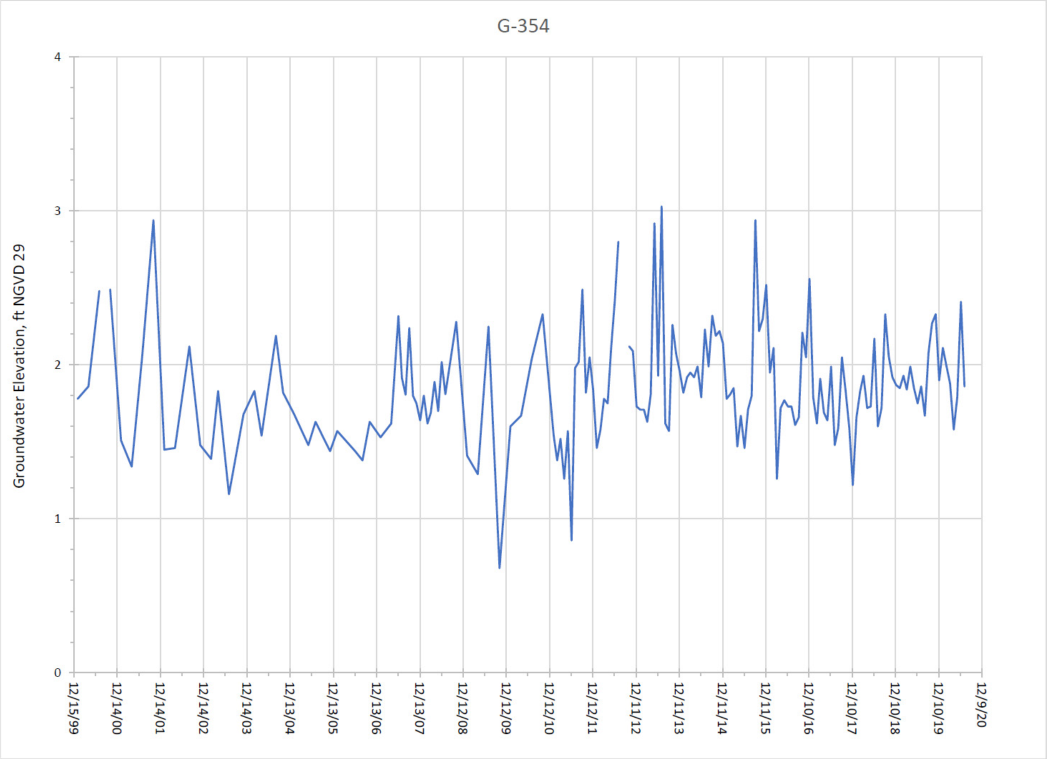


Figure D-5. Groundwater elevations at surficial aquifer system well G-354 (90 feet deep) in Miami-Dade County.

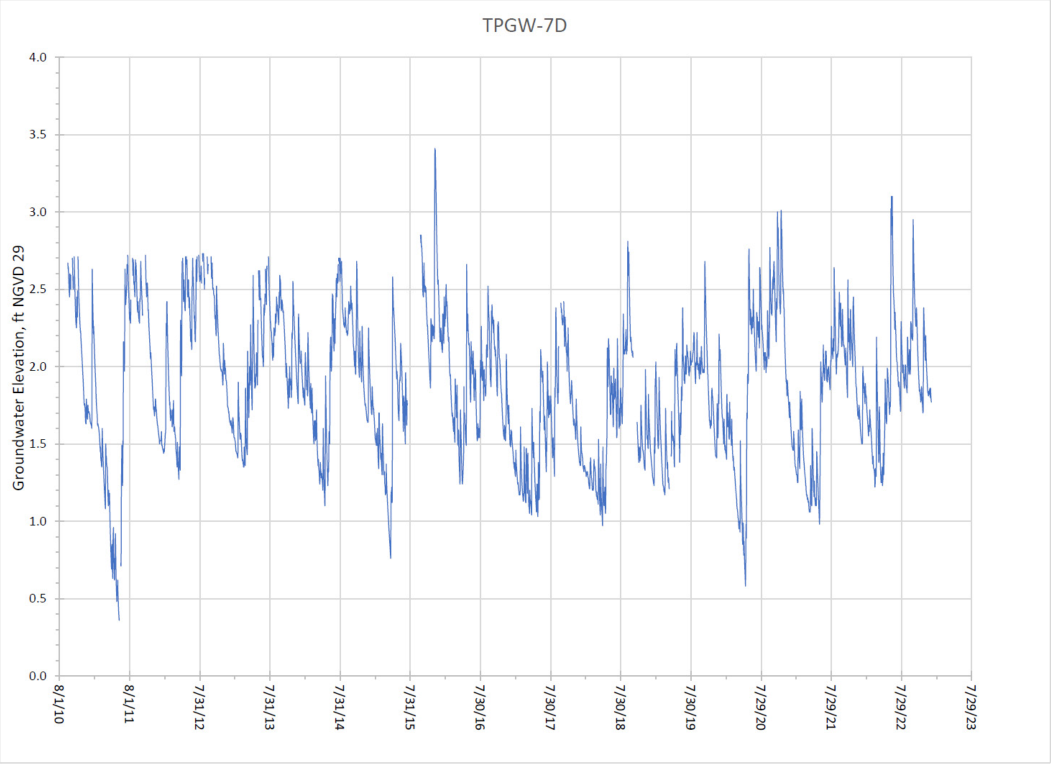


Figure D-6. Groundwater elevations at surficial aquifer system well TPGW-7D (115 feet deep) in Miami-Dade County.

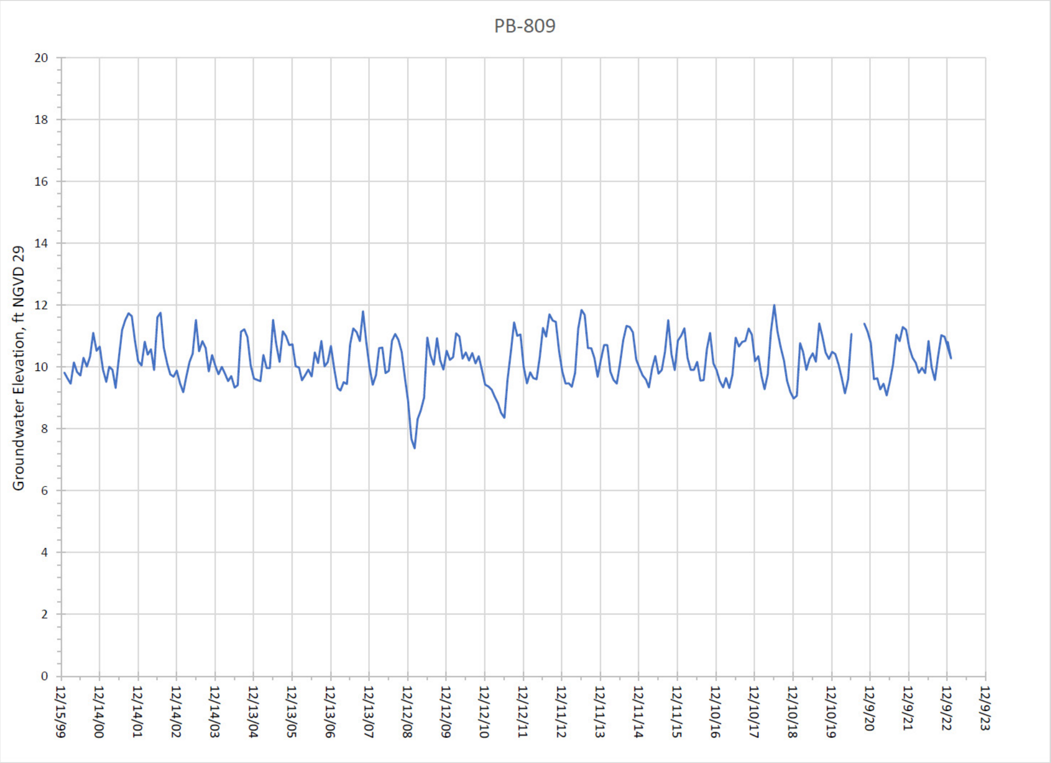


Figure D-7. Groundwater elevations at surficial aquifer system well PB-809 (150 feet deep) in Palm Beach County.

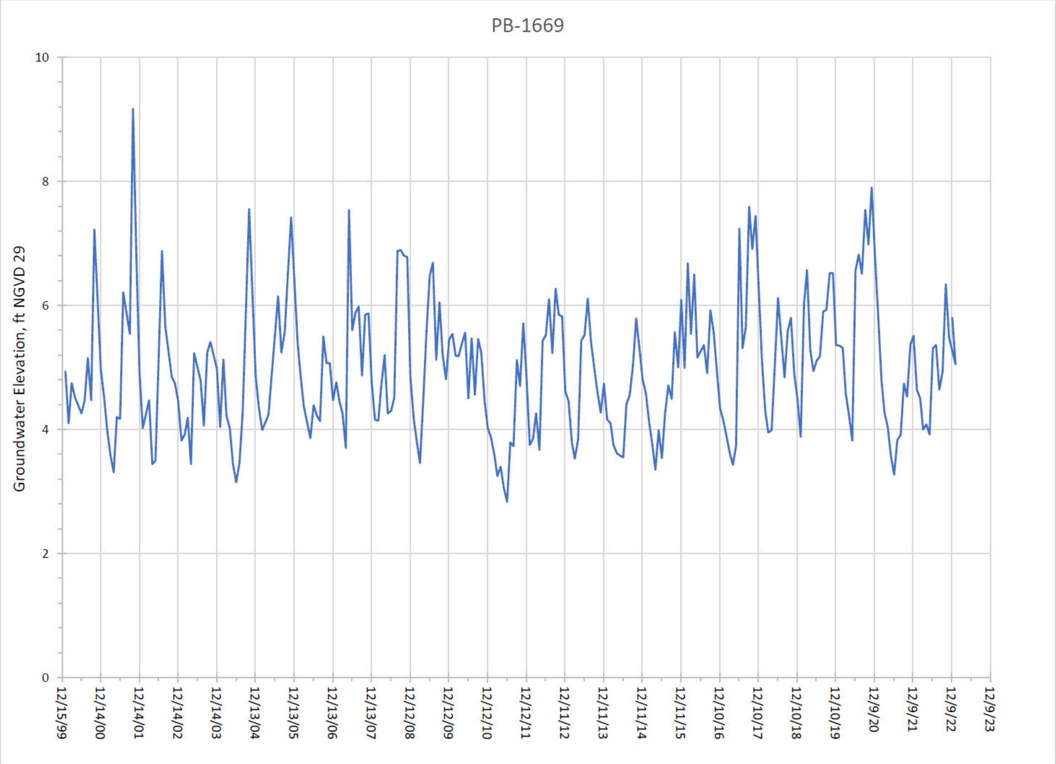


Figure D-8. Groundwater elevations at surficial aquifer system well PB-1669 (131 feet deep) in Palm Beach County.

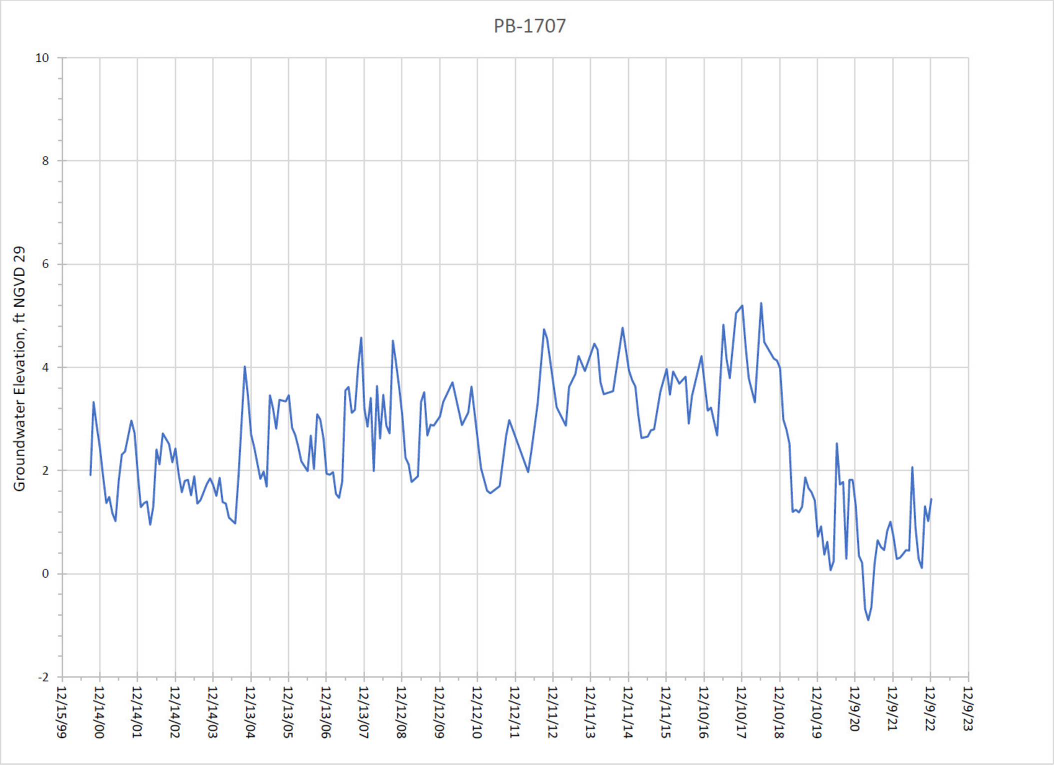


Figure D-9. Groundwater elevations at surficial aquifer system well PB-1707 (183 feet deep) in Palm Beach County.

Lower Tamiami Aquifer Maximum Developable Limit

Six monitor wells in the portion of Hendry County located in the LEC Planning Area were chosen to show the maximum developable limit (MDL) for the Lower Tamiami aquifer (LTA) in relation to the historical groundwater elevations. **Chapter 6** and the glossary contain the definition and description of the MDL. Two monitor wells were discussed in detail in **Chapter 6**. The remaining four LTA monitor wells (HES-25D, HE-859, HE-861, HE-1068) have remained at least 10 feet above the MDL for the period of record and have exhibited stable average groundwater elevation trends as shown in the following time-series plots (**Figures D-10** to **D-13**).

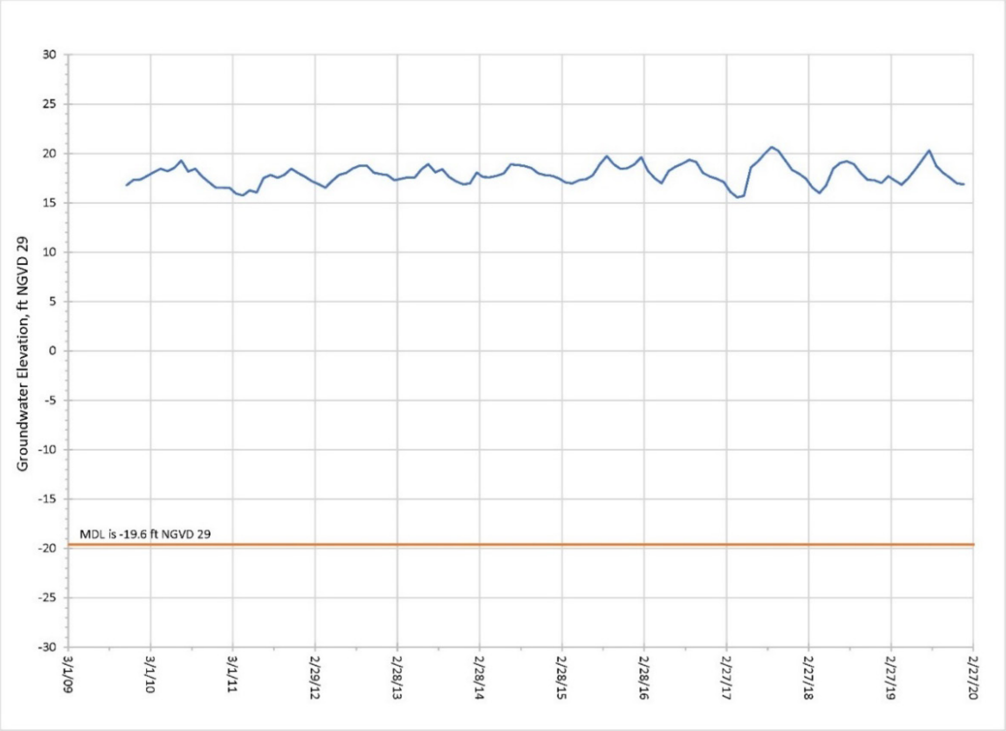


Figure D-10. Groundwater elevations in Lower Tamiami aquifer well HES-25D (92 feet deep), and associated maximum developable limit elevation, eastern Hendry County.

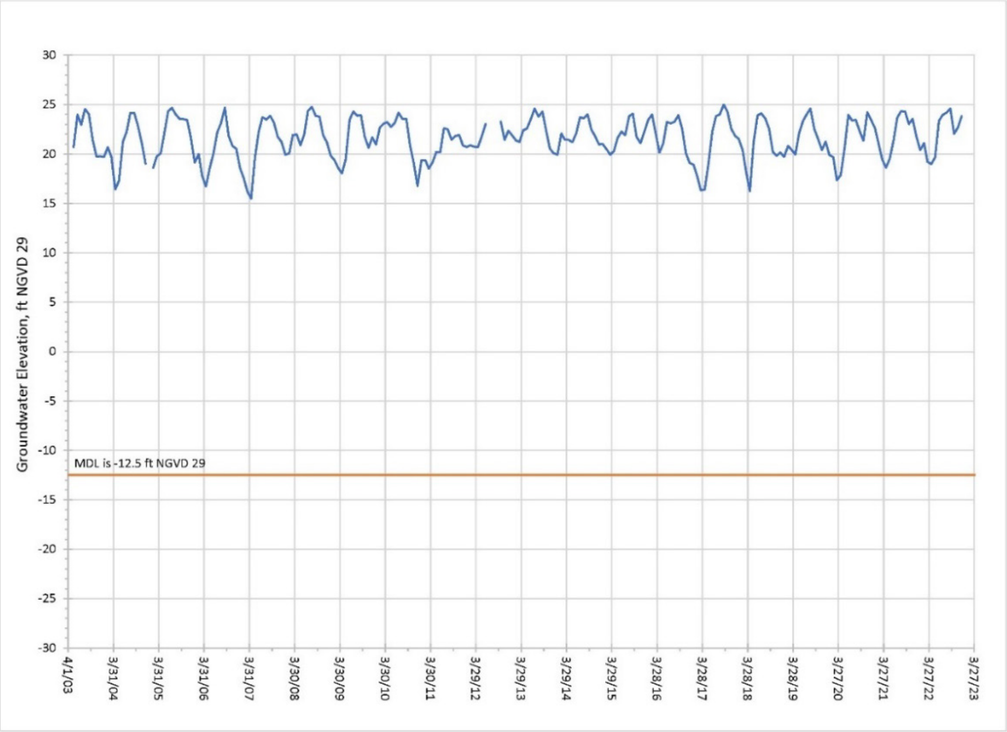


Figure D-11. Groundwater elevations in Lower Tamiami aquifer well HE-859 (59 feet deep), and associated maximum developable limit elevation, eastern Hendry County.

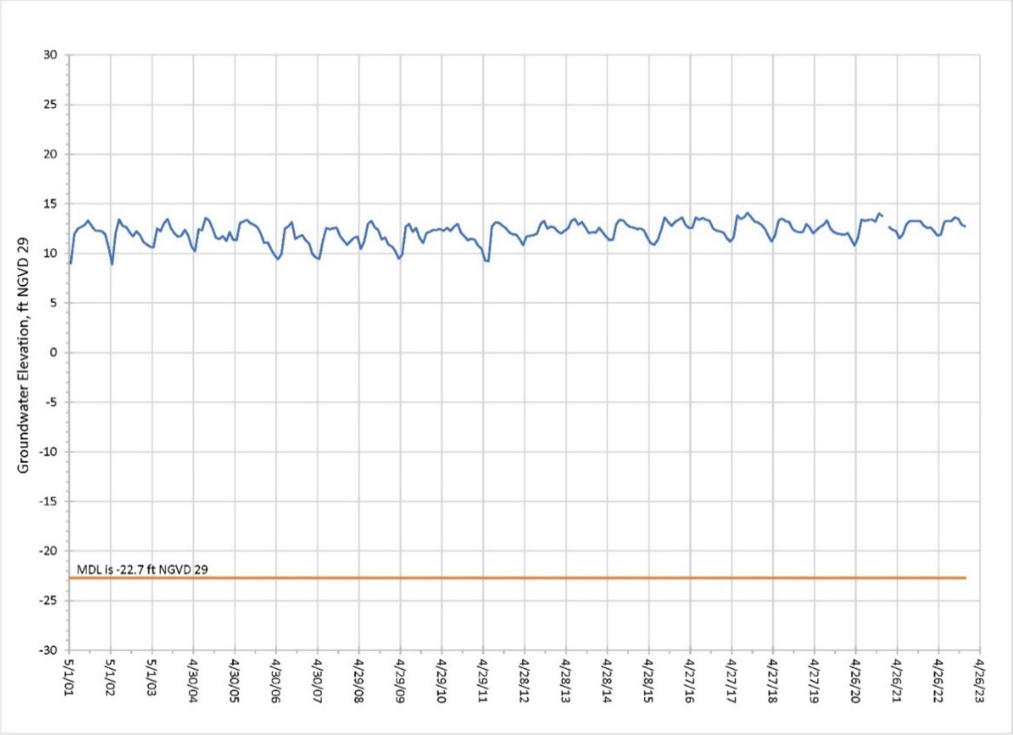


Figure D-12. Groundwater elevations in Lower Tamiami aquifer well HE-861 (70 feet deep), and associated maximum developable limit elevation, southeastern Hendry County.

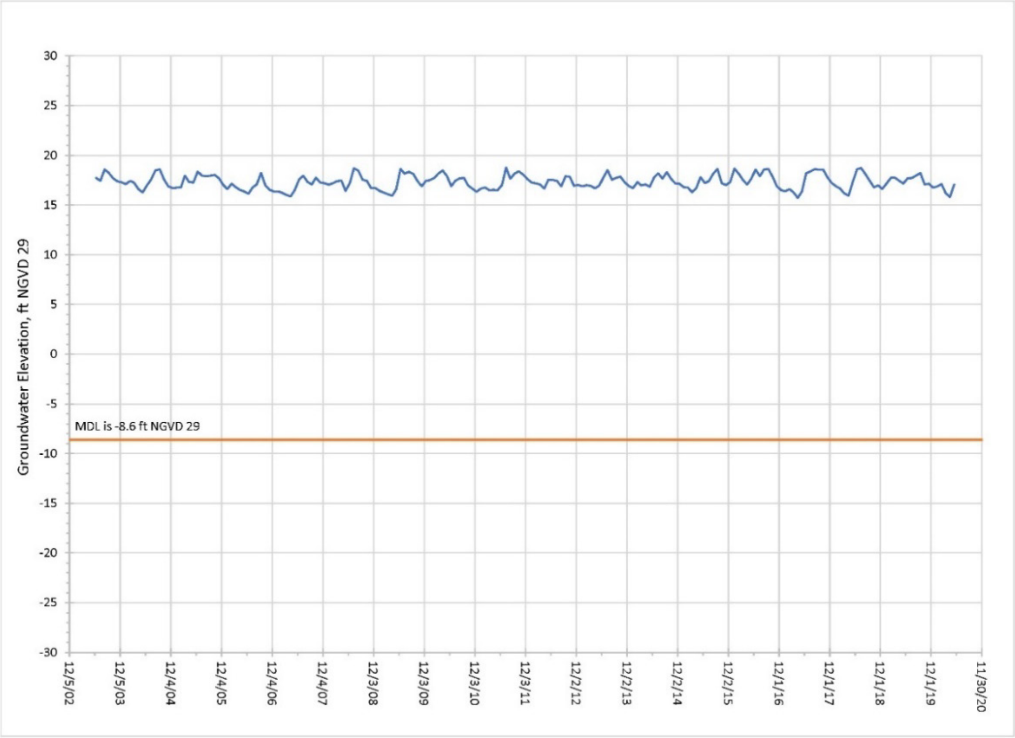


Figure D-13. Groundwater elevations in Lower Tamiami aquifer well HE-1068 (160 feet deep), and associated maximum developable limit elevation, northeastern Hendry County.

SALTWATER INTRUSION

The SFWMD saltwater interface monitoring and mapping program was established to evaluate the extent of seawater encroachment into aquifers along the South Florida coastline with the exception of Miami-Dade County, which has retained the United States Geological Survey (USGS) to conduct its mapping. The SFWMD began mapping the approximate location of the saltwater interface in its coastal aquifers in 2009, with updated maps every 5 years (2014 and 2019 to date). Given the observed effects of sea level rise, this monitoring and mapping program is an essential part of the SFWMD's resiliency program.

The main objective of this mapping effort is to evaluate movement of the saltwater interface over 5-year intervals. The saltwater interface corresponds to a chloride concentration of 250 milligrams per liter (mg/L). Chloride concentrations must be less than 250 mg/L to meet the United States Environmental Protection Agency secondary drinking water standards (USEPA 2023). Water quality data are compiled from multiple sources, and chloride data from more than 1,000 wells were used to create the 2019 saltwater interface maps. The collected chloride data are used to map the extent of saltwater intrusion, examine changes that have occurred over the past 5 years, and possibly determine the causes of those changes. Because monitor wells included in this mapping effort are selected based on their location and depth, improvements to the monitoring program as well as spatial data gaps are assessed with each 5-year update. This is an ongoing data collection and mapping project that may be refined based on water supply planning, regulation, and groundwater modeling needs in the future.

Saltwater intrusion monitoring is an important component of water management, and mapping the movement of the saltwater interface provides vital information for water supply planning. For example, if coastal wellfields are overpumped, salt water can be drawn into wells, resulting in the need to shut down operations, relocate wellfields, or look for alternative water supply (AWS) sources. The SFWMD Water Use Bureau uses the saltwater interface maps when evaluating applications for water use permits. Projects located in vulnerable zones are required to implement a saltwater monitoring program and periodically report chloride concentrations from wells to the SFWMD. Saltwater intrusion is considered harmful when it occurs above and beyond seasonal fluctuations (Shaw and Zamorano 2020).

Figures D-14 to **D-17** show portions of the saltwater interface mapping in Palm Beach and Broward counties and a time series plot for one of the monitor wells as identified by a specific identification number used to create those lines. The 2019 saltwater interface maps to accompany **Figures D-14** to **D-17** for Palm Beach and Broward counties are available on the SFWMD's webpage https://www.sfwmd.gov/documents-by-tag/saltwaterinterface.

Palm Beach County – Surficial Aquifer System

There were 305 wells used in the Palm Beach County saltwater interface map for the SAS in 2019. There has been no apparent landward movement of the saltwater interface in Palm Beach County. Due to the clustering of monitor wells in certain areas, the Palm Beach County map provides insets to enlarge the scale for closer observation of the 250 mg/L isochlor. Around the City of Lake Worth Beach and the City of Lantana there is an area of seaward migration of the saltwater interface as shown in Inset A (**Figure D-14a**). This also is evident in the time-series plot representing USGS monitor well PB-1717 as shown in Map ID 167 (**Figure D-14b**). These improvements (seaward movements) to the saltwater interface may be due to the shifting of pumpage among certain wells within a wellfield or the reduction of pumpage from SAS wells in favor of FAS wells.

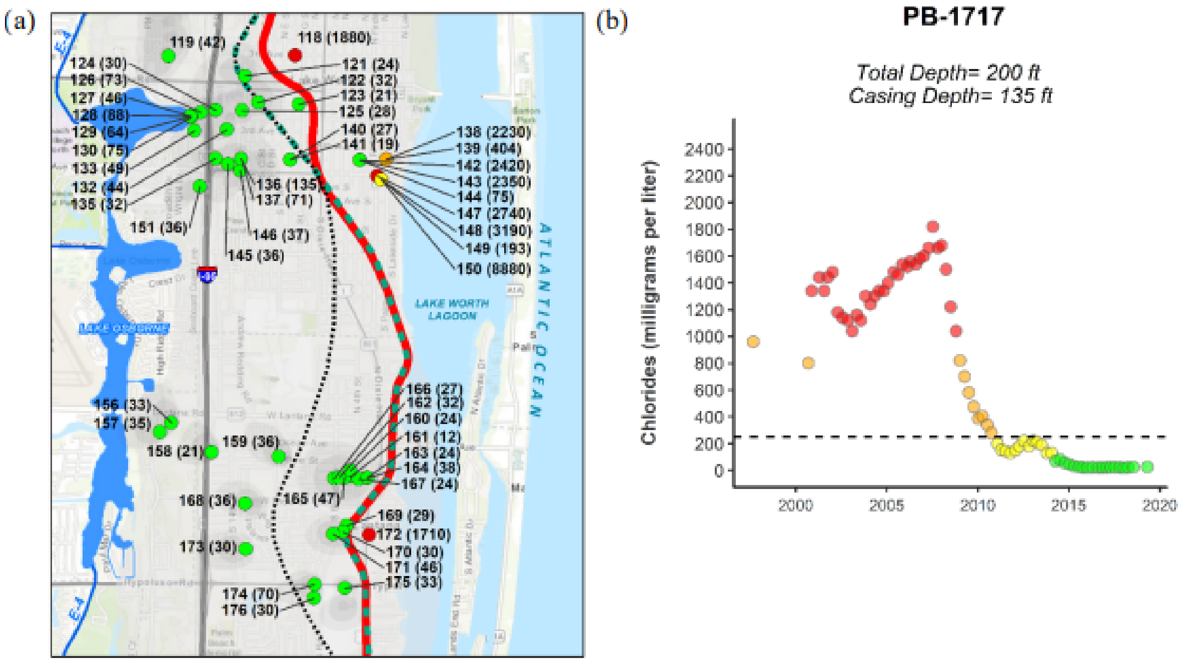


Figure D-14. (a) Evidence of eastward saltwater migration around Lake Worth Beach and Lantana (Inset A); (b) Time-series plot for monitor well PB-1717 (Map ID 167), showing a decline in chloride concentrations.

Broward County – Surficial Aquifer System

There were 126 wells used in the Broward County saltwater interface map for the SAS in 2019. Broward County had some significant landward movement of the saltwater interface compared to the 2014 and 2009 maps. This is evident in **Figure D-15a** where the three isochlors are progressively moving west in Pompano Beach. In some cases, there is evidence of saltwater encroachment in the time-series plot for a single monitor well. For example, in **Figure D-15b** representing USGS monitor well G-2896 (Map ID 48), the chloride concentration was approximately 750 mg/L in 2009, approximately 2,000 mg/L in 2014, and approximately 4,000 mg/L in 2019. These data represent the movement of the saltwater interface through a monitor well as the wedge of salt water moves inland.

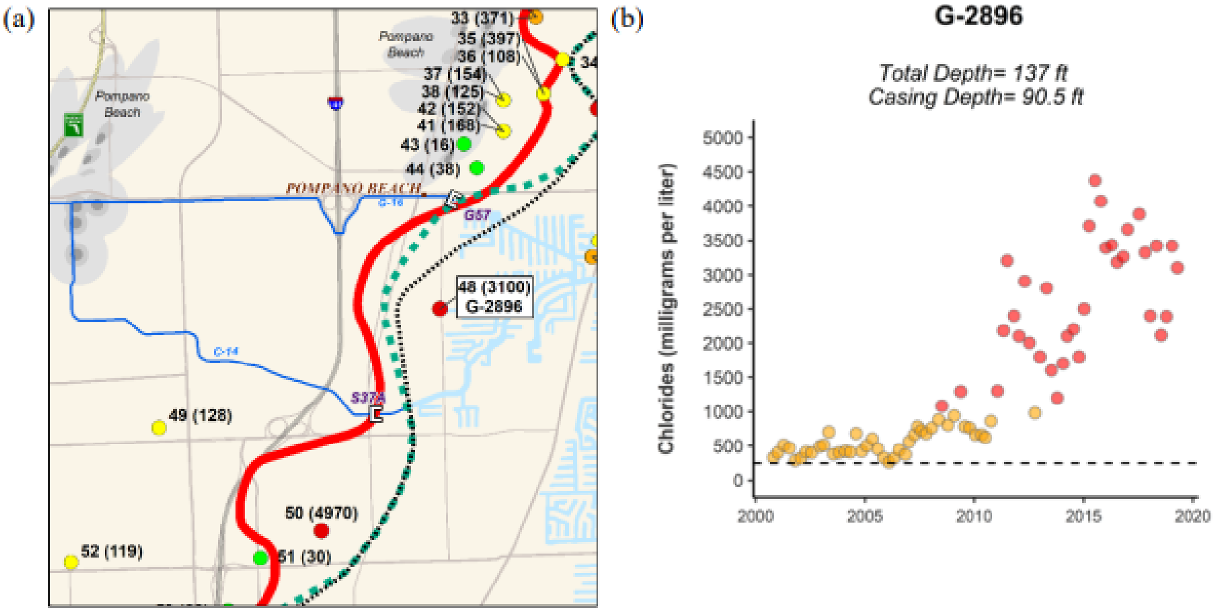


Figure D-15. (a) Evidence of westward saltwater migration in Pompano Beach; (b) Time-series plot showing the saltwater interface passing through monitor well G-2896 (Map ID 48).

In southern Broward County, most of the Dania Beach wellfield had to be taken out of service as the saltwater interface moved into and beyond the wellfield. **Figure D-16a** shows chloride concentrations in several wells (Map IDs 77, 108, 112, 116, 117, and 121) exceed 2,000 mg/L. Farther south, the Hallandale Beach wellfield is another impacted area where westward migration of the saltwater interface is observed (**Figure D-16a**). The time-series plot (**Figure D-16b**) shows monitor well G-2478 (Map ID 108) was fresh prior to 2002, but as the saltwater interface moved westward, chloride concentrations increased to approximately 1,000 mg/L in 2009, approximately 2,500 mg/L in 2014, and is greater than 6,000 mg/L in 2019. This also is an example of where a worst-case scenario was chosen as nearby Map ID 109 has a much lower chloride concentration (55 mg/L). The two monitor wells are close, and the green dot (Map ID 109) is beneath the red dot (Map ID 108). However, Map ID 109 is only 80 feet deep, while Map ID 108 is 200 feet deep, and the higher concentration was used to interpret the location of the saltwater interface.

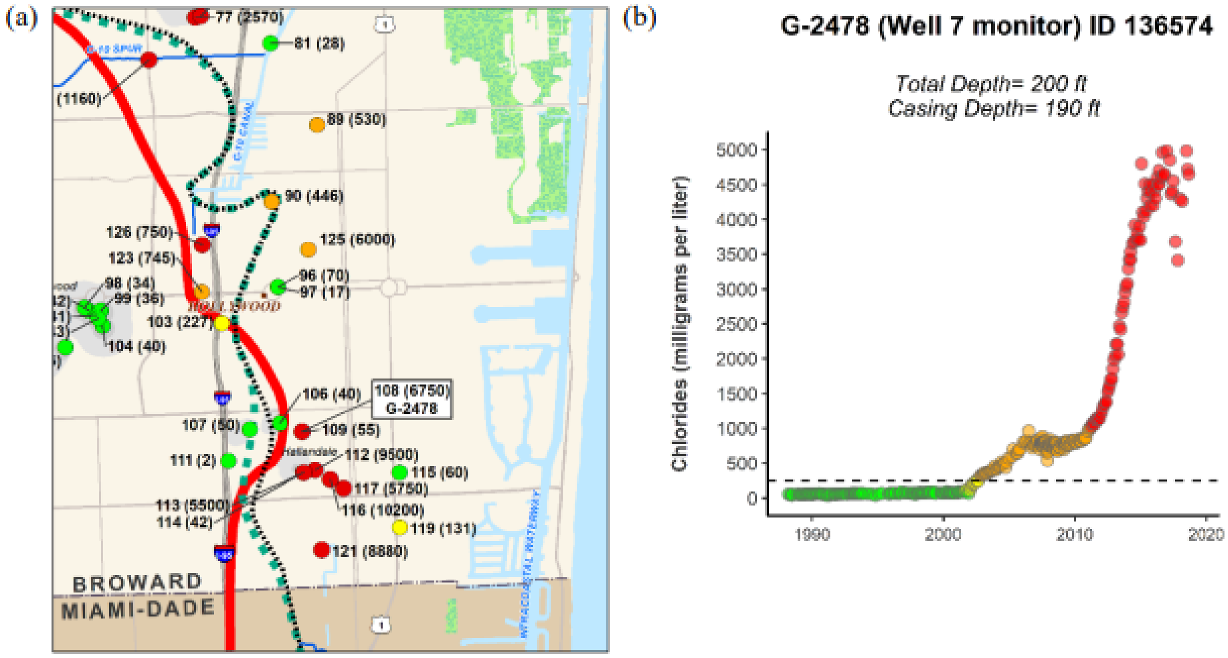


Figure D-16. (a) Westward movement of the saltwater interface impacting Dania Beach and Hallandale wellfields; (b) Time-series plot showing the saltwater interface passing through monitor well G-2478 (Map ID 108).

There is a concerning situation near the Peele-Dixie wellfield in Fort Lauderdale where the 2009 and 2014 maps (**Figure D-17**) showed the 250 mg/L isochlor south of the wellfield. However, in 2019, the monitor wells used to determine potential saltwater intrusion in the wellfield were examined more closely. New data points (Map IDs 66 and 122) as shown in **Figure D-17** and an additional monitor well sampled outside of the March to May time frame showed significant encroachment in the vicinity of the wellfield. The City of Fort Lauderdale plans on installing replacement wells; however, careful monitoring is required.

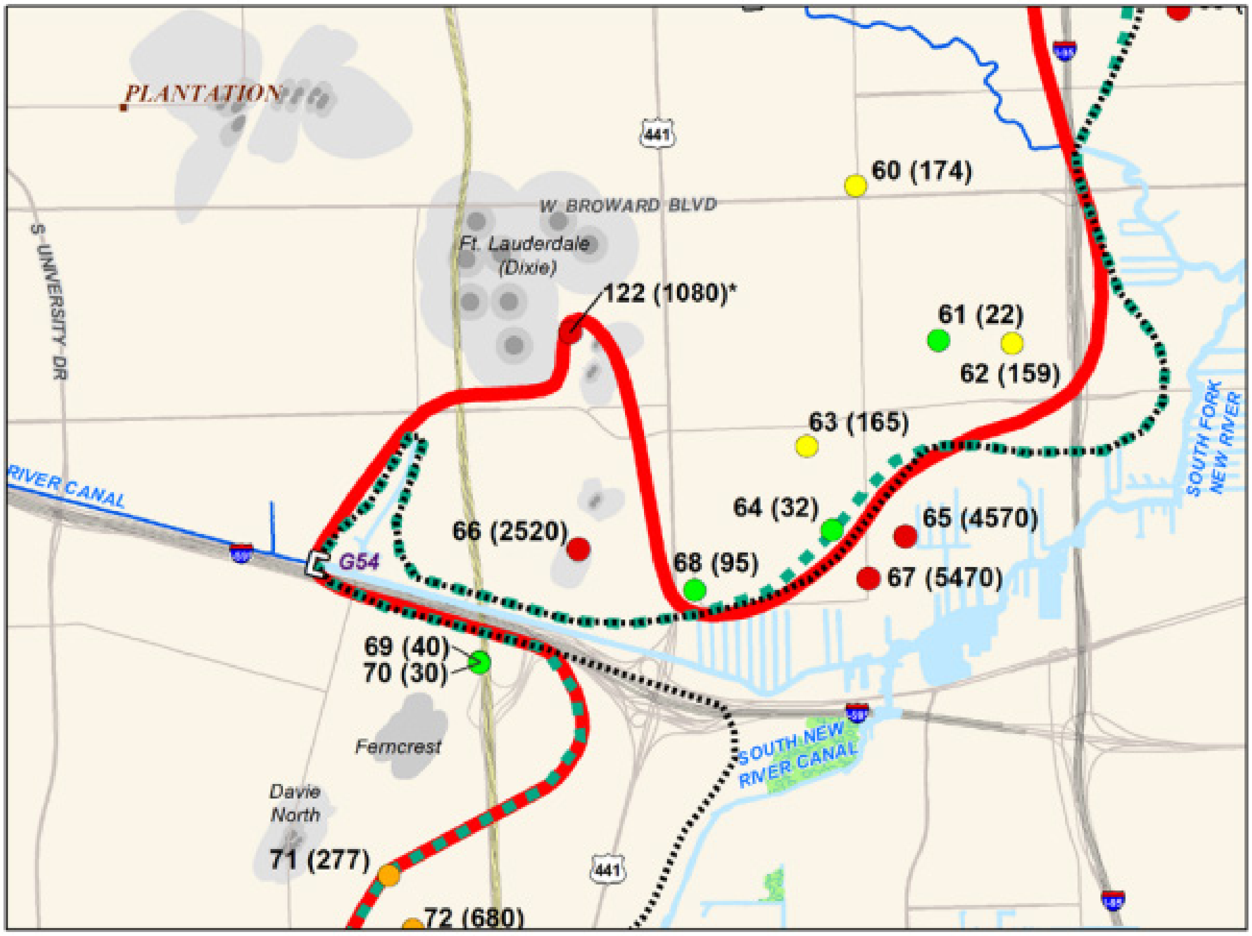
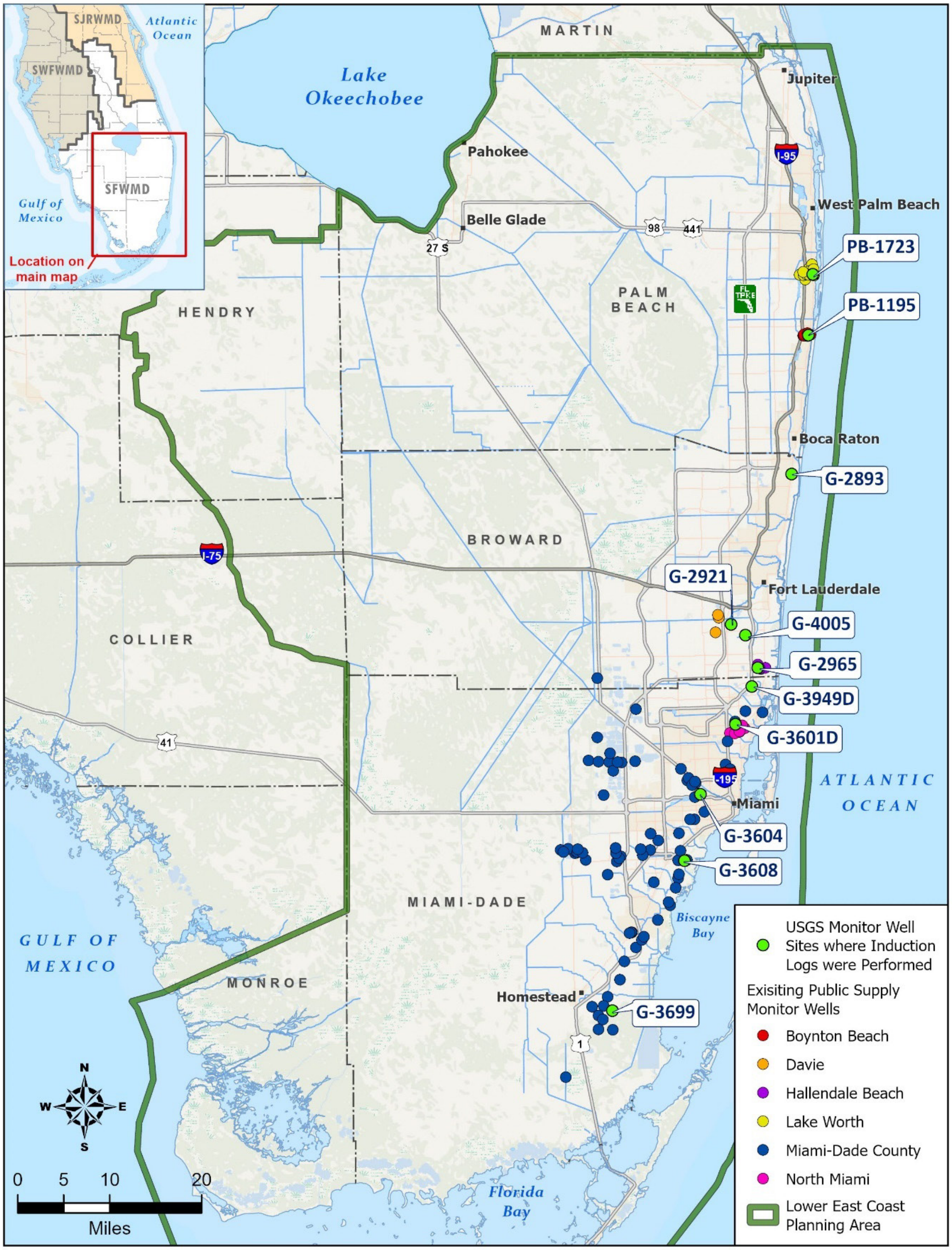


Figure D-17. Changes in the saltwater interface position around the Fort Lauderdale Peele-Dixie wellfield.

Electromagnetic Induction Logs

Electromagnetic induction logs record the electrical conductivity or resistivity of the rocks and water surrounding a well borehole and provide useful information on the location of the saltwater interface. Electrical conductivity and resistivity are affected by the porosity, permeability, and clay content of the rocks and by the total dissolved solids concentration of the water within the rocks. Induction logs for some key monitor wells located in the LEC Planning Area are shown in **Figure D-18** and described below.



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_WUPandMON.aprx Layout Name: 20230803_USGSMonWell_InductionLogs

Figure D-18. United States Geological Survey induction log well locations.

The induction logs for monitor well PB-1723 (**Figure D-19**), located at the Lake Worth Beach PS wellfield, show the saltwater interface has retreated since 2007 in shallow zones due to changes in SAS wellfield operations, abandonment of eastern wells, and operation of its FAS wellfield. However, in 2016 and continuing in 2022, the saltwater interface near the base of the aquifer has moved inland. The Lake Worth Beach PS wells in the SAS range from 50 to 300 feet below land surface (bls).

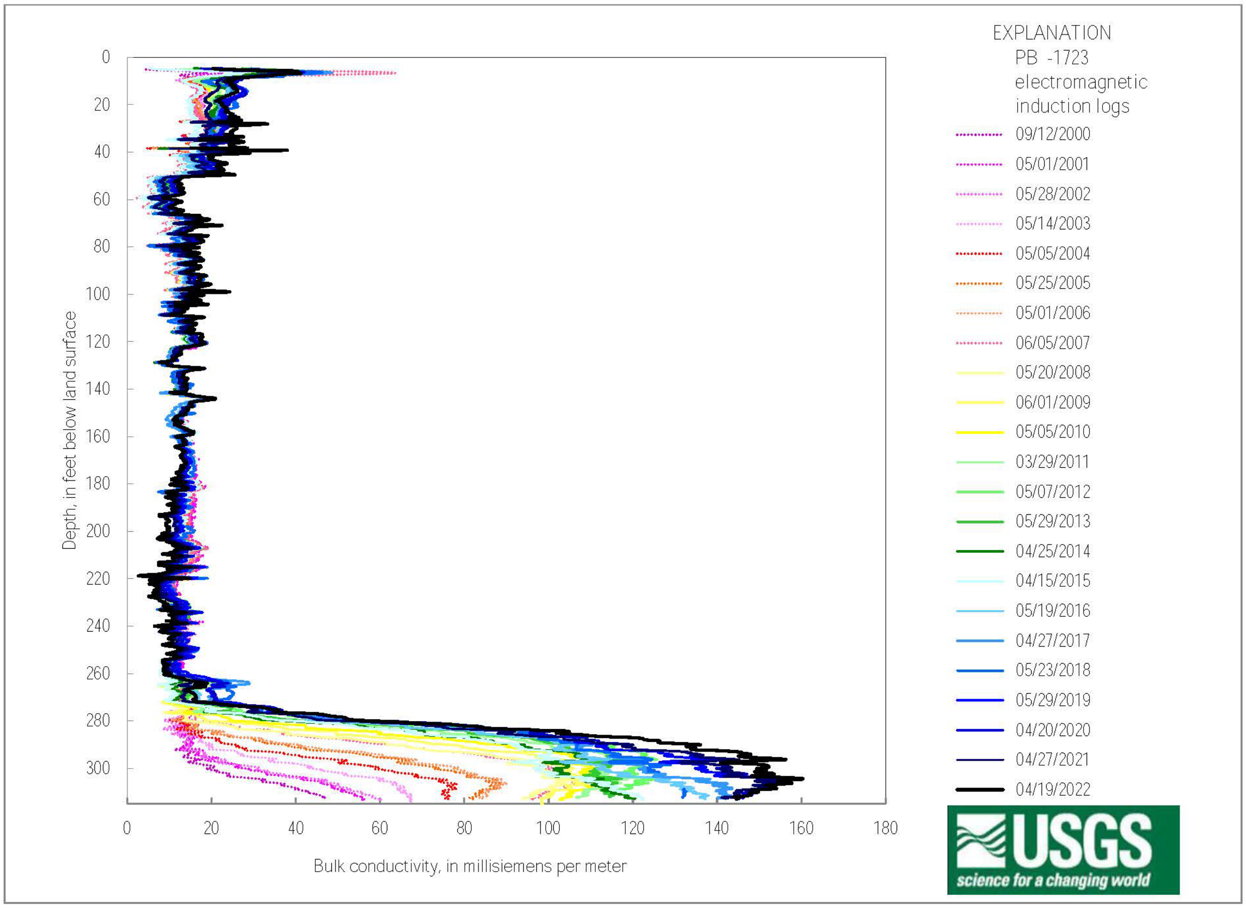


Figure D-19. Induction logs for monitor well PB-1723 (318 feet deep) in Lake Worth Beach, eastern Palm Beach County (USGS 2023).

The induction logs for monitor well PB-1195 (**Figure D-20**), located between U.S. Highway 1 and Interstate 95 in Boynton Beach, show a decrease in salinity, especially between 110 and 150 feet bls, from 2000 to 2011, with slight increases from 2012 to 2017. Changes in eastern Boynton Beach PS wellfield operations, addition of an aquifer storage and recovery (ASR) well, and use of reclaimed water reduced demand on the eastern wellfield and improved salinities in groundwater shallower than approximately 200 feet bls. Some improvement is also evident greater than 200 feet bls in 2022.

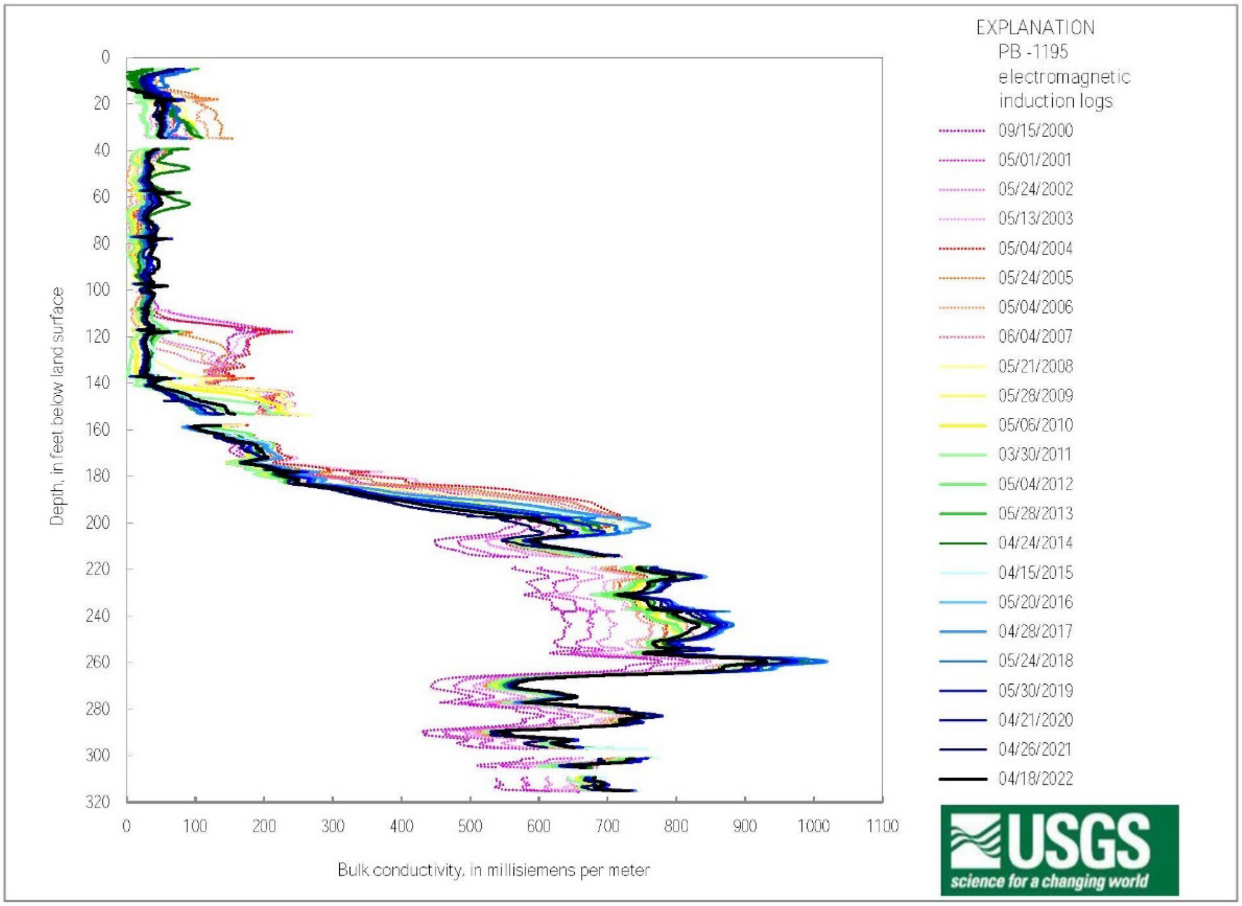


Figure D-20. Induction logs for monitor well PB-1195 (325 feet deep) in Boynton Beach, southeastern Palm Beach County (USGS 2023).

The induction logs for monitor well G-2893 (**Figure D-21**), located on the eastern side of U.S. Highway 1 between Deerfield Beach and Hillsboro Beach, indicate relatively stable salinity from 10 to 40 feet bls but increasing salinity below 120 feet bls, with more rapid increases below 160 feet bls. However, in USGS well G-2693, located west of U.S. Highway 1 and southwest of well G-2893, chloride concentrations have remained relatively stable below 250 mg/L, indicating the saltwater interface has not yet reached this location. These monitor wells are near the Broward County Water and Wastewater Services District 2A wellfield's easternmost wells, which are less than 1 mile west of U.S. Highway 1 and range from 120 to 175 feet bls.

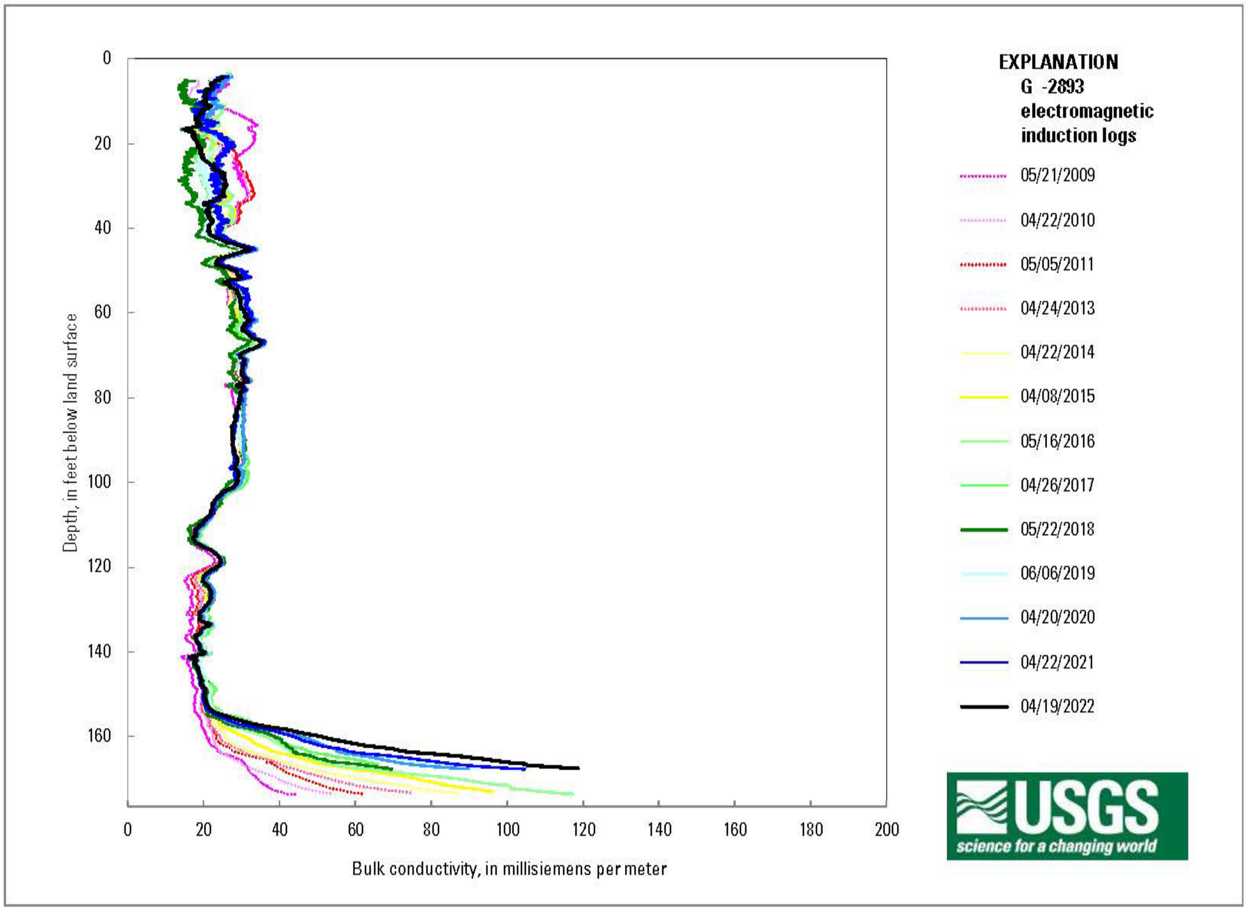


Figure D-21. Induction logs for monitor well G-2893 (177 feet deep) near Hillsboro Beach, northeastern Broward County (USGS 2023).

The induction logs for monitor well G-4005 (**Figure D-22**) near Davie indicate the saltwater interface has been steadily moving inland between 65 and 130 feet bls, with a zone of higher salinity water at approximately 130 feet bls. The Davie PS wells are approximately 4 miles west of well G-4005 and range from 100 to 150 feet bls. The saltwater interface is approaching the Davie North and South wellfields, especially in the more transmissive zone around 115 feet bls. Water quality is monitored by the Town of Davie at four locations between the saltwater interface and the PS wellfields.

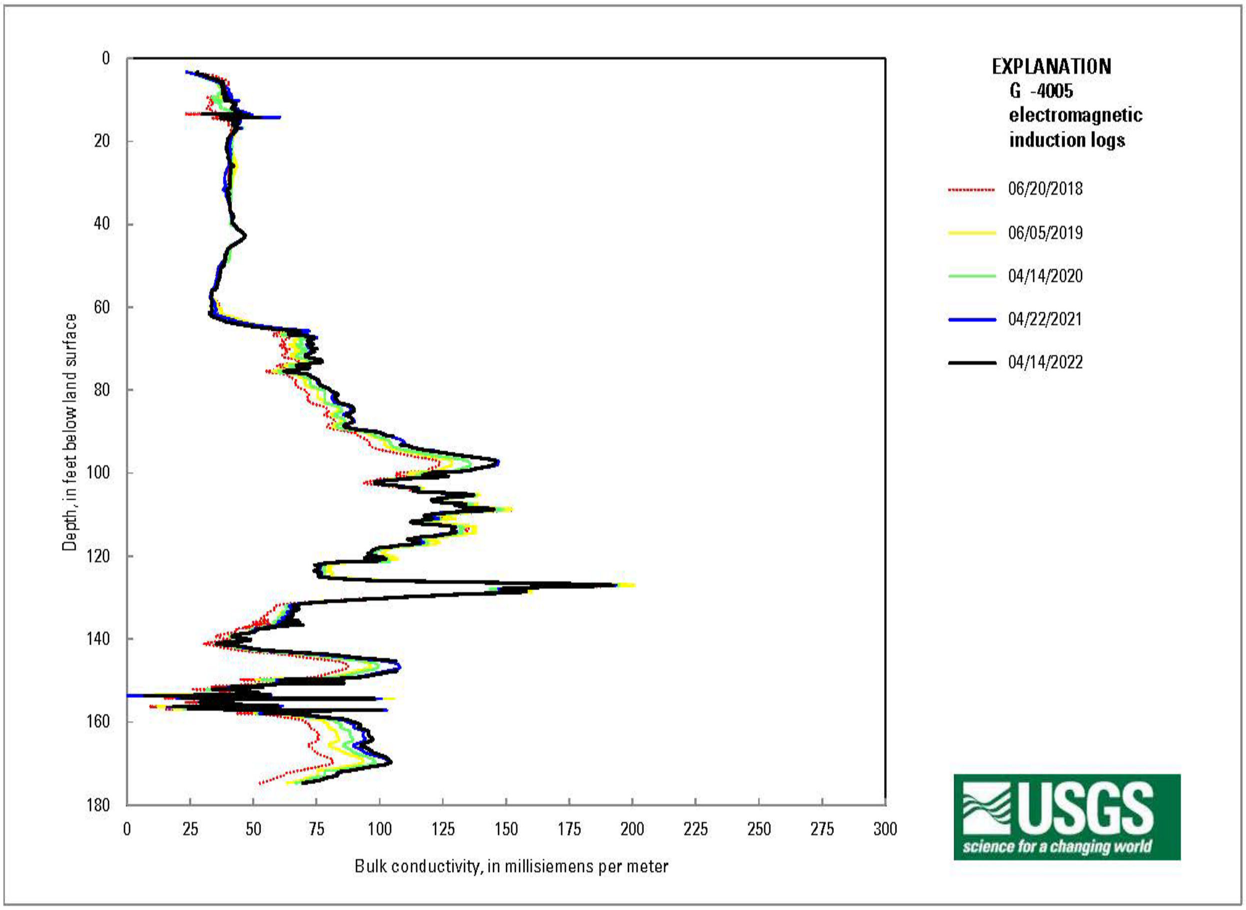


Figure D-22. Induction logs for monitor well G-4005 (178 feet deep) near Davie, southeastern Broward County (USGS 2023).

The induction logs for monitor well G-3949D suggest the saltwater interface is steadily moving inland below 200 feet bls (**Figure D-23**). The Hallandale Beach PS wells are 66 to 107 feet bls where water quality has remained stable. The city's wells are operated to minimize upward movement of the brackish water below.

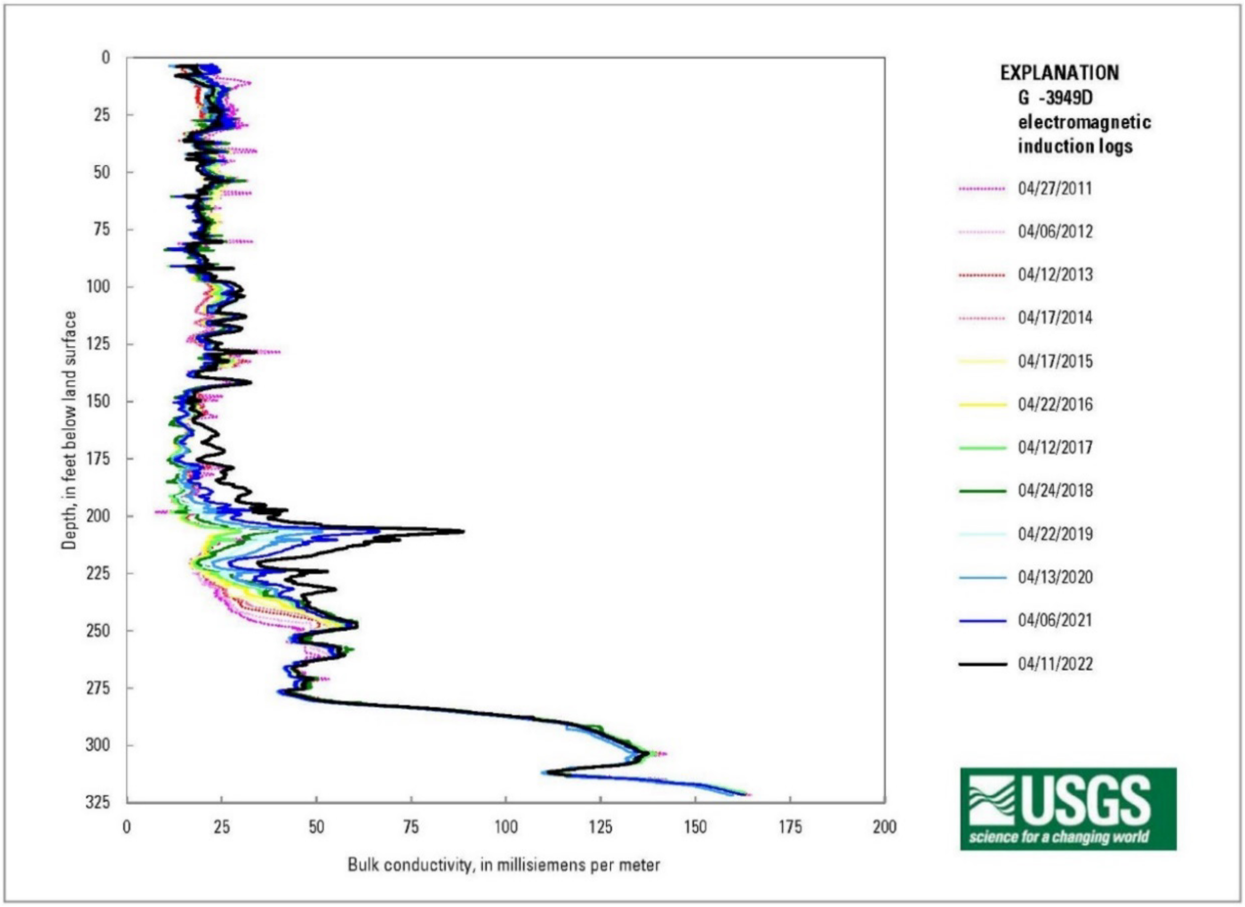


Figure D-23. Induction logs for monitor well G-3949D (325 feet deep) in Hallandale Beach, southeastern Broward County (USGS 2023).

The induction logs for monitor well G-3601D indicate water quality between 50 and 100 feet bls improved from 2013 to 2022, while salinity increases were observed in deeper zones in 2021 to 2022. (**Figure D-24**). The North Miami PS wellfield is west of this monitor well and has production wells from 45 to 65 feet bls and from 100 to 125 feet bls. SAS wellfield withdrawals have been capped since 2002 due to salinity concerns.

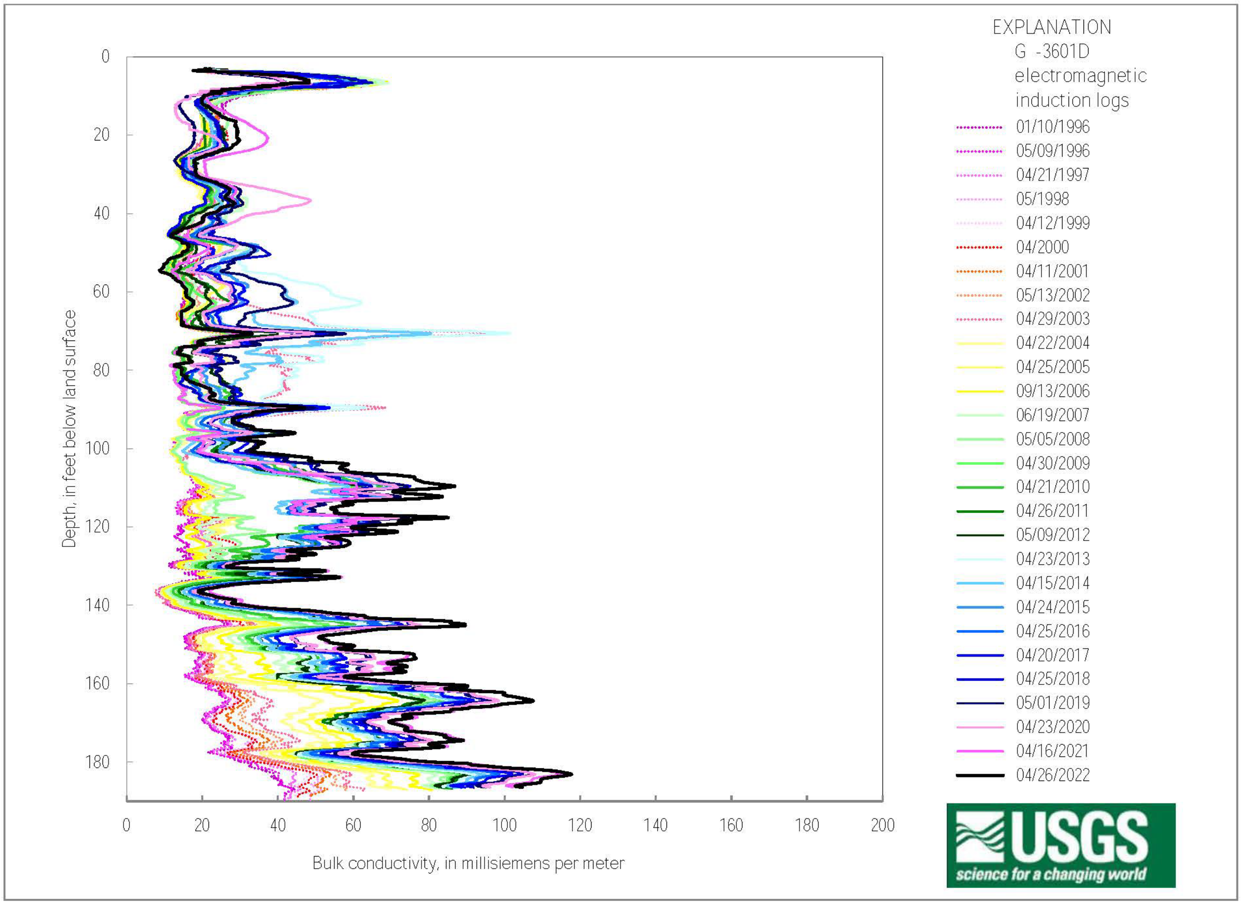


Figure D-24. Induction logs for monitor well G-3601D (190 feet deep) in North Miami, northeastern Miami-Dade County (USGS 2023).

The induction logs for monitor well G-3604, located downstream of the S-26 salinity control structure, indicate that the salinity at this location has steadily increased below 95 feet bls; however, in 2010, chloride concentrations began to increase at shallower depths. By 2021, inland movement of the saltwater interface was observed at approximately 85 feet bls (**Figure D-25**).

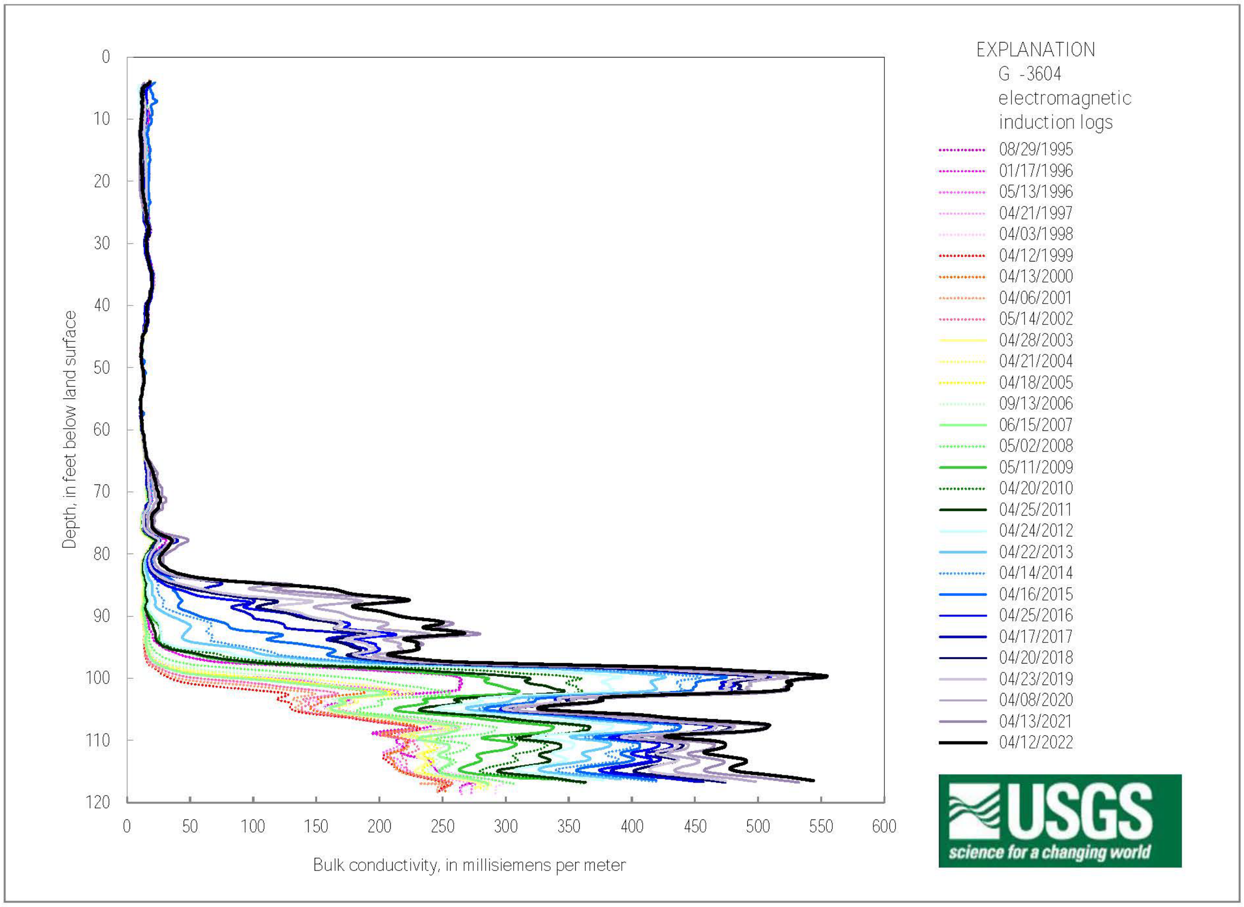


Figure D-25. Induction logs for monitor well G-3604 (120 feet deep) near Miami Springs, east-central Miami-Dade County (USGS 2023).

The induction logs for monitor well G-3608, east of the Miami-Dade Water and Sewer Department (MDWASD) Alexander Orr and Snapper Creek wellfields, indicate that water quality has fluctuated over time. Water quality has improved since 2005, and there is no indication of the saltwater interface at this location (**Figure D-26**). PS wells in these wellfields range from 40 to 100 feet bls.

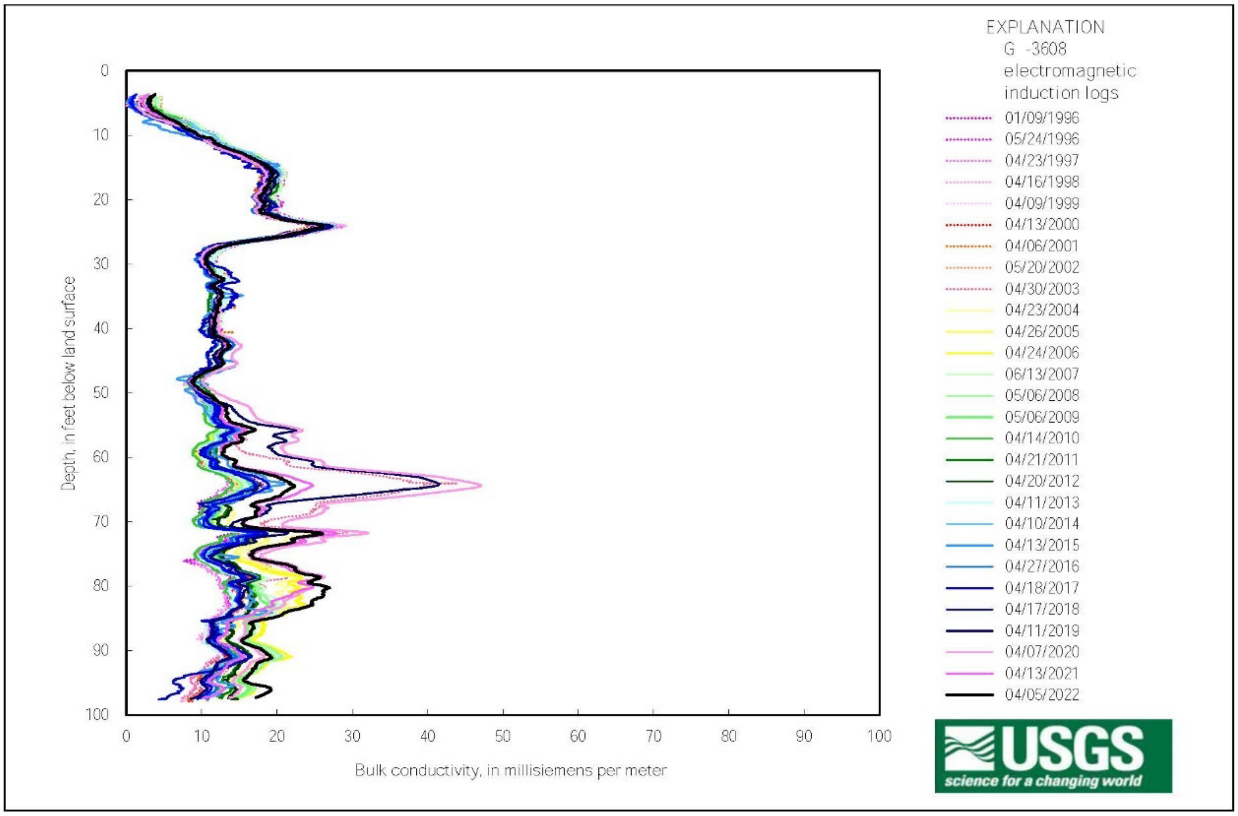


Figure D-26. Induction logs for monitor well G-3608 (100 feet deep) in South Miami, central Miami-Dade County (USGS 2023).

The induction logs for monitor well G-3699, located east of the MDWASD Newton wellfield (which is the closest of the southern Miami-Dade wellfields to the saltwater interface), illustrate increasing salinity below 60 feet bls (**Figure D-27**). The Newton PS wells withdraw water from 50 to 65 feet bls.

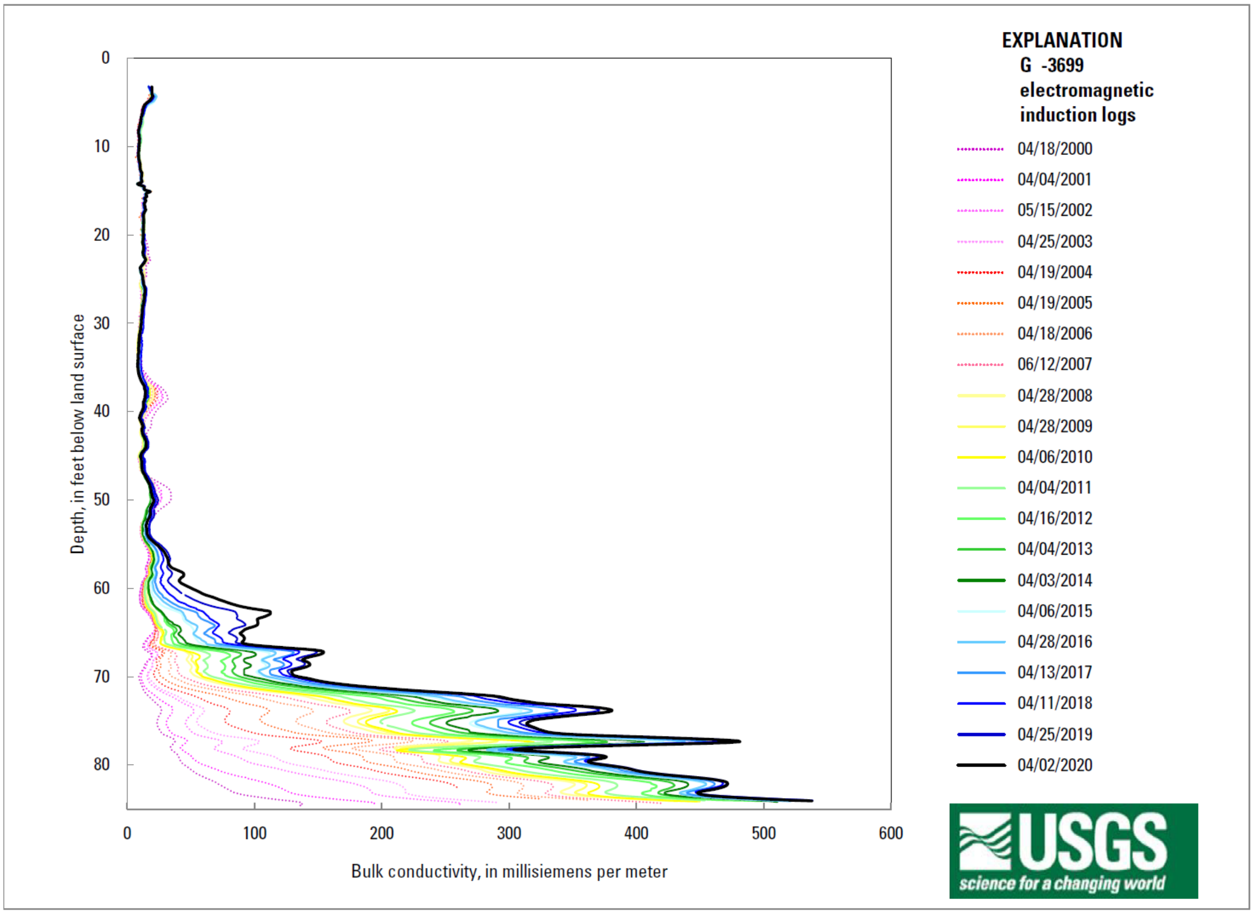


Figure D-27. Induction logs for monitor well G-3699 (88 feet deep) near Homestead, southern Miami-Dade County (USGS 2023).

Additional monitoring data and long-term analyses on saltwater intrusion and chloride levels are available at the SFWMD's Resilience Metrics Hub (SFWMD 2023).

Utilities Vulnerable to Dry Conditions

In 2007, the SFWMD identified PS utilities with water supply sources near the saltwater interface that could be vulnerable to saltwater intrusion or reduced availability during severe drought conditions (SFWMD 2007). The purpose of SFWMD's evaluation was to increase awareness of the potential for saltwater intrusion in the SAS due to a lowered water table, reduced precipitation, and resulting diminished aquifer recharge. The SFWMD identified PS utilities' existing water supply sources, including AWS sources; planned projects; and initiatives to diversify water supply sources, reduce vulnerability, and ensure a more reliable water supply during future dry periods. These considerations are for water supply planning purposes only and do not constitute any regulatory determination or agency action regarding the utilities noted herein.

Considerations used in this updated evaluation include whether the utility had wellfields near a saltwater source (e.g., ocean, relict seawater, hypersaline plume), the availability of other water sources (e.g., inland wellfield, AWS sources, interconnects with other utilities), and the ability of the alternatives to help meet demands. The following utilities, listed north to south, in the LEC Planning Area have wellfields near the saltwater interface and do not have a western wellfield, have not developed AWS sources, and/or have limited ability during water shortages to meet user needs through interconnects with other utilities:

- Town of Hillsboro Beach
- City of Dania Beach
- City of Hallandale Beach
- MDWASD – South Dade wellfields
- City of Homestead
- Florida City Water and Sewer Department

The following utilities, listed north to south, have an SAS wellfield near the saltwater interface but also have access to other water sources (e.g., inland wellfield, AWS sources, interconnects with other utilities) during water shortages:

- Village of Tequesta
- Town of Jupiter
- City of Riviera Beach
- City of Lake Worth Beach
- Town of Lantana
- City of Boynton Beach
- City of Delray Beach
- City of Deerfield Beach
- Broward County Water and Wastewater Services District 2A
- City of Pompano Beach
- City of Fort Lauderdale
- Town of Davie
- City of Hollywood
- City of North Miami Beach
- City of North Miami
- MDWASD – Miami Springs and Hialeah Preston wellfields
- Florida Keys Aqueduct Authority

Wellfields along the coast are particularly susceptible to saltwater intrusion during water shortages. Utilities can respond to the threat of saltwater intrusion by

- Shifting pumpage to inland wells to reduce demand on coastal wells
- Reducing withdrawals from the SAS by using the FAS as an AWS source
- Employing additional water conservation methods to reduce overall water demand
- Expanding water reuse programs to reduce potable and self-supplied SAS withdrawals for irrigation
- Maximizing local stormwater canal operations to provide additional recharge for stability to maintain the freshwater-saltwater interface

PS Historical Salinity Trends from FAS Production Wells

Historical FAS water quality data were examined for trends in select PS utility wellfields with multiple years of data within the LEC Planning Area. The following subsections summarize the chloride concentration data trends from nine FAS wellfields during their respective periods of record.

Village of Tequesta (50-00046-W)

The Village of Tequesta has obtained a portion of its water supply from four FAS wells in the Avon Park permeable zone (APPZ) since 2000. The wells are completed to approximately 1,190 feet bls, with open holes to 1,700 feet bls. Since 2004, the chloride concentration of water produced from the wells has averaged approximately 2,400 mg/L (**Figure D-28**). A subtle increasing trend in chloride concentration began in 2009, and well 2R appears to have a slightly higher chloride concentration than well 3R.

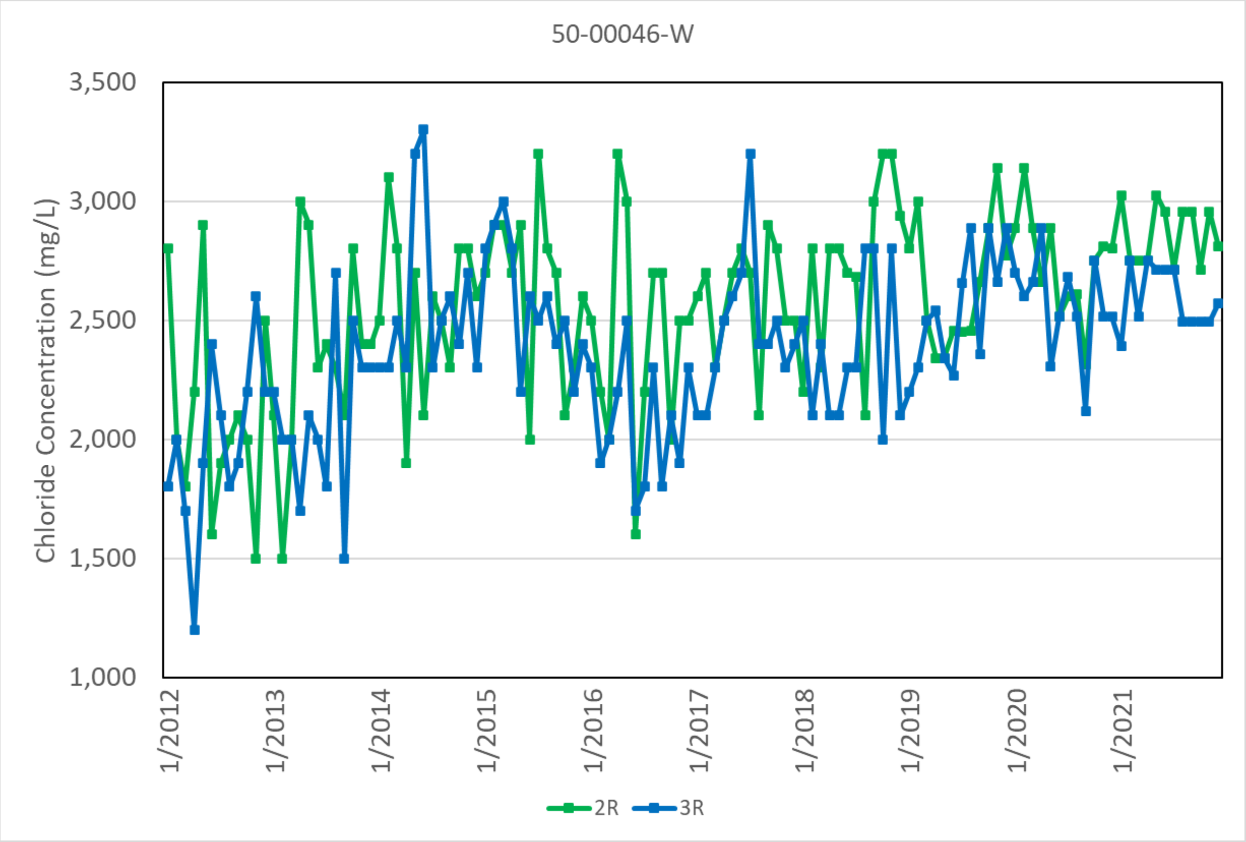


Figure D-28. Chloride concentrations in Village of Tequesta Floridan aquifer system (Avon Park permeable zone) wells 2R and 3R.

Town of Jupiter (50-00010-W)

The Town of Jupiter has relied on the FAS for a portion of its water supply since 1989. The town operates two FAS well locations, the “eastern” and “western” wellfields, with a combined total of 13 wells. The eastern wellfield wells are completed from approximately 1,000 to 1,500 feet bls, obtaining approximately 20% of their water from the Upper Floridan aquifer (UFA) and 80% from the APPZ, and they produce higher salinity water. The 11 active wells typically are pumped at rates of approximately 1,000 to 2,000 gallons per minute (gpm). Wells in the western wellfield are completed between 1,400 to 1,600 feet bls, withdrawing from the APPZ only. A hydrogeologic cross section depicting the well depth relationship between the eastern and western wellfields is shown in **Figure D-29**.

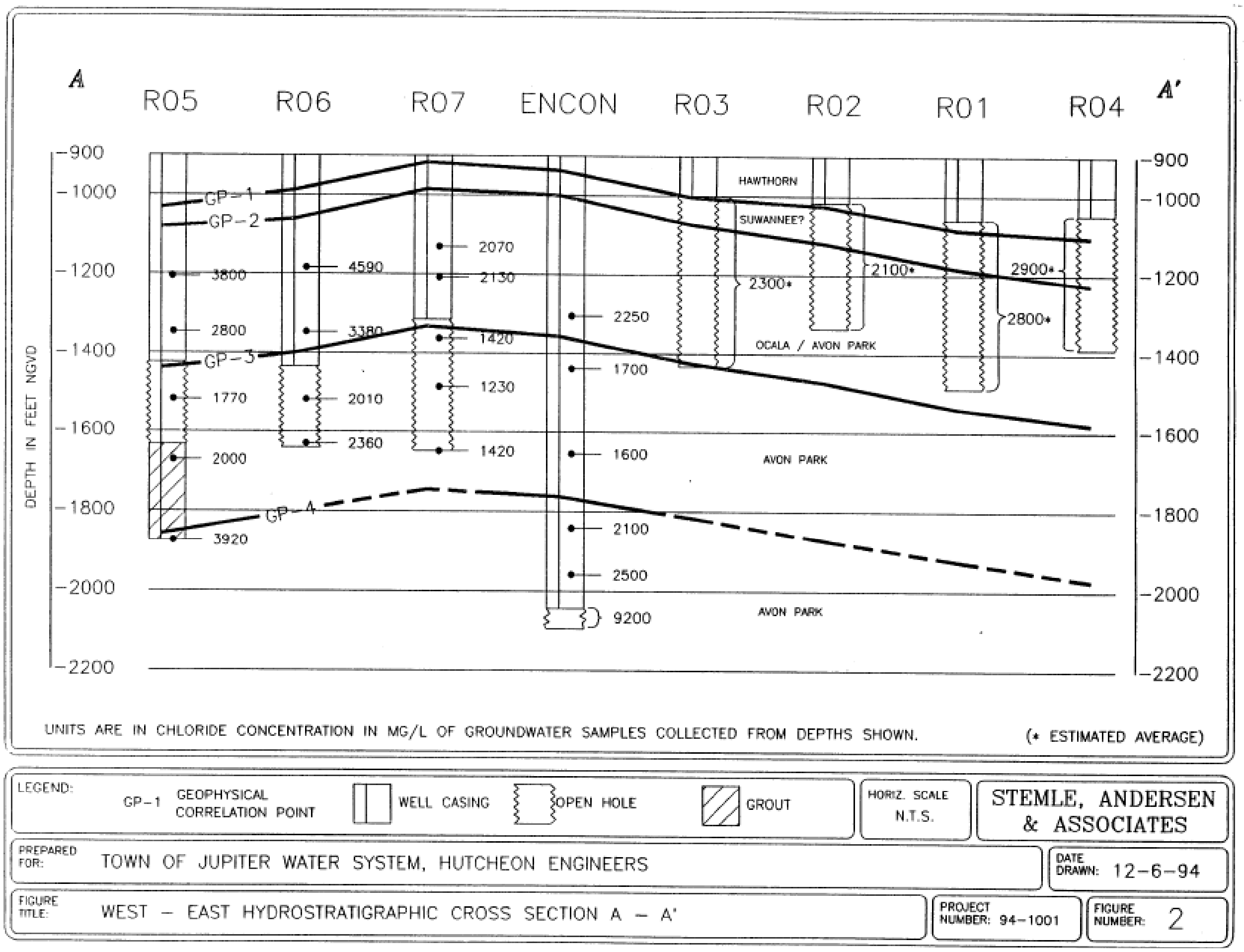


Figure D-29. Hydrogeologic cross section west to east for Town of Jupiter Floridan aquifer system wells RO1 to RO7 (From Stemle, Andersen, & Associates 1994).
Note: RO1 was abandoned in 2007 to construct the 14.5 mgd nanofiltration plant.

During the first several years of water production in the eastern and western wellfields, the chloride concentration from the wells averaged approximately 3,000 mg/L (**Figure D-30**). In 2010, a second generation of wells was constructed to expand the FAS production capacity. Since then, the chloride concentration has shown greater variability among wells, and has increased to between 2,000 and 4,300 mg/L. Chloride concentrations from the wells appear very stable, especially over the last 5 years.

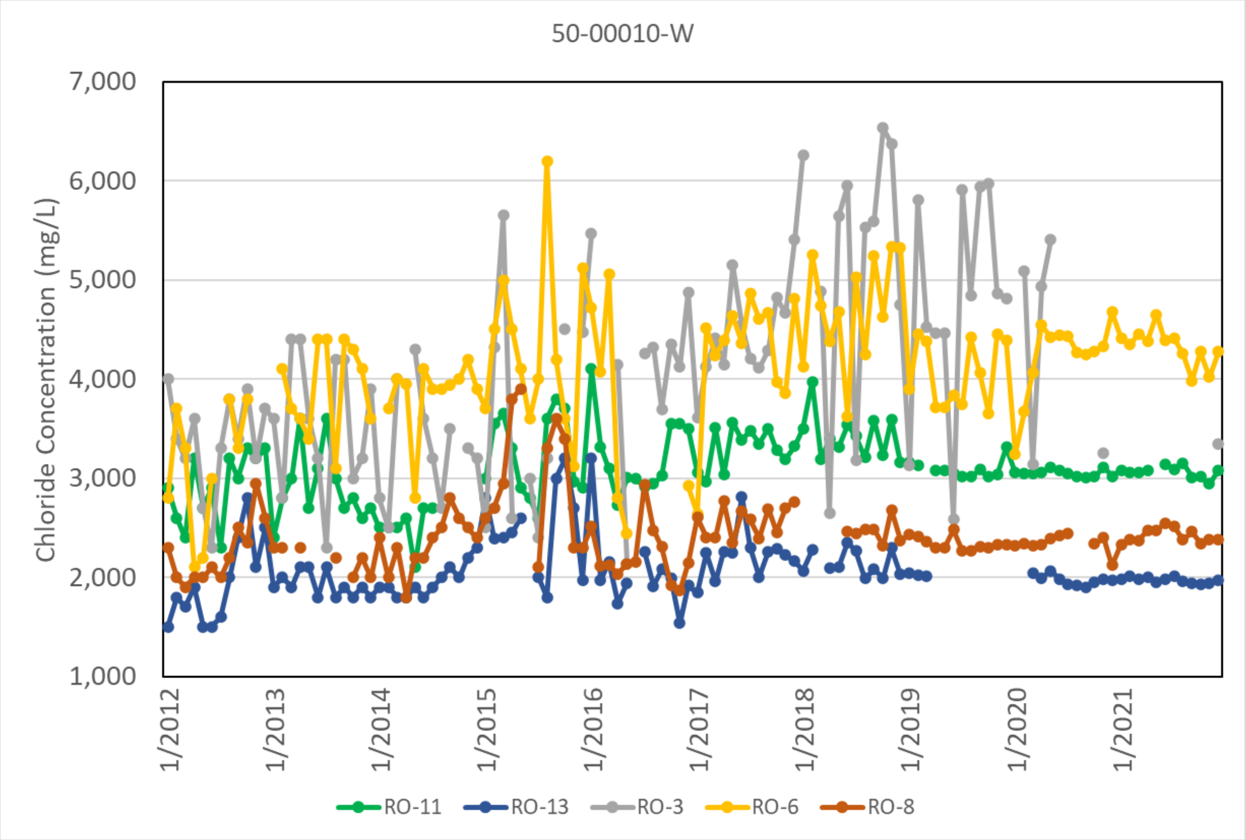


Figure D-30. Chloride concentrations in Town of Jupiter Floridan aquifer system wells RO-6 and RO-8 in the Avon Park permeable zone and wells RO-3, RO-11, and RO-13 in both the Upper Floridan aquifer and Avon Park permeable zone.

City of Lake Worth Beach (50-00234-W)

The City of Lake Worth Beach has used three FAS wells to supplement its water supply since 2011. The wells are completed in the APPZ, with open hole intervals from 1,200 to 1,500 feet bls. The wells are pumped at rates of approximately 1,500 gpm. Since the start of production, chloride concentrations in water from the three wells have remained between 1,500 and 3,000 mg/L (**Figure D-31**). Over the last 5 years, chloride concentrations have shown some slight increases that appear to be related to changes in pumping rates, but overall chloride concentrations have remained below 3,000 mg/L.

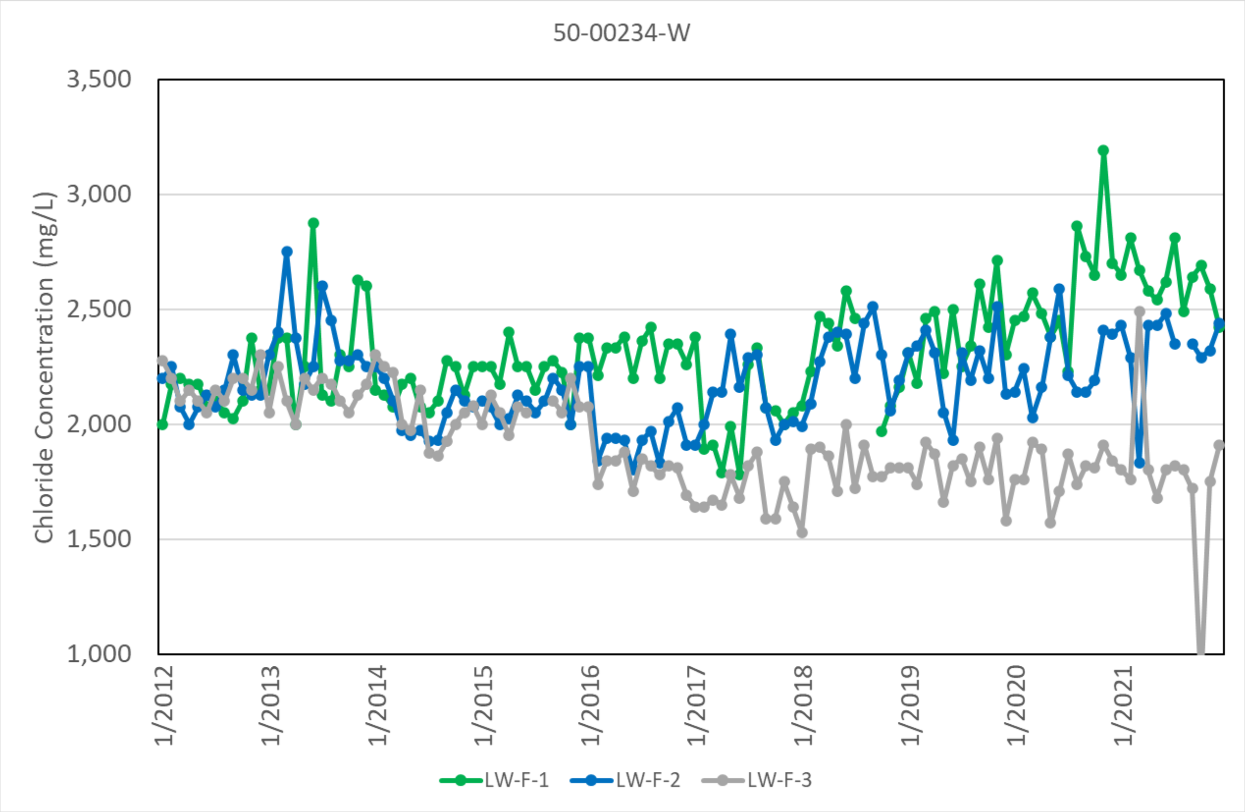


Figure D-31. Chloride concentrations in City of Lake Worth Beach Floridan aquifer system (Avon Park permeable zone) wells LW-F-1, LW-F-2, and LW-F-3.

Town of Manalapan (50-00506-W)

The Town of Manalapan has used two FAS wells for water supply since 2012. One well is completed in the UFA to approximately 1,035 feet bls, with an open hole to 1,200 feet bls, and the other well is completed in the APPZ and open from 1,210 to 1,500 feet bls. The wells are pumped at rates of approximately 1,500 gpm. Since the start of production, the chloride concentration in water from one representative well has been between 2,000 and 3,000 mg/L (**Figure D-32**). Since 2015, chloride concentrations have stabilized between 2,000 and 2,500 mg/L, with a slight increase observed in 2021 that is now decreasing.

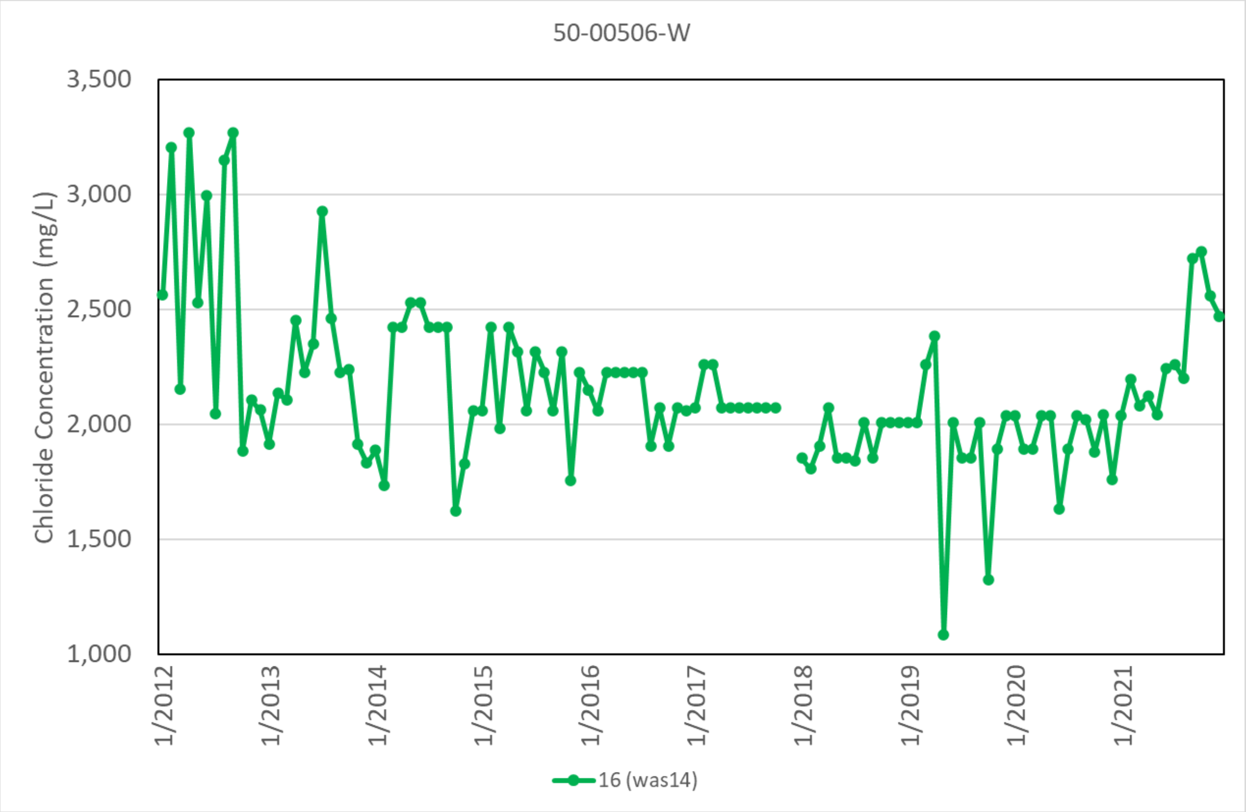


Figure D-32. Chloride concentrations in Town of Manalapan Floridan aquifer system (Avon Park permeable zone) well 16.

Glades Utility Authority, purchased by Palm Beach County Water Utilities Department in 2013, constructed a UFA wellfield in 2008. The wellfield originally consisted of seven wells completed to 1,150 feet bls, with open holes between 1,100 and 1,450 feet bls. In 2021, two wells were added, and the nine wells are pumped at rates of approximately 1,500 gpm per well. During the first few years of wellfield operation, chloride concentrations increased dramatically from 1,600 mg/L to almost 5,000 mg/L in wells TP-1 and PW-6 (**Figure D-33**). Four additional wells were constructed between 2011 and 2015 to lower individual well pumpage rates, thereby more evenly distributing aquifer stress and reducing the effects of interference between wells. Within 2 years, the chloride concentration in PW-6 decreased to 3,500 mg/L and has remained stable; however, the chloride concentration has continued to increase in TP-1, exceeding 6,000 mg/L. During construction of the remaining few wells, there were notable differences in the lithologies of the wells and highly variable vertical water quality stratification. Individual wells in this wellfield have shown a wide range of chloride concentrations, between 1,100 mg/L and 6,500 mg/L. Within this overall range, some wells have displayed gradually increasing trends, with a sharp increase recently observed in PW-10.

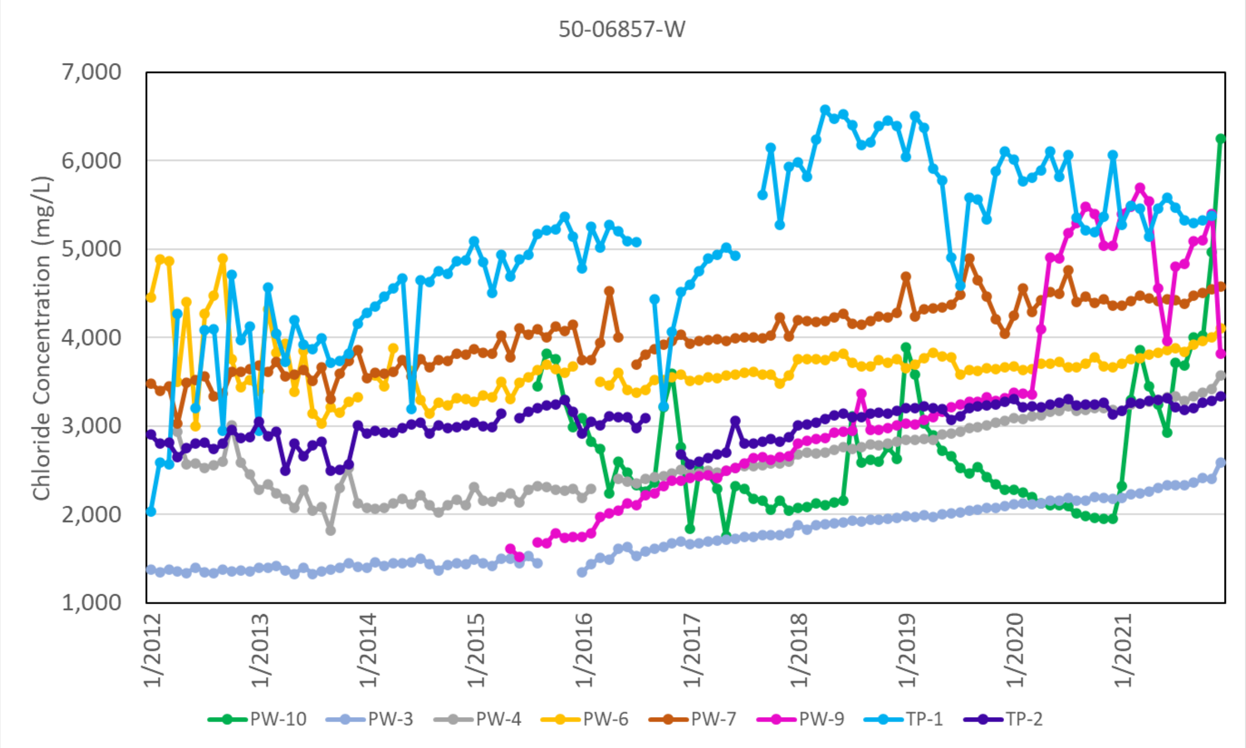


Figure D-33. Chloride concentrations in Palm Beach County Water Utilities Department – Western Region Floridan aquifer system (Upper Floridan aquifer) wells.

City of Sunrise (06-00120-W)

The City of Sunrise began using the FAS in 2011 with one UFA well (RO-1) at the Springtree wellfield. The well was completed to 1,110 feet bls, with an open hole to 1,270 feet bls. The well is pumped at a rate of approximately 1,400 gpm. The city has added three more FAS wells, two at the Sawgrass wellfield (SGF-1 and SGF-2) and one at the Melaleuca wellfield (MF-1). These wells were completed with open holes between 1,000 and 1,200 feet bls. The three wells have not been put in operation but are sampled regularly for water quality. Water sampled from MF-1, withdrawing from the UFA, has the highest chloride concentration (5,000 mg/L; **Figure D-34**). The two Sawgrass wells, withdrawing 60% from the UFA and 40% from the APPZ, have exhibited chloride concentrations between 2,000 and 4,000 mg/L. Well RO-1 was an ASR well, and the lower chloride concentrations from 2008 to 2014 reflect stored Biscayne aquifer water. Over time, that stored water has been removed, and the water quality currently reflects typical FAS chloride concentrations.

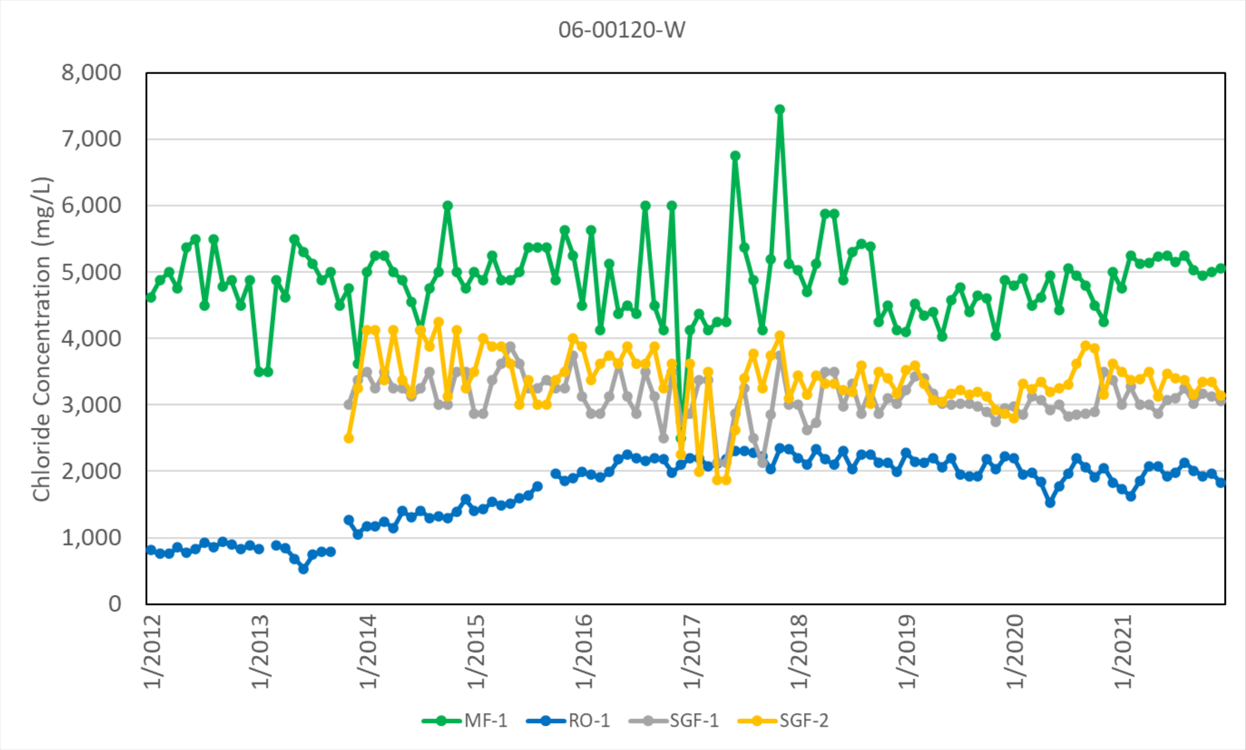


Figure D-34. Chloride concentrations in City of Sunrise Floridan aquifer system wells: MF-1 and RO-1 are completed in the Upper Floridan aquifer, while SGF-1 and SGF-2 are completed in the Upper Floridan aquifer/Avon Park permeable zone.

City of Hollywood (06-00038-W)

The City of Hollywood FAS wellfield has eight existing UFA wells completed to a depth of 926 feet bls with open holes to 1,300 feet bls. The first three wells came into production in 2007, and five wells were added between 2008 and 2010. The wells are pumped at rates of approximately 1,000 gpm. The water quality produced by four representative wells over the past 10 years is shown in **Figure D-35**. Generally, water quality has remained between 1,800 and 2,500 mg/L. The current average chloride concentration of water produced from the wells is approximately 2,200 mg/L.

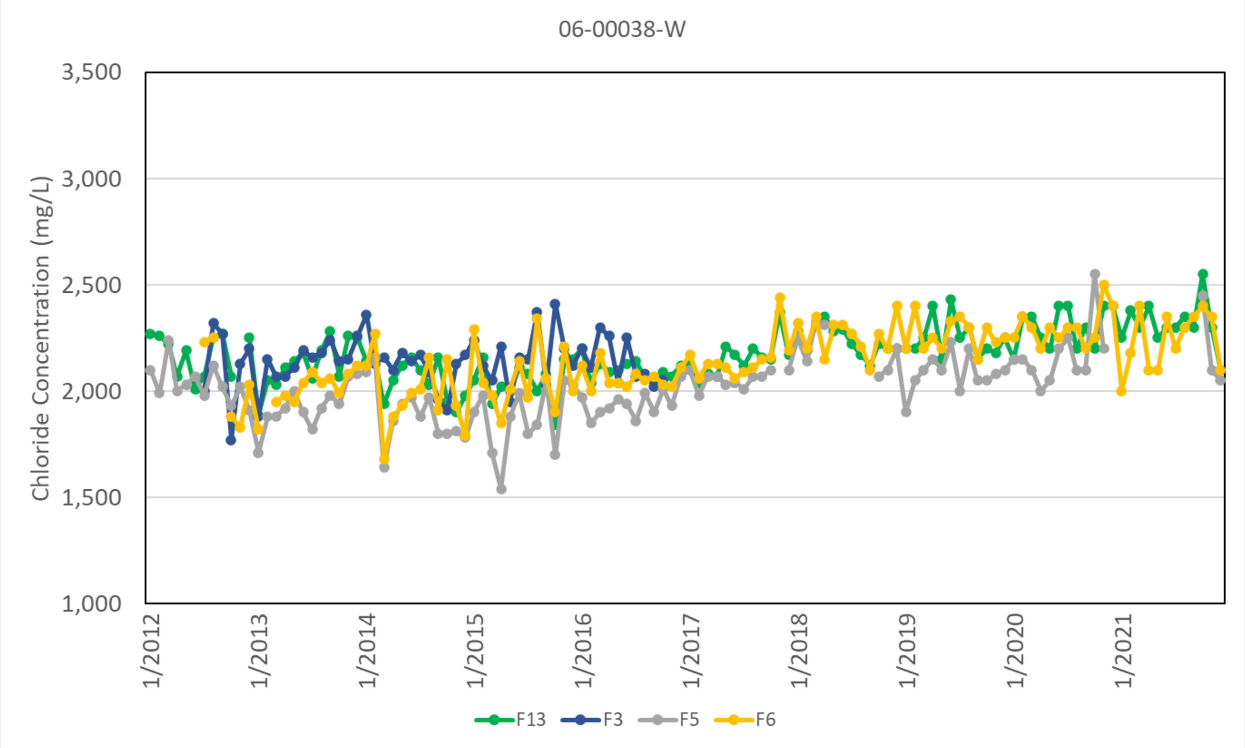


Figure D-35. Chloride concentrations in City of Hollywood Floridan aquifer system (Upper Floridan aquifer) wells 3, 5, 6, and 13.

Miami-Dade Water and Sewer Department (13-00017-W)

MDWASD began pumping from the Hialeah FAS wellfield in 2013. There are 10 existing UFA wells, completed to 1,100 feet bls with open holes to 1,490 feet bls. The wells are pumped at rates of approximately 1,400 gpm. The chloride concentration of water reported from the Hialeah wellfield remained below 2,000 mg/L prior to 2019, but it has shown a gradual increase to 3,500 mg/L over the last 5 years (**Figure D-36**).

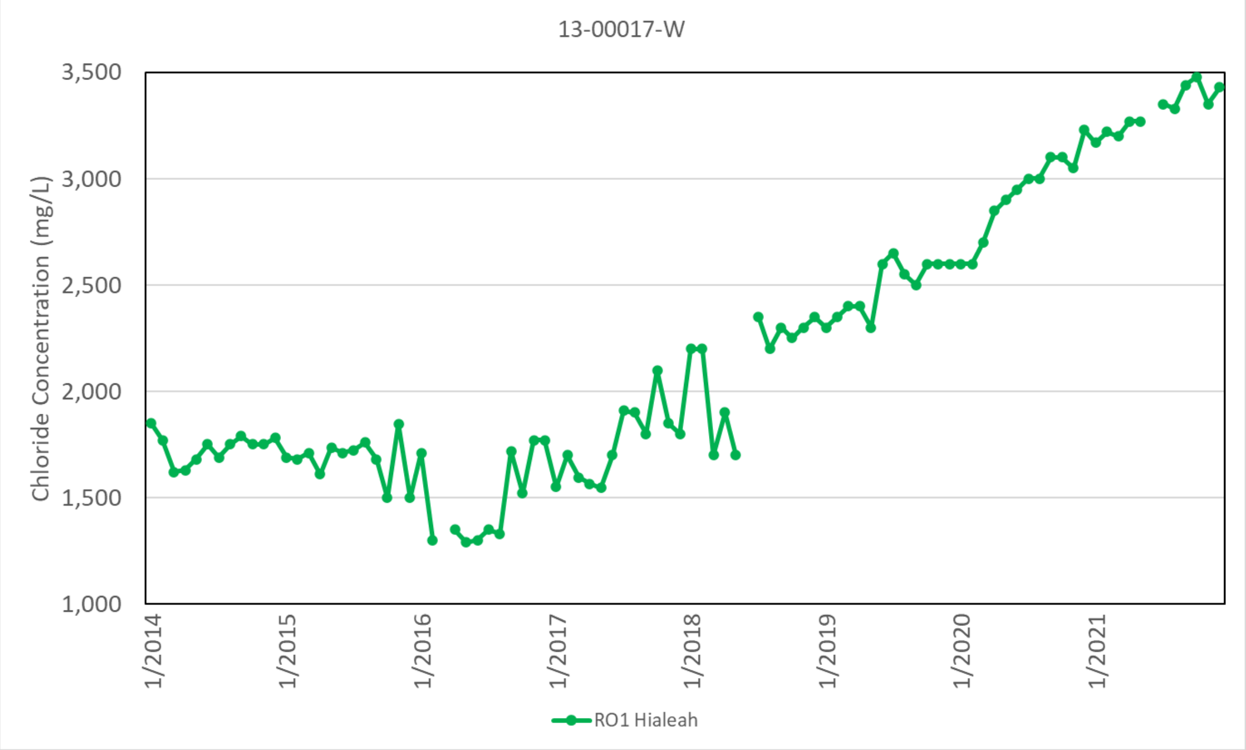


Figure D-36. Chloride concentrations in Miami-Dade Water and Sewer Department Floridan aquifer system (Upper Floridan aquifer) well RO1 Hialeah.

Florida Keys Aqueduct Authority (13-00005-W)

The Florida Keys Aqueduct Authority obtains FAS water from four wells constructed at the J. Robert Dean Water Treatment Plant in Florida City. The FAS wellfield has been producing water since 2011. The water is treated with reverse osmosis and blended with water from the Biscayne aquifer. The FAS wells are completed in the UFA between 880 and 1,350 feet bls. The wells have pump capacities of approximately 2,000 gpm. The chloride concentrations have remained stable between 2,200 and 2,800 mg/L since 2016. It is likely that the spike in March 2019 is an erroneous data point as values subsequently returned to normal range (**Figure D-37**).

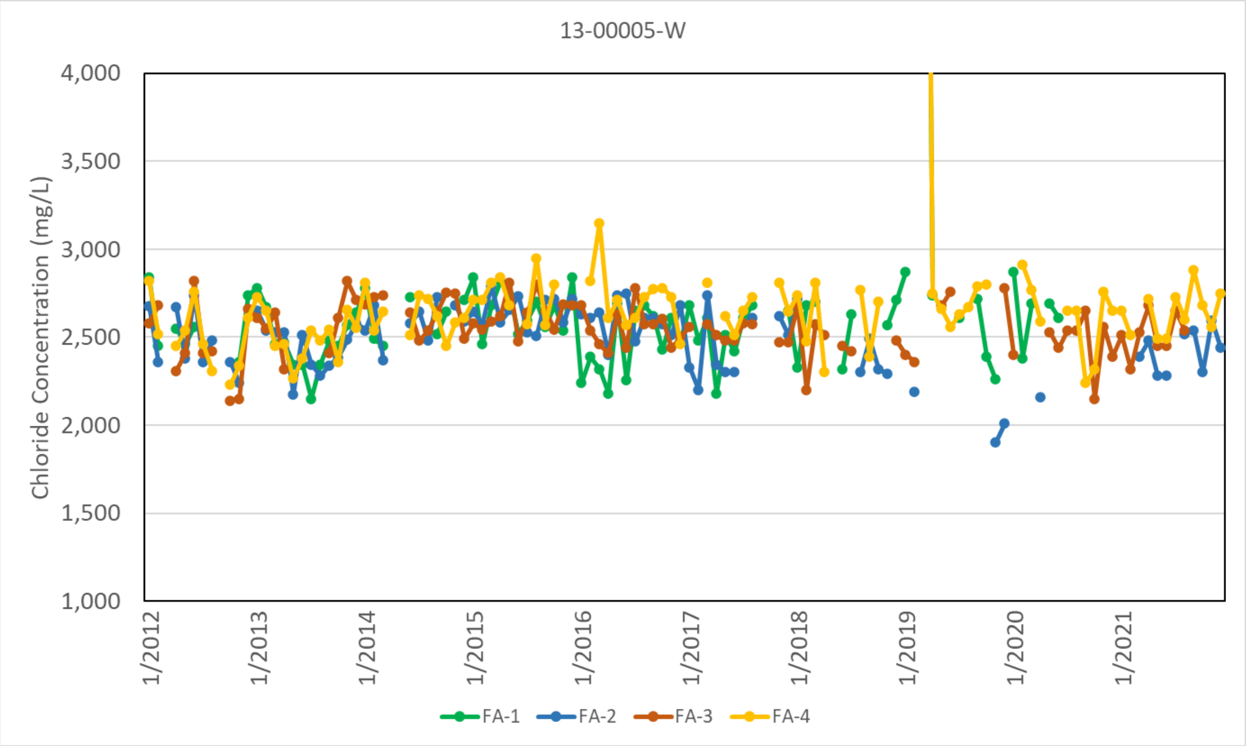


Figure D-37. Chloride concentrations in Florida Keys Aqueduct Authority (Upper Floridan aquifer) wells FA-1 to FA-4.

GROUNDWATER MODELING

County USGS Groundwater Models

Broward County

The USGS, in cooperation with the Broward County Resilient Environment Department used SEAWAT, a three-dimensional solute transport model, to examine the causes of saltwater intrusion and predict the effects of future alterations to the hydrologic system on salinity distribution within the SAS in the southern and central portions of coastal Broward County (Hughes et al. 2016). The model results were used to evaluate the sensitivity of groundwater salinity distribution to sea level rise and groundwater pumping by simulating the potential effects of variable rates of sea level rise, increased pumping, moving a salinity control structure, and using recharge wells on the future distribution of salinity in the Biscayne aquifer. USGS interpretations and conclusions of the model results suggested the following:

- The model generally represents the observed greater westward extent of elevated salinity in the central portion of the county (near the North New River Canal and southeast of Hallandale) relative to the northern and southern parts of the county.
- With increasing rates of sea level rise, the saltwater interface advances progressively inland, and salinity increases at wellfields near the saltwater interface.
- In areas where the source of salt water is largely offshore from the Atlantic Ocean, results of sensitivity testing indicate the extent of elevated salinity is most sensitive to pumping, and in areas where the source of salinity is downward leakage of brackish water from canals, the extent of elevated salinity is most sensitive to sea level rise.
- Increases in future pumping near the saltwater interface may cause the interface to advance, while decreases may cause it to retreat as the aquifer is sensitive to wellfield pumpage.
- Repositioning of salinity control structures may prevent the saltwater interface from advancing farther inland; however, benefits are localized.
- Installation of freshwater recharge wells has localized aquifer benefits but does not noticeably affect the saltwater interface or salinity concentrations at coastal wellfields.

Miami-Dade County

The USGS used a coupled groundwater/surface water model (MODFLOW-NWT and Surface-Water Routing Process) to evaluate the effects of increased groundwater pumpage from the SAS and of increased sea level on canal leakage, regional groundwater flow, and the position of the saltwater interface (Hughes and White 2016). USGS interpretations and conclusions of the model results suggested the following:

- Saltwater intrusion could occur at the MDWASD Miami Springs, Hialeah, and Preston wellfields if operated at currently permitted or increased groundwater pumping rates.

- The SFWMD canal system and salinity control structures limit the adverse effects of proposed groundwater pumping increases on water level changes and saltwater intrusion.
- Higher sea level caused increased water table elevations in urban areas and decreased hydraulic gradients across the surface water and groundwater system, with the largest increase in water table elevations occurring seaward of the salinity control structures.
- Increased groundwater withdrawals decreased water table gradients, which reduced groundwater inflow and outflow, canal exchanges, and surface water inflow and outflow through salinity control structures.

Despite some limitations related to scale and climate variability, the model represents the complexities of the interconnected surface water and groundwater systems that affect how the systems respond to groundwater pumpage, sea level rise, and other hydrologic stresses. The model also quantifies the relative effects of groundwater pumpage and sea level rise on surface water and groundwater systems.

CLIMATE CHANGE, INCLUDING SEA LEVEL RISE

Climate change is an issue of concern globally and especially in coastal regions such as South Florida. Because of its location, regional variability in climate, hydrology, geology, topography, natural resources, and dense coastal populations, South Florida is particularly vulnerable to the effects of changes in climate. Sea level rise and changes in temperature and rainfall patterns, among other evolving conditions, affect the implementation of the SFWMD’s mission elements to safeguard and restore South Florida’s water resources and ecosystems, protect communities from flooding, and meet the region’s water needs. The SFWMD's resiliency efforts focus on 1) using science and advanced technical analyses to characterize climate change impacts on water resources management, in general, and future water supply sources, and 2) continuing to successfully implement the agency’s mission through continuous infrastructure investments, supported by robust technical analyses, planning, and adaptive management. Over the last decade, the SFWMD has implemented strategies to build resiliency by developing tools and models to assess current and future conditions, maintaining and optimizing its operations, and implementing key infrastructure projects. These efforts require collaboration and cooperation with local and tribal governments; other regional, state, and federal agencies; universities; nongovernmental entities; a wide array of stakeholders; and citizens throughout South Florida.

In the LEC Planning Area, Palm Beach, Broward, Miami-Dade, and Monroe counties established the Southeast Florida Regional Climate Change Compact (Compact) to inform and coordinate planning efforts and responses to climate change across county lines. Additional participants include numerous local and city governments, utilities, other governmental agencies, and nonprofit organizations. The SFWMD is an active but nonvoting member of the Compact and has provided data, tools, models, workshop support, and overall technical assistance. In 2022, the Compact published the latest update to the Southeast Florida Regional Climate Action Plan (RCAP 3.0). In this update, the Compact establishes its water related goal as “Identify, develop and implement integrated water management strategies and infrastructure improvements concurrently with existing and enhanced water conservation and alternative water supply source efforts to mitigate the adverse effects of climate change, including sea level rise on water resources systems and operations" (Southeast Florida Regional Climate Change Compact 2022). This goal aligns with the SFWMD's efforts to protect the region's water supply and build resiliency.

In accomplishing its mission, and supporting the implementation of the above stated goal, the SFWMD is improving its understanding of historic, current, and future water supply conditions through the assessment of sea level rise impacts on water supply, which will be analyzed as part of the East Coast Surficial Model (ECSM) modeling effort (to be completed in 2024), and development of a longer-term Water Supply Vulnerability Assessment (WSVA).

Historical Observations, Current Conditions, and Future Projections

The SFWMD keeps up with the latest science by utilizing the best available data sets for historical observations and best available models for current conditions and future projections. Historical data for temperature, rainfall, and evapotranspiration are collected by the SFWMD and federal partners — the National Oceanic and Atmospheric Administration (NOAA) and the USGS. These data are available on DBHYDRO and DBHYDRO Insights on the SFWMD webpage https://www.sfwmd.gov/science-data/dbhydro.

As part of resiliency initiatives, the SFWMD has been assessing water and climate resilience metrics to track and document shifts and trends in water and climate-observed data. These efforts support the assessment of current and future climate condition scenarios, operational decisions, and SFWMD resiliency priorities. The water and climate resilience metrics and related data analyses are featured on the Resilience Metrics Hub (SFWMD 2023).

In anticipation of how climate change may alter temperature, rainfall, and evapotranspiration patterns and how these changes may affect water supply and other SFWMD resiliency efforts, the USGS and Florida International University (FIU) are partnering with the SFWMD to assess and develop suites of rainfall and evapotranspiration data sets to be used for regional and subregional planning and modeling efforts.

The future conditions data sets will be designed around the premise that climate conditions are nonstationary, acknowledging that historic extremes in climate are no longer the outer limits for the future. The future conditions data sets are derived from global circulation models, which include empirical and physics-based models that incorporate elements of dynamics, chemistry, and biology of the atmosphere, biosphere, and the oceans as well as greenhouse gas emission scenarios. These global circulation models have large scales (100 to 250 kilometers) and, therefore, need to be downscaled to regional and subregional levels.

An approach was adopted for selecting climate models to inform future climate data sets (**Figure D-38**). The preliminary projection ranges for average and seasonal climate conditions were produced by FIU and used statistically and dynamically downscaled data sets. Each of these downscaled data sets were statistically analyzed and compared to each other and to observational data. The top 10 best performing models with the highest correlation, low root mean square error, Model Climate Performance Index (MCI) < 0, and Model Variability Index (MVI) < 0 for each climate region were selected for the determination of scenario ranges.

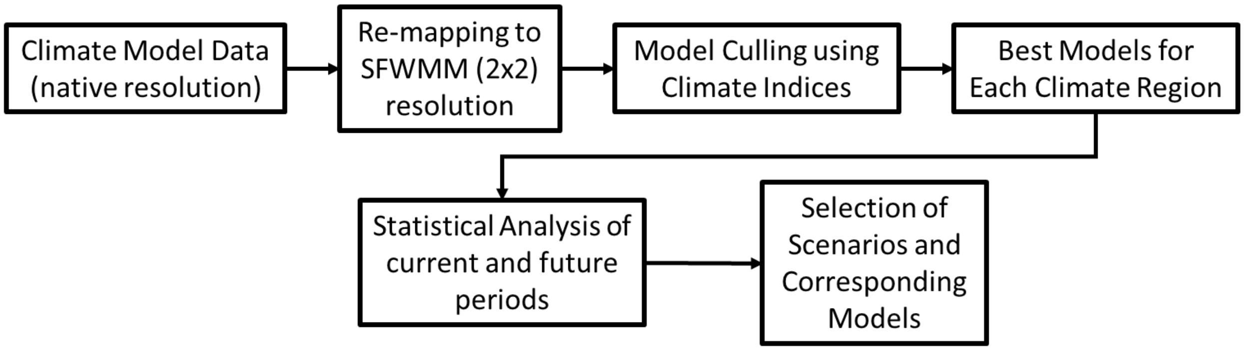


Figure D-38. Summary of the adopted approach to modeling future climate scenarios.

The USGS is preparing extreme wet and dry data sets, while FIU is preparing the average and seasonal conditions data sets. The results of this initial effort in partnership with FIU are detailed in the sections below. There will be further data development and assessments to determine how to best represent long-term future conditions. The eventual future climate data sets will be processed and used throughout the SFWMD modeling efforts, including the WSVA. Additional regional future conditions temperature, rainfall, and evapotranspiration projections may be developed to fully address future climate scenario uncertainty and will support the needs and outputs of regional groundwater and surface water models. The results from the development and analyses of the data sets will continue to be updated and made available through the Resilience Metrics Hub (SFWMD 2023).

Air Temperature Rise and Evapotranspiration

Current predictions from multiple climate models summarized by the Intergovernmental Panel on Climate Change (IPCC 2021) stated that global temperatures are expected to reach or exceed 1.5°C of warming between 2030 and 2052. Warmer air temperatures will increase evapotranspiration, resulting in lower surface water levels (e.g., in lakes, canals, rivers); increased irrigation demands; and impacts to stormwater runoff, soil moisture, groundwater recharge, and water quality. Additionally, increased air temperatures contribute to sea level rise through thermal expansion of ocean waters and through glacial melt releasing large volumes of water into the oceans.

As shown in **Figure D-39**, the average daily maximum temperature for Miami-Dade County is projected to increase from 86.3°F during the 2020s to 87.9°F in 2040 and 88.6°F in 2050 at the high end and at the low end to 87.2°F in 2040 and 87.6°F in 2050. The figure is generated from a climate toolkit developed by an interagency team, including NOAA, National Aeronautics and Space Administration (NASA), USEPA, USGS, United States Bureau of Reclamation (USBR), National Environmental Modeling and Analysis Center (NEMAC) at the University of North Carolina, and United States Global Change Research Program (USGCRP).

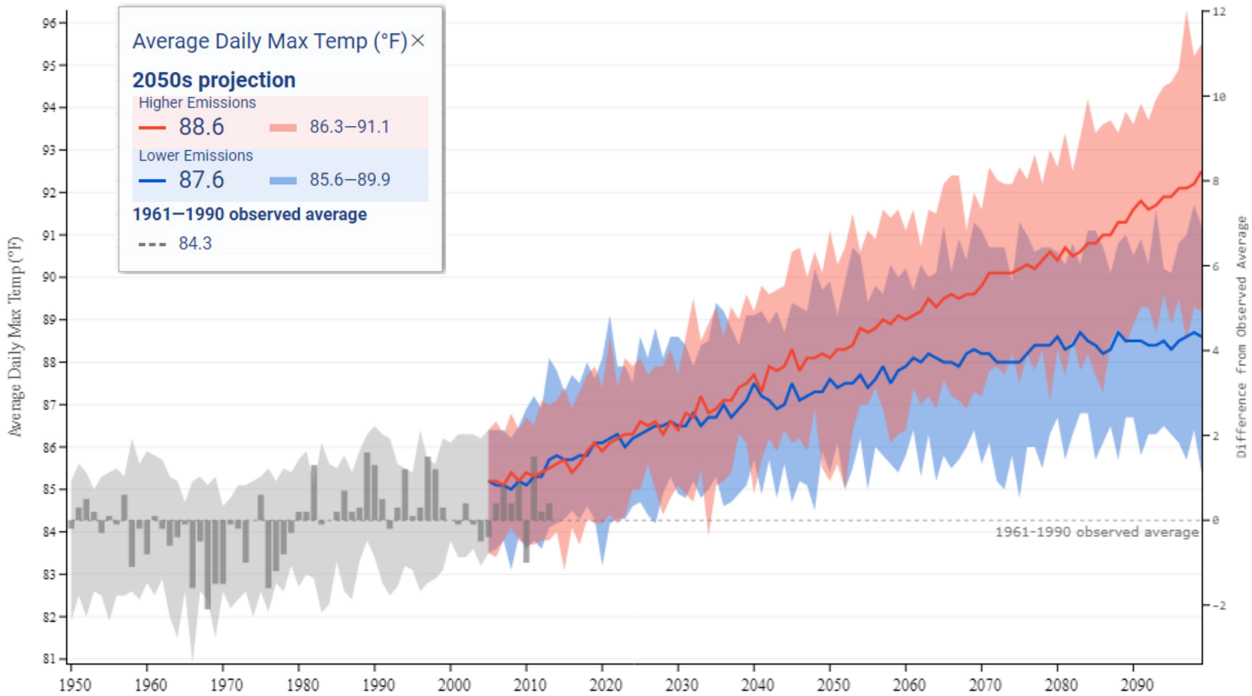


Figure D-39. Projected average daily maximum temperature in Miami-Dade County (Data from NOAA, NASA, USEPA, USGS, USBR, NEMAC, and USGCRP 2023; Sweet et al. 2017).

In 2021, as part of the water and climate resilience metrics efforts, the SFWMD assessed observed evapotranspiration data and found a statistically significant upward trend (**Figure D-40**). The effect of this increase on water demand and availability is being evaluated in South Florida through advanced hydrology and hydraulics models. It is likely that as evapotranspiration increases, water demand for irrigation needs will also increase and aquifer recharge may be negatively affected (SFWMD 2021, Cortez et al. 2022).

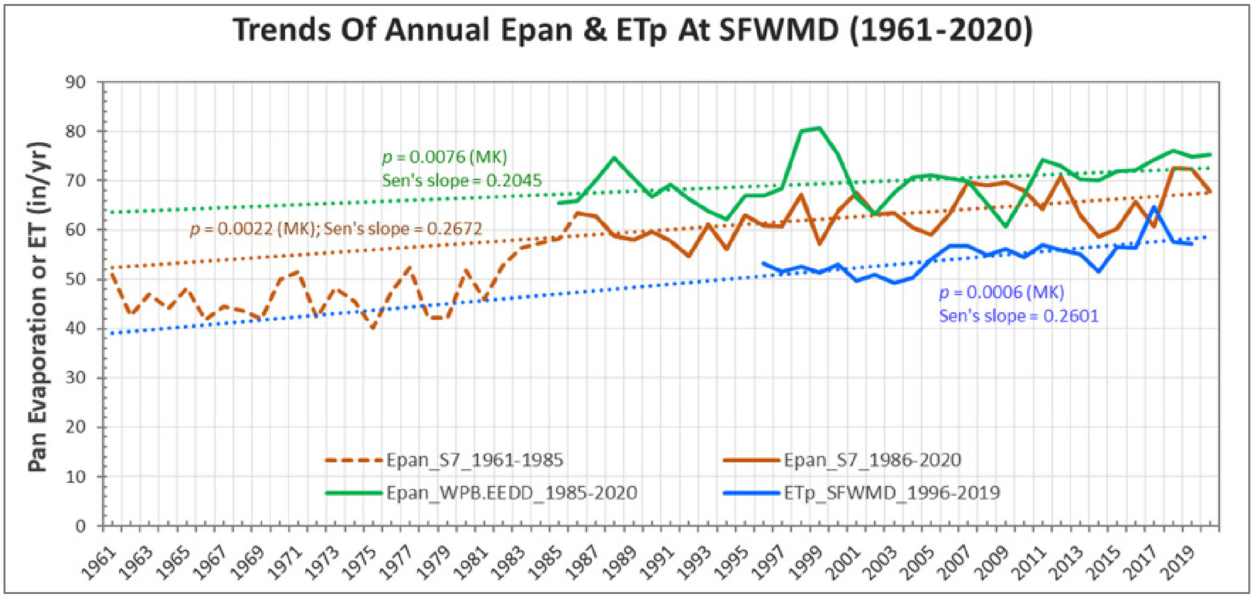


Figure D-40. Trend of annual pan evaporation (Epan) and potential evapotranspiration (ETp) across the SFWMD, 1961 to 2020 (Cortez et al. 2022).

While the preliminary results highlighted in **Figure D-40** imply increased water losses due to increased evapotranspiration and higher temperatures, comprehensive evapotranspiration assessments require additional input from other climatic variables, such as wind speed and relative humidity. Further analyses are under way focusing on estimating drought projections, based on indices relevant to irrigation and other water uses, that will support the assessment of vulnerability of water supply sources more comprehensively.

Rainfall Patterns and Extrema

The effects of climate change on rainfall patterns will likely have a significant impact on future regional water supplies. The SFWMD is focused on understanding existing conditions and anticipating future conditions through the above-mentioned water and climate resilience metrics studies, which examine temporal and spatial rainfall duration, frequency, and intensity. An initial regional rainfall wet season analysis evaluated the entire period of record for all the SFWMD's rainfall basins. In the LEC Planning Area, the East Everglades Agricultural Area rainfall basin shows a statistically significant downward trend (**Figure D-41**; SFWMD 2021). This trend indicates drier conditions which may increase irrigation demands.

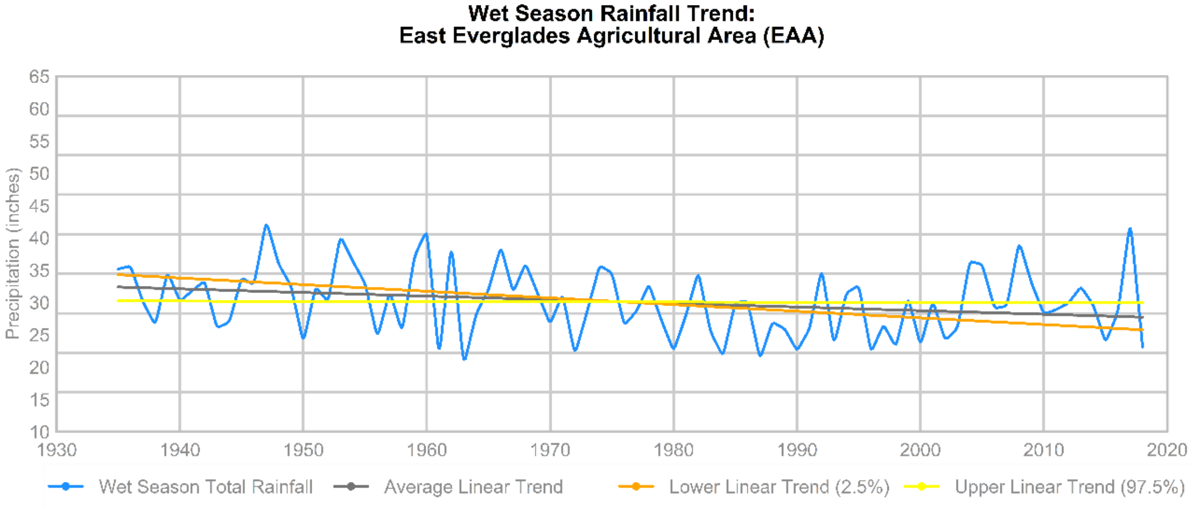


Figure D-41. Trend analyses of average rainfall during the wet season in the East Everglades Agricultural Area (SFWMD 2021).

Preliminary results from the study developed in partnership with FIU to investigate average annual and seasonal future rainfall patterns are estimating a potential reduction in the annual average precipitation. Additionally, the study evaluates a potential shift in seasonality, such as varying start and end dates of the wet and dry seasons. These results support the need for further rainfall projection assessments that emphasize not just the chronic effects of changes in rainfall averages, but the acute event effects associated with changes in rainfall extrema, such as those related to droughts. Further development of these projections is already under way, and they will be used to examine the effects of extrema and apply them to the analyses conducted in the SFWMD WSVA.

Sea Level Rise

The effects of sea level rise are most easily observed in the LEC Planning Area as they relate to flooding events, such as those caused by high tides, heavy rainfall, and storm surge. This was apparent during Hurricane Ian when the combination of some of these factors resulted in significant damage and lives lost across the SFWMD. Perhaps less apparent is the effect sea level rise can have on South Florida's drinking water supplies. Sea level rise may affect water supply through the inland movement of the saltwater interface (see **Chapter 6**). As the rate of sea level rise continues to increase, saltwater intrusion may require some coastal wellfields in the LEC Planning Area to be relocated farther inland, change treatment processes, or be replaced by AWS sources. Since 2000, 25 PS wells in the SFWMD have been abandoned due to saltwater intrusion (SFWMD 2023).

Global mean sea level rise is caused by thermal expansion and an increase in the volume of water in the oceans from melting glaciers and other sources. The gradual increase in sea level has been observed in sediment, tide gauge, and satellite altimetry records. Tide gauge records show that relative sea level is rising along the Florida coastline. The historical rate of sea level rise at Key West presented by NOAA (shown in **Figure D-42**) is 2.5 millimeters per year (mm/year) based on long-term data from 1913 to 2021. Over the last 20 years, increasing rates of annual tidal elevation at the SFWMD's coastal structures have varied between 5.0 and 10.4 mm/year and averaged 8.2 mm/year between 2003 and 2022 (SFWMD 2023). It is important to note that a longer period of record with linear averaging shows a flatter trend line, yet if the acceleration and nonlinear trends are examined, the rate of sea level rise increases. This nonlinearity emphasizes the need for applying projections rather than trends to water management planning.

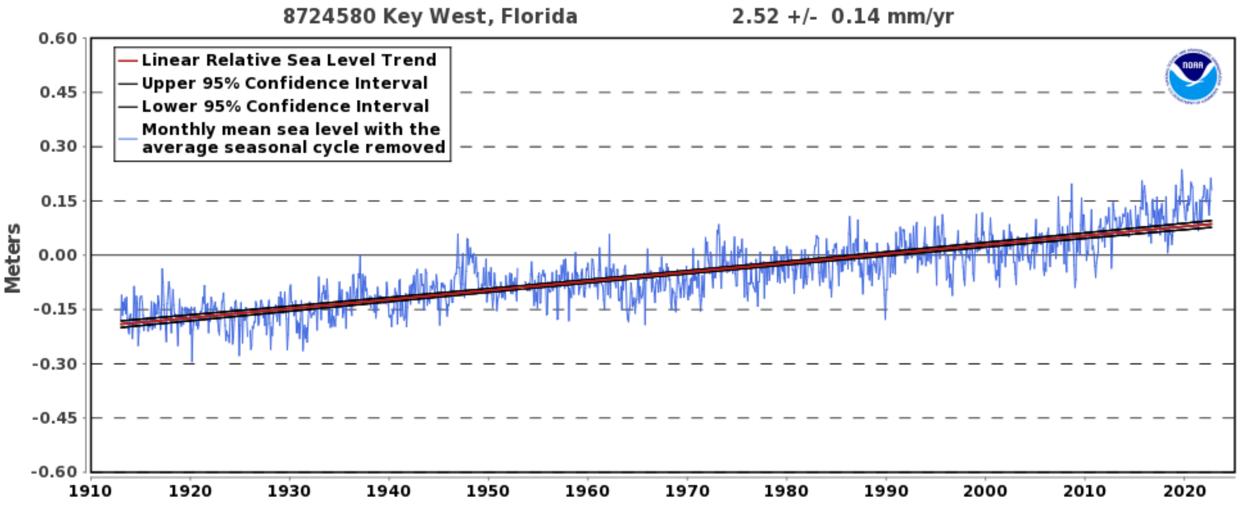


Figure D-42. Historical sea level measurements from the Key West, Florida tide gauge (From NOAA 2022).

In 2021, the Florida Legislature passed Section 380.093(3)(d), Florida Statutes (F.S.), specifying the requirements for the Florida Department of Environmental Protection to include "At least two local sea level rise scenarios, which must include the 2017 National Oceanic and Atmospheric Administration intermediate-low and intermediate-high sea level rise projections."

In 2022, NOAA updated its 2017 projections reducing the uncertainties through applying the latest scientific methodologies and updated data. By 2050, sea levels are expected to rise in Key West by 1.33 feet per the Intermediate-High curve and 0.99 feet per the Intermediate-Low curve (**Figure D-43**).

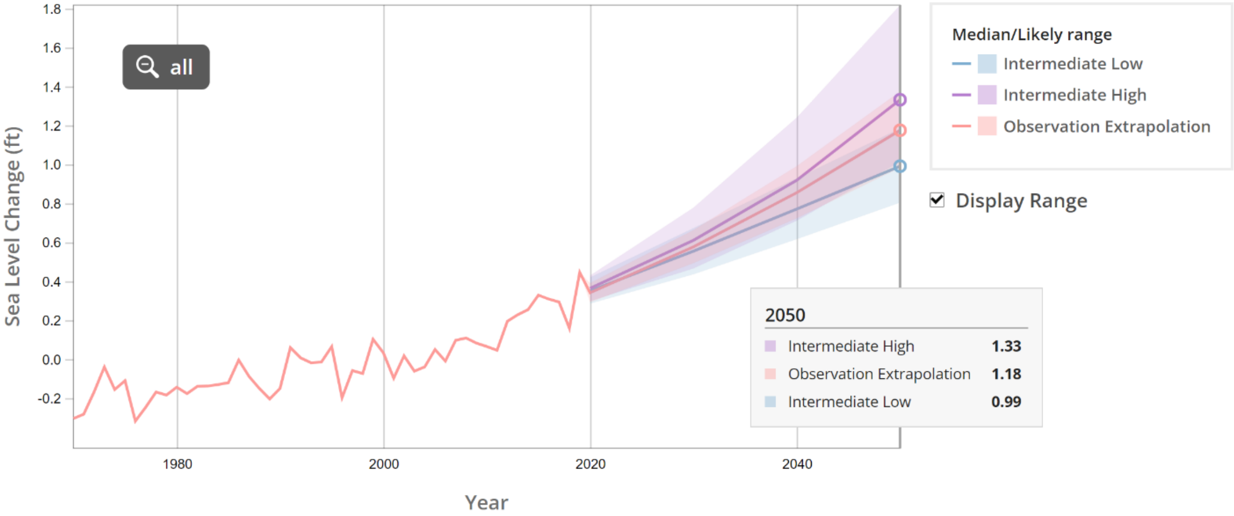
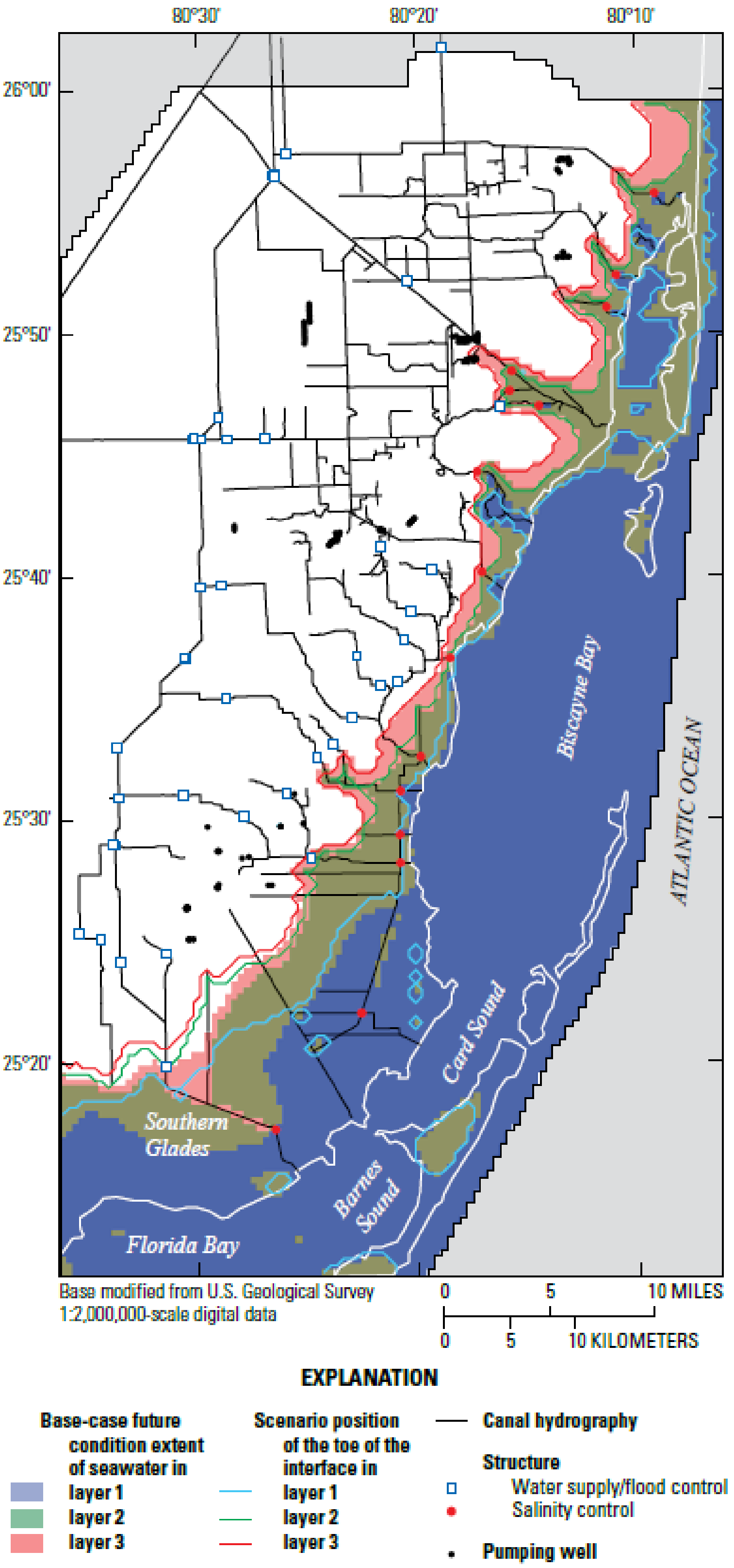


Figure D-43. Future sea level rise projections for Key West, Florida (Data from NASA, NOAA, USEPA, Rutgers, and USGS 2022; Sweet et al. 2022).

In general, canal stages in the LEC Planning Area are maintained higher than sea level to prevent salt water from moving inland. If canal water levels cannot be maintained higher than sea level, then salinity control structures are closed to prevent entry of salt water into fresh surface water bodies. More frequent and longer structure closures due to higher sea levels can lead to increased risk for flooding.

Sea level rise projections have been incorporated into groundwater models in Miami-Dade and Broward counties. Miami-Dade County contracted with the USGS to develop a model to evaluate the potential impacts of sea level rise on the interconnected surface water and groundwater systems (Hughes and White 2016). Higher sea levels resulted in landward movement of the saltwater interface, with the largest salinity changes seaward of salinity control structures or where the land was inundated by increased sea level (**Figure D-44**).

As summarized earlier in this appendix, Broward County and the USGS developed a series of groundwater and surface water models that can generate predictive scenarios of saltwater intrusion into the Biscayne aquifer and inundation from sea level rise (Hughes et al. 2016). Model results indicate the saltwater interface will advance progressively inland with increasing rates of sea level rise, with preferential movement via canals, and salinities increasing commensurately at wellfields near the existing saltwater interface. Hypothetical repositioning of an existing salinity control structure seaward only had local effects on preventing further movement of the saltwater interface. Injection of fresh water near an existing wellfield had local freshening effects (constrained by land elevations and drainage impacts) but little effect on the saltwater interface or salinity at wellfields. Another scenario relocated wellfield withdrawals to the west.



Base modified from U.S. Geological Survey 1:2,000,000-scale digital data

Figure D-44. Estimated 2040 saline inundation in Miami-Dade County (From Hughes and White 2016).

As summarized above, sea level rise will have a direct effect on groundwater elevations and relative groundwater recharge rates. One potential effect is due to the relative buoyancy of fresh water resting on top of salt water. As the lower, saltier groundwater rises with sea level rise, it may also push up the more buoyant fresh water, a concept referred to as groundwater shoaling. This reduces the overall freshwater storage capacity, and the potential for recharge during the wet season decreases (**Figure D-45**). The impacts of sea level rise on freshwater supplies and regional water supply availability will be assessed using the ECSM, which is density-dependent allowing for sea level rise scenarios to be incorporated into the model simulations. Following the ECSM 2045 water supply plan horizon scenario runs, the WSVA will utilize the same models to look at the effects of sea level rise at longer-time scales and with future growth and associated future climate conditions.

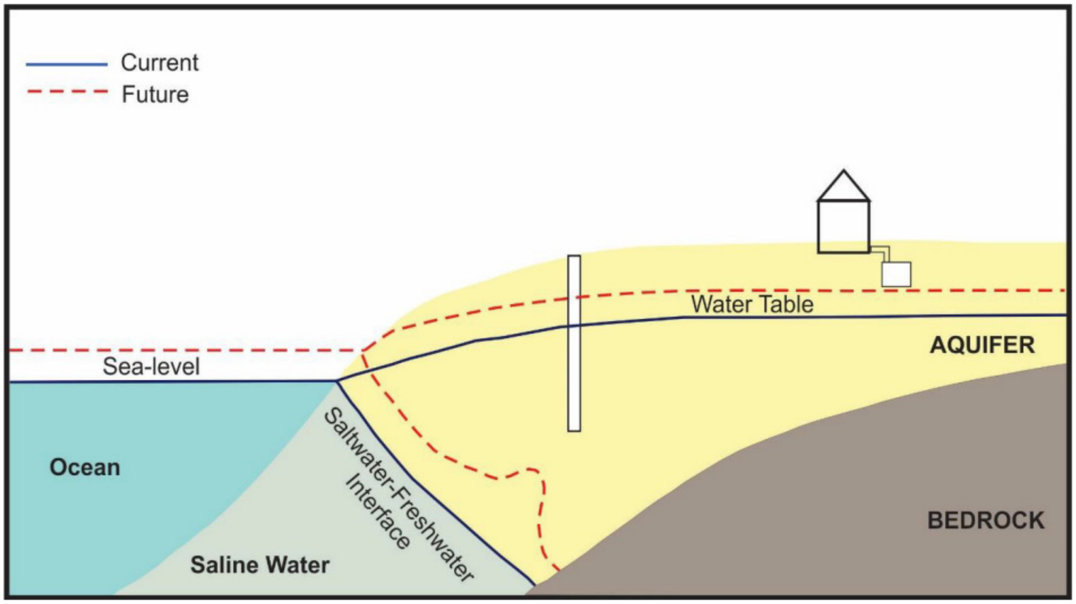


Figure D-45. Inland movement of the saltwater-freshwater interface and elevation of the water table in response to sea level rise (Jamaluddin et al. 2016).

Water Supply Vulnerability Assessment

The SFWMD will be conducting the WSVA aimed at understanding how future growth and climate conditions impact the regional water supply. In addition to utilizing the ECSM, the SFWMD is developing future conditions temperature, rainfall, and evapotranspiration data sets to support scenario formulation for the ECSM runs and surface water regional models such as the South Florida Water Management Model (SFWMM) and Regional Simulation Model (RSM).

The SFWMD created an internal workgroup with representation from various bureaus to develop an approach for identifying and assessing water supply vulnerabilities. Initial scenarios, modeling assumptions, input data selection and limitations, research, scope, time, and cost were considered in the development of the proposed approach. **Table D-2** and **Figure D-46** summarize the majority of the initial recommendations and assumptions that are being integrated into the proposed approach to conducting the WSVA. The table includes scenarios A through C for LEC planning runs followed by D through K for water supply vulnerability runs.

Table D-2. Water Supply Vulnerability Assessment proposed approach.

Water Supply Vulnerability Assessment Future Conditions Recommendations for Proposed Approach		
Water Demand Projections		
Water Use Category	Growth Rate	Withdrawal Rate
Public Supply	Extrapolate BEBR medium growth to 2075	PCUR at 50 years
Agriculture	LEC WSP 2045 rate	AFSIRS with climate change data sets
Landscape/Recreation	Proportional to population growth	Use rate at 50 years
Domestic Self-Supply	Proportional to population growth	PCUR at 50 years
Institutional/Commercial/Industrial	LEC WSP 2045 rate	LEC WSP 2045 rate
Power Generation	LEC WSP 2045 rate	LEC WSP 2045 rate
Climate Projections		
Climate Conditions	Temperature, Rainfall, Evapotranspiration	Sea Level Rise
Data sets	Downscaled global circulation models	2022 NOAA Intermediate-Low, Intermediate-High
Existing Available Sources		
Available Sources	Model Output Metrics	Model Input Assumptions
Surficial aquifer	Groundwater levels, total dissolved solids, flow vectors, zone budgets	Canal stages, flows from Regional Simulation Model, tidal
Shallow impoundment (WCA, STA, SWM)	Storage, water depth, overland flow	
Unsaturated zones	Storage	
Canals	Storage, stages	Conveyance, quality, structure operations
Lakes	Storage, inflows, stages	
Reservoirs	Storage	Seepage, level of service
Scenario Formulation		
Scenario Run	Growth Variable	Climate Variable
A (LEC WSP)	No growth	No change
B (LEC WSP)	BEBR medium 2045	No change
C (LEC WSP)	BEBR medium 2045	SLR 1
D (WS Vuln)	BEBR medium 2045	Warmer and drier
E (WS Vuln)	BEBR medium 2045	Warmer, drier, and SLR 1
F (WS Vuln)	BEBR medium 2045	Hot, driest, and SLR 2
G (WS Vuln)	BEBR medium 2075	No change
H (WS Vuln)	BEBR medium 2075	SLR 1
I (WS Vuln)	BEBR medium 2075	Warmer and drier
J (WS Vuln)	BEBR medium 2075	Warmer, drier, and SLR1
K (WS Vuln)	BEBR medium 2075	Hot, driest, and SLR2

AFSIRS = Agricultural Field Scale Irrigation Requirements Simulation; BEBR = Bureau of Economic and Business Research; LEC WSP = Lower East Coast Water Supply Plan; PCUR = per capita use rate; SLR = sea level rise; STA = stormwater treatment area; SWM = Surface Water Management Area; WCA = water conservation area; WS Vuln = water supply vulnerability.

To analyze the effects of climate change, including sea level rise, each of the water availability sources will be analyzed as independent “buckets,” and model outputs will highlight the effects of select parameters. Initial scenario formulation is proposing less and more conservative estimate ranges in scenario runs A through K, with degrees of warming, dryness, and Intermediate-Low (SLR1, warmer and drier) and Intermediate-High (SLR2, hot and driest) sea level rise, along with 2045 and 2075 growth scenario ranges. Scenario runs A, B, and C will be analyzed as part of the LEC Water Supply Plan. The remaining runs D through K are part of the WSVA. The outputs of these scenario runs should allow the SFWMD to understand how future conditions may impact source characteristics, water management operations, and overall water availability. **Figure D-47** shows a diagram of the potential WSVA scenario runs. Future iterations may include the analyses of management strategies and their effects on reducing water supply vulnerability.

The WSVA analyses and results will be developed after the 2023–2024 LEC Plan Update and will be released upon completion of the subsequent model runs. The WSVA results will be considered in the 2028 LEC Plan Update and will be integrated into the SFWMD resiliency efforts. The assessment will be based on SFWMD water supply plan methodologies by independently analyzing effects of future climate conditions on demands related to population growth, irrigation withdrawals, and availability of water supply sources. Growth rates will be based on the University of Florida Bureau of Economic and Business Research (BEBR) population projections. BEBR publishes low, medium, and high projections to account for uncertainty in future population growth. Section 373.709(2)(a)1., F.S., prescribes the use of BEBR medium population projections (Rayer and Wang 2021) in determining water supply needs in regional water supply plans. The 20-year BEBR medium growth rates for PS and DSS will be extrapolated to 50 years, and their withdrawal rates will be calculated using the 20-year per capita use rate (PCUR). The agricultural water withdrawal rate will be determined using the Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) model (Smajstrla 1990). Agriculture, landscape, and recreational withdrawal rates will include projected temperature, rainfall, and evapotranspiration rates at 50 years. The surficial aquifer and other freshwater sources will incorporate sea level rise in the boundary conditions, and all surface water and unconfined groundwater will incorporate future temperature, rainfall, and evapotranspiration conditions.

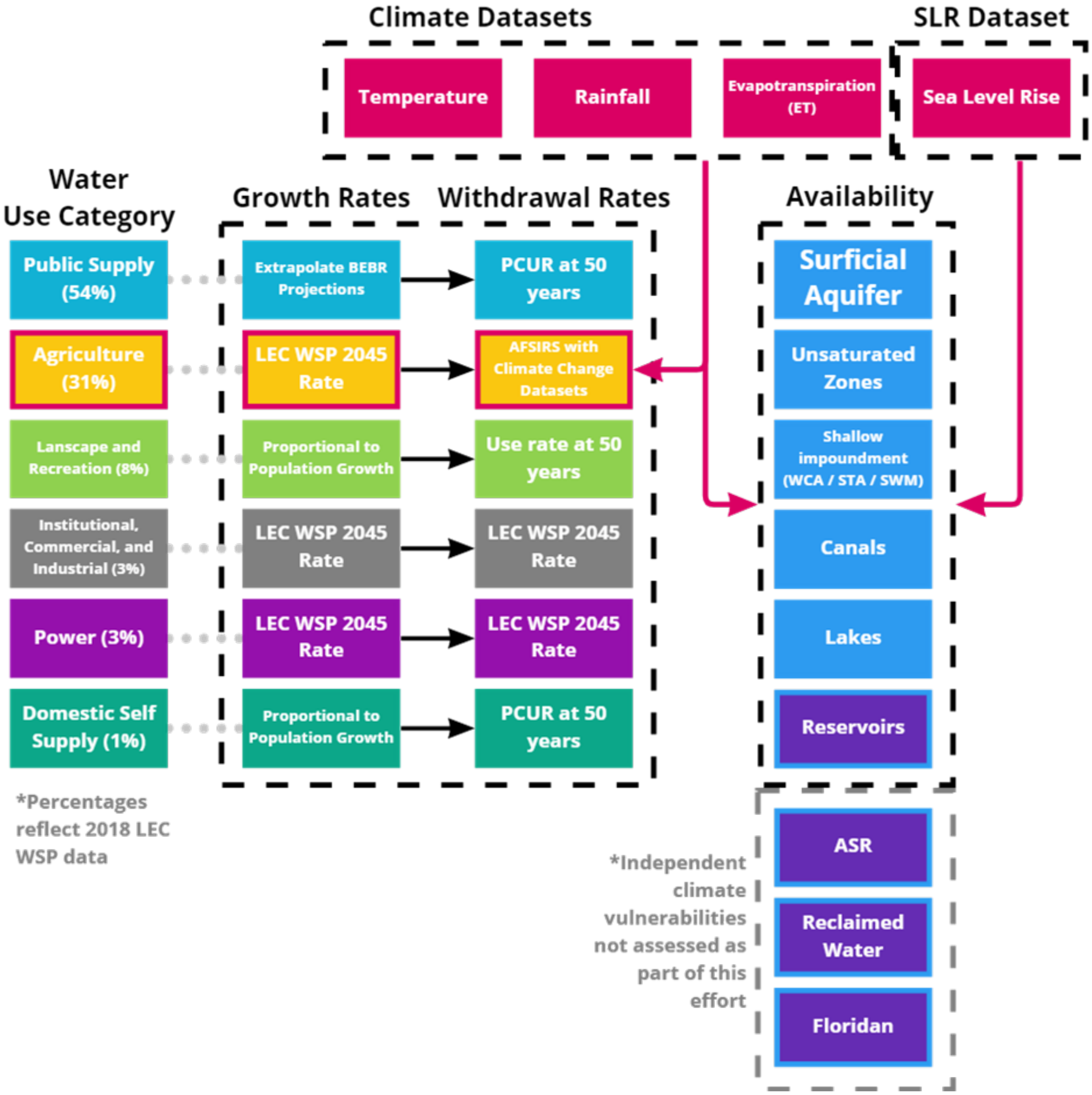


Figure D-46. Water Supply Vulnerability Assessment overall approach to incorporating climate change variables and future conditions.

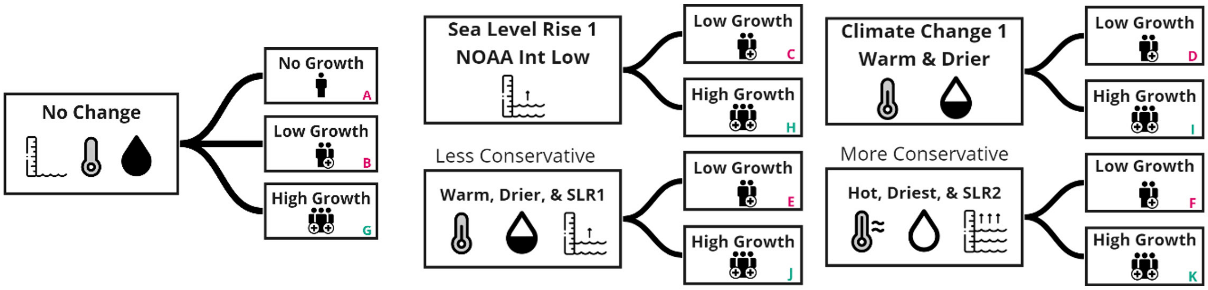


Figure D-47. Suggested scenario runs as part of the Water Supply Vulnerability Assessment.

Current and Future Planning and Adaptive Management Strategies

The SFWMD has been evaluating climate change and its effects since 2008 to determine the best short- and long-term strategies to address water resource management and prepare for related impacts (SFWMD 2009, Obeysekera et al. 2011). Long-established networks of rainfall and surface water flow monitoring, with real-time automation, provide continuous data to monitor changes in local hydrology. In addition, an extensive network of coastal and inland surface water and groundwater monitoring sites has been established to collect and analyze water level and quality data.

Coastal monitoring wells and data from water users track the location and movement of the saltwater interface, which is affected by several factors, including sea level rise and groundwater withdrawals (**Figure D-48**). Every 5 years, the SFWMD uses the monitor data to estimate the location of the saltwater interface in its coastal aquifers. Comparison of 2009, 2014, and 2019 saltwater interface maps indicate a few locations where noticeable inland movement has occurred in the LEC Planning Area (see **Chapter 6**).

Although many aspects of climate change are uncertain, the SFWMD is assessing the current and predicted impacts of climate change on South Florida's ecosystems and water resources. Since 2020, water and climate resilience metrics (e.g., tidal elevations, groundwater levels, and groundwater quality) are being developed and published at the Resilience Metrics Hub (SFWMD 2023) with the goal of tracking and documenting trends and shifts in water and climate data. The Resilience Metrics Hub is continually updated with new metrics, trend, and correlation analyses as well as relevant data sets. This effort supports the SFWMD's resiliency goals of ensuring ecosystem restoration, flood protection, and water supply mission elements while accounting for current and future climate conditions. The analyses of trends and shifts in observed data, along with the collective experience and best professional judgment of SFWMD technical staff, serve as the foundation for more robust infrastructure planning and operational decisions.

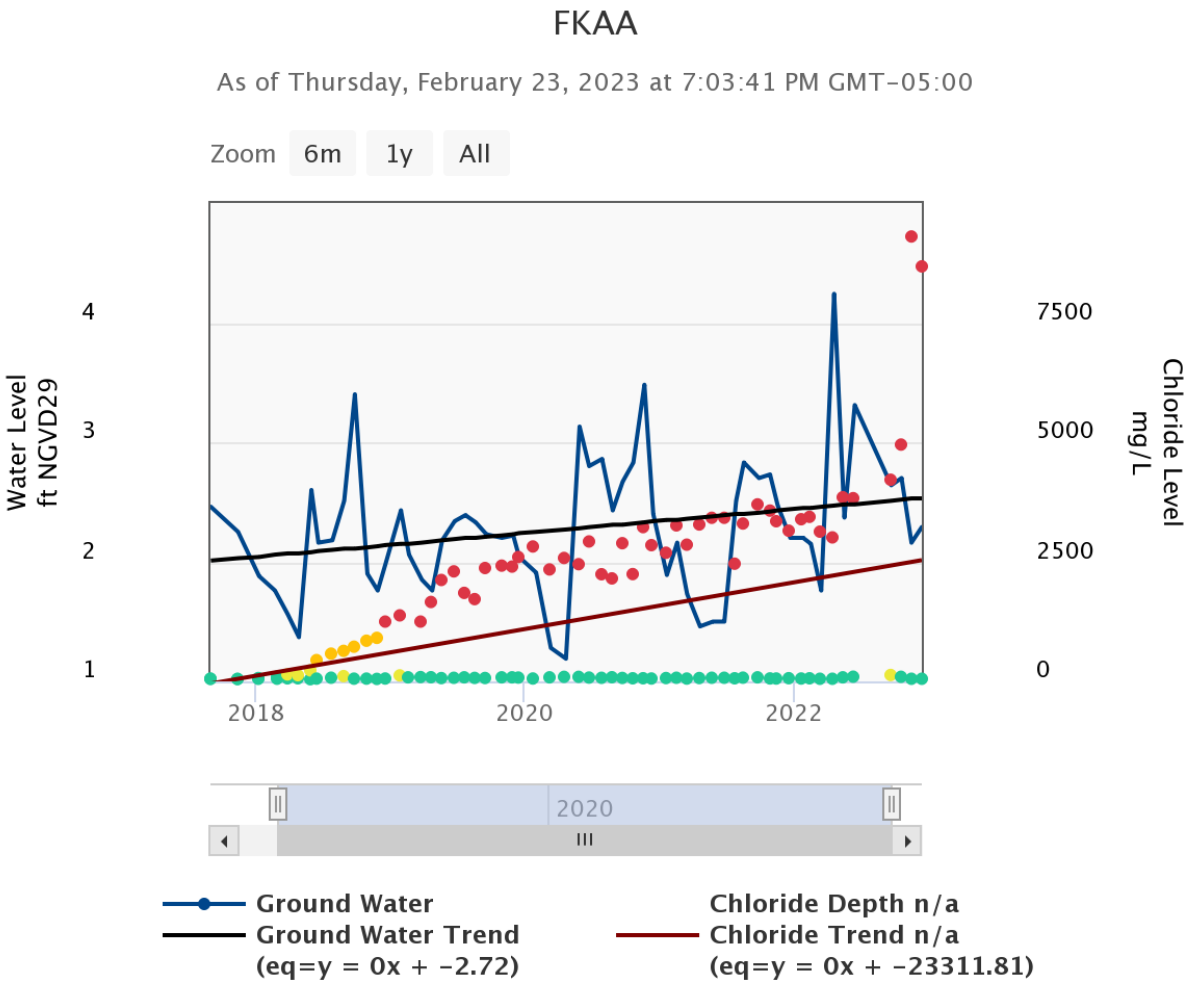


Figure D-48. Example of chloride and water level plot from the Resilience Metrics Hub (SFWMD 2023).

The SFWMD is the nonfederal sponsor of the Central and Southern Florida (C&SF) Project authorized by the Flood Control Act of 1948, primarily for the purposes of flood control, water supply, and prevention of saltwater intrusion. Utilizing some of the inputs from the Resilience Metrics Hub (SFWMD 2023) and other relevant data, the SFWMD is assessing flood vulnerabilities of the C&SF water management system and determining appropriate adaptation measures. Initiated in 2015, the SFWMD's Flood Protection Level of Service (FPLOS) Program evaluates the effectiveness of flood control assets (e.g., canals, structures, and pump stations) to determine their ability to continue meeting the flood protection needs of the region under current and future conditions, including sea level rise and extreme rainfall projections. The program assesses vulnerabilities in the regional flood control system and recommends adaptation strategies within the primary, secondary, and tertiary flood control system. FPLOS Phase 1 assessments have been completed for all major basins in Miami-Dade and Broward counties. Phase 1 studies are ongoing for Palm Beach County. Available results show that the flood control system is currently vulnerable in several densely populated basins and has widespread vulnerability under sea level rise, extreme rainfall, and future development conditions. These results indicate a need to advance to mitigation and adaptation planning and recommended project implementation to ensure the flood control system is resilient and remains effective under future conditions.

The SFWMD has developed its Sea Level Rise and Flood Resiliency Plan through ongoing coordination with local governments, stakeholders, and communities to address the impacts of a changing climate, including sea level rise and extreme rainfall events, on the SFWMD's critical assets, water management operations, water supplies, and water resources. The plan, updated annually, is the first SFWMD initiative to compile a comprehensive list of priority resiliency projects with the goal of reducing the risks of flooding, sea level rise, and other climate impacts on water resources and increasing community and ecosystem resiliency in South Florida. Initial projects moving into implementation stages are flood risk management related projects, which have been technically supported through the FPLOS adaptation planning efforts.

In addition, the United States Army Corps of Engineers Jacksonville District and the SFWMD, nonfederal partner, initiated the C&SF Flood Resiliency Study to identify the need to provide continued flood risk management to reduce the most immediate risk to the C&SF Project due to changing conditions including climate change, sea level rise, land development, and population growth in Palm Beach, Broward, and Miami-Dade counties. Flood risk management measures to be evaluated may include a combination of structural, nonstructural, natural, and nature-based features.

Water supply resiliency efforts are currently focusing on advancing the approach proposed for the WSVA. Scenario runs and related technical analyses for the LEC Planning Area are expected to be under way later in 2025 for additional resiliency analyses efforts. This future assessment will include long-term future population and climate projections and delineate potential impacts on water supply availability.

REFERENCES

Cortez, N.A., C. Maran, Y.K. Zhu, N. Iricanin, A. Ali, and T. Dessalegne. 2022. Chapter 2B: Water and Climate Resilience Metrics. In: *2022 South Florida Environmental Report – Volume I*. South Florida Water Management District, West Palm Beach, FL.

Hughes, J.D. and J.T. White. 2016. *Hydrologic Conditions in Urban Miami-Dade County, Florida, and the Effect of Groundwater Pumpage and Increased Sea Level on Canal Leakage and Regional Groundwater Flow*. Scientific Investigations Report 2014-5162. Prepared in cooperation with the Miami-Dade Water and Sewer Department. United States Geological Survey, Reston, VA.

Hughes, J.D., D.F. Sifuentes, and J.T. White. 2016. *Potential Effects of Alterations to the Hydrologic System on the Distribution of Salinity in the Biscayne Aquifer in Broward County, Florida*. Scientific Investigations Report 2016-5022. Prepared in cooperation with the Broward County Environmental Planning and Community Resilience Division. United States Geological Survey, Reston, VA.

IPCC. 2021. *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY.

Jamaluddin, U.A., J. Yaakub, S. Suratman, and J.J. Pereira. 2016. Threats faced by groundwater: A preliminary study in Kuala Selangor. *Bulletin of the Geological Society of Malaysia* 62:65-72.

NASA, NOAA, USEPA, Rutgers The State University of New Jersey, and USGS. 2022. *Interagency Sea Level Rise Scenario Tool.* Available online at https://sealevel.nasa.gov/task-force-scenario-tool.

NOAA. 2022. *Tides & Currents: Relative Sea Level Trends*. Available online at https://tidesandcurrents.noaa.gov/sltrends/.

NOAA, NASA, USEPA, USGS, USBR, NEMAC The University of North Carolina at Chapel Hill, and USGCRP. 2023*. United States Climate Resilience Toolkit Climate Explorer*. Available online at https://crt-climate-explorer.nemac.org/.

Obeysekera, J., J.J. Park, M. Irizarry-Ortiz, P. Trimble, J. Barnes, J. VanArman, W. Said, and E. Gadzinski. 2011. *Past and Projected Trends in Climate and Sea Level for South Florida*. South Florida Water Management District, West Palm Beach, FL.

Rayer, S. and Y. Wang. 2021. *Projections of Florida Population by County, 2025-2045, with Estimates for 2020*. Florida Population Studies, Volume 54, Bulletin 189. Bureau of Economic and Business Research, University of Florida, Gainesville, FL. April 2021.

SFWMD. 2007. *Utilities of Concern in the Lower East Coast Region and Lake Okeechobee Service Area*. September 27, 2007. Water Shortage Analysis Team. South Florida Water Management District, West Palm Beach, FL.

SFWMD. 2009. *Climate Change & Water Management in South Florida*. Interdepartmental Climate Change Group. South Florida Water Management District, West Palm Beach, FL.

SFWMD. 2021. *Water and Climate Resilience Metrics, Phase 1: Long-Term Observed Trends*. South Florida Water Management District, West Palm Beach, FL.

SFWMD. 2023. *Resilience Metrics Hub*. South Florida Water Management District, West Palm Beach, FL. Available online at https://sfwmd-district-resiliency-sfwmd.hub.arcgis.com.

Shaw, J.E. and M. Zamorano. 2020. *Saltwater Interface Monitoring and Mapping Program*. Technical Publication WS-58. South Florida Water Management District, West Palm Beach, FL. December 2020.

Smajstrla, A.G. 1990. Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) Model, Version 5.5. Agricultural Engineering Department, University of Florida, Gainesville, FL.

Southeast Florida Regional Climate Change Compact. 2022. *Regional Climate Action Plan 3.0*. Available online at https://southeastfloridaclimatecompact.org/initiative/regional-climate-action-plan/.

Stemle, Andersen & Associates. 1994. *Floridan Aquifer Wellfield Deepening Preliminary Hydrogeologic Report for the Town of Jupiter Water System, Jupiter, Florida*. Technical report prepared for Hutcheon Engineers Division of Kimley-Horn and Associates, Inc., West Palm Beach, FL. Stemle, Andersen & Associates, Inc., Lake Worth, FL. December 1994.

Sweet, W.V., B.D. Hamlington, R.E. Kopp, C.P. Weaver, P.L. Barnard, D. Bekaert, W. Brooks, M. Craghan, G. Dusek, T. Frederikse, G. Garner, A.S. Genz, J.P. Krasting, E. Larour, D. Marcy, J.J. Marra, J. Obeysekera, M. Osler, M. Pendleton, D. Roman, L. Schmied, W. Veatch, K.D. White, and C. Zuzak. 2022. *Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines*. NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD. February 2022.

Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M. Horton, E.R. Thieler, and C. Zervas. 2017. *Global and Regional Sea Level Rise Scenarios for the United States*. NOAA Technical Report NOS CO-OPS 083. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD. January 2017.

USEPA. 2023. *Secondary Drinking Water Standards: Guidance for Nuisance Chemicals*. United States Environmental Protection Agency, Washington, DC. Updated February 14, 2023. Available online at https://www.epa.gov/sdwa/secondary-drinking-water-standards-guidance-nuisance-chemicals.

USGS. 2023. *USGS GeoLog Locator*. United States Geological Survey, Reston, VA. Updated 2023. Available online at https://webapps.usgs.gov/GeoLogLocator/.

E

Wastewater Treatment Facilities

Table of Contents

List of Tables

List of Figures

WASTEWATER TREATMENT FACILITIES

Wastewater generated by homes and businesses is either directed to an on-site septic tank for treatment and disposal or collected via sanitary sewer and conveyed to a wastewater treatment facility (WWTF) for treatment and disposal or reuse. WWTFs can either be smaller "package plants" to larger, more regional, facilities. This appendix focuses on the larger facilities with a Florida Department of Environmental Protection (FDEP) permitted treatment capacity of 0.10 million gallons per day (mgd) or greater in the Lower East Coast (LEC) Planning Area. These larger treatment facilities allow economy of operation and have sufficient flows that, if properly treated and reused as reclaimed water, could positively impact water resources.

Mandatory Reuse Zones

Mandatory reuse zones (MRZs) are designated sections within a utility service area where properties are required to receive or prepare to receive reclaimed water, pending service being active or anticipated. Eleven municipalities in the LEC Planning Area have MRZs, which are specified in local ordinances (**Table E-1**). It is important to note that, although an entire city or utility service area may be shaded in **Figure E-1**, MRZ ordinances typically require users to connect to reclaimed water lines only when service becomes available within a certain proximity to an active reclaimed water transmission line. Reclaimed water distribution also occurs outside of MRZs. Additionally, individual municipalities may have other conditional connection or dry-line construction requirements based on parcel type or areas of future development within the MRZ.

North Springs Improvement District, Coconut Creek, and Deerfield Beach do not have their own MRZ ordinances. However, Broward County will begin providing reclaimed water to those service areas by 2025. Users would then be obligated to connect to the transmission main per the connection requirements as described in Broward County's MRZ ordinance.

For specifics on a particular municipality's connection requirements, refer to each city or county ordinance.

Table E-1. Local governments with mandatory reuse zones.

Local Governments	MRZ Ordinance Number
Boca Raton	Chapter 17 Article VII Sec. 17-203
Broward County	Chapter 34 Article XI Sec. 34-253
Davie	Chapter 25 Article VI Sec. 25-60
Delray Beach	Title 5 Chapter 59 Sec. 59.06
Hollywood	Title V Chapter 52 Sec. 52.75
Key West	Chapter 108 Article IX Sec. 108-957
Lighthouse Point	Chapter 50 Article II Sec. 50-4
Miramar	Chapter 21 Article IX Sec. 21-296
Palm Beach County	Chapter 27 Article IX Sec. 27-176
Pompano Beach	Title V Chapter 54 Sec. 54.02
Sunrise	Chapter 15 Article V Sec. 15-152

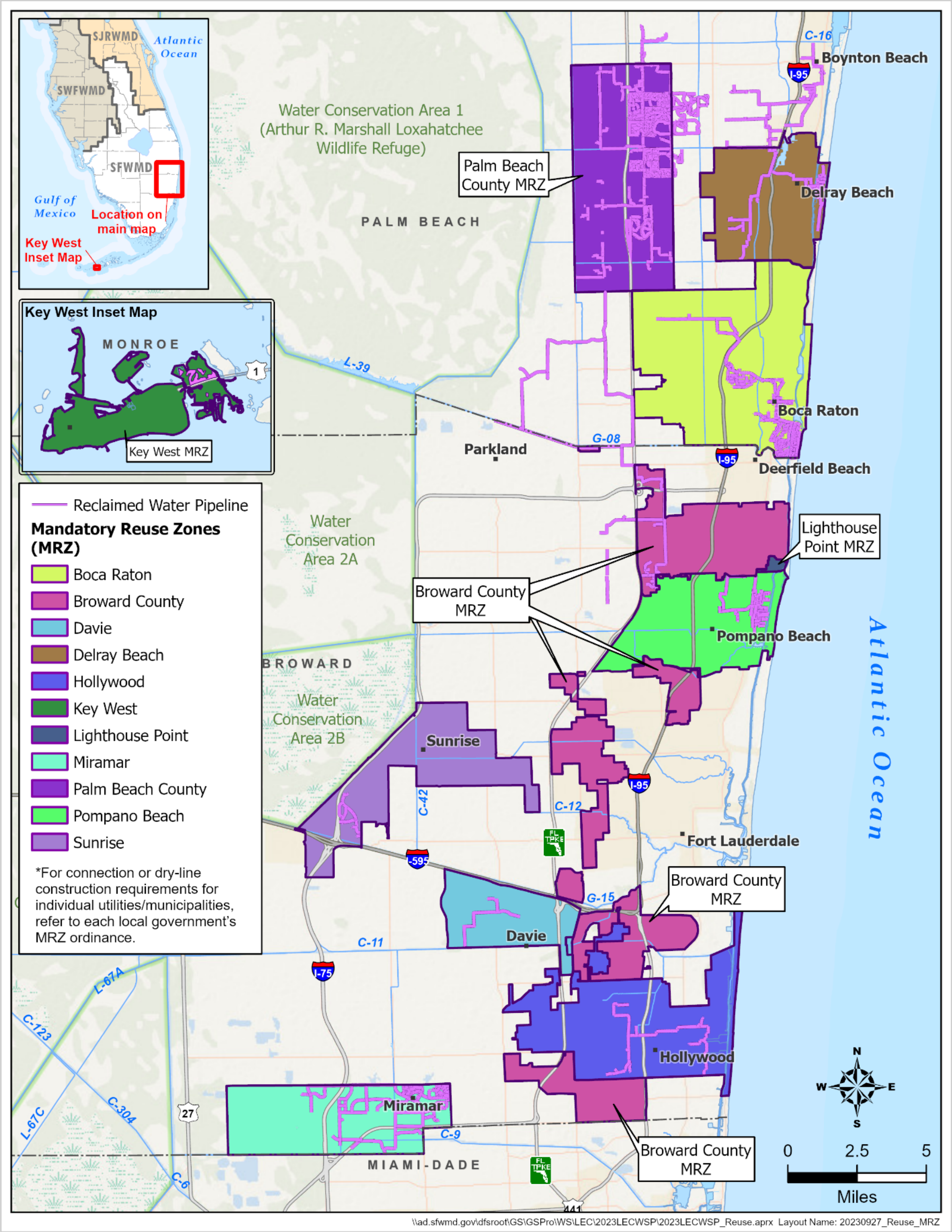


Figure E-1. Mandatory reuse zones in the LEC Planning Area.

Leah Schad Memorial Ocean Outfall Program

The Florida Legislature enacted an Ocean Outfall Law (OOL) in 2008 as defined in Chapter 2008-232, Laws of Florida. Section 403.086(10), Florida Statutes (F.S.), requires 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% of the outfall flows by December 31, 2025. Beginning in 2026, ocean outfalls should be used only for backup disposal.

The OOL provides utilities an option to satisfy their reuse requirements by entering into a contract with another utility under provisions of Section 163.01, F.S., (i.e., Florida Interlocal Cooperation Act of 1969). Contractual or "virtual" reuse agreements are an innovative mechanism some LEC utilities are employing to expand the use of reclaimed water and meet OOL conditions. Under these agreements, a city/utility can contribute financially to the development of another city/utility's reuse system and receive credit for the subsequent reuse flows. Such agreements are currently in place between the cities of Cooper City, Hollywood, and Miramar. These agreements are described further in this appendix and in the profiles of the affected facilities.

The status of each of the seven wastewater treatment permit holders affected by the OOL on meeting their 60% reuse flow requirement includes the following:

- **Boca Raton** – In 2015, the Boca Raton WWTF was designated a 100% reuse facility by the FDEP since the city has installed a fully operational reuse system including 100% of the facility's baseline flow. As a result, Boca Raton was also deemed to have met the reuse requirements of the OOL.
- **Broward County** – The Broward County – North Regional WWTF will be operationally capable of meeting its OOL mandated flows by the end of December 2025. Actual reuse flows will depend on the receiving and distribution capabilities of partnering utilities including Palm Beach County Water Utilities Department (PBCWUD) – Southern Region, the North Springs Improvement District, and the cities of Coconut Creek, Deerfield Beach, and Pompano Beach. Additional deep injection wells have been installed for backup disposal to cease ocean outfall discharges.
- **Cooper City** – Cooper City expects to meet its OOL requirements by providing reclaimed water via contractual (virtual) flows within the City of Miramar whereby Cooper City has provided financial assistance to the City of Miramar for the expansion of its reuse system.
- **Davie** – The Davie WRF has a current capacity to provide up to 3.50 mgd of reclaimed water for irrigation and industrial uses, which is sufficient to meet its OOL requirement. In addition, its deep well disposal program can fully eliminate its current ocean outfall disposals. However, Davie is limited in wastewater flows due to its 1.70 mgd commitment with Hollywood for that city's reuse program. Davie is seeking new reuse users as well as funding to construct new reuse lines and connections to ensure the 1.10 mgd beneficial reuse flow requirement is met by 2026.

- **Hollywood** – Hollywood expects to meet its OOL requirements by providing reclaimed water via contractual flows to nearby cities in Broward County, including the City of Miramar. Hollywood is aggressively exploring additional contractual reuse to meet its OOL reuse requirements. Additional deep injection wells are being installed for backup disposal to cease ocean outfall discharges.
- **Miami-Dade Water and Sewer Department (MDWASD)** – To meet its OOL target reuse requirements, the MDWASD is pursuing the implementation of an agreement with Florida Power & Light (FPL) where the MDWASD will provide up to 15 mgd of reclaimed water to FPL's Turkey Point Clean Energy Center and use treated effluent to provide cooling to buildings and energy intensive processes within its WWTFs. Additional deep injection wells are being installed for backup disposal and to cease ocean outfall discharges.
- **South Central Regional Water Authority (SCRWA)** – The SCRWA WWTF currently disposes its treated wastewater through deep well injection and irrigation reuse. Two deep injection wells were completed in 2009 and 2023, so ocean outfall will only be used as an emergency backup. The WWTF has the treatment capacity to produce reclaimed water volumes to meet its OOL requirements. The SCRWA's member cities (Boynton Beach and Delray Beach) are exploring the possibility of expanding MRZs and/or implementing contractual reuse flows with other cities.

In 2021, there were 45 domestic WWTFs within the LEC Planning Area with a permitted treatment capacity of 0.10 mgd or greater. **Table E-2** lists those WWTFs and shows annual average daily flows for 2021 and projected flows for 2045. Twenty-seven of the thirty-four WWTFs permitted to produce reclaimed water reused their wastewater. **Tables E-3** and **E-4** show 2021 and projected 2045 utilization of reclaimed water and methods of disposal, respectively, for those facilities. The 2045 flows for Cooper City, Hollywood, and Miramar in **Tables E-1**, **E-2**, and **E-3** may differ from cumulative 2045 flow totals for Broward County to avoid double counting of contractual (virtual) reuse flows. **Table E-5** shows 2021 and 2045 methods of wastewater disposal for facilities with capacities of 0.10 mgd or greater. The facilities at Boca Chica Naval Air Station and Key Haven were both decommissioned in 2018 and 2019, respectively, and are not included in the tables. Additionally, the proposed MDWASD – West WWTF has been deferred. The MDWASD does not anticipate a need for this facility until approximately 2040. Therefore, this facility is also excluded from the tables.

DATA AND METRICS

Flow data for the 28 facilities permitted for reuse were obtained from the individual reuse inventory reports submitted to FDEP for the year 2021 (FDEP 2022). For the remaining 17 facilities not permitted to produce reclaimed water, data were obtained through direct communications with the utility or facility staff. For all facilities, 2045 flow projections for annual average daily wastewater, reuse, total discharges, and supplemental water are based on data provided by each utility. Future project information, which will increase reclaimed water production capacity, is shown for each facility as provided by the respective utilities.

Differences between wastewater flow at a treatment facility and the sum of water reused and disposed from the facility are often due to the addition of post-treatment supplemental water and/or (e.g., concentrate) at treatment plant processes that can lead to double counting of flows or metering inaccuracies.

Reuse percentage is a metric frequently used when describing reuse facilities and is intended to reflect the amount of reclaimed water reused, relative to the amount of water the facility has potentially available for that purpose. The potential reuse at a facility is equal to the sum of wastewater treated at the facility, water imported from another facility, and supplemental water added to the system to meet reclaimed water demands, minus the water exported to another facility. Because supplemental water (including, but not limited to, groundwater or surface water) is sometimes blended with reclaimed water, calculated reuse percentages may exceed the processed wastewater flow at a WWTF. In these cases, the reuse percentage can exceed 100%. However, for the purposes of this plan update, any reuse percentage more than 100% is reported as 100%. The calculated reuse percentage may also differ slightly from actual reuse flows in some cases due to metering inaccuracies or when one or more system activities occur in which reclaimed water is returned to the treatment train after its use, especially if used at the facility itself.

INFO ⓘ

Reuse Percentage:

A Metric for Reclaimed Water Use Efficiency

Reuse Percentage = Reuse / Potential Reuse

Not to exceed 100%

Potential Reuse = (Wastewater Flow + Supplemental Flow + Imports) - Exports

For the tables that follow, the following acronyms and abbreviations are defined here.

INFO ⓘ

BA – basic-level disinfection indicates a facility's level of effluent disinfection as described in Subsection 62-600.440(5), F.A.C.

DemConc – demineralized concentrate

DW – drinking water

FDEP – Florida Department of Environmental Protection

FKAA – Florida Keys Aqueduct Authority

FPL – Florida Power & Light

GW – groundwater

HB – high-level disinfection and basic disinfection for portions of treated flow

HI – high-level disinfection indicates a facility's level of effluent disinfection as described in Subsection 62-600.440(6), F.A.C.

MDWASD – Miami-Dade Water and Sewer Department

mgd – million gallons per day

PBCWUD – Palm Beach County Water Utilities Department

SW – surface water

WRF – water reclamation facility

WWTF – wastewater treatment facility

Table E-2. Summary of 2021 and 2045 wastewater treatment facilities with current or projected capacities of 0.10 mgd or greater in the LEC Planning Area.

County	Facility	Disinfection Level	FDEP Rated Capacity (mgd)	2021			2045		
				Annual Average Daily Wastewater Flow (mgd)	Annual Average Daily Reuse Flow (mgd)	Reuse Percentage	Annual Average Daily Wastewater Flow (mgd)	Annual Average Daily Reuse Flow (mgd)	Reuse Percentage
Broward	Broward County – North Regional	HB	95.00	71.30	3.55	0.05%	86.00	18.24	0.28%
	Cooper City	BA	3.44	2.55	0.00	0.0%	2.74	1.00[a]	0.0%
	Coral Springs Improvement District	BA	7.72	5.04	0.00	0.0%	5.82	0.00	0.0%
	Davie WRF	HI	3.50	1.56	0.67	42.9%	2.40	1.48	61.7%
	Davie WWTF	BA	4.85	2.16	0.00	0.0%	2.85	0.00	0.0%
	Fort Lauderdale – G.T. Lohmeyer	-	56.60	38.10	0.00	0.0%	50.01	0.00	0.0%
	Hollywood	HB	55.50	43.37	5.45	11.3%	55.50	12.50[a]	20.8%
	Margate	-	10.10	6.40	0.00	0.0%	8.70	0.00	0.0%
	Miramar	HI	12.70	10.08	4.24	42.0%	11.13	7.50[b]	67.4%
	Pembroke Pines	-	9.50	7.16	0.00	0.0%	7.91	0.00	0.0%
	Plantation	HI	18.90	12.64	0.57	4.5%	14.54	1.06	7.3%
	Pompano Beach	HI	7.50	2.82	2.51	88.4%	10.00	10.00	99.2%
	Sunrise – Sawgrass	HB	20.00	13.49	0.15	1.1%	14.66	1.97	13.4%
	Sunrise – Southwest	BA	0.99	0.29	0.29	100.0%	0.31	0.31	100.0%
	Sunrise – Springtree	BA	10.00	6.83	0.00	0.0%	7.66	0.00	0.0%
	Tindall Hammock	HI	0.60	0.39	0.39	100.0%	0.40	0.00	0.0%
Broward County Total			**316.90**	**224.18**	**17.82**	**7.9%**	**280.63**	**51.06[a]**	**18.9%**
Miami-Dade	Americana Village Condominium	-	0.20	0.14	0.00	0.0%	0.15	0.00	0.0%
	Cricket Club Condominium	BA	0.11	0.06	0.00	0.0%	0.06	0.00	0.0%
	Homestead	HI	5.00	4.62	5.16	100.0%	9.00	9.00	100.0%
	MDWASD – Central	HB	143.00	110.50	6.13	5.5%	146.76	30.13	20.5%
	MDWASD – North	HB	120.00	103.71	2.35	2.3%	111.82	16.35	14.6%
	MDWASD – South	HI	112.50	101.80	5.20	5.1%	127.25	70.20	55.2%
Miami-Dade County Total			**380.81**	**320.83**	**18.84**	**5.9%**	**395.04**	**125.68**	**31.8%**
Monroe	FKAA – Big Coppitt	HB	0.41	0.32	0.06	17.8%	0.32	0.06	17.8%
	FKAA – Cudjoe Regional	-	0.84	0.62	0.00	0.0%	0.94	0.00	0.0%
	FKAA – Duck Key	HI	0.27	0.14	0.06	41.1%	0.15	0.08	48.5%
	Key Colony Beach	HI	0.34	0.21	0.03	15.9%	0.21	0.03	15.9%

Table E-2. Continued.

County	Facility	Disinfection Level	FDEP Rated Capacity (mgd)	2021			2045		
				Annual Average Daily Wastewater Flow (mgd)	Annual Average Daily Reuse Flow (mgd)	Reuse Percentage	Annual Average Daily Wastewater Flow (mgd)	Annual Average Daily Reuse Flow (mgd)	Reuse Percentage
Monroe (Continued)	Key Largo	-	3.45	1.98	0.00	0.0%	2.81	2.81	100.0%
	Key West	-	10.00	4.03	0.00	0.0%	4.52	0.00	0.0%
	Key West Resort	HI	0.85	0.58	0.11	18.8%	0.79	0.13	16.5%
	Marathon – Area 3	HI	0.25	0.18	0.00	0.0%	0.18	0.18	0.0%
	Marathon – Area 4	HI	0.40	0.29	0.00	0.0%	0.29	0.29	0.0%
	Marathon – Area 5	HB	0.45	0.35	0.00	0.0%	0.35	0.35	0.0%
	Marathon – Area 6	BA	0.20	0.08	0.00	0.0%	0.08	0.08	0.0%
	Marathon – Area 7	HI	0.20	0.04	0.00	0.0%	0.04	0.04	0.0%
	North Key Largo	HI	0.50	0.26	0.06	22.9%	0.26	0.06	22.9%
Monroe County Total			**18.16**	**9.06**	**0.32**	**3.3%**	**10.94**	**4.10**	**34.6%**
Palm Beach	Boca Raton	HI	17.50	15.43	11.10	71.4%	16.12	11.49	70.8%
	East Central Regional (WPB)	HB	70.00	45.21	15.02	33.6%	67.97	20.12	29.8%
	Loxahatchee River District	HI	11.00	7.18	7.40	78.5%	10.52	8.27	78.6%
	PBCWUD – Central Region	HI	3.00	0.54	0.47	100.0%	0.54	0.47	100.0%
	PBCWUD – Southern Region	HI	35.00	19.58	11.43	58.4%	27.05	28.48	75.8%
	PBCWUD – Western Region (Belle Glade)	BA	6.50	3.24	0.08	2.6%	3.63	0.08	2.2%
	PBCWUD – Western Region North (Pahokee)	BA	1.20	1.07	0.00	0.0%	1.26	0.00	0.0%
	Seacoast	HI	12.00	7.54	8.70	92.7%	8.74	9.24	86.1%
	South Central Regional	HB	24.00	17.98	5.94	33.0%	20.65	7.06	34.2%
	Wellington	HB	6.50	3.83	0.35	8.9%	6.54	0.55	8.4%
Palm Beach County Total			**186.70**	**121.59**	**60.49**	**48.1%**	**163.02**	**85.76**	**48.8%**
LEC Planning Area Total			**902.57**	**675.66**	**97.47**	**14.3%**	**849.62**	**266.60**[a]	**31.3%**

[a] Contractual (virtual) reuse water flows between the cities of Cooper City, Hollywood, and Miramar were accounted for in the Broward County and LEC Planning Area totals to avoid double counting. See individual utility profiles for more explanation.

Table E-3. 2021 utilization of reclaimed water (in mgd) from wastewater treatment facilities in the LEC Planning Area with current or projected capacities of 0.10 mgd or greater.

County	Facility	2021							
		Golf Course Irrigation	Residential Irrigation	Other Irrigation[a]	Groundwater Recharge[b]	Wetlands	Industrial & Other Types of Reuse[c]	Potable Reuse	Reuse Total
Broward	Broward County – North Regional	0.00	0.00	0.08	0.00	0.00	3.47	0.00	3.55
	Cooper City	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Coral Springs Improvement District	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Davie WRF	0.00	0.00	0.59	0.00	0.00	0.08	0.00	0.67
	Davie WWTF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Fort Lauderdale – G.T. Lohmeyer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Hollywood	1.64	0.19	0.04	0.00	0.00	3.59	0.00	5.45
	Margate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Miramar	0.00	2.89	0.00	0.00	0.00	1.34	0.00	4.24
	Pembroke Pines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Plantation	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.57
	Pompano Beach	1.25	1.17	0.09	0.00	0.00	0.00	0.00	2.51
	Sunrise – Sawgrass	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.15
	Sunrise – Southwest	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.29
	Sunrise – Springtree	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tindall Hammock	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.39
Broward County Total		**2.88**	**4.25**	**0.80**	**0.68**	**0.00**	**9.20**	**0.00**	**17.82**
Miami-Dade	Americana Village Condominium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cricket Club Condominium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Homestead	0.00	0.00	0.00	4.11	0.00	1.05	0.00	5.16
	MDWASD – Central	0.00	0.00	0.00	0.00	0.00	6.13	0.00	6.13
	MDWASD – North	0.00	0.00	0.00	0.00	0.00	2.35	0.00	2.35
	MDWASD – South	0.00	0.00	0.00	0.00	0.00	5.20	0.00	5.20
Miami-Dade County Total		**0.00**	**0.00**	**0.00**	**4.11**	**0.00**	**14.73**	**0.00**	**18.84**
Monroe	FKAA – Big Coppitt	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.06
	FKAA – Cudjoe Regional	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	FKAA – Duck Key	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.06
	Key Colony Beach	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.03

Table E-3. Continued.

County	Facility	2021							
		Golf Course Irrigation	Residential Irrigation	Other Irrigation[a]	Groundwater Recharge[b]	Wetlands	Industrial & Other Types of Reuse[c]	Potable Reuse	Reuse Total
Monroe (Continued)	Key Largo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Key West	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Key West Resort	0.09	0.00	0.00	0.00	0.00	0.02	0.00	0.11
	Marathon – Area 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	North Key Largo	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Monroe County Total		**0.18**	**0.11**	**0.01**	**0.00**	**0.00**	**0.02**	**0.00**	**0.32**
Palm Beach	Boca Raton	4.18	2.08	3.54	0.00	0.00	1.30	0.00	11.10
	East Central Regional (WPB)	0.00	0.00	0.08	0.00	0.00	14.94	0.00	15.02
	Loxahatchee River District	4.38	1.12	0.68	0.00	0.00	1.22	0.00	7.40
	PBCWUD – Central Region	0.01	0.46	0.00	0.00	0.00	0.00	0.00	0.47
	PBCWUD – Southern Region	2.46	5.01	0.35	0.00	0.88	2.73	0.00	11.43
	PBCWUD – Western Region (Belle Glade)	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.08
	PBCWUD – Western Region North (Pahokee)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Seacoast	5.63	2.38	0.65	0.00	0.00	0.03	0.00	8.70
	South Central Regional	2.77	0.61	1.45	0.00	0.00	1.11	0.00	5.94
	Wellington	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.35
Palm Beach County Total		**19.43**	**11.66**	**7.10**	**0.08**	**0.88**	**21.34**	**0.00**	**60.49**
LEC Planning Area Total		**22.49**	**16.02**	**7.91**	**4.88**	**0.88**	**45.29**	**0.00**	**97.47**

[a] Includes parks, schools, common areas, etc.

[b] Includes rapid infiltration basins and percolation ponds.

[c] Includes other permitted uses, such as process water at the treatment facility, cooling water, and toilet flushing.

Table E-4. 2045 utilization of reclaimed water (in mgd) from wastewater treatment facilities in the LEC Planning Area with current or projected capacities of 0.10 mgd or greater.

County	Facility	2045							
		Golf Course Irrigation	Residential Irrigation	Other Irrigation[a]	Groundwater Recharge[b]	Wetlands	Industrial & Other Types of Reuse[c]	Potable Reuse	Reuse Total
Broward	Broward County – North Regional	6.00	0.10	7.49	0.00	0.00	4.65	0.00	18.24
	Cooper City	0.00	0.00	1.00[d]	0.00	0.00	0.00	0.00	1.00[d]
	Coral Springs Improvement District	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Davie WRF	0.00	0.00	1.40	0.00	0.00	0.08	0.00	1.48
	Davie WWTF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Fort Lauderdale – G.T. Lohmeyer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Hollywood	3.52	0.40[d]	4.58[d]	0.00	0.00	4.00	0.00	12.50[d]
	Margate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Miramar	0.00	4.00[d]	2.00[d]	0.00	0.00	1.50	0.00	7.50[d]
	Pembroke Pines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Plantation	0.00	0.00	0.00	0.00	0.00	1.06	0.00	1.06
	Pompano Beach	2.00	6.50	1.50	0.00	0.00	0.00	0.00	10.00
	Sunrise – Sawgrass	0.50	0.13	1.19	0.00	0.00	0.15	0.00	1.97
	Sunrise – Southwest	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.31
	Sunrise – Springtree	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tindall Hammock	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Broward County Total	**12.02**	**9.63[d]**	**17.66[d]**	**0.31**	**0.00**	**11.44**	**0.00**	**51.06[d]**
Miami-Dade	Americana Village Condominium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cricket Club Condominium	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Homestead	0.50	3.00	0.50	3.50	0.00	1.50	0.00	9.00
	MDWASD – Central	0.00	0.00	0.00	0.00	0.00	30.13	0.00	30.13
	MDWASD – North	0.00	0.00	0.00	0.00	0.00	16.35	0.00	16.35
	MDWASD – South	0.00	0.00	0.00	0.00	0.00	70.20	0.00	70.20
	Miami-Dade County Total	**0.50**	**3.00**	**0.50**	**3.50**	**0.00**	**118.18**	**0.00**	**125.68**
Monroe	FKAA – Big Coppitt	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.06
	FKAA – Cudjoe Regional	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	FKAA – Duck Key	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.08
	Key Colony Beach	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.03

Table E-4. Continued.

County	Facility	2045							
		Golf Course Irrigation	Residential Irrigation	Other Irrigation[a]	Groundwater Recharge[b]	Wetlands	Industrial & Other Types of Reuse[c]	Potable Reuse	Reuse Total
Monroe (Continued)	Key Largo	0.00	0.00	0.00	0.00	0.00	0.00	2.81	2.81
	Key West	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Key West Resort	0.09	0.00	0.00	0.00	0.00	0.04	0.00	0.13
	Marathon – Area 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
	Marathon – Area 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
	Marathon – Area 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35
	Marathon – Area 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
	Marathon – Area 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	North Key Largo	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Monroe County Total		**0.18**	**0.11**	**0.03**	**0.00**	**0.00**	**0.04**	**2.81**	**4.10**
Palm Beach	Boca Raton	4.32	2.16	3.67	0.00	0.00	1.34	0.00	11.49
	East Central Regional (WPB)	0.00	0.00	0.12	0.00	0.00	20.00	0.00	20.12
	Loxahatchee River District	4.38	1.12	1.55	0.00	0.00	1.22	0.00	8.27
	PBCWUD – Central Region	0.01	0.46	0.00	0.00	0.00	0.00	0.00	0.47
	PBCWUD – Southern Region	2.46	18.16	1.35	0.00	2.88	3.63	0.00	28.48
	PBCWUD – Western Region (Belle Glade)	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.08
	PBCWUD – Western Region North (Pahokee)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Seacoast	4.88	3.41	0.90	0.00	0.00	0.05	0.00	9.24
	South Central Regional	3.32	0.73	1.75	0.00	0.00	1.25	0.00	7.06
	Wellington	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.55
Palm Beach County Total		**19.38**	**26.04**	**9.90**	**0.08**	**2.88**	**27.49**	**0.00**	**85.76**
LEC Planning Area Total		**32.08**	**38.77**[d]	**28.09**[d]	**3.89**	**2.88**	**157.15**	**2.81**	**266.60**[d]

[a] Includes parks, schools, common areas, etc.

[b] Includes rapid infiltration basins and percolation ponds.

[c] Includes other permitted uses, such as process water at the treatment facility, cooling water, and toilet flushing.

[d] Contractual (virtual) reuse water flows between the cities of Cooper City, Hollywood, and Miramar were accounted for in the Broward County and LEC Planning Area totals to avoid double counting. See individual utility profiles for more explanation.

Table E-5. 2021 and 2045 methods of wastewater disposal for facilities (in mgd) with current or projected capacities of 0.10 mgd or greater in the LEC Planning Area.

County	Facility	2021						2045					
		Deep Well Injection (mgd)	Shallow Well Injection	Surface Water Discharge (mgd)	Ocean Outfall	Other[a]	Total Disposals	Deep Well Injection (mgd)	Shallow Well Injection	Surface Water Discharge (mgd)	Ocean Outfall	Other	Total Disposals
Broward	Broward County – North Regional	44.60	0.00	0.00	23.40	0.00	68.00	45.46	0.00	0.00	1.79	0.00	47.25
	Cooper City	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.00	0.00	0.00	0.00	1.04
	Coral Springs Improvement District	5.04	0.00	0.00	0.00	0.00	5.04	5.82	0.00	0.00	0.00	0.00	5.82
	Davie WRF	0.89	0.00	0.00	0.00	0.00	0.89	0.89	0.00	0.00	0.00	0.00	0.89
	Davie WWTF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Fort Lauderdale – G.T. Lohmeyer	38.10	0.00	0.00	0.00	0.00	38.10	50.01	0.00	0.00	0.00	0.00	50.01
	Hollywood	11.48	0.00	0.00	31.89	0.00	43.37	45.55	0.00	0.00	2.00	0.00	47.55
	Margate	6.40	0.00	0.00	0.00	0.00	6.40	8.70	0.00	0.00	0.00	0.00	8.70
	Miramar	7.46	0.00	0.00	0.00	0.00	7.46	3.63	0.00	0.00	0.00	0.00	3.63
	Pembroke Pines	7.16	0.00	0.00	0.00	0.00	7.16	7.91	0.00	0.00	0.00	0.00	7.91
	Plantation	11.66	0.00	0.00	0.00	0.00	11.66	13.53	0.00	0.00	0.00	0.00	13.53
	Pompano Beach	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sunrise – Sawgrass	13.34	0.00	0.00	0.00	0.00	13.34	12.69	0.00	0.00	0.00	0.00	12.69
	Sunrise – Southwest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sunrise – Springtree	6.83	0.00	0.00	0.00	0.00	6.83	7.66	0.00	0.00	0.00	0.00	7.66
	Tindall Hammock	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.40
Broward County Total		**152.96**	**0.00**	**0.00**	**55.29**	**0.00**	**208.25**	**203.28**	**0.00**	**0.00**	**3.79**	**0.00**	**207.08**
Miami-Dade	Americana Village Condominium	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.00	0.00	0.15	0.15
	Cricket Club Condominium	0.06	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.06
	Homestead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MDWASD – Central	33.17	0.00	0.00	89.15	0.00	122.32	136.46	0.00	0.00	7.18	0.00	143.64
	MDWASD – North	68.21	0.00	0.00	33.05	0.00	101.26	103.88	0.00	0.00	5.51	0.00	109.39
	MDWASD – South	94.10	0.00	0.00	0.00	0.00	94.10	57.05	0.00	0.00	0.00	0.00	57.05
Miami-Dade County Total		**195.54**	**0.00**	**0.00**	**122.20**	**0.14**	**317.88**	**297.45**	**0.00**	**0.00**	**12.69**	**0.15**	**310.29**
Monroe	FKAA – Big Coppitt	0.00	0.26	0.00	0.00	0.00	0.26	0.00	0.26	0.00	0.00	0.00	0.26
	FKAA – Cudjoe Regional	0.62	0.00	0.00	0.00	0.00	0.62	0.94	0.00	0.00	0.00	0.00	0.94
	FKAA – Duck Key	0.00	0.09	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.00	0.00	0.09
	Key Colony Beach	0.00	0.17	0.00	0.00	0.00	0.17	0.00	0.17	0.00	0.00	0.00	0.17

Table E-5. Continued.

County	Facility	2021						2045					
		Deep Well Injection (mgd)	Shallow Well Injection	Surface Water Discharge (mgd)	Ocean Outfall	Other[a]	Total Disposals	Deep Well Injection (mgd)	Shallow Well Injection	Surface Water Discharge (mgd)	Ocean Outfall	Other	Total Disposals
Monroe (Continued)	Key Largo	0.00	1.98	0.00	0.00	0.00	1.98	0.00	0.00	0.00	0.00	0.00	0.00
	Key West	4.03	0.00	0.00	0.00	0.00	4.03	4.52	0.00	0.00	0.00	0.00	4.52
	Key West Resort	0.00	0.46	0.00	0.00	0.00	0.46	0.00	0.66	0.00	0.00	0.00	0.66
	Marathon – Area 3	0.00	0.18	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 4	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 5	0.00	0.35	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon – Area 6	0.00	0.08	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
	Marathon - Area 7	0.00	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
	North Key Largo	0.00	0.20	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.00	0.20
Monroe County Total		**4.65**	**4.10**	**0.00**	**0.00**	**0.00**	**8.75**	**5.46**	**1.38**	**0.00**	**0.00**	**0.00**	**6.84**
Palm Beach	Boca Raton	0.00	0.00	0.00	4.44	0.00	4.44	0.00	0.00	0.00	4.59	0.00	4.59
	East Central Regional (WPB)	30.19	0.00	0.00	0.00	0.00	30.19	45.39	0.00	0.00	0.00	0.00	45.39
	Loxahatchee River District	2.02	0.00	0.00	0.00	0.00	2.02	2.26	0.00	0.00	0.00	0.00	2.26
	PBCWUD – Central Region	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PBCWUD – Southern Region	9.08	0.00	0.00	0.00	0.00	9.08	9.08	0.00	0.00	0.00	0.00	9.08
	PBCWUD – Western Region (Belle Glade)	3.00	0.00	0.00	0.00	0.00	3.00	3.37	0.00	0.00	0.00	0.00	3.37
	PBCWUD – Western Region North (Pahokee)	0.99	0.00	0.00	0.00	0.00	0.99	1.17	0.00	0.00	0.00	0.00	1.17
	Seacoast	1.65	0.00	0.00	0.00	0.00	1.65	1.50	0.00	0.00	0.00	0.00	1.50
	South Central Regional	10.33	0.00	0.00	1.78	0.00	12.11	11.67	0.00	0.00	2.01	0.00	13.68
	Wellington	3.56	0.00	0.00	0.00	0.00	3.56	5.99	0.00	0.00	0.00	0.00	5.99
Palm Beach County Total		**60.81**	**0.00**	**0.00**	**6.22**	**0.00**	**67.03**	**80.42**	**0.00**	**0.00**	**6.60**	**0.00**	**87.02**
LEC Planning Area Total		**413.95**	**4.10**	**0.00**	**183.71**	**0.14**	**601.90**	**586.62**	**1.38**	**0.00**	**23.08**	**0.15**	**611.23**

[a] Includes soakage pit.

WASTEWATER/REUSE FACILITY PROFILES

Reclaimed Water Pump

This section contains profiles for many of the wastewater/reuse facilities within the LEC Planning Area with a treatment capacity of 0.10 mgd or greater. Some smaller facilities are not individually profiled due to limitations in expected growth; however, their basic information is included in **Tables E-2, E-3, E-4,** and **E-5** of this appendix. The profiles are organized by county, then alphabetically by utility, development, or institution. Each profile contains the existing facility information, followed by the current (2021) and projected (2045) annual average daily flows of wastewater and reclaimed water. Existing capacity and flow information were obtained from the individual reuse inventory reports for the year 2021, filed by each reuse facility to the FDEP (2022). Flow data from WWTFs not producing reuse were obtained directly from those utilities for the year 2021. Projected flows are based on information obtained from each utility.

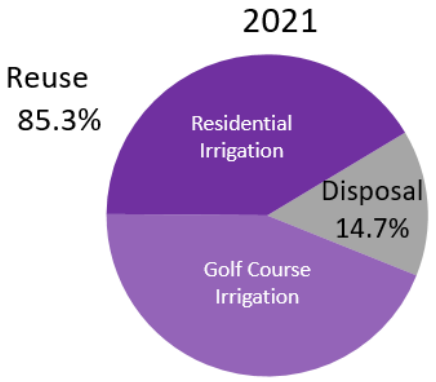
To help understand the information in the facility profiles, a sample profile with descriptions is provided. **Figures E-2**, **E-3**, and **E-4** show WWTFs with a permitted capacity of 0.10 mgd or greater in Broward, Miami-Dade, Monroe, and Palm Beach counties, respectively.

SAMPLE UTILITY NAME

Description: Descriptions may include any of the following types of information but are not limited to service area identification/description, interconnections with other facilities, ocean outfall requirements (if applicable), and significant projects.

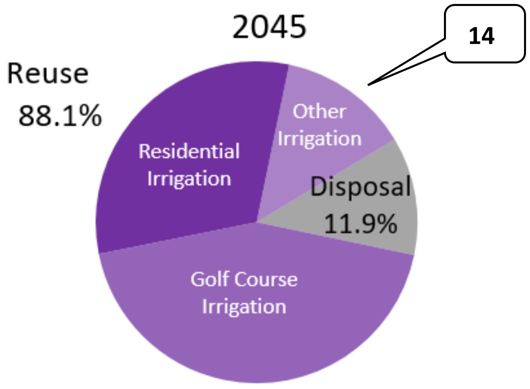
Wastewater Treatment Facility Information			
FDEP Wastewater Facilities Regulation Identification		FLA99999 1	
Wastewater Treatment Capacity (mgd)		3 0.90 2	
Disinfection		High Level	
Public Access Users Served Reclaimed Water: 4			
Residences – 10,690	Golf Courses – 0	Parks and Schools – 5	
Annual Average Daily Flows (mgd) 5			
	2021	2045	
Total Wastewater Treated 6	**4.96**	**6.76**	
Total Wastewater Disposed 7	**0.89**	**0.95**	
Deep Well Injection	0.89	0.89	
Total Water Reused[a]	**5.17**	**7.04**	
Golf Course Irrigation 8	2.67	3.48	
Residential Irrigation	2.51	2.51	
Other Irrigation	0.00	1.05	
Supplemental to Reclaimed Water 9	**2.12** GW 10	**2.37** GW	
Reuse Percentage 12	**92.6%**	**92.6%** 11	
Facility Water Imports/Exports (mgd)			
Importing Utility/Facility	1.02 – Sea Grape WWTF	1.14 – Sea Grape WWTF	
13 Reclaimed Water Project Summary			
Project Name	Completion Date	Total Capital Cost ($ million)	Added Capacity (mgd)
WRF Phase II Expansion	2025	$6.5	1.25

[a] Includes supplemental water blended with treated wastewater.



Wastewater Treated 4.96 mgd
1.02 mgd Exported

Water Reuse 5.17 mgd
Supplemental flow 2.12 mgd



Wastewater Treated 6.76 mgd
1.14 mgd Exported

Water Reuse 7.04 mgd
Supplemental flow 2.37 mgd

1 **FDEP Wastewater Facilities Regulation Identification** – A unique identification number assigned by the FDEP to each domestic WWTF or master reuse system; it is also the first part of each facility's permit number.

2 **Wastewater Treatment Capacity** – The capacity of the WWTF to produce treated wastewater as permitted by the FDEP, presented in mgd.

3 **Disinfection** – This represents the disinfection level at the facility: basic level, as described in Subsection 62-600.440(5), F.A.C., and high level, as described in Subsection 62-600.440(6), F.A.C.

4 **Public Access Users Served Reclaimed Water** – Indicates the number of reclaimed water recipients in the following classes: Residences, Golf Courses, Parks and Schools.

5 **Annual Average Daily Flows** – Flows in mgd at the facility, broken out as follows below in items 6, 7, 8, 9, 10, and 12 for the planning base year and the final year of the planning period.

6 **Total Wastewater Treated** – The net (treated) wastewater flow in mgd.

7 **Total Wastewater Disposed** – Wastewater flow (mgd) not reused or sent to another facility, shown as a Total Wastewater Disposed and broken out into disposal type: Deep or Shallow Well Injection, Surface Water Discharge, Coastal or Estuarine, Wetlands, or Ocean Outfall.

8 **Total Water Reused** – Application (reuse) of treated wastewater, shown as a Total Water Reused and broken out into the following reuse types: Golf Course Irrigation; Residential Irrigation; Other Irrigation (including parks, schools, common areas); Groundwater Recharge (including rapid infiltration basins, percolation ponds, and sprayfields); Wetlands (reuse for recharge and hydroperiod management); Industrial (including, but not limited to, use at the facility as part of treatment operations or at another facility, primarily for industrial cooling); Other (including, but not limited to, toilet flushing and other processes). All flows are shown in mgd.

9 **Supplemental to Reclaimed Water** – Supplemental flows added to reclaimed water to meet high-demand periods. Supplemental sources can include, but may not be limited to, Demineralized Concentrate, Drinking Water, Groundwater, Stormwater, and Surface Water. All flows are shown in mgd.

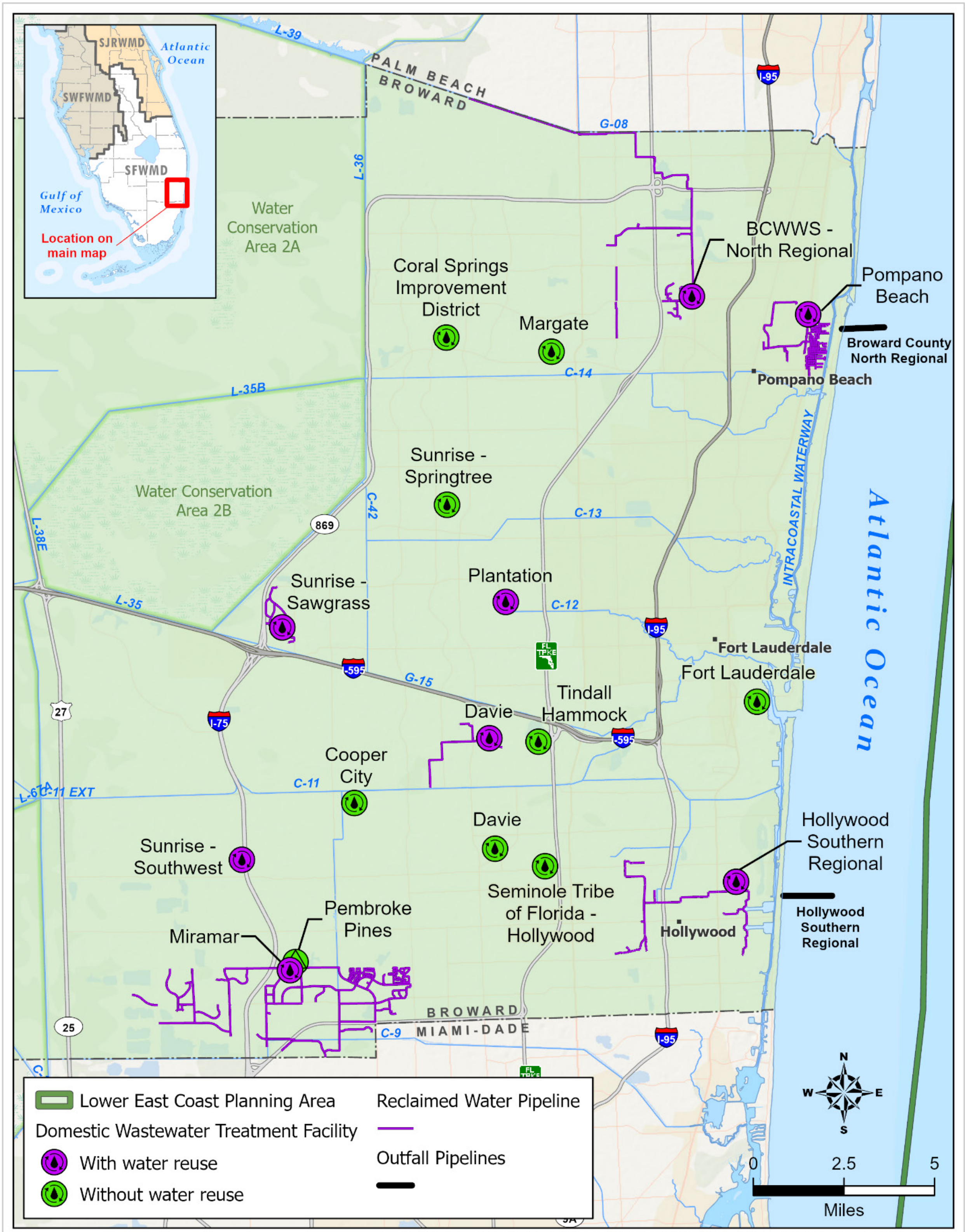
10 **Supplemental Source Indication** – Uses the acronyms as defined in the Data and Metrics section of this appendix to indicate the source of supplemental flows at the facility.

11 **Reuse Percentage** – A metric used when describing reuse facilities and intended to reflect the amount of water reused when compared with the amount of water available for reuse. Reuse Percentage = Reuse / Potential Reuse, where Potential Reuse = (Wastewater Flow + Supplemental Flow + Imports) - Exports. If supplemental flows cause the calculated reuse percentage to exceed 100%, the reuse percentage will be shown as 100%.

12 **Facility Water Imports/Exports** – Indicates whether the flow, shown in mgd, is an Import or Export, the facility sending flow to the profiled facility (for Imports) or receiving flow from the profiled facility (for Exports). This flow is treated effluent unless noted otherwise.

13 **Reclaimed Water Project Summary** – Information on utility-forecasted projects that will result in increased reclaimed water production capacity, including Project Name, Completion Date (anticipated), Total Capital Cost (in $ millions), and Added Capacity (in mgd).

14 **Pie Graphs** – Showing planning base year and final planning year (projected) reuse and disposal flows as well as percentages and breakdowns of flows for the relevant reuse types.



\\ad.sfwmd.gov\dfsroot\GS\GSPro\WS\LEC\2023LECWSP\2023LECWSP_Reuse.aprx Layout Name: 20230726_Reuse_Broward

Figure E-2. Wastewater and reuse facilities in Broward County.

BROWARD COUNTY – NORTH REGIONAL

Description: This facility serves northern Broward County. A 2017 county ordinance established MRZs to facilitate future customer connections (**Figure E-1**). Pompano Beach currently diverts approximately 2.80 mgd of effluent from the county's ocean outfall pipeline and, beginning in 2025, will receive approximately 5 mgd of effluent via a direct connection (increasing up to 10 mgd by 2045). Broward County has completed its portion of the Broward–Palm Beach County reclaimed water pipeline, which will deliver 16 mgd to PBCWUD – Southern Region, Coconut Creek, North Springs Improvement District (NSID), and Deerfield Beach for irrigation. This facility will be operationally capable of meeting its OOL mandated flow of 25.95 mgd by 12/31/2025. Excess effluent will be primarily disposed of via deep well injection by 2025.

Wastewater Treatment Facility Information	
FDEP Wastewater Facilities Regulation Identification	**FL0031771**
Wastewater Treatment Capacity (mgd)	**95.00**
Disinfection	Basic and High Level

Public Access Users Served Reclaimed Water 2021:		
Residences – 19	Golf Courses – 0	Parks and Schools – 1

Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**71.30**	**86.00**
Total Wastewater Disposed	**68.00**	**47.25**
Deep Well Injection	44.60	45.46
Ocean Outfall[a]	23.40[a]	1.79
Total Water Reused	**3.55**	**18.24**[b]
Golf Course Irrigation	0.00	6.00
Residential Irrigation	0.00	0.10
Other Irrigation	0.08	7.49[c]
Industrial	3.47	4.65
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**5.0%**	**27.9%**

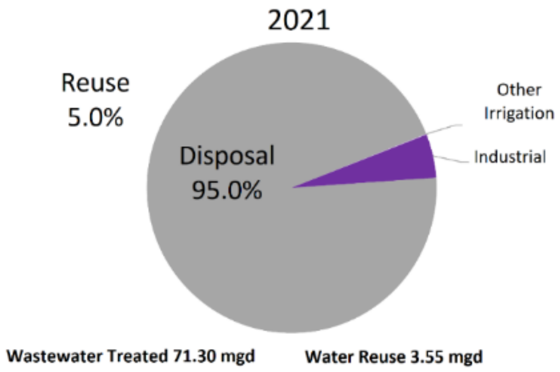
Facility Water Imports/Exports (mgd)		
Importing Utility/Facility	-	10.51 – PBCWUD – Southern Region[c] 2.49 – Coconut Creek 2.00 – NSID 1.00 – Deerfield Beach 10.00 – Pompano Beach[c]

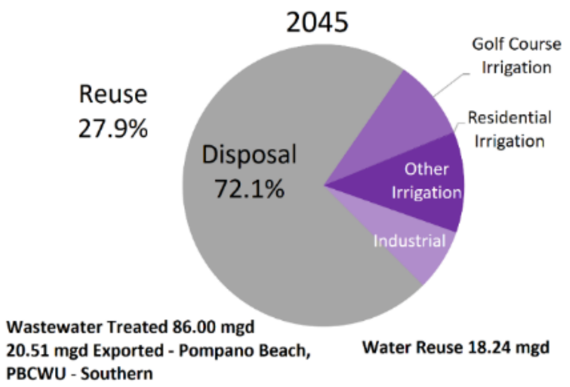
Reclaimed Water Project Summary			
Project Name	Completion Date	Total Capital Cost ($ million)	Added Capacity (mgd)
Water Reclamation Facility 16 mgd Expansion	2023	$54.2	16.0
Reclaimed Water Distribution Line (Deerfield Beach)	2030	$11.0	1.0

[a] In 2021, Pompano Beach intercepted 2.82 mgd from Broward County's ocean outfall. Therefore, 20.58 mgd actually reached the outfall.

[b] Includes 2.49 mgd to Coconut Creek, 2.00 mgd to NSID, and 1.00 mgd to Deerfield Beach.

[c] Water exported to Pompano Beach and PBCWUD – Southern Region is shown as reuse on the profiles of those facilities, respectively.


2021
Reuse
5.0%
Disposal
95.0%
Other
Irrigation
Industrial
Wastewater Treated 71.30 mgd
Water Reuse 3.55 mgd


2045
Reuse
27.9%
Disposal
72.1%
Golf Course
Irrigation
Residential
Irrigation
Other
Irrigation
Industrial
Wastewater Treated 86.00 mgd
20.51 mgd Exported - Pompano Beach,
PBCWU - Southern
Water Reuse 18.24 mgd

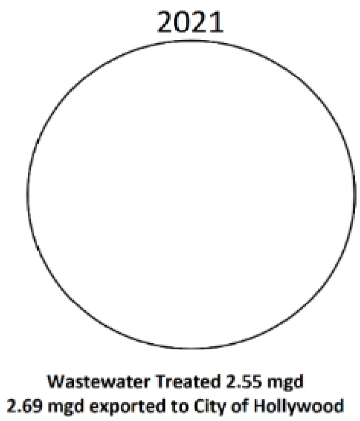
COOPER CITY

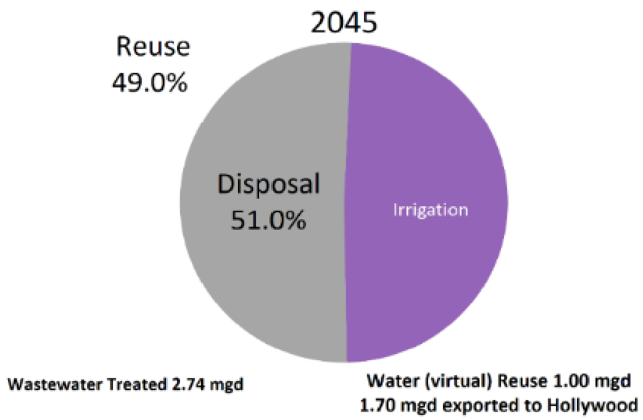
Description: This facility serves Cooper City and small sections of the Town of Davie and Southwest Ranches. A contract between Cooper City and the City of Hollywood requires effluent be sent to the Hollywood WWTF for reuse or disposal. The OOL requires Cooper City to implement 0.90 mgd of reuse by 12/31/2025. Cooper City does not have plans to implement a water reuse system within the city. Instead, the city has engaged in a contractual (virtual) water reuse agreement with the City of Miramar to meet its OOL obligations by 2025.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FL0040398**	
Wastewater Treatment Capacity (mgd)	**3.44**	
Disinfection	Basic Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**2.55**	**2.74**
Total Wastewater Disposed	**0.00**	**1.04**
Deep Well Injection	0.00	1.04
Total Water Reused	**0.00**	**1.00**
Contractual (Virtual) Reuse (City of Miramar)[a]	0.00	1.00
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Facility Water Imports/Exports (mgd)		
Importing Utility/Facility	2.69[b] – Hollywood	1.70 – Hollywood
Reclaimed Water Project Summary		
No Projects		

[a] Contractual (virtual) reuse with the City of Miramar is anticipated to begin as early as 2025. However, full development of demand is anticipated to take 5 to 10 years to synchronize transitions to reclaimed water with the expiration of existing irrigation permits held by target customers.

[b] This includes 0.14 mgd concentrate from Cooper City's drinking water facility.

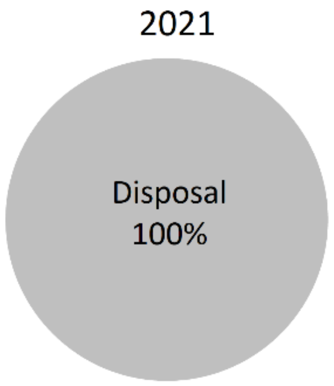




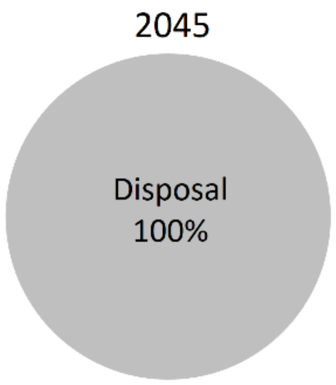
CORAL SPRINGS IMPROVEMENT DISTRICT

Description: This facility serves the area within the Coral Springs Improvement District. The facility does not produce reclaimed water. Effluent is disposed of via two deep injection wells. The facility also has an on-site rapid infiltration basin for short-term, emergency backup disposal. The Coral Springs Improvement District will continue to evaluate the potential of producing reclaimed water.

<table>
<tr><th colspan="6">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="3">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">**FLA041301**</td></tr>
<tr><td colspan="3">Wastewater Treatment Capacity (mgd)</td><td colspan="3">**7.72**</td></tr>
<tr><td colspan="3">Disinfection</td><td colspan="3">Basic Level</td></tr>
<tr><td colspan="6">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td colspan="2">Residences – 0</td><td colspan="2">Golf Courses – 0</td><td colspan="2">Parks and Schools – 0</td></tr>
<tr><th colspan="6">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="3"></th><th colspan="2">2021</th><th>2045</th></tr>
<tr><td colspan="3">**Total Wastewater Treated**</td><td colspan="2">**5.04**</td><td>**5.82**</td></tr>
<tr><td colspan="3">**Total Wastewater Disposed**</td><td colspan="2">**5.04**</td><td>**5.82**</td></tr>
<tr><td colspan="3">Deep Well Injection</td><td colspan="2">5.04</td><td>5.82</td></tr>
<tr><td colspan="3">**Total Water Reused**</td><td colspan="2">**0.00**</td><td>**0.00**</td></tr>
<tr><td colspan="3">**Supplemental to Reclaimed Water**</td><td colspan="2">**0.00**</td><td>**0.00**</td></tr>
<tr><td colspan="3">**Reuse Percentage**</td><td colspan="2">**0.0%**</td><td>**0.0%**</td></tr>
<tr><th colspan="6">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="6">No Projects</td></tr>
</table>



Wastewater Treated 5.04 mgd

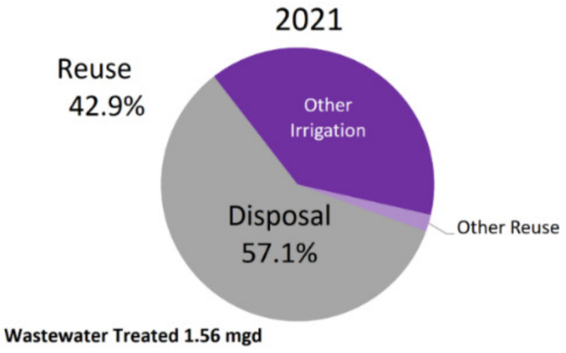


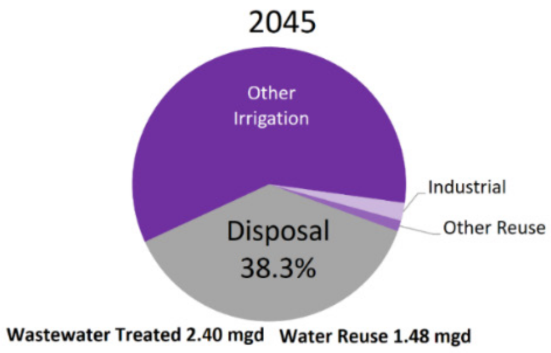
Wastewater Treated 5.82 mgd

DAVIE WATER RECLAMATION FACILITY

Description: This facility serves the eastern portion of the Town of Davie from North of Griffin Road to I-595. This membrane bioreactor facility has a capacity to provide 3.50 mgd of reclaimed water for irrigation and industrial uses. However, the town is limited in wastewater flow supply due to an agreement with the City of Hollywood for 2.00 mgd. Wastewater flows at Davie's WWTF greater than the 2.0 mgd for Hollywood are sent to this facility for reuse. Effluent that is not reused is disposed of via deep well injection. The town is seeking new reuse users and funding to ensure the 1.10 mgd beneficial reuse is met by 12/31/2025 as required by the OOL. The City of Sunrise is considering purchase of the Town of Davie's utilities, including its WWTF and WRF. The Town of Davie has an MRZ (**Figure E-1**).

<table>
<tr><th colspan="5">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="3">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA706736</td></tr>
<tr><td colspan="3">Wastewater Treatment Capacity (mgd)</td><td colspan="2">3.50</td></tr>
<tr><td colspan="3">Disinfection</td><td colspan="2">High Level</td></tr>
<tr><td colspan="5">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td colspan="2">Golf Courses – 1</td><td colspan="2">Parks and Schools – 1</td></tr>
<tr><th colspan="5">Annual Average Daily Flows (mgd)</th></tr>
<tr><td colspan="3"></td><td>2021</td><td>2045</td></tr>
<tr><td colspan="3">Total Wastewater Treated</td><td>1.56</td><td>2.40</td></tr>
<tr><td colspan="3">Total Wastewater Disposed</td><td>0.89</td><td>0.89</td></tr>
<tr><td colspan="3">Deep Well Injection</td><td>0.89</td><td>0.89</td></tr>
<tr><td colspan="3">Total Water Reused</td><td>0.67</td><td>1.48</td></tr>
<tr><td colspan="3">Other Irrigation</td><td>0.59</td><td>1.40</td></tr>
<tr><td colspan="3">Industrial</td><td>0.05</td><td>0.05</td></tr>
<tr><td colspan="3">Other (e.g., toilet flushing, etc.)</td><td>0.03</td><td>0.03</td></tr>
<tr><td colspan="3">Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Reuse Percentage</td><td>42.9%</td><td>61.7%</td></tr>
<tr><th colspan="5">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="2">Project Name</td><td>Completion Date</td><td>Total Capital Cost ($ million)</td><td>Added Capacity (mgd)</td></tr>
<tr><td colspan="2">Reclaimed Water System Extension – Bamford Sports Complex and along University Drive between SW 36th Street and SW 30th Street</td><td>2023</td><td>$1.4</td><td>0.2</td></tr>
<tr><td colspan="2">Reclaimed Water System Extension along SW 30th Street from 75th Avenue to College Avenue</td><td>2025</td><td>$0.64</td><td>0.3</td></tr>
<tr><td colspan="2">Reclaimed Water System Extension along SW 92nd Avenue from SW 36th Avenue to Griffin Road</td><td>2025</td><td>$2.0</td><td>1.0</td></tr>
</table>



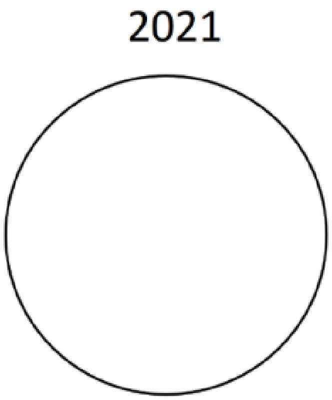


DAVIE WASTEWATER TREATMENT FACILITY

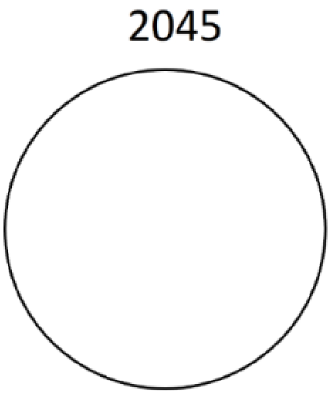
Description: This facility serves a majority of the eastern portion of the Town of Davie and is interconnected with the Seminole Tribe of Florida Hard Rock Hotel and Casino Hollywood complex (as a backup, only). This facility does not produce reclaimed water. Through a large user agreement, the Davie WWTF is required to send at least 2.0 mgd of effluent to Hollywood for its reuse program through at least 2037, where effluent is reused or disposed of via deep well injection. Both of the Davie facilities may be purchased by the City of Sunrise before 2045, or these facilities may be decommissioned, whereby all of the town's wastewater would be directed to the town's WRF.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FL0040541**	
Wastewater Treatment Capacity (mgd)	**4.85**	
Disinfection	Basic Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**2.16**	**2.85**
Total Wastewater Disposed	**0.00**	**0.00**
Total Water Reused	**0.00**	**0.00**
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Facility Water Imports/Exports (mgd)		
Importing Utility/Facility	2.16 – Hollywood	2.85 – Hollywood[a]
Reclaimed Water Project Summary		
No Projects		

[a] Through at least 2037.



Wastewater Treated 2.16 mgd
2.16 mgd exported to City of Hollywood

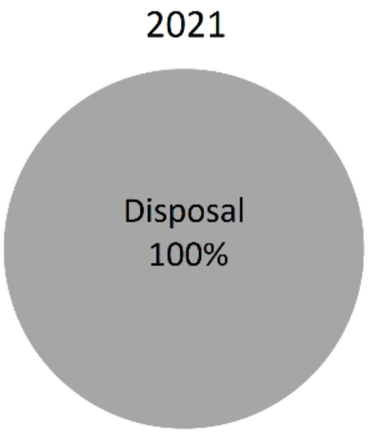


Wastewater Treated 2.85 mgd
2.85 mgd exported to City of Hollywood

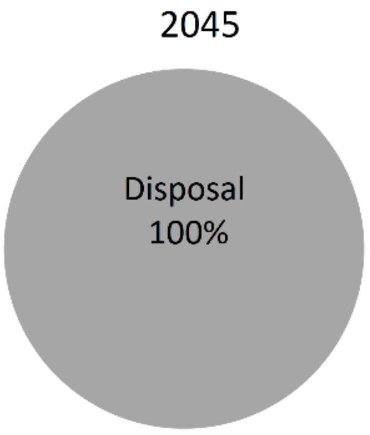
FORT LAUDERDALE – G.T. LOHMEYER

Description: This facility serves the cities of Fort Lauderdale, Wilton Manors, and Oakland Park as well as Port Everglades, sections of the City of Tamarac, and unincorporated Broward County. Effluent is disposed of via five deep injection wells. The facility does not provide reclaimed water since it is located far from traditional reclaimed water users, and there is limited space at the WWTF. In addition, the effluent has elevated chloride concentrations, limiting its viability as reclaimed water. Therefore, the city has determined that water reuse alternatives are not feasible at this time.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA041378**	
Wastewater Treatment Capacity (mgd)	**56.60**	
Disinfection	-	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**38.10**	50.01
Total Wastewater Disposed	**38.10**	**50.01**
Deep Well Injection	38.10	50.01
Total Water Reused	**0.00**	**0.00**
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Reclaimed Water Project Summary		
No Projects		



Wastewater Treated 38.10 mgd



Wastewater Treated 50.01 mgd

HOLLYWOOD SOUTHERN REGIONAL

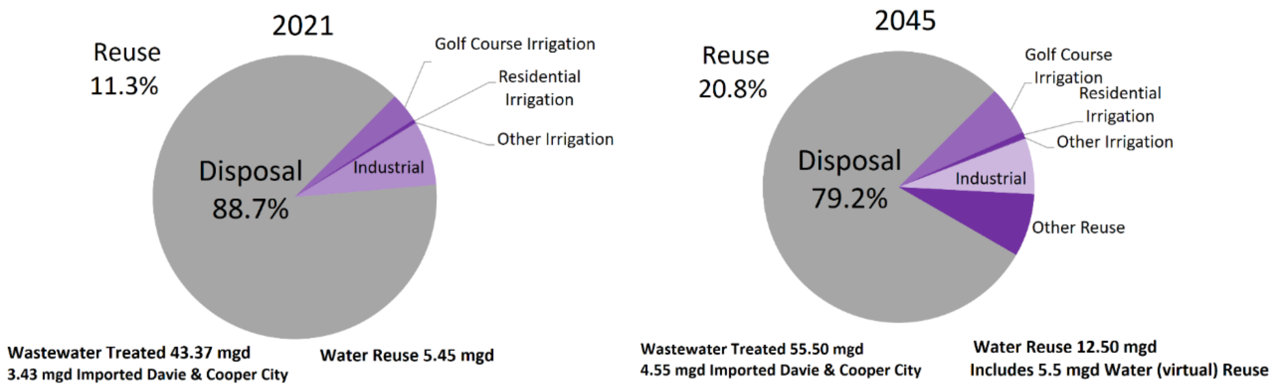
Description: This facility serves the City of Hollywood and southern Broward County. The city's effluent is not suitable for irrigation due to high salinity but is reused as process water at the treatment facility. The city maintains contractual (virtual) water reuse agreements to provide effluent disposal for the Town of Davie and Cooper City. Effluent from their WWTFs is treated to high-level disinfection standards and used as reclaimed water for public access irrigation. For the City of Hollywood, OOL requires an additional 10.00 mgd of reuse (above the 2008 baseline flow), for a total reuse of 12.30 mgd. The City of Hollywood expects to meet its OOL goals virtually through the City of Miramar and other cities yet to be determined and through deep well injection. The City of Hollywood has an MRZ (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FL0026255**	
Wastewater Treatment Capacity (mgd)	**55.50**	
Disinfection	Basic Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 5	Parks and Schools – 6
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**43.37**	**55.50**
Total Wastewater Disposed	**43.37**	**47.55**
Deep Well Injection	11.48	45.55
Ocean Outfall	31.89	2.00
Total Water Reused[a]	**5.45**	**12.50**
Golf Course Irrigation	1.64	3.52
Residential Irrigation	0.19	0.40
Other Irrigation	0.04	0.08
Contractual (Virtual) Reuse (City of Miramar)[b]	-	2.00[b]
Contractual (Virtual) Reuse (with additional cities)[c]	-	2.50[c]
Industrial	3.59	4.00
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**11.3%**	**20.8%**
Facility Water Imports/Exports (mgd)		
Exporting Utility/Facility	2.16 – Davie WWTF 1.27 – Cooper City	2.85 – Davie WWTF 1.70 – Cooper City
Reclaimed Water Project Summary		
No Projects		

[a] Includes imported water blended with treated wastewater from the Davie WWTF and Cooper City.

[b] Contractual reuse with the City of Miramar is anticipated to begin as early as 2025. Full development of demand is anticipated to take 5 to 10 years.

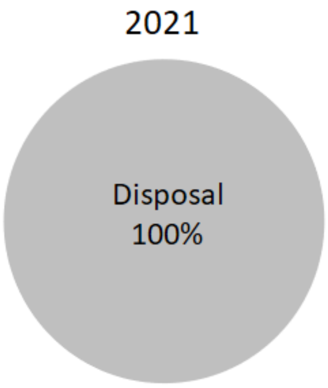
[c] The city is currently exploring other possibilities for contractual reuse and expects to meet its OOL reuse goal by 12/31/2025.


2021
Reuse
11.3%
Golf Course Irrigation
Residential Irrigation
Other Irrigation
Industrial
Disposal
88.7%
Wastewater Treated 43.37 mgd
3.43 mgd Imported Davie & Cooper City
Water Reuse 5.45 mgd
2045
Reuse
20.8%
Golf Course Irrigation
Residential Irrigation
Other Irrigation
Industrial
Other Reuse
Disposal
79.2%
Wastewater Treated 55.50 mgd
4.55 mgd Imported Davie & Cooper City
Water Reuse 12.50 mgd
Includes 5.5 mgd Water (virtual) Reuse

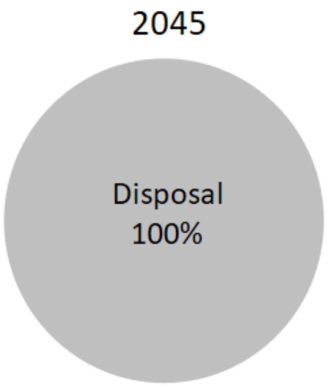
MARGATE

Description: This facility serves the City of Margate and a portion of the City of Coconut Creek, south of Coconut Creek Parkway. The facility is comprised of two semi-independent wastewater treatment trains, the East WWTF and the West WWTF operating under one permit. Wastewater can be diverted to either plant, as needed. Effluent from the East WWTF is sent to the West WWTF for disposal via deep well injection.

<table>
<tr><th colspan="3">Wastewater Treatment Facility Information</th></tr>
<tr><td>FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA041289</td></tr>
<tr><td>Wastewater Treatment Capacity (mgd)</td><td colspan="2">10.10</td></tr>
<tr><td>Disinfection</td><td colspan="2">N/A</td></tr>
<tr><td colspan="3">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td>Golf Courses – 0</td><td>Parks and Schools – 0</td></tr>
<tr><th colspan="3">Annual Average Daily Flows (mgd)</th></tr>
<tr><th></th><th>2021</th><th>2045</th></tr>
<tr><td>Total Wastewater Treated</td><td>6.40</td><td>8.70</td></tr>
<tr><td>Total Wastewater Disposed</td><td>6.40</td><td>8.70</td></tr>
<tr><td>Deep Well Injection</td><td>6.40</td><td>8.70</td></tr>
<tr><td>Total Water Reused</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Reuse Percentage</td><td>0.0%</td><td>0.0%</td></tr>
<tr><th colspan="3">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="3">No Projects</td></tr>
</table>



Wastewater Treated 6.40 mgd



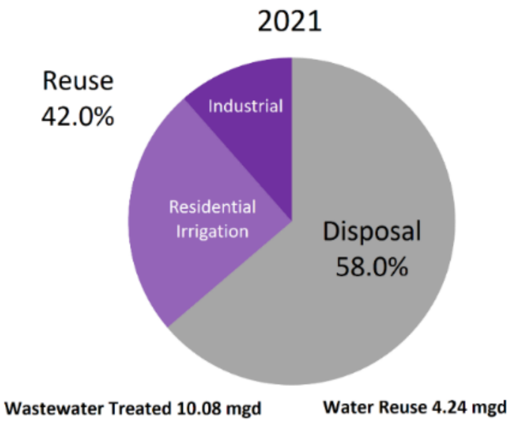
Wastewater Treated 8.70 mgd

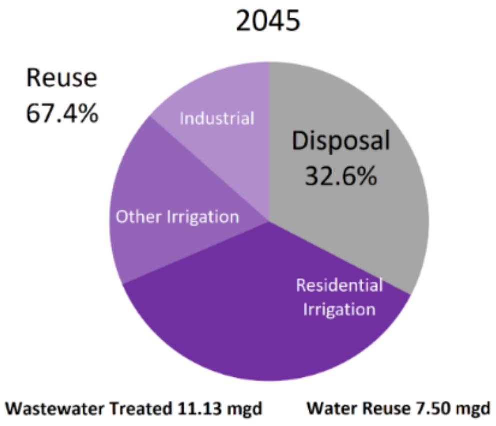
MIRAMAR

Description: This facility serves the City of Miramar. The City of Miramar has a contractual (virtual) water reuse agreement with the City of Hollywood to manage excess flow. Reclaimed water produced at this facility is used for on-site processing and irrigation of residential, commercial, and other common areas west of Palm Avenue. The reclaimed water distribution network is being expanded into the western part of the city. Excess effluent is disposed of via two deep injection wells. The City of Hollywood and Cooper City have entered agreements with the City of Miramar for contractual (virtual) water reuse to meet their OOL requirement. The City of Miramar has an MRZ (**Figure E-1**).

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA017025</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="2">12.70</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="2">High Level</td></tr>
<tr><td colspan="4">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 2,054</td><td colspan="2">Golf Courses – 0</td><td>Parks and Schools – 18</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th>2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td>10.08</td><td>11.13</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td>7.46</td><td>3.63</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td>7.46</td><td>3.63</td></tr>
<tr><td colspan="2">Total Water Reused</td><td>4.24</td><td>7.50[a]</td></tr>
<tr><td colspan="2">Residential Irrigation</td><td>2.89</td><td>4.00</td></tr>
<tr><td colspan="2">Other Irrigation</td><td>0.00</td><td>2.00</td></tr>
<tr><td colspan="2">Industrial</td><td>1.34</td><td>1.50</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td>42.0%</td><td>67.4%</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th>Completion Date</th><th>Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>Reclaimed Water System Extension West of I-75</td><td>2025</td><td>$8.6</td><td>3.50</td></tr>
</table>

[a] Includes 2.00 mgd and 1.00 mgd of contractual (virtual) reuse from the City of Hollywood and Cooper City, respectively.

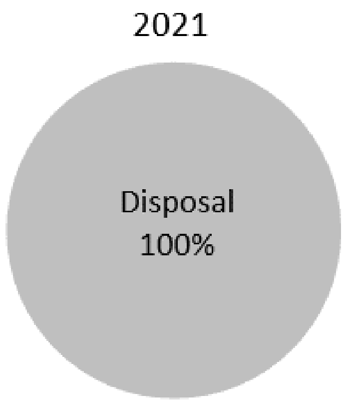




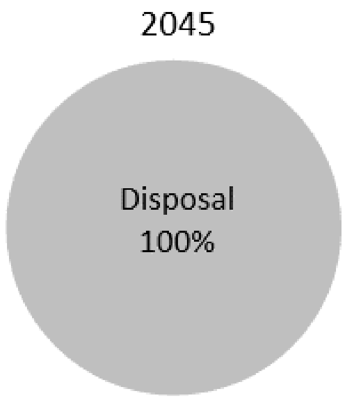
PEMBROKE PINES

Description: This facility serves the western portion of the City of Pembroke Pines, west of Flamingo Road. The Hollywood WWTF serves the eastern portion of Pembroke Pines. Effluent is disposed of via two Class I deep injection wells. In 2011, the City of Pembroke Pines completed a pilot project evaluating the feasibility of recharging the surficial aquifer with reclaimed water, and it was determined the implementation of a reuse program is not economically feasible.

<table>
<tr><th colspan="3">Wastewater Treatment Facility Information</th></tr>
<tr><td>FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA013575</td></tr>
<tr><td>Wastewater Treatment Capacity (mgd)</td><td colspan="2">9.50</td></tr>
<tr><td>Disinfection</td><td colspan="2">N/A</td></tr>
<tr><td colspan="3">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td>Golf Courses – 0</td><td>Parks and Schools – 0</td></tr>
<tr><th colspan="3">Annual Average Daily Flows (mgd)</th></tr>
<tr><th></th><th>2021</th><th>2045</th></tr>
<tr><td>Total Wastewater Treated</td><td>7.16</td><td>7.91</td></tr>
<tr><td>Total Wastewater Disposed</td><td>7.16</td><td>7.91</td></tr>
<tr><td>Deep Well Injection</td><td>7.16</td><td>7.91</td></tr>
<tr><td>Total Water Reused</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Reuse Percentage</td><td>0.0%</td><td>0.0%</td></tr>
<tr><th colspan="3">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="3">No Projects</td></tr>
</table>



Wastewater Treated 7.16 mgd

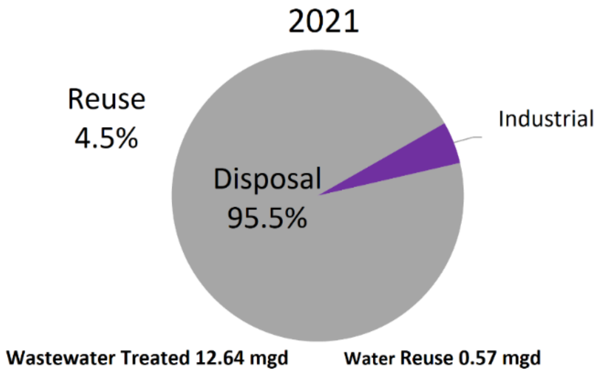


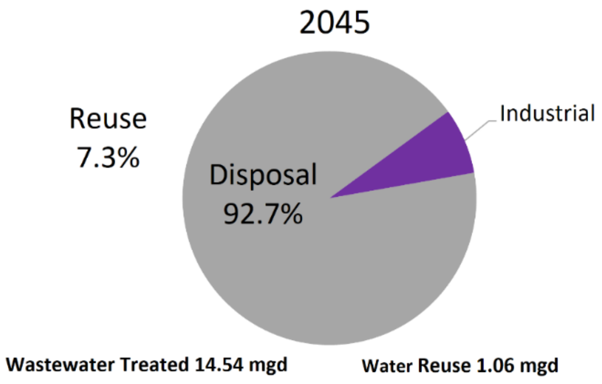
Wastewater Treated 7.91 mgd

PLANTATION

Description: This facility serves the City of Plantation. A portion of the effluent is reused for plant processes. Effluent disposal is via deep well injection. In 2008, the City of Plantation completed a pilot project evaluating potential treatment options to use reclaimed water to recharge the surficial aquifer. Although the concept is technically feasible, costs and regulatory constraints stalled its progress. The city will continue to evaluate options to increase water reuse, including use of reclaimed water for irrigation at the Plantation Preserve and Jacaranda golf courses.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA040401**	
Wastewater Treatment Capacity (mgd)	**18.90**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**12.64**	**14.54**
Total Wastewater Disposed	**11.66**	**13.53**
Deep Well Injection	11.66	13.53
Total Water Reused	**0.57**	**1.06**
Industrial	0.57	1.06
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**4.5%**	**7.3%**
Reclaimed Water Project Summary		
No Projects		





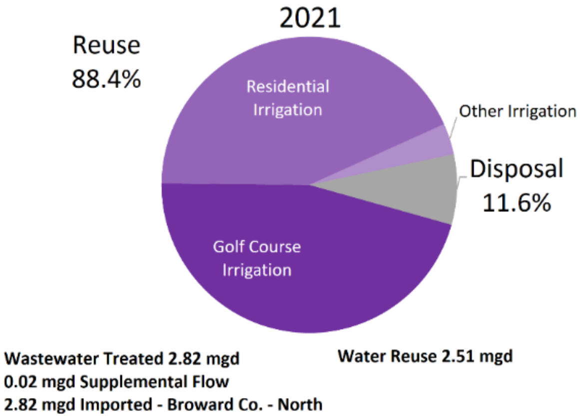
POMPANO BEACH

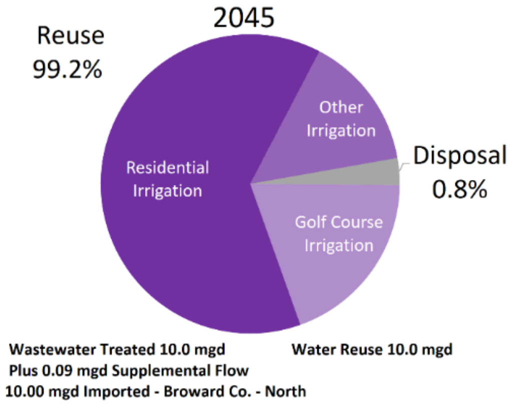
Description: The City of Pompano Beach operates a WRF and reclaimed water distribution system but does not have a WWTF. Pompano Beach diverts a portion of effluent from the Broward County – North Regional's ocean outfall pipeline and provides high-level disinfection before being reused for green space irrigation in the city and northeastern Broward County. A direct connection between Broward County – North Regional and Pompano's WRF will replace the current diversion from Broward County's ocean outfall pipeline in 2025. Direct flows from Broward County – North Regional will start at 5 mgd and increase to 10 mgd by 2045 to expand reuse for irrigation in the cities of Deerfield Beach and Pompano Beach. The City of Pompano Beach has an MRZ (**Figure E-1**).

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA013581</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="2">7.50</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="2">High Level</td></tr>
<tr><td colspan="4">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 1,039</td><td colspan="2">Golf Courses – 2</td><td>Parks and Schools – 7</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th>2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td>2.82</td><td>10.00</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Total Water Reused[a]</td><td>2.51</td><td>10.00</td></tr>
<tr><td colspan="2">Golf Course Irrigation</td><td>1.25</td><td>2.00</td></tr>
<tr><td colspan="2">Residential Irrigation</td><td>1.17</td><td>6.50</td></tr>
<tr><td colspan="2">Other Irrigation</td><td>0.09</td><td>1.50</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td>0.02 – DW</td><td>0.09 – DW</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td>88.4%</td><td>99.2%</td></tr>
<tr><th colspan="4">Facility Water Imports/Exports (mgd)</th></tr>
<tr><td colspan="2">Exporting Utility/Facility</td><td>-</td><td>10.00 – Broward County – North Regional</td></tr>
<tr><td colspan="2">Importing Utility/Facility</td><td>0. 21 – Broward County – North Regional[b]</td><td>0.31 – Broward County – North Regional[b]</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th>Completion Date</th><th>Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>Pompano Beach – Broward County Reclaimed Water Trunk Main</td><td>2025</td><td>$50</td><td>10.0</td></tr>
<tr><td>3.5 mg Reclaimed Water Storage Tank with Booster Station</td><td>2027</td><td>$15.0</td><td>3.5</td></tr>
<tr><td>5.00 mgd WRF Expansion</td><td>2030</td><td>$15.0</td><td>5.0</td></tr>
<tr><td>Reclaimed Water System Extension Program Phase VI+</td><td>2030</td><td>$7.8</td><td>6.90</td></tr>
<tr><td>3.5 mg Reclaimed Water Storage Tank</td><td>2035</td><td>$5.0</td><td>3.5</td></tr>
</table>

[a] Includes supplemental water blended with treated wastewater.

[b] Reclaimed water reject concentrate sent to Broward County – North Regional for disposal.

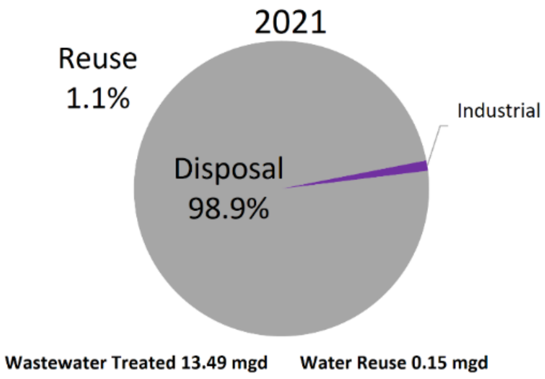

2021
Reuse
88.4%
Residential Irrigation
Other Irrigation
Disposal
11.6%
Golf Course Irrigation
Wastewater Treated 2.82 mgd
0.02 mgd Supplemental Flow
2.82 mgd Imported - Broward Co. - North
Water Reuse 2.51 mgd

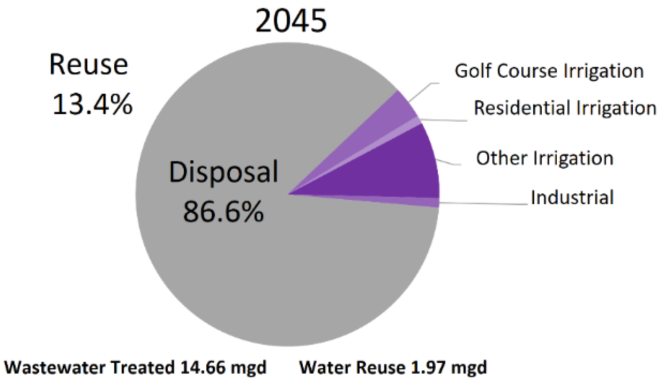

2045
Reuse
99.2%
Residential Irrigation
Other Irrigation
Disposal
0.8%
Golf Course Irrigation
Wastewater Treated 10.0 mgd
Plus 0.09 mgd Supplemental Flow
10.00 mgd Imported - Broward Co. - North
Water Reuse 10.0 mgd

SUNRISE – SAWGRASS

Description: This facility is one of three WWTFs operated by the City of Sunrise. This facility serves the central and western area of the cities of Sunrise and Weston as well as portions of the Town of Davie and unincorporated Broward County. Some secondary effluent is diverted to the new 4.0-mgd, high-level disinfection facility at Sawgrass and is treated for public access irrigation. Remaining secondary effluent flow is disinfected and disposed of via deep well injection. This facility receives effluent from the Springtree facility for disposal. The City of Sunrise has an MRZ (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA042641**	
Wastewater Treatment Capacity (mgd)	**20.00**	
Disinfection	Basic and High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**13.49**	**14.66**
Total Wastewater Disposed	**13.34**	**12.69**
Deep Well Injection	13.34	12.69
Total Water Reused	**0.15**	**1.97**
Golf Course Irrigation	0.00	0.50
Residential Irrigation	0.00	0.13
Other Irrigation	0.00	1.19
Industrial	0.15	0.15
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**1.1%**	**13.4%**
Reclaimed Water Project Summary		
No Projects		





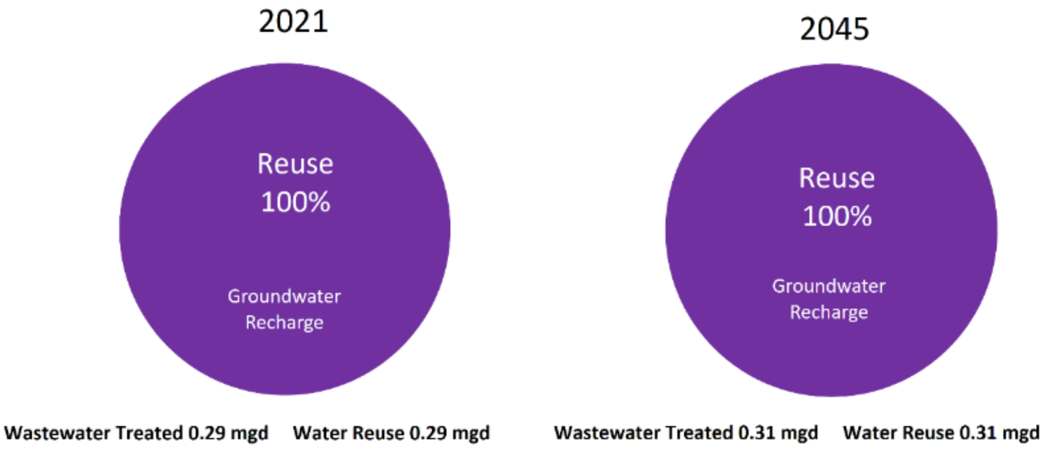
SUNRISE – SOUTHWEST

Description: This facility is one of three WWTFs operated by the City of Sunrise. This WWTF serves the southwestern area of the Town of Davie and Southwest Ranches. The facility provides groundwater recharge through four rapid infiltration basins. The City of Sunrise has an MRZ (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA013580**	
Wastewater Treatment Capacity (mgd)	**0.99**	
Disinfection	Basic Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0

Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.29**	**0.31**
Total Wastewater Disposed	**0.00**	**0.00**
Total Water Reused	**0.29**	**0.31**
Groundwater Recharge (rapid infiltration basins)	0.29	0.31
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**100.0%**	**100.0%**

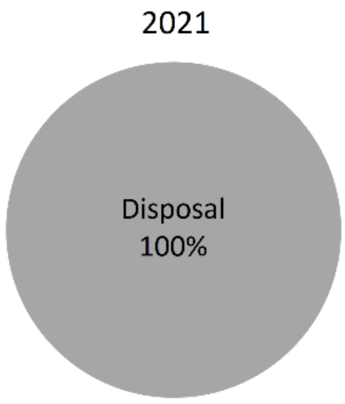
Reclaimed Water Project Summary
No Projects



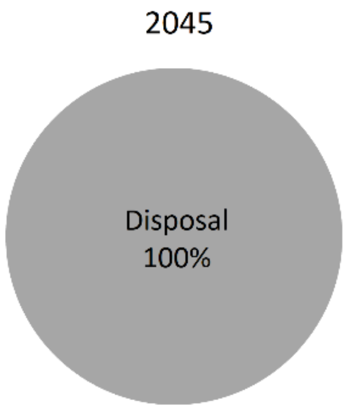
SUNRISE – SPRINGTREE

Description: This facility is one of three WWTFs operated by the City of Sunrise. This facility serves the northern areas of the City of Sunrise and does not produce reclaimed water. Effluent is disinfected and pumped to the Sawgrass WWTF for disposal via the existing deep injection wells. Expansion of the reclaimed water pipeline system from this facility is currently on hold. The City of Sunrise has an MRZ (**Figure E-1**).

<table>
<tr><th colspan="5">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">FLA041947</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="3">10.00</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="3">Basic Level</td></tr>
<tr><td colspan="5">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td colspan="2">Golf Courses – 0</td><td colspan="2">Parks and Schools – 0</td></tr>
<tr><th colspan="5">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th colspan="2">2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td colspan="2">6.83</td><td>7.66</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td colspan="2">6.83</td><td>7.66</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td colspan="2">6.83</td><td>7.66</td></tr>
<tr><td colspan="2">Total Water Reused</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td colspan="2">0.0%</td><td>0.0%</td></tr>
<tr><th colspan="5">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="5">No Projects</td></tr>
</table>



Wastewater Treated 6.83 mgd

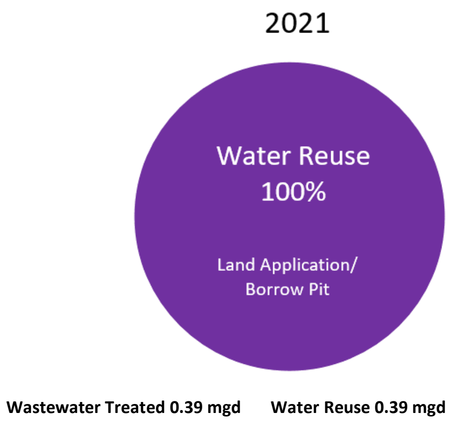


Wastewater Treated 7.66

TINDALL HAMMOCK

Description: This facility serves a small area within the Town of Davie. Effluent is discharged to an on-site borrow pit lake which also accepts stormwater runoff and serves to recharge the surficial aquifer system. This method of disposal is being discontinued due to concerns with storage capacity overflows entering the New River during storm events. A deep injection well is planned for future disposals.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA013583**	
Wastewater Treatment Capacity (mgd)	**0.60**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.39**	**0.40**
Total Wastewater Disposed	**0.00**	**0.40**
Deep Well Injection	0.00	0.40
Total Water Reused	**0.39**	**0.00**
Other (Land Application/Borrow Pit)	0.39	0.00
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**100.0%**	**0.0%**
Reclaimed Water Project Summary		
No Projects		



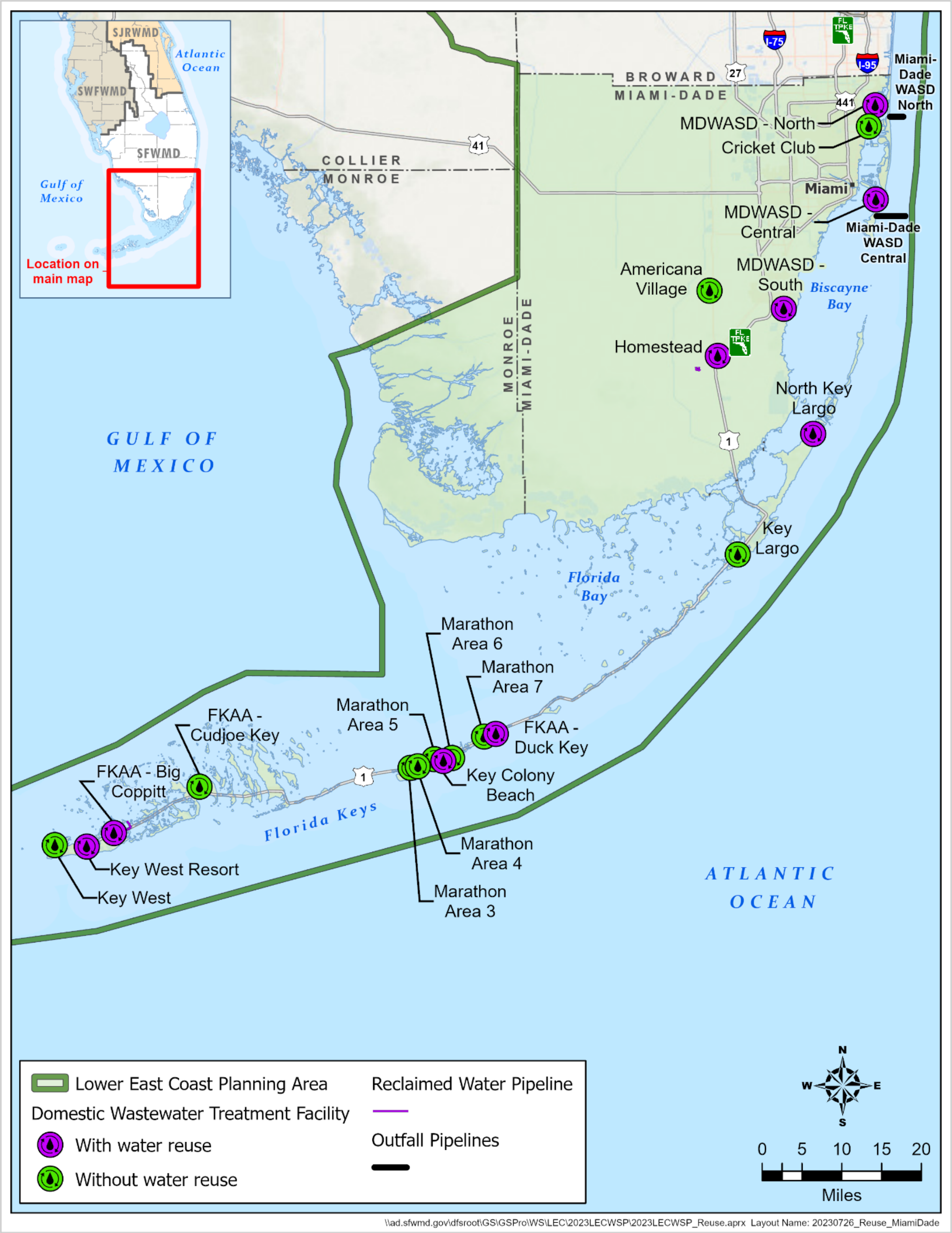
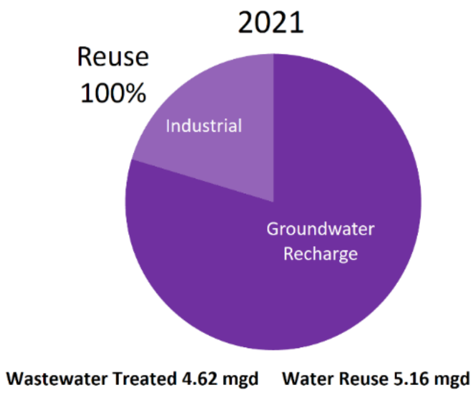


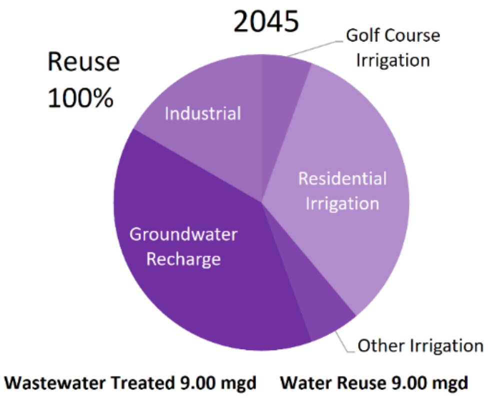
Figure E-3. Wastewater and reuse facilities in Miami-Dade County and portions of Monroe County.

HOMESTEAD

Description: This facility serves users within the city’s limits. Reclaimed water is used for in-plant processes and groundwater recharge via rapid infiltration basins. Wastewater flows beyond the rated capacity are diverted to MDWASD. In 2021, 4.38 mgd of raw wastewater was diverted to the MDWASD – South facility. Planned expansion of the facility’s treatment capacity should eliminate diversions in 2030 and expand use of reclaimed water for golf course and residential irrigation.

Wastewater Treatment Facility Information			
FDEP Wastewater Facilities Regulation Identification		**FLA013609**	
Wastewater Treatment Capacity (mgd)		**5.00**	
Disinfection		High Level	
Public Access Users Served Reclaimed Water 2021:			
Residences – 0	Golf Courses – 0	Parks and Schools – 0	
Annual Average Daily Flows (mgd)			
		2021	**2045**
Total Wastewater Treated		**4.62**	**9.00**
Total Wastewater Disposed		**0.00**	**0.00**
Total Water Reused		**5.16**	**9.00**
Golf Course Irrigation		0.00	0.50
Residential Irrigation		0.00	3.00
Other Irrigation		0.00	0.50
Groundwater Recharge (including rapid infiltration basins)		4.11	3.50
Industrial		1.05	1.50
Supplemental to Reclaimed Water		**0.00**	**0.00**
Reuse Percentage		**100.0%**	**100.0%**
Facility Water Imports/Exports (mgd)			
Importing Utility/Facility		4.38 – MDWASD – South	-
Reclaimed Water Project Summary			
Project Name	Completion Date	Total Capital Cost ($ million)	Added Capacity (mgd)
4.0 mgd Reclaimed Water Treatment Expansion	2030	$45	4.00



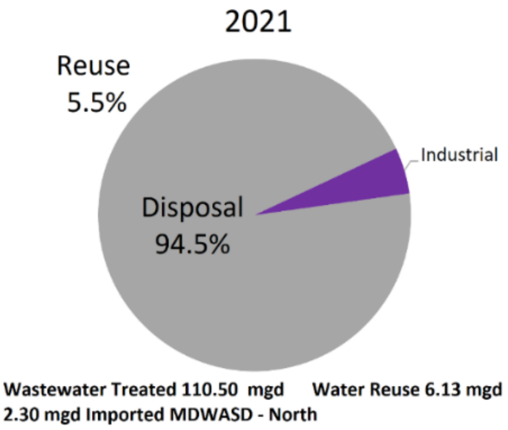


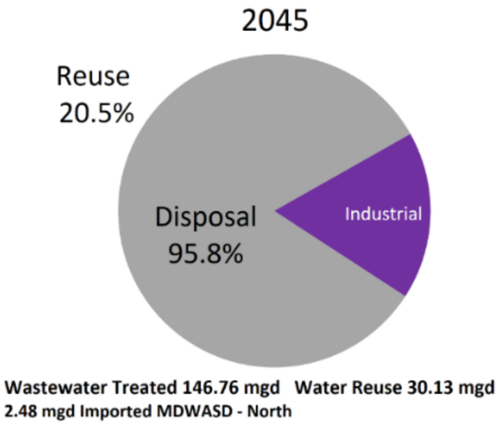
MDWASD – CENTRAL

Description: This facility is one of three interconnected MDWASD WWTFs. This facility serves the area from Northwest 79th Street to the Tamiami Canal, including a portion of the City of Coral Gables to Southwest 156th Street. Effluent disposal is via ocean outfall and deep well injection. There are two existing deep injection wells and nine proposed by 12/31/2025 to comply with the OOL. This three-facility system must reuse a total of 117.5 mgd by 12/31/2025 pursuant to the OOL and currently has 13.68 mgd of reuse for in-plant use. MDWASD is planning to use treated wastewater for in-plant cooling of buildings and energy intensive processes using centralized heat exchangers to add 24 mgd of industrial reuse.

<table>
<tr><th colspan="5">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">FL0024805</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="3">143.00</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="3">Basic and High Level</td></tr>
<tr><td colspan="5">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td colspan="2">Golf Courses – 0</td><td colspan="2">Parks and Schools – 0</td></tr>
<tr><th colspan="5">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th colspan="2">2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td colspan="2">110.50</td><td>146.76</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td colspan="2">122.32</td><td>143.64</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td colspan="2">33.17</td><td>136.46</td></tr>
<tr><td colspan="2">Ocean Outfall</td><td colspan="2">89.15</td><td>7.18</td></tr>
<tr><td colspan="2">Total Water Reused[a]</td><td colspan="2">6.13</td><td>30.13</td></tr>
<tr><td colspan="2">Industrial</td><td colspan="2">6.13</td><td>30.13</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td colspan="2">5.5%</td><td>20.5%</td></tr>
<tr><th colspan="5">Facility Water Imports/Exports (mgd)</th></tr>
<tr><td colspan="2">Exporting Utility/Facility</td><td colspan="2">2.30 – MDWASD – North Facility</td><td>2.48 – MDWASD – North Facility</td></tr>
<tr><th colspan="5">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th>Completion Date</th><th colspan="2">Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>Central District Effluent Energy Recovery System</td><td>2045</td><td colspan="2">$19.50</td><td>24</td></tr>
</table>

[a] Includes imported water blended with treated wastewater.

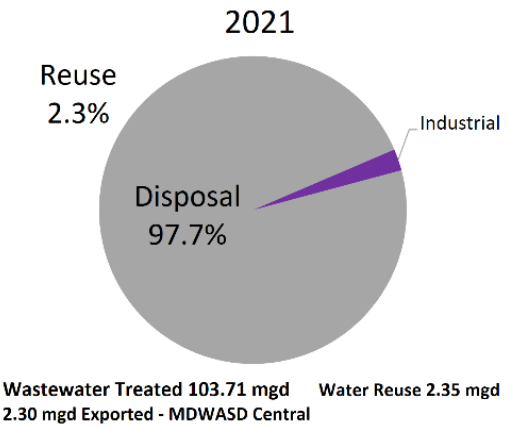


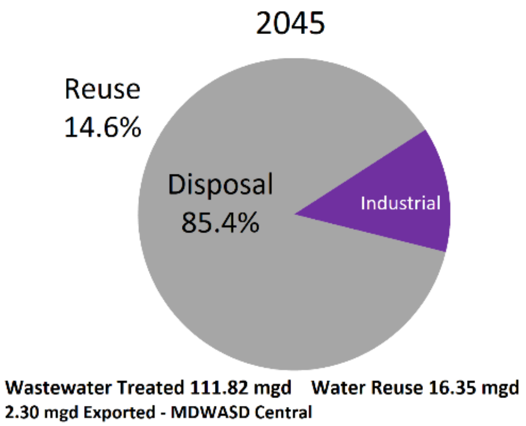


MDWASD – NORTH

Description: This facility is one of three interconnected MDWASD WWTFs. This facility serves the cities of Hialeah, Hialeah Gardens, North Miami, Miami Gardens, Opa Locka, and North Miami Beach; the Town of Miami Lakes; the Village of Miami Shores; and unincorporated areas in northern Miami-Dade County. The majority of the treated wastewater is discharged through deep well injection and ocean outfall. The three-facility system must reuse a total of 117.5 mgd by 12/31/2025 pursuant to the OOL and currently has 13.68 mgd of reuse for in-plant use. MDWASD is planning to use treated wastewater for in-plant cooling of buildings and energy intensive processes using centralized heat exchangers to add 14 mgd of industrial reuse at MDWASD – North.

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FL0032182</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="2">120.00</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="2">Basic and High Level</td></tr>
<tr><td colspan="4">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td colspan="2">Golf Courses – 0</td><td>Parks and Schools – 0</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th>2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td>103.71</td><td>111.82</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td>101.26</td><td>109.39</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td>68.21</td><td>103.88</td></tr>
<tr><td colspan="2">Ocean Outfall</td><td>33.05</td><td>5.51</td></tr>
<tr><td colspan="2">Total Water Reused</td><td>2.35</td><td>16.35</td></tr>
<tr><td colspan="2">Industrial</td><td>2.35</td><td>16.35</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td>2.3%</td><td>14.6%</td></tr>
<tr><th colspan="4">Facility Water Imports/Exports (mgd)</th></tr>
<tr><td colspan="2">Importing Utility/Facility</td><td>2.30 – MDWASD – Central</td><td>2.48 – MDWASD – Central</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th>Completion Date</th><th>Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>North District Effluent Energy Recovery System</td><td>2045</td><td>$15</td><td>35</td></tr>
</table>





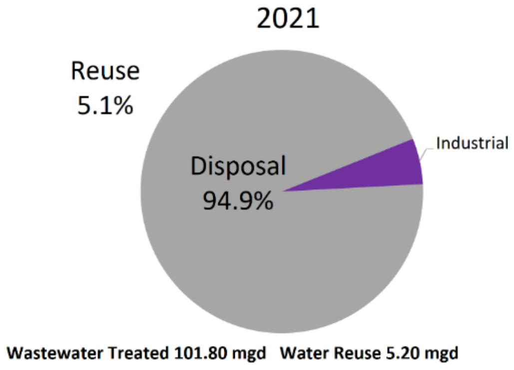
MDWASD – SOUTH

Description: This facility is one of three interconnected MDWASD WWTFs. This facility serves large unincorporated areas south of the North Tamiami Canal to Southwest 360th Street, including Homestead Air Force Base and Florida City. This three-facility system must reuse a total of 117.5 mgd by 12/31/2025 pursuant to the OOL and currently has a total of 13.68 mgd of reuse for in-plant use. The MDWASD – South facility will provide up to 15 mgd of reclaimed water to the FPL facilities at Turkey Point Clean Energy Center beginning in 2025. MDWASD is planning to use treated wastewater for in-plant cooling of buildings and energy intensive processes using centralized heat exchangers to add 50 mgd of industrial reuse at this facility.

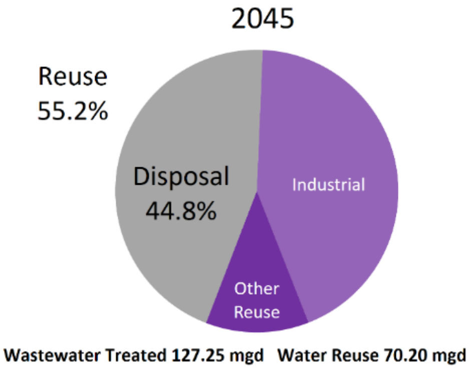
Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA042137**	
Wastewater Treatment Capacity (mgd)	**112.50**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0

Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**101.80**	**127.25**
Total Wastewater Disposed	**94.10**	**57.05**
Deep Well Injection	94.10	57.05
Total Water Reused	**5.20**	**70.20**
Industrial (at the plant)	5.20	55.20
Other (FPL cooling)	0.00	15.00
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**5.1%**	**55.2%**
Facility Water Imports/Exports (mgd)		
Exporting Utility/Facility	4.38 – Homestead	-

Reclaimed Water Project Summary			
Project Name	Completion Date	Total Capital Cost ($ million)	Added Capacity (mgd)
South District Reclaimed Water Main Extension to FPL Turkey Point Clean Energy Center	2024	$315	15
South District Effluent Energy Recovery System	2045	$22	50



Wastewater Treated 101.80 mgd   Water Reuse 5.20 mgd



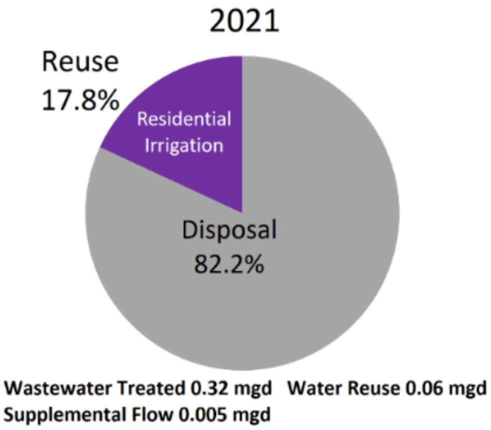
Wastewater Treated 127.25 mgd   Water Reuse 70.20 mgd

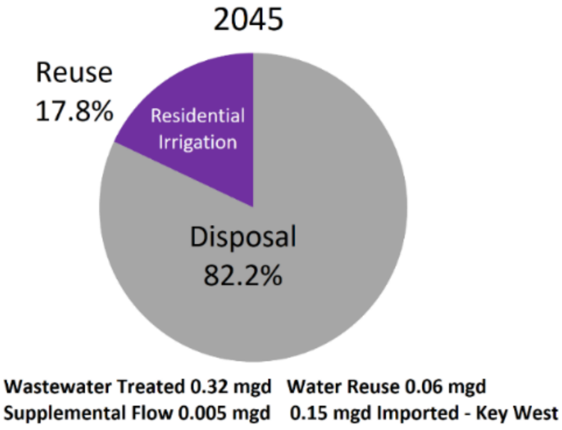
FKAA – BIG COPPITT

Description: This is one of five FKAA WWTFs, three of which have a treatment capacity over 0.1 mgd. The facility serves the communities of Rockland Key, Big Coppitt Key, Geiger Key, Key Haven, Naval Air Station Boca Chica Field, and Shark Key. Growth in this service area is minimal due to county growth restriction ordinances. FKAA does not plan on expanding water reuse at this facility. FKAA has recently entered into an agreement with the City of Key West to divert influent from Key Haven to the Richard Heyman WWTF (Key West). Potable water is blended with reclaimed water to reduce salinity concentrations. Effluent is disposed of via shallow well injection.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA567591**	
Wastewater Treatment Capacity (mgd)	**0.41**	
Disinfection	Basic and High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 135	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.32**	**0.32**
Total Wastewater Disposed	**0.26**	**0.26**
Shallow Well Injection	0.26	0.26
Total Water Reused[a]	**0.06**	**0.06**
Residential Irrigation	0.06	0.06
Supplemental to Reclaimed Water	0.005 – DW	0.005 – DW
Reuse Percentage	**17.8%**	**17.8%**
Facility Water Imports/Exports (mgd)		
Importing Utility/Facility	-	0.15 – Key West
Reclaimed Water Project Summary		
No Projects		

[a] Includes supplemental water blended with treated wastewater.

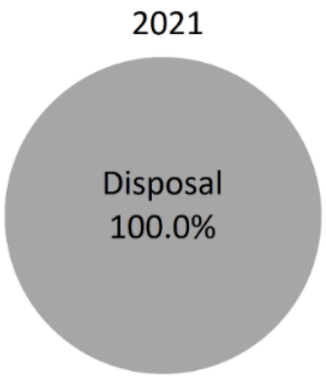




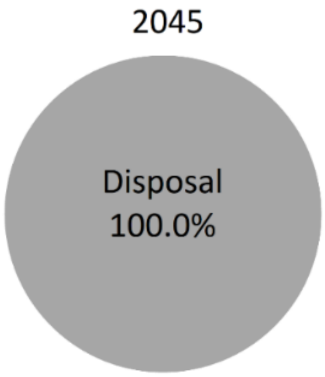
FKAA – CUDJOE REGIONAL

Description: This is one of five FKAA WWTFs, three of which have a treatment capacity over 0.1 mgd. This WWTF serves the keys of Lower Sugarloaf, Upper Sugarloaf, Cudjoe, Summerland, Ramrod, Middle Torch, Big Torch, Little Torch, Big Pine, and No Name. As of 2022, approximately 88% of sewer connections have been completed. Growth beyond the planned sewer connections is projected to be minimal due to county growth restriction ordinances. While the facility is capable of producing high-quality effluent, FKAA does not have plans for water reuse at this facility. Effluent is disposed of via a Class V deep injection well.

<table>
<tr><th colspan="6">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="3">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">FLA671932</td></tr>
<tr><td colspan="3">Wastewater Treatment Capacity (mgd)</td><td colspan="3">0.84</td></tr>
<tr><td colspan="3">Disinfection</td><td colspan="3">N/A</td></tr>
<tr><td colspan="6">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td colspan="2">Residences – 0</td><td colspan="2">Golf Courses – 0</td><td colspan="2">Parks and Schools – 0</td></tr>
<tr><th colspan="6">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="3"></th><th colspan="2">2021</th><th>2045</th></tr>
<tr><td colspan="3">Total Wastewater Treated</td><td colspan="2">0.62</td><td>0.94</td></tr>
<tr><td colspan="3">Total Wastewater Disposed</td><td colspan="2">0.62</td><td>0.94</td></tr>
<tr><td colspan="3">Deep Well Injection</td><td colspan="2">0.62</td><td>0.94</td></tr>
<tr><td colspan="3">Total Water Reused</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Supplemental to Reclaimed Water</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Reuse Percentage</td><td colspan="2">0.0%</td><td>0.0%</td></tr>
<tr><th colspan="6">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="6">No Projects</td></tr>
</table>



Wastewater Treated 0.62 mgd



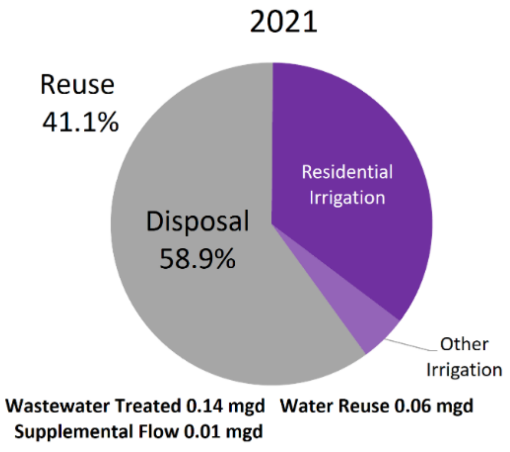
Wastewater Treated 0.94 mgd

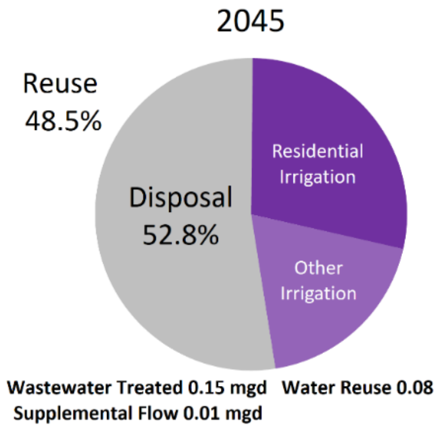
FKAA – DUCK KEY

Description: This is one of five FKAA WWTFs, three of which have a treatment capacity over 0.1 mgd. This WWTF serves Duck Key, Hawk's Cay Resort, Walker's Island, and Conch Key. Effluent disposal is via two Class V shallow injection wells or reuse through irrigation of residential lawns and common-area landscaping at Hawk's Cay Resort and Duck Key. Little growth in wastewater flows is projected. Potable water is blended with reclaimed water to reduce salinity concentrations.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA014772**	
Wastewater Treatment Capacity (mgd)	**0.27**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 220	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.14**	**0.15**
Total Wastewater Disposed	**0.09**	**0.09**
Shallow Well Injection	0.09	0.09
Total Water Reused[a]	**0.06**	**0.08**
Residential Irrigation	0.05	0.05
Other Irrigation	0.01	0.03
Other	0.003	0.00
Supplemental to Reclaimed Water	0.01 – DW	0.01 – DW
Reuse Percentage	**41.1%**	**48.5%**
Reclaimed Water Project Summary		
No Projects		

[a] Includes supplemental water blended with treated wastewater.

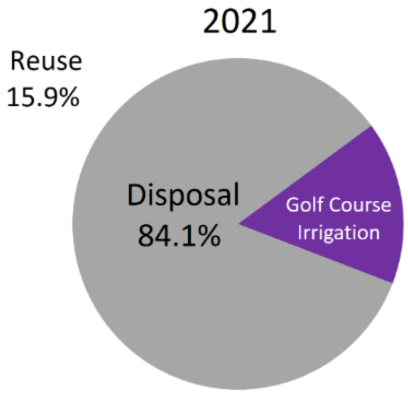




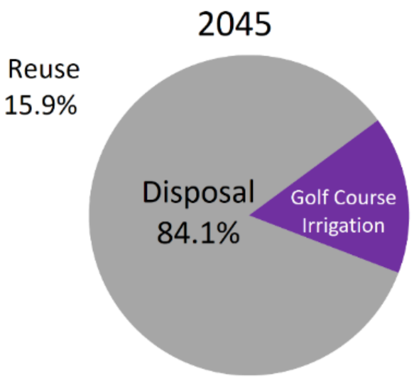
KEY COLONY BEACH

Description: This facility serves the City of Key Colony Beach. This WWTF utilizes membrane bioreactor technology and ultraviolet disinfection that provides reclaimed water for irrigation of the city's golf course and other recreational areas. Excess reclaimed water is disposed of via Class V shallow injection wells. The island is becoming fully developed, and no increased reclaimed water production is projected.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA014720**	
Wastewater Treatment Capacity (mgd)	**0.34**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 1	Parks and Schools – 4
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.21**	**0.21**
Total Wastewater Disposed	**0.17**	**0.17**
Shallow Well Injection	0.17	0.17
Total Water Reused	**0.03**	**0.03**
Golf Course Irrigation	0.03	0.03
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**15.9%**	**15.9%**
Reclaimed Water Project Summary		
No Projects		



Wastewater Treated 0.21 mgd **Water Reuse 0.03 mgd**



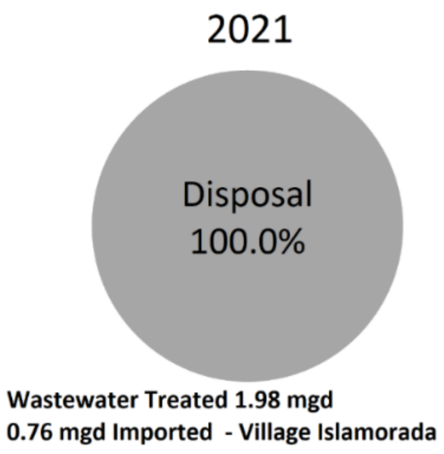
Wastewater Treated 0.03 mgd **Water Reuse 0.21 mgd**

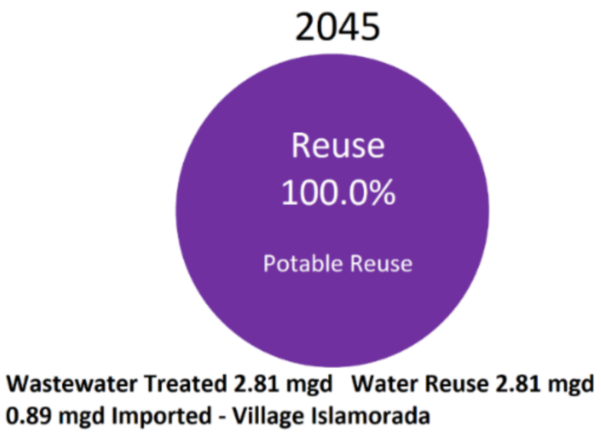
KEY LARGO

Description: This facility serves Key Largo and accepts bulk wastewater from Islamorada Village of Islands and Card Sound Road. This WWTF produces public access reclaimed water quality but does not currently have a reuse program. Effluent is disposed of via shallow well injection. Implementation of a direct potable reuse system in the future is being considered.

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA370967</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="2">3.45</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="2">High Level</td></tr>
<tr><td colspan="2">Public Access Users Served Reclaimed Water 2021:</td><td colspan="2"></td></tr>
<tr><td>Residences – 0</td><td>Golf Courses – 0</td><td colspan="2">Parks and Schools – 4</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th>2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td>1.98[a]</td><td>2.81[b]</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td>1.98</td><td>0.00</td></tr>
<tr><td colspan="2">Shallow Well Injection</td><td>1.98</td><td>0.00</td></tr>
<tr><td colspan="2">Total Water Reused</td><td>0.00</td><td>2.81</td></tr>
<tr><td colspan="2">Potable Reuse</td><td>0.00</td><td>2.81</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td>0.0%</td><td>100.0%</td></tr>
<tr><th colspan="4">Facility Water Imports/Exports (mgd)</th></tr>
<tr><td colspan="2">Importing Utility/Facility</td><td>0.76 – Islamorada Village of Islands</td><td>0.89 – Islamorada Village of Islands</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th>Completion Date</th><th>Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>Key Largo Wastewater Treatment District and FKAA – Initial Direct Potable Reuse Demonstration Project</td><td>2026</td><td>$2</td><td>0.5</td></tr>
<tr><td>Key Largo Wastewater Treatment District and FKAA – Direct Potable Reuse Demonstration Project Expansion</td><td>2030</td><td>$6</td><td>3.45</td></tr>
</table>

[a] Includes 0.76 mgd received from Islamorada Village of Islands.
[b] Includes 0.89 mgd received from Islamorada Village of Islands.



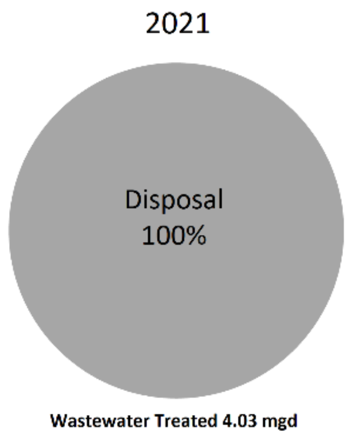


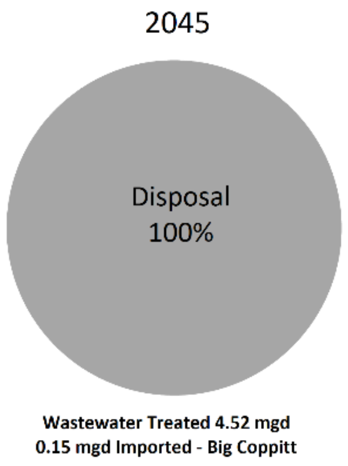
KEY WEST

Description: This facility serves the City of Key West. Wastewater is treated to advanced wastewater treatment levels, but no reclaimed water is produced by this facility. There are no plans to implement a reuse program as a result of the relatively high salinity of the effluent. Effluent is disposed of via two deep injection wells. The facility began importing wastewater from Key Haven starting in 2023. The City of Key West has an MRZ (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA147222**	
Wastewater Treatment Capacity (mgd)	**10.00**	
Disinfection	N/A	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**4.03**	**4.52**
Total Wastewater Disposed	**4.03**	**4.52**[a]
Deep Well Injection	4.03	4.52
Total Water Reused	**0.00**	**0.00**
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Facility Water Imports/Exports (mgd)		
Exporting Utility/Facility	-	0.15 – FKAA Big Coppitt Key WWTF (Key Haven)
Reclaimed Water Project Summary		
No Projects		

[a] Includes imported wastewater.

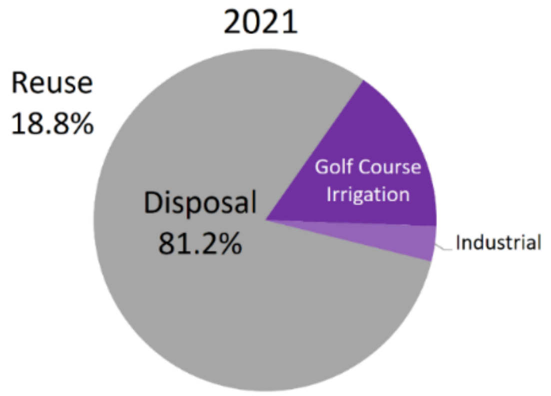




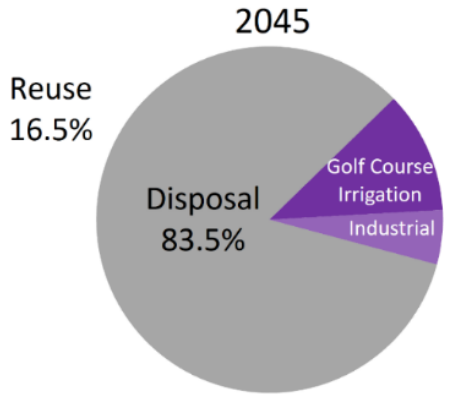
KEY WEST RESORT

Description: This facility serves Stock Island, (bound by the Cow Key Bridge to the west and the Boca Chica Bridge to the east with the exclusion of Key Haven/Racoon Key). This WWTF provides reclaimed water for irrigation at the Key West Country Club and to the Monroe County Detention Center for nonpotable purposes (e.g., toilet flushing). Excess reclaimed water is disposed of via shallow well injection.

<table>
<tr><th colspan="5">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">FLA014951</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="3">0.85</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="3">High Level</td></tr>
<tr><td colspan="5">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td colspan="2">Golf Courses – 1</td><td colspan="2">Parks and Schools – 1</td></tr>
<tr><th colspan="5">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="3"></th><th>2021</th><th>2045</th></tr>
<tr><td colspan="3">Total Wastewater Treated</td><td>0.58</td><td>0.79</td></tr>
<tr><td colspan="3">Total Wastewater Disposed</td><td>0.46</td><td>0.66</td></tr>
<tr><td colspan="3">Shallow Well Injection</td><td>0.46</td><td>0.66</td></tr>
<tr><td colspan="3">Total Water Reused</td><td>0.11</td><td>0.13</td></tr>
<tr><td colspan="3">Golf Course Irrigation</td><td>0.09</td><td>0.09</td></tr>
<tr><td colspan="3">Industrial (toilet flushing)</td><td>0.02</td><td>0.04</td></tr>
<tr><td colspan="3">Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="3">Reuse Percentage</td><td>18.8%</td><td>16.5%</td></tr>
<tr><th colspan="5">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th colspan="2">Completion Date</th><th>Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>Key West Resort Utilities – Reuse Distribution Mains and Irrigation Systems</td><td colspan="2">2027</td><td>$3</td><td>0.85</td></tr>
<tr><td>Key West Resort Utilities and FKAA – Direct Potable Reuse Distribution Line</td><td colspan="2">2026</td><td>$1</td><td>0.5</td></tr>
</table>


2021

Wastewater Treated 0.58 mgd Water Reuse 0.11 mgd


2045

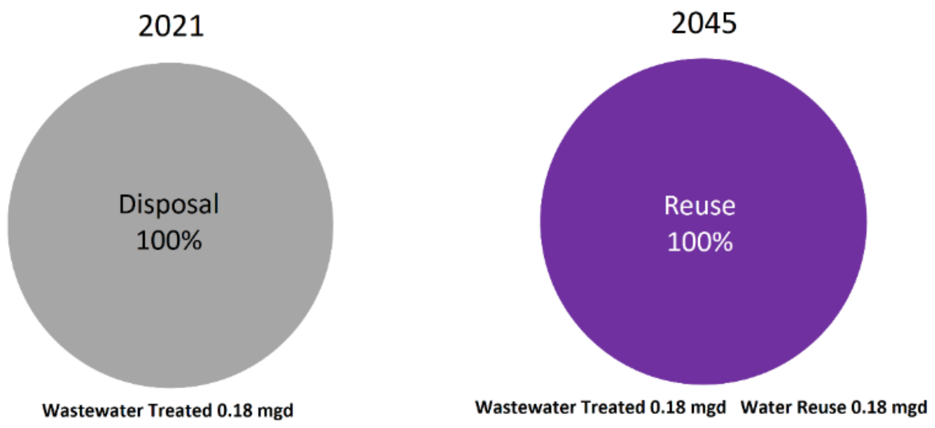
Wastewater Treated 0.79 mgd Water Reuse 0.13

MARATHON – AREA 3

Description: This is one of five facilities of the City of Marathon Utility Department. This facility serves Vaca Key West (11th Street to 39th Street) and Knight's Key. Disposal from this WWTF is via Class V shallow injection wells. All of the city's WWTFs were built with the ability to produce reclaimed water, but none is currently being produced. However, the city plans to be operating at a total projected reuse flow (from all its WWTFs) of 0.93 mgd by 2045.

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td>FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">FLA642851</td></tr>
<tr><td>Wastewater Treatment Capacity (mgd)</td><td colspan="3">0.25</td></tr>
<tr><td>Disinfection</td><td colspan="3">High Level</td></tr>
<tr><td colspan="4">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td colspan="2">Golf Courses – 0</td><td>Parks and Schools – 0</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><td></td><td colspan="2">2021</td><td>2045</td></tr>
<tr><td>Total Wastewater Treated</td><td colspan="2">0.18</td><td>0.18</td></tr>
<tr><td>Total Wastewater Disposed</td><td colspan="2">0.18</td><td>0.00</td></tr>
<tr><td>Shallow Well Injection</td><td colspan="2">0.18</td><td>0.00</td></tr>
<tr><td>Total Water Reused</td><td colspan="2">0.00</td><td>0.18[a]</td></tr>
<tr><td>Supplemental to Reclaimed Water</td><td colspan="2">0.00</td><td>0.00</td></tr>
<tr><td>Reuse Percentage</td><td colspan="2">0.0%</td><td>0.0%</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><td>Project Name</td><td>Completion Date</td><td>Total Capital Cost ($ million)</td><td>Added Capacity (mgd)</td></tr>
<tr><td>City of Marathon – Reuse System Reactivation and Expansion[a]</td><td>2024</td><td>$3</td><td rowspan="3">1.4</td></tr>
<tr><td>City of Marathon and FKAA – Direct Potable Reuse RO[a]</td><td>2030</td><td>$16</td></tr>
<tr><td>City of Marathon and FKAA – Indirect Potable Reuse with ASR and RO[a]</td><td>2030</td><td>$14</td></tr>
</table>

[a] Several projects are being evaluated by the city. A finalized plan may include the entire total (0.93 mgd) combined flow from all the city's WWTFs being reused for direct potable reuse or indirect potable reuse, or a combination of conventional reuse (irrigation) and direct or indirect potable reuse. Both potable reuse options would need to be coordinated with the FKAA. Costs and implementation dates are estimates and have yet to be finalized.

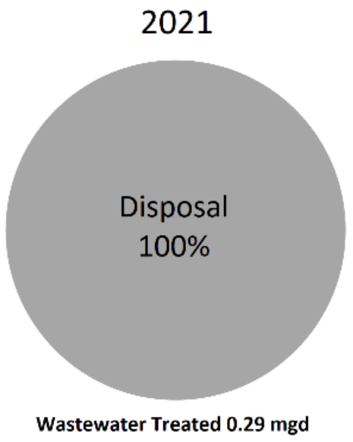


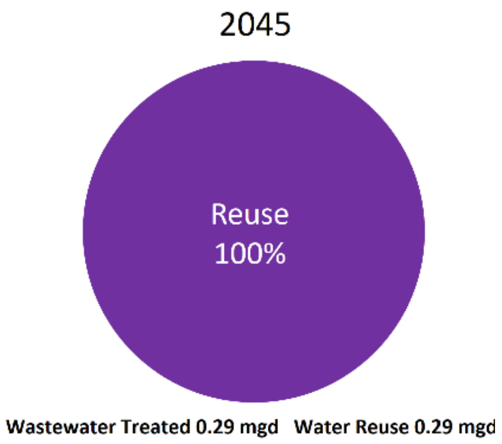
MARATHON – AREA 4

Description: This is one of five facilities of the City of Marathon Utility Department. This facility serves Vaca Key Central (39th Street to 60th Street). Disposal from this WWTF is via Class V shallow injection wells. All of the city's WWTFs were built with the ability to produce reclaimed water, but none is currently being produced. However, the city plans to be operating at a total projected reuse flow (from all its WWTFs) of 0.93 mgd by 2045.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA550973**	
Wastewater Treatment Capacity (mgd)	**0.40**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.29**	**0.29**
Total Wastewater Disposed	**0.29**	**0.00**
Shallow Well Injection	0.29	0.00
Total Water Reused	**0.00**	**0.29**[a]
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Reclaimed Water Project Summary		
See Marathon – Area 3: Reclaimed Water Project Summary		

[a] Future reuse may include direct potable reuse or indirect potable reuse, or a combination of conventional reuse and direct or indirect potable reuse.



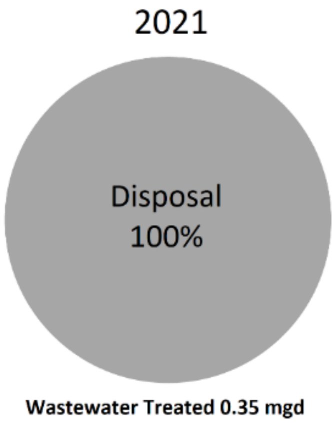


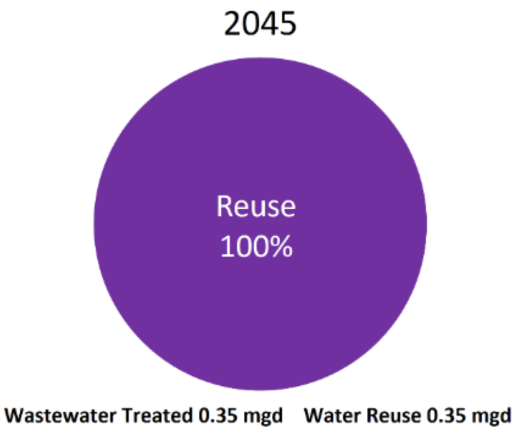
MARATHON – AREA 5

Description: This is one of five facilities of the City of Marathon Utility Department. This facility serves Vaca Key East (60th Street to Vaca Cut). Disposal from this WWTF is via Class V shallow injection wells. All of the city's WWTFs were built with the ability to produce reclaimed water, but none is currently being produced. However, the city plans to be operating at a total projected reuse flow (from all its WWTFs) of 0.93 mgd by 2045.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA187364**	
Wastewater Treatment Capacity (mgd)	**0.45**	
Disinfection	Basic and High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.35**	**0.35**
Total Wastewater Disposed	**0.35**	**0.00**
Shallow Well Injection	0.35	0.00
Total Water Reused	**0.00**	**0.35**[a]
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Reclaimed Water Project Summary		
See Marathon – Area 3: Reclaimed Water Project Summary		

[a] Future reuse may include direct potable reuse or indirect potable reuse, or a combination of conventional reuse and direct or indirect potable reuse.



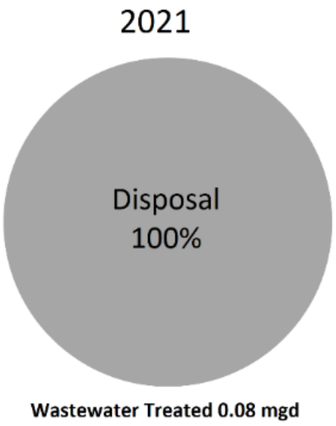


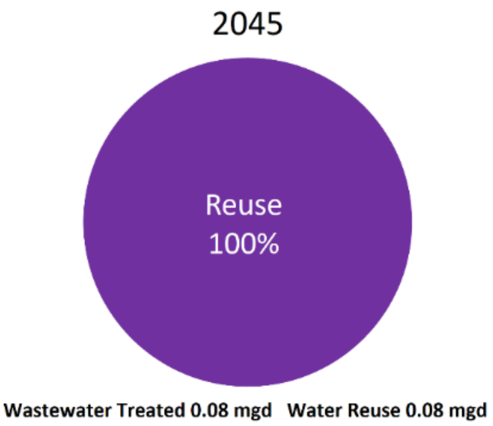
MARATHON – AREA 6

Description: This is one of five facilities of the City of Marathon Utility Department. This facility serves Fat Deer Key West-Coco Plum (Vaca Cut to Coco Plum). Disposal from this WWTF is via Class V shallow injection wells. All of the city's WWTFs were built with the ability to produce reclaimed water, but none is currently being produced. However, the city plans to be operating at a total projected reuse flow (from all its WWTFs) of 0.93 mgd by 2045.

<table>
<tr><th colspan="6">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="3">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">FLA579033</td></tr>
<tr><td colspan="3">Wastewater Treatment Capacity (mgd)</td><td colspan="3">0.20</td></tr>
<tr><td colspan="3">Disinfection</td><td colspan="3">Basic Level</td></tr>
<tr><td colspan="6">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td colspan="2">Residences – 0</td><td colspan="2">Golf Courses – 0</td><td colspan="2">Parks and Schools – 0</td></tr>
<tr><th colspan="6">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th colspan="2">2021</th><th colspan="2">2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td colspan="2">0.08</td><td colspan="2">0.08</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td colspan="2">0.08</td><td colspan="2">0.00</td></tr>
<tr><td colspan="2">Shallow Well Injection</td><td colspan="2">0.08</td><td colspan="2">0.00</td></tr>
<tr><td colspan="2">Total Water Reused</td><td colspan="2">0.00</td><td colspan="2">0.08[a]</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td colspan="2">0.00</td><td colspan="2">0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td colspan="2">0.0%</td><td colspan="2">0.0%</td></tr>
<tr><th colspan="6">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="6">See Marathon – Area 3: Reclaimed Water Project Summary</td></tr>
</table>

[a] Future reuse may include direct potable reuse or indirect potable reuse, or a combination of conventional reuse and direct or indirect potable reuse.



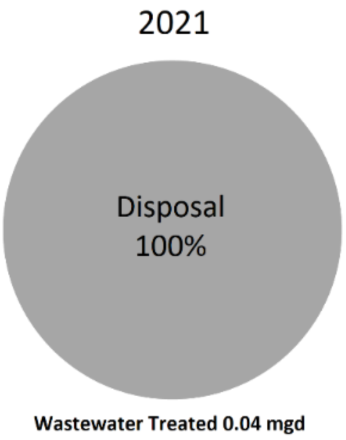


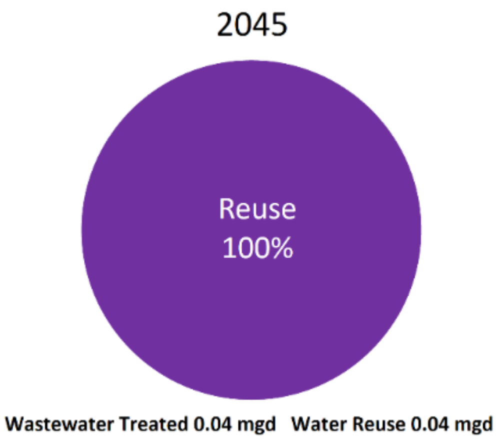
MARATHON – AREA 7

Description: This is one of five facilities of the City of Marathon Utility Department. This facility serves Grassy Key (Fat Deer Key East through Grassy Key). Disposal from this WWTF is via Class V shallow injection wells. All of the city's WWTFs were built with the ability to produce reclaimed water, but none is currently being produced. However, the city plans to be operating at a total projected reuse flow (from all its WWTFs) of 0.93 mgd by 2045.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA705250**	
Wastewater Treatment Capacity (mgd)	**0.20**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.04**	**0.04**
Total Wastewater Disposed	**0.04**	**0.00**
Shallow Well Injection	0.04	0.00
Total Water Reused	**0.00**	**0.04**[a]
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**
Reclaimed Water Project Summary		
See Marathon – Area 3: Reclaimed Water Project Summary		

[a] Future reuse may include direct potable reuse or indirect potable reuse, or a combination of conventional reuse and direct or indirect potable reuse.

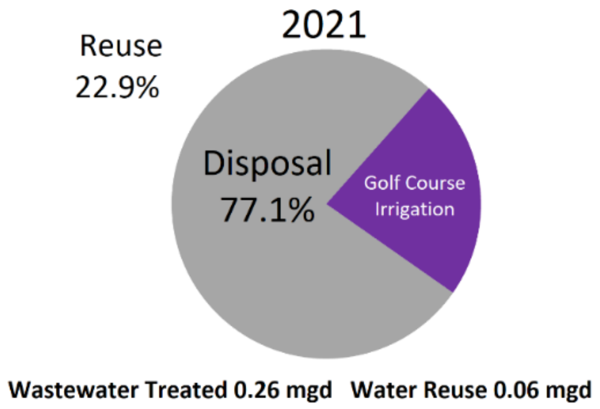


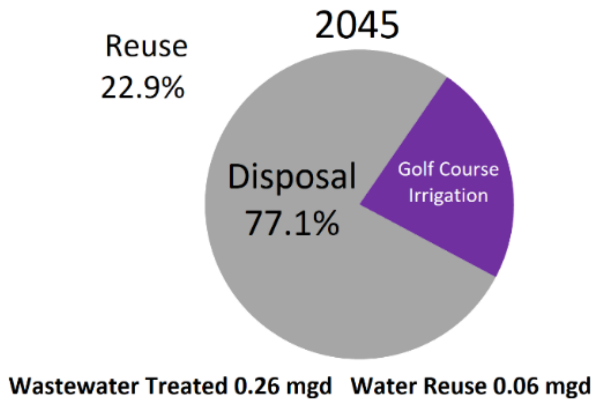


NORTH KEY LARGO

Description: This facility serves the Ocean Reef and Angler's Club communities in North Key Largo. Filtered effluent from the WWTF is treated by reverse osmosis to reduce the salinity and is stored in a 2.2-million-gallon storage pond. Reclaimed water is used for common area and golf course irrigation. The reverse osmosis concentrate is sent to four Class V shallow injection wells for disposal. During the summer (off season), the facility does not produce enough effluent to send for reuse. Because of the seasonal nature of the property and the limitations of the water reuse system, no expansion of reuse is expected.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA015009**	
Wastewater Treatment Capacity (mgd)	**0.50**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 3	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.26**	**0.26**
Total Wastewater Disposed	**0.20**	**0.20**
Shallow Well Injection	0.20	0.20
Total Water Reused	**0.06**	**0.06**
Golf Irrigation	0.06	0.06
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**22.9%**	**22.9%**
Reclaimed Water Project Summary		
No Projects		





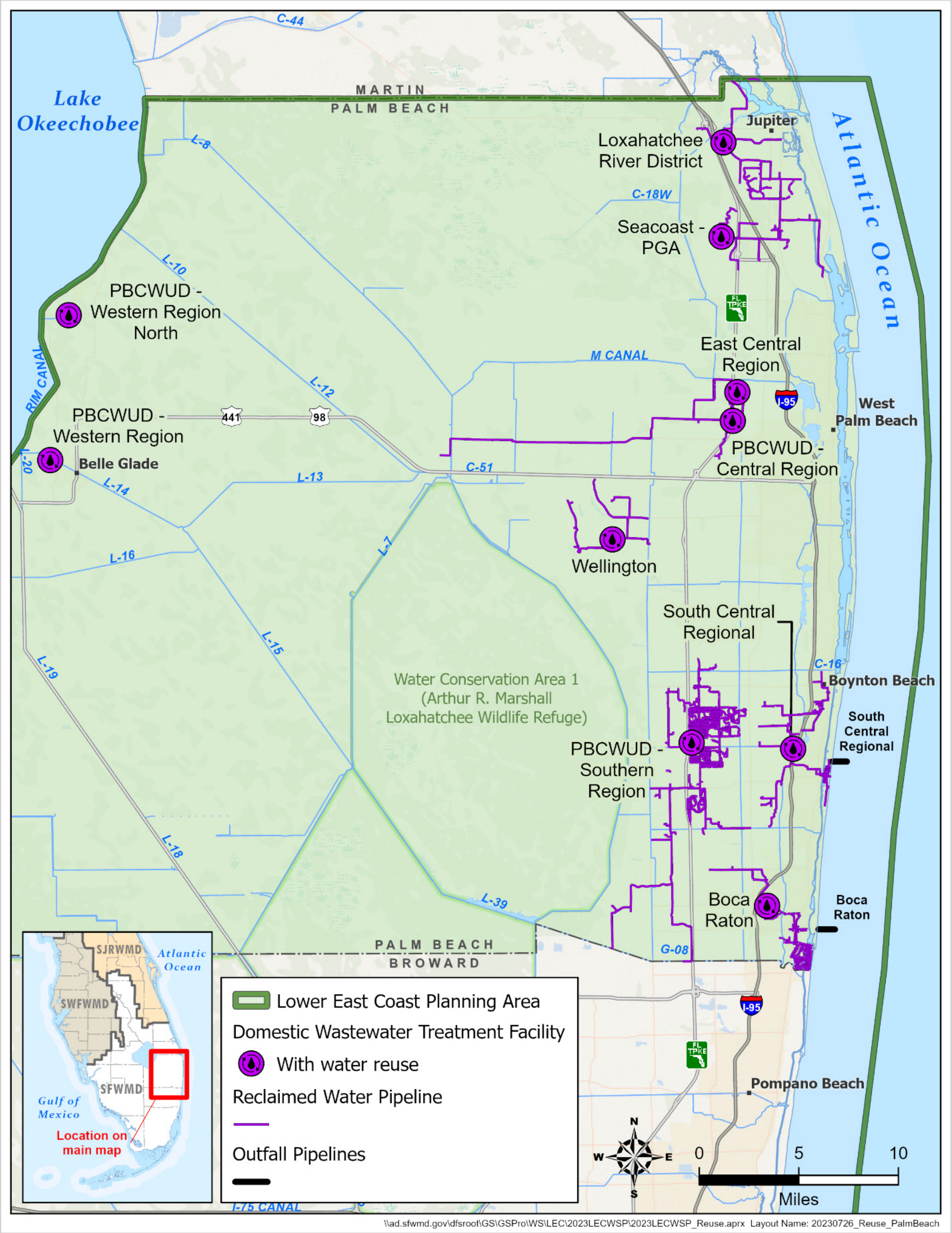


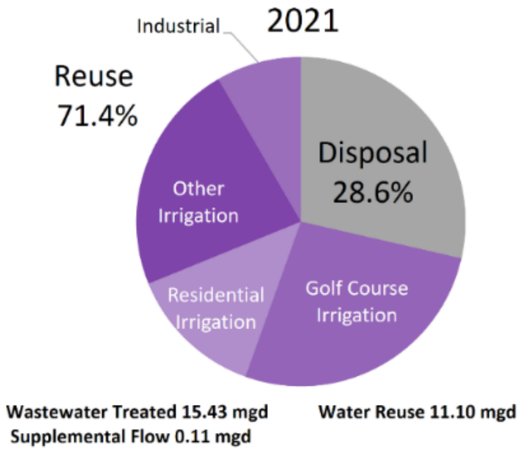
Figure E-4. Wastewater and reuse facilities in Palm Beach County.

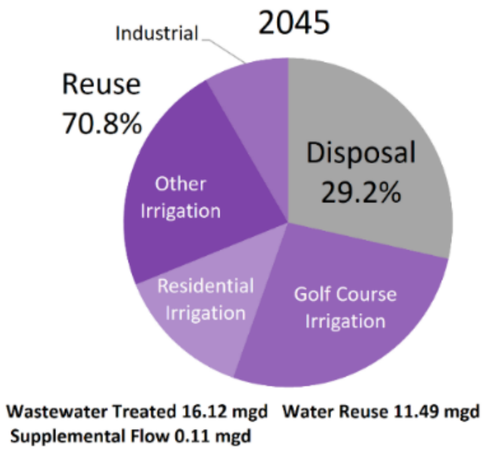
BOCA RATON

Description: This facility serves the City of Boca Raton and portions of unincorporated Palm Beach County. Reclaimed water is used for irrigation of golf courses and green spaces. The city's reclaimed water facility is currently permitted at 17.5 mgd and has the ability to deliver all of it to end users. Concentrate from the city's drinking water membrane treatment facility supplements reclaimed water flows. The city's WWTF was designated a 100% reuse capacity facility by the FDEP and was deemed to have met its OOL reuse requirement in 2015. The City of Boca Raton has an MRZ (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FL0026344**	
Wastewater Treatment Capacity (mgd)	**17.50**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 1,726	Golf Courses – 6	Parks and Schools – 10
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**15.43**	**16.12**
Total Wastewater Disposed	**4.44**	**4.59**
Ocean Outfall	4.44	4.59
Total Water Reused[a]	**11.10**	**11.49**
Golf Course Irrigation	4.18	4.32
Residential Irrigation	2.08	2.16
Other Irrigation	3.54	3.67
Industrial (Irrigation and use at treatment plant)	1.30	1.34
Supplemental to Reclaimed Water	0.11 – DemConc.	0.11 – DemConc.
Reuse Percentage	**71.4%**	**70.8%**
Reclaimed Water Project Summary		
No Projects		

[a] Includes supplemental water blended with treated wastewater.

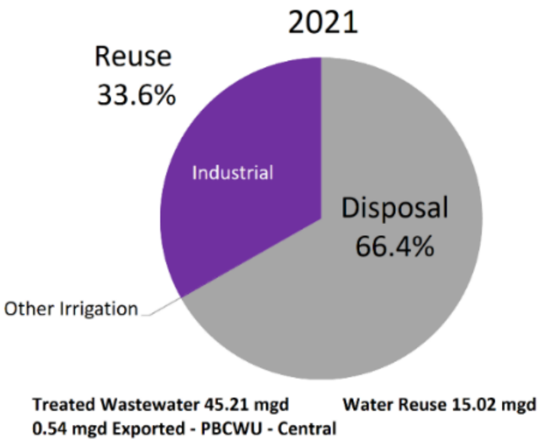


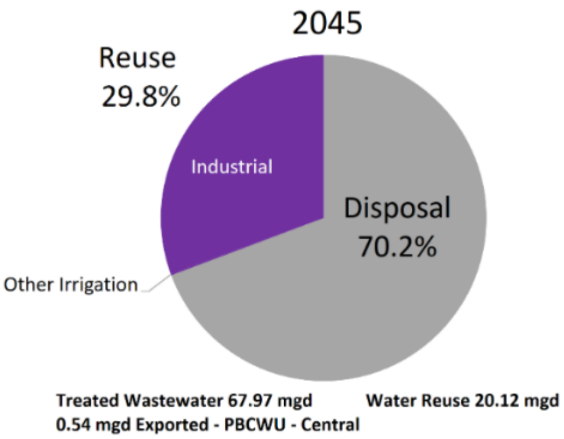


EAST CENTRAL REGIONAL (WEST PALM BEACH)

Description: This facility serves the cities of West Palm Beach, Lake Worth Beach, and Riviera Beach; Town of Palm Beach; and portions of unincorporated Palm Beach County. Each entity is responsible for its wastewater collection and transmission systems. Most of the reclaimed water produced by this facility is sent to the FPL West County Energy Center for industrial cooling. Due to problems with the facility's primary screens in 2020 and 2021, less than 15.0 mgd was sent to FPL's West County Energy Center. However, flows returned to 20 mgd (annual average daily flow) in March of 2022. Approximately 0.5 mgd of effluent is sent to the adjacent PBCWUD – Central Region (Century Village) where it is treated to reclaimed water standards and reused for irrigation. The remaining effluent is disposed of via Class I deep injection wells.

<table>
<tr><th colspan="3">Wastewater Treatment Facility Information</th></tr>
<tr><td>FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA041360</td></tr>
<tr><td>Wastewater Treatment Capacity (mgd)</td><td colspan="2">70.00</td></tr>
<tr><td>Disinfection</td><td colspan="2">Basic and High Level</td></tr>
<tr><td>Public Access Users Served Reclaimed Water 2021:</td><td colspan="2"></td></tr>
<tr><td>Residences – 0</td><td>Golf Courses – 0</td><td>Parks and Schools – 1</td></tr>
<tr><th colspan="3">Annual Average Daily Flows (mgd)</th></tr>
<tr><th></th><th>2021</th><th>2045</th></tr>
<tr><td>Total Wastewater Treated</td><td>45.21</td><td>67.97</td></tr>
<tr><td>Total Wastewater Disposed</td><td>30.19</td><td>45.39</td></tr>
<tr><td>Deep Well Injection</td><td>30.19</td><td>45.39</td></tr>
<tr><td>Total Water Reused</td><td>15.02</td><td>20.12</td></tr>
<tr><td>Other Irrigation</td><td>0.08</td><td>0.12</td></tr>
<tr><td>Industrial (FPL)</td><td>14.94</td><td>20.00</td></tr>
<tr><td>Supplemental to Reclaimed Water</td><td>0.00</td><td>0.00</td></tr>
<tr><td>Reuse Percentage</td><td>33.6%</td><td>29.8%</td></tr>
<tr><th colspan="3">Facility Water Imports/Exports (mgd)</th></tr>
<tr><td>Importing Utility/Facility</td><td>0.54 – PBCWUD – Central Region</td><td>0.54 – PBCWUD – Central Region</td></tr>
<tr><th colspan="3">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="3">No Projects</td></tr>
</table>



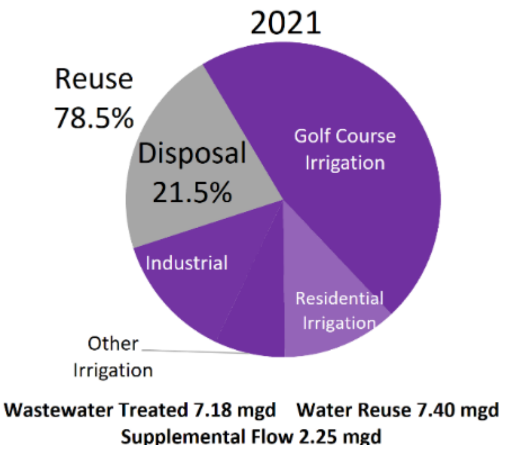


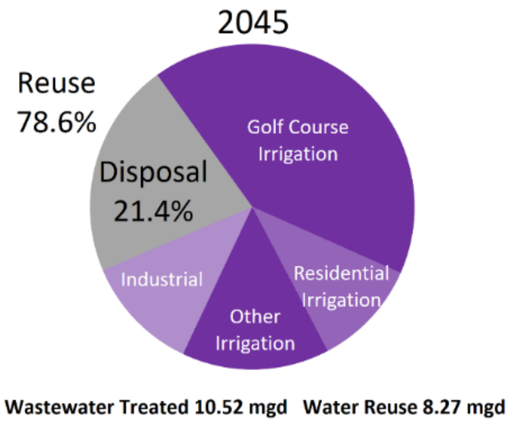
LOXAHATCHEE RIVER DISTRICT

Description: This facility serves the towns of Jupiter, Jupiter Inlet Colony, and Juno Beach; Village of Tequesta; and unincorporated areas of northern Palm Beach County and southern Martin County. Reclaimed water is reused for golf and landscape irrigation. Excess effluent is disposed of via Class I deep injection wells. Nanofiltration concentrate from the Town of Jupiter's water treatment plant is blended with reclaimed water currently, but this is anticipated to be discontinued in June of 2026. Reclaimed water is committed from this facility, and this area is becoming fully developed such that future expansion of reuse is limited.

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FL0034649**	
Wastewater Treatment Capacity (mgd)	**11.00**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 5,858	Golf Courses – 12	Parks and Schools – 17
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**7.18**	**10.52**
Total Wastewater Disposed	**2.02**	**2.26**
Deep Well Injection	2.02	2.26
Total Water Reused[a]	**7.40**	**8.27**
Golf Course Irrigation	4.38	4.38
Residential Irrigation	1.12	1.12
Other Irrigation	0.68	1.55
Industrial	1.22	1.22
Supplemental to Reclaimed Water	2.25 – DemConc	**0.00**
Reuse Percentage	**78.5%**	**78.6%**
Facility Water Imports/Exports (mgd)		
Exporting Utility/Facility	2.25 – Town of Jupiter	-
Reclaimed Water Project Summary		
No Projects		

[a] Includes supplemental water blended with treated wastewater.



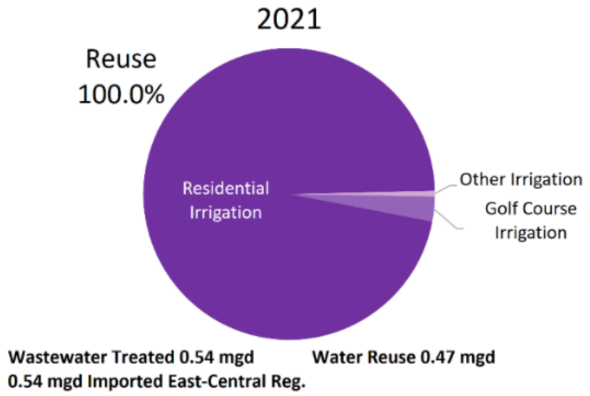


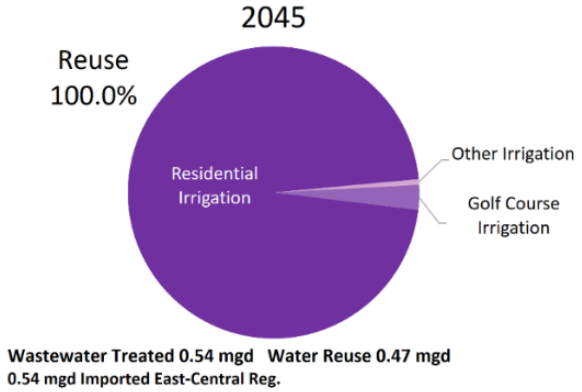
PBCWUD – CENTRAL REGION

Description: This facility is one of four WWTFs operated by PBCWUD. This facility receives secondary treated effluent from the East Central Regional WRF (West Palm Beach) and subsequently provides filtration and high-level disinfection. Reclaimed water is provided for irrigation of a golf course, residential, and commercial areas in the service area between Belvedere Road to Roebuck Road. Palm Beach County has an MRZ for new residential developments within a section of its service area (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FL0471275**	
Wastewater Treatment Capacity (mgd)	**3.00**	
Disinfection	High Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 7,294	Golf Courses – 1	Parks and Schools – 1
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**0.54**	**0.54**
Total Wastewater Disposed	**0.00**	**0.00**
Total Water Reused[a]	**0.47**	**0.47**
Golf Course Irrigation	0.01	0.01
Residential Irrigation	0.46	0.46
Other Irrigation	0.003	0.003
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**100.0%**	**100.0%**
Facility Water Imports/Exports (mgd)		
Exporting Utility/Facility	0.54 – East Central Regional	0.54 – East Central Regional
Reclaimed Water Project Summary		
No Projects		

[a] Includes imported water blended with treated wastewater.

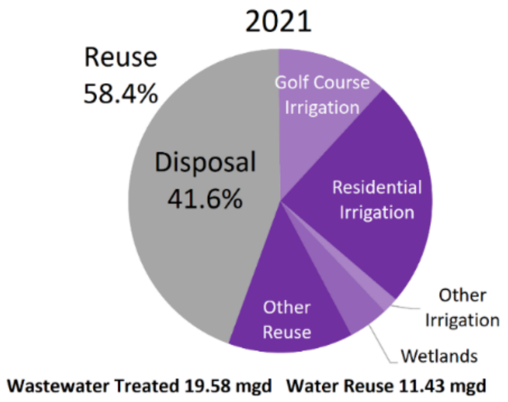


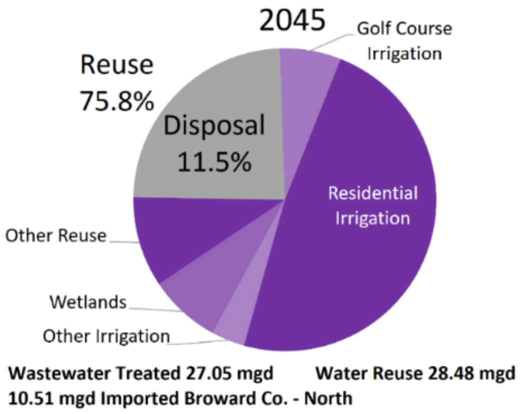


PBCWUD – SOUTHERN REGION

Description: This facility is one of four WWTFs operated by PBCWUD. This facility serves the western portion of the cities of Boynton Beach and Delray Beach, primarily from Lake Worth Road to Clint Moore Road. Reclaimed water is used for irrigation of golf courses, residential lots, and green spaces as well as hydration of Wakodahatchee and Green Cay wetlands. Effluent is disposed of through deep well injection. Palm Beach County will receive approximately 10.51 mgd of reclaimed water from the Broward County – North Regional facility for reuse in southern Palm Beach County in 2028. Palm Beach County has an MRZ for new residential developments within a section of its service area (**Figure E-1**).

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FL0041424</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="2">35.00</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="2">High Level</td></tr>
<tr><td colspan="4">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 6,062</td><td>Golf Courses – 7</td><td colspan="2">Parks and Schools – 3</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th>2021</th><th>2045</th></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td>19.58</td><td>27.05</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td>9.08</td><td>9.08</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td>9.08</td><td>9.08</td></tr>
<tr><td colspan="2">Total Water Reused</td><td>11.43</td><td>28.48</td></tr>
<tr><td colspan="2">Golf Course Irrigation</td><td>2.46</td><td>2.46</td></tr>
<tr><td colspan="2">Residential Irrigation</td><td>5.01</td><td>18.16</td></tr>
<tr><td colspan="2">Other Irrigation</td><td>0.35</td><td>1.35</td></tr>
<tr><td colspan="2">Wetlands</td><td>0.88</td><td>2.88</td></tr>
<tr><td colspan="2">Other (at treatment plant use)</td><td>2.73</td><td>3.63</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water (mgd)</td><td>0.00</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td>58.4%</td><td>75.8%</td></tr>
<tr><th colspan="4">Facility Water Imports/Exports (mgd)</th></tr>
<tr><td colspan="2">Exporting Utility/Facility</td><td>-</td><td>10.51 – Broward County – North Regional</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><th>Project Name</th><th>Completion Date</th><th>Total Capital Cost ($ million)</th><th>Added Capacity (mgd)</th></tr>
<tr><td>Green Cay Wetlands Phase 2: 2.00 mgd Indirect Potable Reuse Project – WTP, 2.3 Miles Purified Water Pipeline, and SAS Wells</td><td>2025</td><td>$47.5</td><td>2.0</td></tr>
<tr><td>Palm Beach-Broward Interconnect Phase 1B: South Reclaimed Water Transmission and System Extension in Southern Palm Beach County</td><td>2028</td><td>$58.5</td><td>10.51</td></tr>
</table>

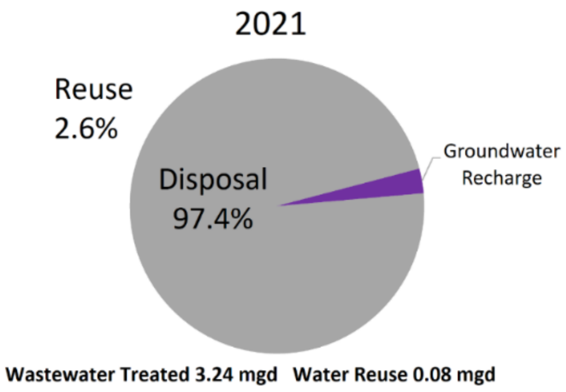

2021
Reuse
58.4%
Disposal
41.6%
Golf Course Irrigation
Residential Irrigation
Other Irrigation
Wetlands
Other Reuse
Wastewater Treated 19.58 mgd
Water Reuse 11.43 mgd

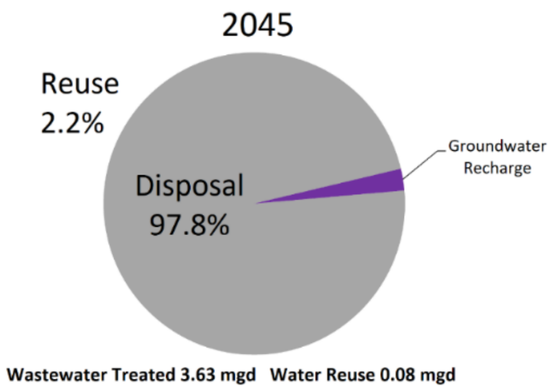

2045
Golf Course Irrigation
Reuse
75.8%
Disposal
11.5%
Residential Irrigation
Other Reuse
Wetlands
Other Irrigation
Wastewater Treated 27.05 mgd
Water Reuse 28.48 mgd
10.51 mgd Imported Broward Co. - North

PBCWUD – WESTERN REGION (BELLE GLADE)

Description: This facility is one of four WWTFs operated by PBCWUD. This facility serves the cities of Belle Glade and South Bay. Most effluent is disposed of through deep well injection. There are no plans to expand reclaimed water use beyond the existing on-site infiltration basins. Palm Beach County has an MRZ for new residential developments within a section of its service area (**Figure E-1**).

Wastewater Treatment Facility Information		
FDEP Wastewater Facilities Regulation Identification	**FLA027740**	
Wastewater Treatment Capacity (mgd)	**6.50**	
Disinfection	Basic Level	
Public Access Users Served Reclaimed Water 2021:		
Residences – 0	Golf Courses – 0	Parks and Schools – 0
Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**3.24**	**3.63**
Total Wastewater Disposed	**3.00**	**3.37**
Deep Well Injection	3.00	3.37
Total Water Reused	**0.08**	**0.08**
Groundwater Recharge (including rapid infiltration basins)	0.08	0.08
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**2.6%**	**2.2%**
Reclaimed Water Project Summary		
No Projects		





PBCWUD – WESTERN REGION NORTH (PAHOKEE)

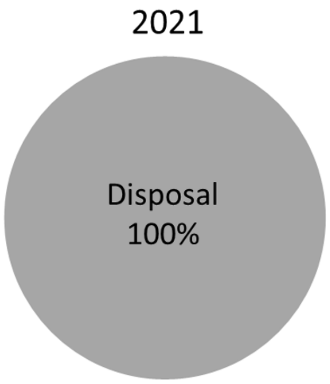
Description: This facility is one of four WWTFs operated by PBCWUD. This facility serves the City of Pahokee and Canal Point. The City of Pahokee has determined a water reuse system is not feasible, and there are no plans to implement a reclaimed water program. Effluent is disposed of through deep well injection. Palm Beach County has an MRZ for new residential developments within a section of its service area (**Figure E-1**).

Wastewater Treatment Facility Information	
FDEP Wastewater Facilities Regulation Identification	**FLA136778**
Wastewater Treatment Capacity (mgd)	**1.20**
Disinfection	Basic Level
Public Access Users Served Reclaimed Water 2021:	

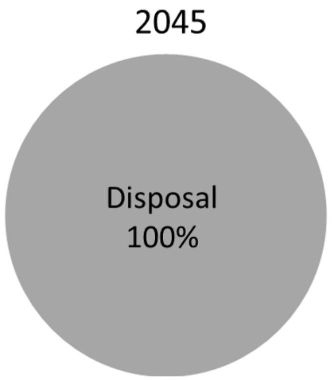
Residences – 0	Golf Courses – 0	Parks and Schools – 0

Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**1.07**	**1.26**
Total Wastewater Disposed	**0.99**	**1.17**
Deep Well Injection	0.99	1.17
Total Water Reused	**0.00**	**0.00**
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**0.0%**	**0.0%**

Reclaimed Water Project Summary
No Projects



Wastewater Treated 1.07 mgd



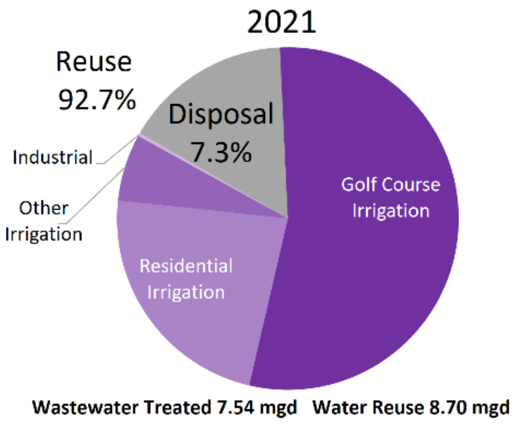
Wastewater Treated 1.26 mgd

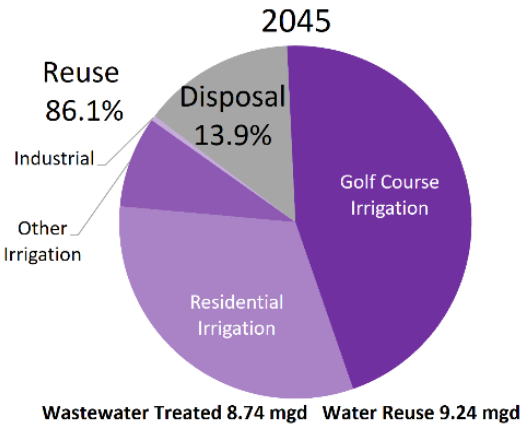
SEACOAST

Description: This facility serves the City of Palm Beach Gardens, Village of North Palm Beach, Town of Lake Park, portions of the Town of Juno Beach, and unincorporated portions of Palm Beach County. Reclaimed water is used for irrigation of golf courses, residential lots, and other green spaces. The reclaimed water supply is augmented with nanofiltration concentrate, groundwater, and surface water. Excess effluent is disposed of via deep well injection.

<table>
<tr><th colspan="6">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="3">FDEP Wastewater Facilities Regulation Identification</td><td colspan="3">**FL0038768**</td></tr>
<tr><td colspan="3">Wastewater Treatment Capacity (mgd)</td><td colspan="3">**12.00**</td></tr>
<tr><td colspan="3">Disinfection</td><td colspan="3">High Level</td></tr>
<tr><td colspan="6">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td colspan="2">Residences – 0</td><td colspan="2">Golf Courses – 9</td><td colspan="2">Parks and Schools – 0</td></tr>
<tr><th colspan="6">Annual Average Daily Flows (mgd)</th></tr>
<tr><th colspan="2"></th><th colspan="2">2021</th><th colspan="2">2045</th></tr>
<tr><td colspan="2">**Total Wastewater Treated**</td><td colspan="2">**7.54**</td><td colspan="2">**8.74**</td></tr>
<tr><td colspan="2">**Total Wastewater Disposed**</td><td colspan="2">**1.65**</td><td colspan="2">**1.50**</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td colspan="2">1.65</td><td colspan="2">1.50</td></tr>
<tr><td colspan="2">**Total Water Reused**[a]</td><td colspan="2">**8.70**</td><td colspan="2">**9.24**</td></tr>
<tr><td colspan="2">Golf Course Irrigation</td><td colspan="2">5.63</td><td colspan="2">4.88</td></tr>
<tr><td colspan="2">Residential Irrigation</td><td colspan="2">2.38</td><td colspan="2">3.41</td></tr>
<tr><td colspan="2">Other Irrigation</td><td colspan="2">0.65</td><td colspan="2">0.90</td></tr>
<tr><td colspan="2">Industrial</td><td colspan="2">0.03</td><td colspan="2">0.05</td></tr>
<tr><td colspan="2">**Supplemental to Reclaimed Water**</td><td colspan="2">**1.83**
0.0002 – SW
0.0024 – GW
1.832 – DemConc</td><td colspan="2">**2.00**
2.00 – DemConc</td></tr>
<tr><td colspan="2">**Reuse Percentage**</td><td colspan="2">**92.7%**</td><td colspan="2">**86.1%**</td></tr>
<tr><th colspan="6">Reclaimed Water Project Summary</th></tr>
<tr><td colspan="6">No Projects</td></tr>
</table>

[a] Includes supplemental water blended with treated wastewater.





SOUTH CENTRAL REGIONAL

Description: The cities of Boynton Beach and Delray Beach each operate and maintain wastewater collection systems in their respective service areas and transmit raw wastewater to the South Central Regional WWTF. Reclaimed water is used for irrigation of residential areas, golf courses, schools, and parks. Most of the excess effluent is disposed of via deep well injection. This facility is required by the OOL to reuse an additional 7.70 mgd of reclaimed water (above the 2008 baseline flow), for a total reuse of 13.30 mgd by 2025. The two cities are in discussions with FDEP regarding the additional flow needed to meet the OOL. A second deep injection well is under construction to avoid using the ocean outfall during wet weather conditions. The City of Delray Beach has an MRZ (**Figure E-1**).

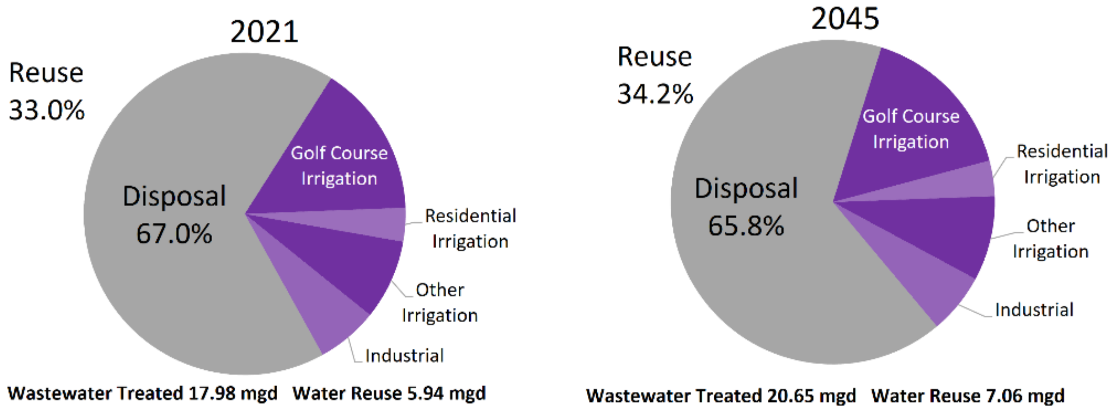
Wastewater Treatment Facility Information	
FDEP Wastewater Facilities Regulation Identification	**FL0035980**
Wastewater Treatment Capacity (mgd)	**24.00**
Disinfection	Basic and High Level

Public Access Users Served Reclaimed Water 2021:		
Residences – 960	Golf Courses – 9	Parks and Schools – 14

Annual Average Daily Flows (mgd)		
	2021	**2045**
Total Wastewater Treated	**17.98**	**20.65**
Total Wastewater Disposed	**12.11**	**13.68**
Deep Well Injection	10.33	11.67
Ocean Outfall	1.78	2.01[a]
Total Water Reused	**5.94**	**7.06**
Golf Course Irrigation	2.77	3.32
Residential Irrigation	0.61	0.73
Other Irrigation	1.45	1.75
Industrial	1.11	1.25
Supplemental to Reclaimed Water	**0.00**	**0.00**
Reuse Percentage	**33.0%**	**34.2%**

Reclaimed Water Project Summary			
Project Name	Completion Date	Total Capital Cost ($ million)	Added Capacity (mgd)
Reclaimed Water System Extension Phases 1 to 4 (Boynton Beach)	2030	$40.00	3.30
Reclaimed Water System Extension Area 9 (Delray Beach)	2026	$1.50	0.20
Reclaimed Water System Extension Area 15 (Delray Beach)	2028	$1.70	0.16
Reclaimed Water System Extension Areas 2, 3, 5 (Delray Beach)	2026	$1.00	0.42
Reclaimed Water System Extension Area 10 (Delray Beach)	2023	$2.70	0.10

[a] Completion of a second deep injection well will remove the need for effluent to be sent to the ocean outfall except during extreme weather events as per rule.

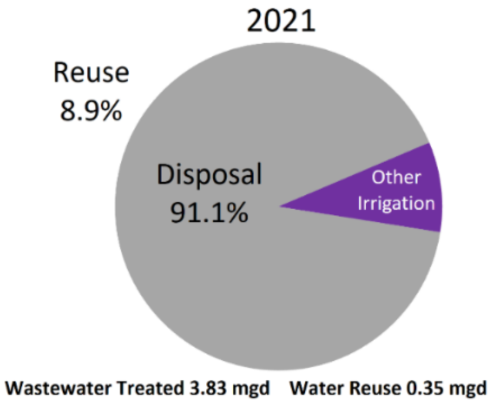

2021
Reuse
33.0%
Disposal
67.0%
Golf Course Irrigation
Residential Irrigation
Other Irrigation
Industrial
Wastewater Treated 17.98 mgd
Water Reuse 5.94 mgd
2045
Reuse
34.2%
Disposal
65.8%
Golf Course Irrigation
Residential Irrigation
Other Irrigation
Industrial
Wastewater Treated 20.65 mgd
Water Reuse 7.06 mgd

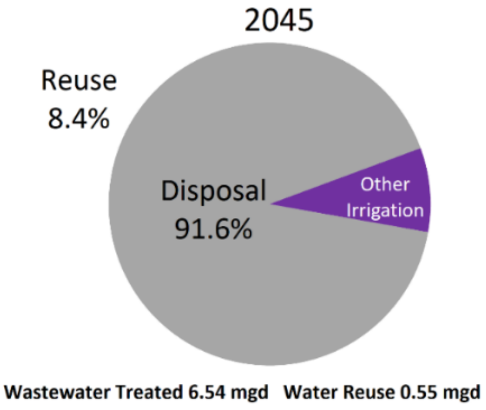
WELLINGTON

Description: This facility serves the Village of Wellington, portions of the Village of Royal Palm Beach, and unincorporated Palm Beach County. Part of the effluent is treated to high-level disinfection standards for public access reuse. The reuse system consists of hydration of the Peaceful Waters Sanctuary wetland park having a capacity of 0.23 mgd, and public access irrigation of parks, playgrounds, highway medians, and rights-of-way. A majority of the effluent is disposed of via deep well injection. Wastewater flows are projected to increase through new development, redevelopment, and septic-to-sewer conversions.

<table>
<tr><th colspan="4">Wastewater Treatment Facility Information</th></tr>
<tr><td colspan="2">FDEP Wastewater Facilities Regulation Identification</td><td colspan="2">FLA042595</td></tr>
<tr><td colspan="2">Wastewater Treatment Capacity (mgd)</td><td colspan="2">6.50</td></tr>
<tr><td colspan="2">Disinfection</td><td colspan="2">Basic and High level</td></tr>
<tr><td colspan="4">Public Access Users Served Reclaimed Water 2021:</td></tr>
<tr><td>Residences – 0</td><td>Golf Courses – 0</td><td colspan="2">Parks and Schools – 8</td></tr>
<tr><th colspan="4">Annual Average Daily Flows (mgd)</th></tr>
<tr><td colspan="2"></td><td>2021</td><td>2045</td></tr>
<tr><td colspan="2">Total Wastewater Treated</td><td>3.83</td><td>6.54</td></tr>
<tr><td colspan="2">Total Wastewater Disposed</td><td>3.56</td><td>5.99</td></tr>
<tr><td colspan="2">Deep Well Injection</td><td>3.56</td><td>5.99</td></tr>
<tr><td colspan="2">Total Water Reused[a]</td><td>0.35</td><td>0.55</td></tr>
<tr><td colspan="2">Other Irrigation</td><td>0.35</td><td>0.55</td></tr>
<tr><td colspan="2">Supplemental to Reclaimed Water</td><td>0.08 – DW</td><td>0.00</td></tr>
<tr><td colspan="2">Reuse Percentage</td><td>8.9%</td><td>8.4%</td></tr>
<tr><th colspan="4">Reclaimed Water Project Summary</th></tr>
<tr><td>Project Name</td><td>Completion Date</td><td>Total Capital Cost ($ million)</td><td>Added Capacity (mgd)</td></tr>
<tr><td>0.20 mgd WRF Expansion – Phase 2</td><td>2030</td><td>$1.3</td><td>0.20 mgd</td></tr>
</table>

[a] Includes supplemental water blended with treated wastewater.





REFERENCES

FDEP. 2022. *OCULUS Electronic Document Management System*. Florida Department of Environmental Protection, Tallahassee, FL. Available online at https://depedms.dep.state.fl.us/Oculus/servlet/login.

The South Florida Water Management District is committed to managing and protecting our region's water resources.

Get the latest information from SFWMD

Learn more about water supply planning in South Florida by signing up for the District's emails. Visit **sfwmd.gov** and click on ***"Subscribe for Email Updates."***

Connect with us on Facebook, X, Instagram, LinkedIn and YouTube.

3301 Gun Club Road
West Palm Beach, FL 33406
SFWMD.gov