



# Water Supply Assessment and Water Supply Plan

## Planning for water supply needs through 2025

### Fast Facts

Most of the water currently used comes from fresh groundwater.

Fresh groundwater alone will not be able to meet all future water supply needs through 2025.

About 200 million gallons per day of alternative supplies are likely to be needed in the east-central Florida area.

Eighty alternative water supply project options have been identified to meet these needs.

### Introduction

The St. Johns River Water Management District prepares water supply assessments for the purpose of:

- Identifying future water supply needs for a 20-year planning horizon.
- Identifying areas where those needs cannot be met by the water supply plans of major water users without unacceptable impacts to water resources and related natural systems. These areas are called priority water resource caution areas (PWRCA).

The District also develops and implements water supply plans that identify programs and projects which ensure adequate and sustainable water supplies are available to meet future water supply needs without unacceptable impacts.

Water supply assessments and water supply plans are developed every five years and are designed to meet the water supply planning provisions of Chapter 373, *Florida Statutes*.

### Water Supply Assessment (WSA) 2003

The WSA 2003 is based on a planning period that extends through 2025 and is the first five-year update to the WSA 1998. The WSA 1998 projection period extended through the year 2020.

The assessment determines the following:

- Existing legal uses of water, reasonably anticipated future needs, existing and reasonably anticipated sources of water and conservation efforts.
- Whether existing and reasonably anticipated sources of water and conservation efforts are adequate to supply water for all existing legal uses and reasonably anticipated future needs and to sustain the water resources and related natural systems.

Water use data from 1995 served as the base for the WSA 1998 and WSA 2003 projections. The base year for assessment projections will continue to be 1995 because natural systems and groundwater quality are impacted by the cumulative long-term change in water levels.

### Water use projections

Total District population in 1995 was 3.5 million people. Population in 2025 is projected to be nearly 5.9 million, a 67 percent increase. Total water use in the District is projected to increase from 1.36 billion gallons per day in 1995 to about 1.79 billion gallons per day in 2025. (See table below.) This represents an approximate 30 percent increase.

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**Total water use by category for 1995 and 2025**

Category	1995 Water Use (mgd)			2025 Projected Water Use Average Rainfall Year (mgd)			Percent Change 1995-2025
	Ground	Surface	Total	Ground	Surface	Total	
Public supply	441.11	12.15	453.26	809.88	25.68	835.56	84
Domestic and other small public supply	71.09	0.00	71.09	100.67	0.00	100.67	42
Agricultural irrigation (ss)	361.16	223.15	584.31	306.93	215.18	522.11	-11
Recreational irrigation (ss) 68	.78	30.35	99.13	107.77	48.67	156.44	58
Commercial/Industrial/Institutional (ss)	95.55	38.13	133.68	98.63	30.67	129.30	-3
Thermoelectric power generation (ss)	7.68	14.50	22.18	13.42	28.44	41.86	89
<b>Total</b>	<b>1,045.37</b>	<b>318.28</b>	<b>1,363.65</b>	<b>1,437.30</b>	<b>348.64</b>	<b>1,785.94</b>	<b>31</b>

mgd = million gallons per day ss = self supply



The category of water use with the most significant projected increase is public supply, for which demand is estimated to increase by about 84 percent from 1995 to 2025. Increase in public supply represents about 90 percent of the increase in total water use demands.

**Water resource constraints**

To determine if projected groundwater and surface water withdrawals would result in unacceptable impacts to the water resources and related natural systems, the District established limits of

impacts (or constraints) beyond which unacceptable impacts are likely to occur.

Water resource constraints were established for the following categories.

- Natural systems:
  - Native vegetation (wetlands)
  - Lakes
  - Springs
  - Minimum flows and levels (MFLs)
- Groundwater quality (saltwater intrusion)

PWRCAs were determined by comparing water resource constraints to the cumulative impacts of 2025-projected water withdrawals from ground and surface water sources. If projected water withdrawals were likely to result in unacceptable impacts to wetlands, lakes, springs or water quality, then the area was identified as a PWRCa.

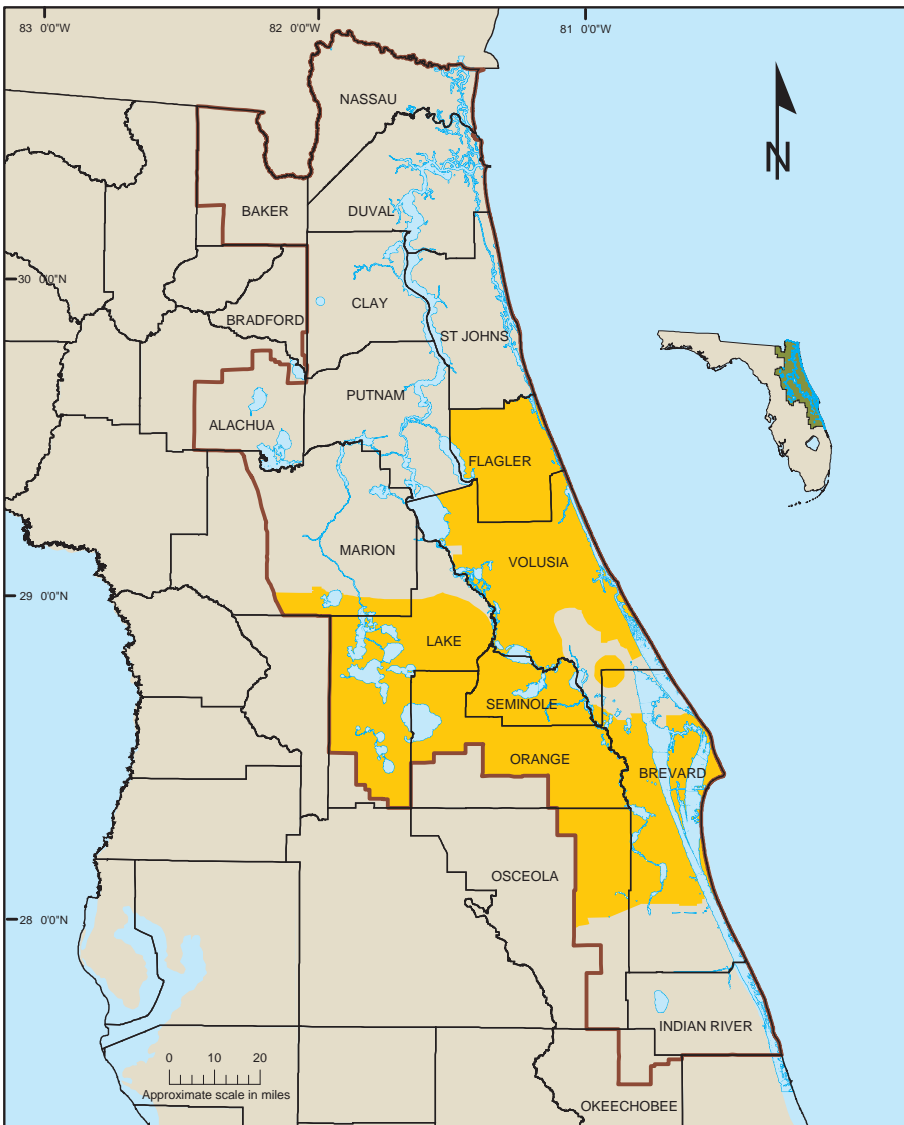
PWRCAs cover about 39 percent of the District and include all or parts of Brevard, Flagler, Lake, Marion, Orange, Osceola, Seminole and Volusia counties. This area is generally referred to as the east-central Florida area.

Water supply assessments are conducted every five years. Changes in anticipated quantities and locations of projected groundwater and surface water withdrawals can change the boundaries of the PWRCAs over time. Therefore, it should not be assumed that areas located outside of the PWRCAs identified in the WSA 2003 will be able to support all future water supply demands from current sources.

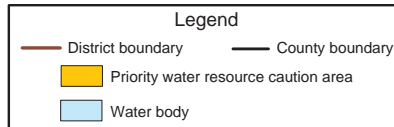
**District Water Supply Plan (DWSP) 2005**

The DWSP 2005 addresses current and future water use, and it describes traditional and alternative water sources and water conservation measures required to meet 2025 water supply needs without causing unacceptable adverse impacts to the water resources and related natural systems. The plan focuses on the PWRCAs identified in the WSA 2003, with the east-central Florida area as a primary area of concern.

Total water use in this area is projected to increase approximately 50 percent between 1995 and 2025. The vast majority of this increase is to come from the growth in public supply water use, which is expected to almost double. Fresh groundwater alone will not be able to meet all future needs. About 200



**Priority water resource caution areas of the St. Johns River Water Management District**



million gallons per day of alternative supplies are likely to be needed in the east-central Florida area by 2025.

To meet these projected demands, alternative water supply projects and management techniques will need to be implemented.

The DWSP 2005 identifies the following management techniques.

- Artificial recharge
- Aquifer storage and recovery
- Avoidance of groundwater withdrawals through hydration

- Water supply system optimization and interconnections
- Demand management (water conservation)

The DWSP 2005 identifies several options for alternative sources of water supplies: fresh groundwater, brackish groundwater, seawater, and surface water from rivers and lakes.

More than enough alternative water supply development projects have been identified to meet the needs in the east-central Florida area through 2025.

A water supply development project is a project that includes planning, design, construction, operation and maintenance of facilities for water collection, production, treatment, transmission, or distribution for sale, resale or end use.

The DWSP 2005 includes 80 alternative water supply development projects, from which local governments and water supply utilities may choose for water supply development.

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## **Alternative water supply development projects**

The following water supply development projects are identified in the *DWSP 2005*.\* The project numbers are not sequential and reflect the way the projects are listed in tables and on maps in the *DWSP 2005*.

### **Brackish groundwater projects**

1. Dunes Community Development District Brackish Groundwater
2. East Putnam Regional Water System
3. Melbourne Reverse Osmosis Water Treatment Plant Expansion
4. Ormond Beach Water Treatment Plant Expansion
5. St. Augustine Water Supply
6. St. Johns County Water Supply

### **Surface water projects**

7. Lower Ocklawaha River in Putnam County
8. St. Johns River Near State Road 50
10. St. Johns River Near DeLand
12. St. Johns River/Taylor Creek Reservoir Water Supply
61. Lower Ocklawaha River in Marion County
62. Sanford ASR Well for Surface Potable Water Storage
63. Sanford Surface Water Treatment Plant on Lake Monroe
64. St. Johns River Near State Road 46
65. St. Johns River Near Yankee Lake

### **Seawater projects**

13. Indian River Lagoon at FP&L Cape Canaveral Power Plant
14. Indian River Lagoon at Reliant Energy Power Plant
66. Coquina Coast Seawater Desalination

### **Reclaimed water projects**

16. Alafaya Reclaimed Water Storage and High Service Pump
17. Altamonte Springs and Apopka (APRICOT)
18. Apopka and Winter Garden Reuse Partnership
19. Belleview and Spruce Creek Golf Course Reclaimed Water System Expansion
20. Beverly Beach Integrated Reclaimed Water and Stormwater Reuse, Phase II
21. Clermont Reclaimed and Stormwater System Expansion
22. Cocoa and Rockledge Reclaimed Water Line Connection
23. Daytona Beach Reclaimed Water System
25. Eastern Orange and Seminole Counties Regional Reuse
26. Edgewater Reclaimed Water System Interconnect to Southeast Volusia County
27. Eustis Reclaimed Water System Expansion and Augmentation
28. Flagler County Bulow Reclaimed Water System
29. Holly Hill Reuse System to Ormond Beach
30. Lady Lake Reclaimed Water System, Phase II
31. Lake Utility Services Lake Groves Wastewater Treatment Plant

\*Projects are identified in the Fourth Addendum to the DWSP 2005. The District's Governing Board approved the Fourth Addendum in May 2009, but final approval is pending until resolution of an administrative hearing process.

# Alternative water supply development projects

## Reclaimed Water System Expansion

32. Leesburg Reclaimed Water Reuse
33. Melbourne Reclaimed Water System Expansion
34. Minneola Reclaimed Water Reuse
35. Mount Dora Country Club Golf Course Reclaimed Water
37. Ocoee Reuse System Expansion
38. Orange County Northwest Reclaimed Water
39. Orange County Southeast Reclaimed Water System Expansion
40. Orlando Utilities Commission Project RENEW
41. Ormond Beach North Peninsula Reclaimed Water Storage
42. Ormond Beach South Peninsula Reuse Improvement
43. Palm Coast Reclaimed Water System Expansion
44. Port Orange Airport Road Reclaimed Water Transmission Main
45. Port Orange Pioneer Trail Storage and Pumping Facility
46. Port Orange Reclaimed Water Reservoir and Recharge Basin
47. Rockledge Reclaimed Water Storage
48. Rockledge Reclaimed Water System Expansion (ASR Project)
49. South Daytona Reclaimed Water System Expansion
50. Tavares Reclaimed Water Treatment System Expansion
51. Volusia County Southwest Reclaimed Water System
52. West Melbourne Above-Ground Reclaimed Water Storage Tank
53. Winter Garden Reclaimed Water Pumping and Transmission
56. University of Central Florida (UCF) Reclaimed Water and Stormwater Integration Project
67. Heathrow Boulevard Reclaimed Water Transmission Main
68. Markham Woods Road Reclaimed Water Transmission Main
69. Orange Boulevard Reclaimed Water Transmission Main
70. Oviedo Reclaimed Water
71. Seminole County Residential Reclaimed Water Retrofit, Phase I
72. Seminole County/Sanlando Utilities Interconnect with Altamonte Springs
73. Spruce Creek Golf and Country Club Reclaimed Water
74. Timacuan Reclaimed Water Main Upgrade
75. West Melbourne – Reuse Distribution System Improvements

76. Western Ormond Beach Reclaimed Water Distribution
81. City of Flagler Beach Reclaimed Water Treatment System
84. City of Ocoee Northwest Reuse Re-Pump Station and Interconnection Mains

## Reuse augmentation projects

24. DeLand Reclaimed Water and Surface Water Augmentation Project
36. North Seminole Regional Reclaimed Water and Surface Water Augmentation System Expansion and Optimization Project
54. Lake Apopka Reuse Augmentation
55. Seminole County Yankee Lake Reclaimed Water System Augmentation
57. Winter Park Windsong Stormwater Reuse Demonstration
58. Winter Springs Lake Jesup Reclaimed Water Augmentation
77. Nova Canal Reclaimed Augmentation
79. St. Johns River Near State Road 46 – Nonpotable with Storage
80. Umatilla Reclaimed Development and Surface Water Reclaimed Supply
82. Securing Minneola’s Alternative Resources for Tomorrow (SMART)
83. Silver Springs Citrus Industrial Waste for Reuse Blending and Augmentation

## Other projects

59. Cherry Lake Tree Farm Lake Withdrawal for Agricultural Irrigation
60. Holloway Farms Agricultural Irrigation Rainwater Collection System

