



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.

Sixty 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 to assure that adequate and sustainable water supplies are available to meet future water supply needs without unacceptable impacts in PWRCA.

Water supply assessments and water supply plans are developed every 5 years and are designed to meet the water supply planning provisions of Section 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 5-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

1995 water use data served as the base year for the WSA 1998 and 2003 projections. 1995 will continue to be the base year for assessment projections 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 for 1995 and 2025 by category of use

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
Total	1,045.37	318.28	1,363.65	1,437.30	348.64	1,785.94	31

mgd = million gallons per day ss = self supply



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The category of water use with the most significant projected increase is public supply, where 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, limits of impacts (or constraints) were established 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)

PWRCA 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.

PWRCA 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 5 years. Changes in anticipated quantities and locations of projected groundwater and surface water withdrawals can change the

boundaries of the PWRCA over time. Therefore, it should not be assumed that areas located outside of the PWRCA identified in the WSA 2003 will be able to support all future water supply demands from current sources. All water supply entities within the District should institute water conservation measures and reuse of reclaimed water.

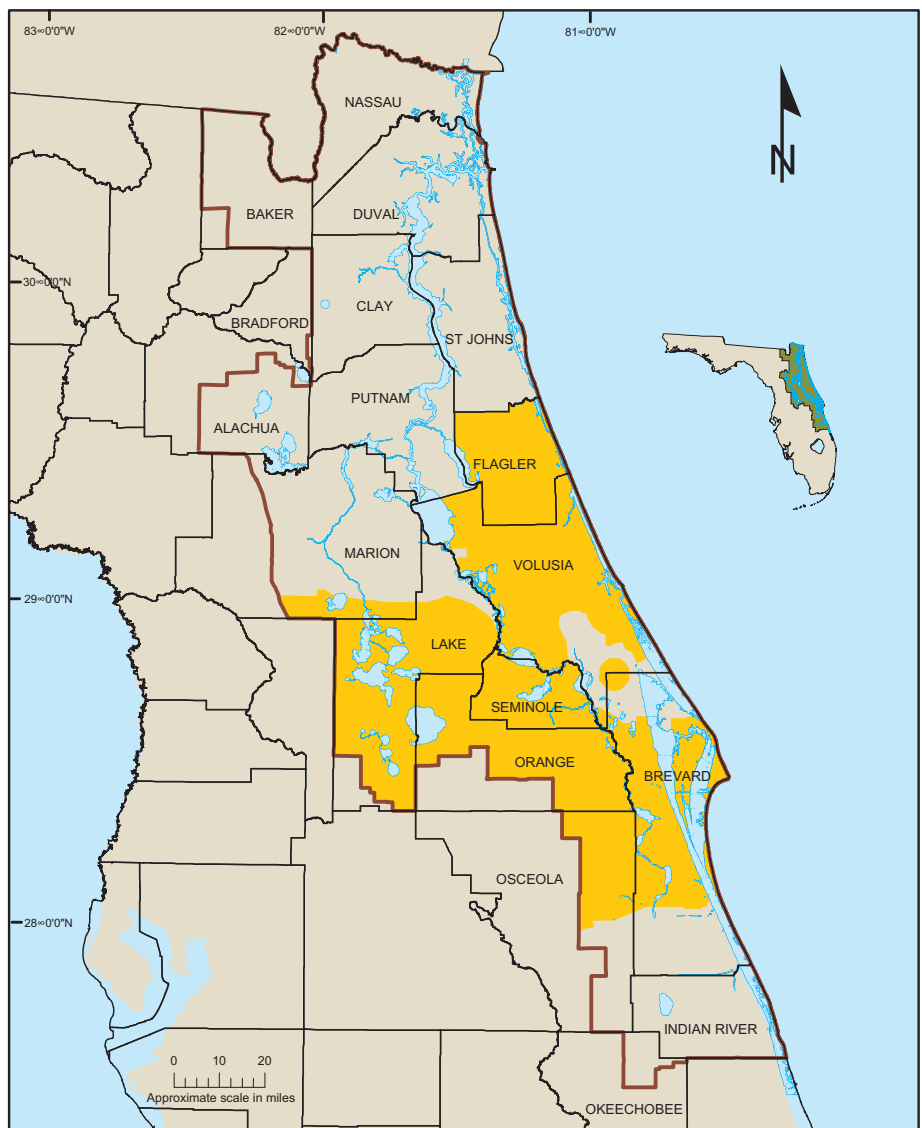
District Water Supply Plan (DWSP) 2005

The DWSP 2005 addresses current and future water use, and it describes traditional and alternative water sources and water conservation

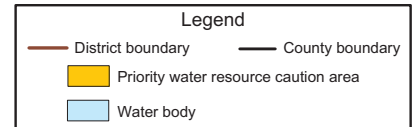
measures required to meet 2025 water supply needs without causing unacceptable adverse impacts to the water resources and related natural systems. The plan focuses on the PWRCA identified in the WSA 2003, with the east-central Florida area as a primary area of concern.

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

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



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double. Fresh groundwater alone will not be able to meet all future needs. About 200 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 management strategies will need to be implemented and alternative sources of supplies will need to be developed.

The DWSP 2005 identifies the following alternative management strategies:

- Water conservation
- Use of reclaimed water
- Water resource development (ways to make more water available for use)
 - Artificial aquifer recharge
 - Aquifer storage and recovery
 - Avoidance of impacts through hydration
 - Water supply system interconnections

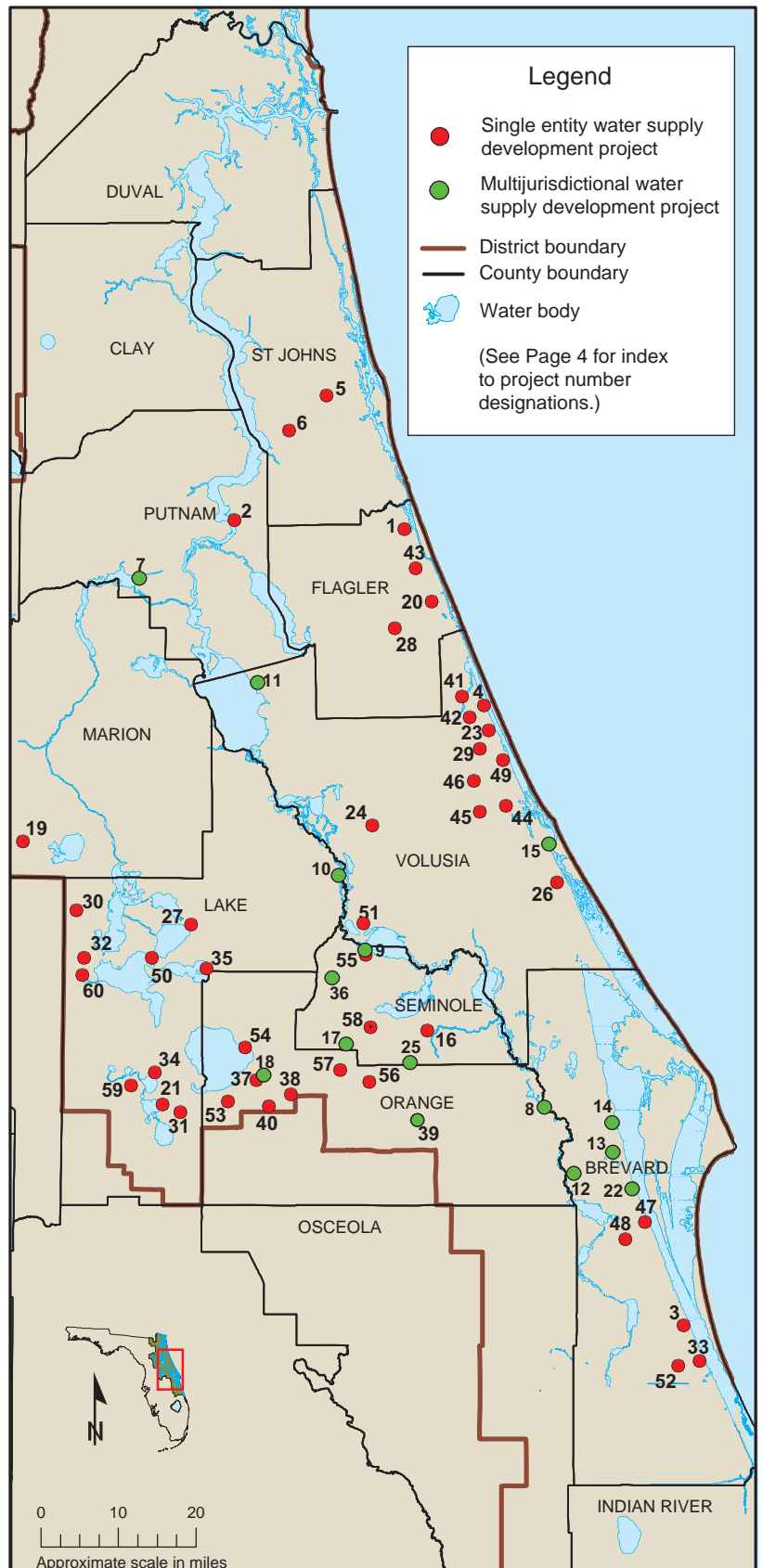
The DWSP 2005 identifies several options for alternative sources of water supplies: fresh groundwater, brackish groundwater, seawater and surface water from rivers and lakes.

More than enough alternative water supply development projects have been identified to meet the needs in the east-central Florida area through 2025. Sixty project options are identified in the DWSP 2005, and they include the following:

- Six brackish groundwater projects
- Six surface water projects
- Three seawater projects
- Forty-three reclaimed water projects
- Two agricultural projects

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 includes a list with maps of alternative water supply development projects, from which local governments and water supply utilities may choose for water supply development.

Some of these projects are single-entity projects that clearly will serve only one water supply entity. Others are suitable for development by more than one entity. The DWSP identifies the water supply entities that should



Water supply development projects identified in DWSP 2005

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Index to alternative water supply development projects

MULTIJURISDICTIONAL PROJECTS

SURFACE WATER PROJECTS

7. Lower Ocklawaha River in Putnam County
8. St. Johns River Near State Road 50
9. St. Johns River Near Lake Monroe
10. St. Johns River Near DeLand
11. St. Johns River Near Lake George
12. St. Johns River/Taylor Creek Reservoir Water Supply

SEAWATER PROJECTS

13. Indian River Lagoon at FP&L Cape Canaveral Power Plant
14. Indian River Lagoon at Reliant Energy Power Plant
15. Intracoastal Waterway at New Smyrna Beach

REUSE PROJECTS

17. Altamonte Springs and Apopka (RENEW APRICOT)
18. Apopka and Winter Garden Reuse Partnership
22. Cocoa and Rockledge Reclaimed Water Line Connection
25. Eastern Orange and Seminole Counties Regional Reuse
36. North Seminole Regional Reclaimed Water and Surface Water Augmentation System Expansion and Optimization
39. Orange County Southeast Reclaimed Water System Expansion

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consider developing each of these alternative water supply development projects to assure adequate supplies of water to meet projected water use through 2025 in their respective service areas.

To address the water supply concerns in east-central Florida, many water supply entities are implementing the projects which are listed in the DWSP 2005. Also, several countywide planning efforts are under way to identify partners for project implementation and to identify new project options that may be included in plan updates.

SINGLE-ENTITY PROJECTS

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
5. St. Augustine Water Supply
6. St. Johns County Water Supply

REUSE PROJECTS

16. Alafaya Reclaimed Water Storage and High Service Pump
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
23. Daytona Beach Reclaimed Water System
24. DeLand Reclaimed Water and Surface Water Augmentation
26. Edgewater Reclaimed Water System Interconnection to southeast Volusia County
27. Eustis Reclaimed Water System Expansion and Augmentation
28. Flagler County, Bulow Reclaimed Water System
29. Holly Hill and Ormond Beach Reclaimed Water System Expansion
30. Lady Lake Reclaimed Water System, Phase II
31. Lake Utility Services Inc., Lake Groves Wastewater Treatment Plant Reclaimed Water 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
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

REUSE AUGMENTATION PROJECTS

54. Lake Apopka Reuse Augmentation
55. Seminole County, Yankee Lake Reclaimed Water System Augmentation
56. University of Central Florida (UCF) Reclaimed Water and Stormwater Integration
57. Winter Park Windsong Stormwater Reuse Demonstration
58. Winter Springs, Lake Jesup Reclaimed Water Augmentation

OTHER PROJECTS

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

