



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Annual Status Report on
**Regional Water
Supply Planning**

December 2013



Cover page graphic/photo credits, clockwise from top left:

- CFWI map – courtesy of SWFWMD
- Water Supply Plant Construction – courtesy of SJRWMD
- Reclaimed Water Piping – courtesy of Pasco County, FL
- Suwannee River – courtesy of SRWMD

Executive Summary

Florida's water management system is structured to provide a sustainable water supply for both people and the environment. This report, prepared by the Florida Department of Environmental Protection (Department) according to the statutory requirements of sections 373.709(6) and 373.536(6)(a)4, Florida Statutes, provides an update on the progress made in planning for the state's future water supply. Specifically, the report summarizes the five water management districts' progress on their:

- regional water supply plans, including projected water demands by 2030,
- development of alternative water sources through incentive funding provided by the Water Protection and Sustainability Program, and
- five-year water resource development work programs.

Key findings of this report include:

- By 2030, demand for fresh water in Florida is estimated to increase by about 1.3 billion gallons per day (bgd) for a total of 7.7 bgd. Traditional sources of fresh groundwater will not be able to meet all of the additional demand.
- Diversification of water sources is needed to maintain a reliable water supply. Regional water supply plans, developed by the water management districts (districts), identify traditional and alternative water supply projects that can, if constructed, produce approximately 2.2 bgd of water by 2030. This quantity is more than adequate to meet projected 2030 needs.

- The Water Protection and Sustainability Program provided funding assistance for the construction of 389 alternative water supply projects. To date, funded projects have made approximately 427 million gallons per day (mgd) of additional water available for consumptive use. Completion of all funded projects is expected to make available around 707 mgd of additional water, more than 50 percent of the projected 2030 needs.
- In addition to the Water Protection and Sustainability Program, water management districts have their own cooperative funding programs that help develop water supply projects involving both traditional and alternative water supplies.
- Cooperative multi-district water supply planning is important in areas where groundwater basins are shared among two or more water management districts.
- The Department reviewed the districts' Five-year Water Resource Development Work Programs and found they were consistent with the regional water supply plans and the expenditures reasonably contribute to meeting the districts' water resource development responsibilities.
- Continued efforts on all regional water supply plan components, including traditional and alternative water source development and water conservation, will be required to ensure that supplies are available to meet 2030 demands.

Regional Water Supply Planning

As Florida's population grows, pressure increases on the water resources of the state. The need to ensure that water use is sustainable for future generations, while protecting the environment, becomes increasingly important. The Florida Water Resources Act, Chapter 373, Florida Statutes, directs the state's five water management districts (WMDs) (Figure 1) to develop a regional water supply plan (RWSP) for any region where "existing sources of water are not adequate to supply water for all existing and future reasonable-beneficial uses and to sustain the water resources and related natural systems" for 20 years.

The plans consider all water use sectors, including public water supply, agricultural irrigation, commercial/industrial/institutional use, power generation, recreational irrigation, and domestic/small public supply. The statute requires the water management districts to update these plans every five years. Some of the key elements of these plans include:

- Quantification of water needs for all projected uses for a 20-year period.
- Lists of traditional and alternative water supply options and projects, which together exceed projected 20-year demands, that local governments and other public water suppliers may implement to meet their future demand.
- Estimates of the amount of water each project will make available.
- Recommendations identifying the local government or other water supplier to implement each project.

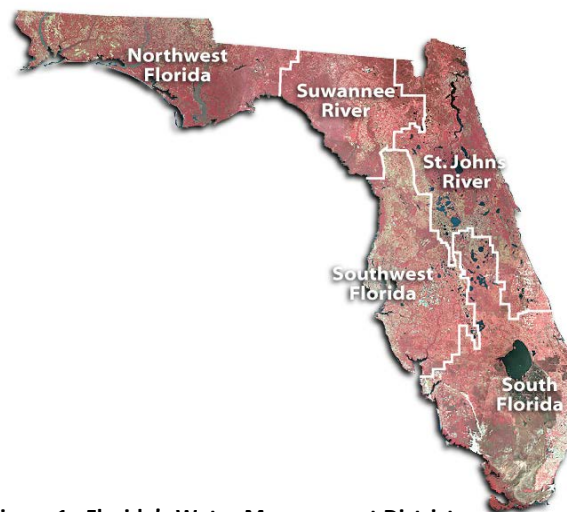


Figure 1. Florida's Water Management Districts

- Timeframe and cost estimates for implementing each project.
- Analysis of funding needs and identification of potential funding sources.
- Identification of Minimum Flows and Levels (MFLs), MFL recovery or prevention strategies and any reservations of water adopted by district rule.

Links to more information on district regional water supply plans can be found under *Water Supply Planning* at: <http://www.dep.state.fl.us/water/waterpolicy/links.htm>.

Previous versions of DEP's Annual Report on Regional Water Supply Planning can be found under *Regional Water Supply Planning* at: <http://www.dep.state.fl.us/water/waterpolicy/pubs.htm>.

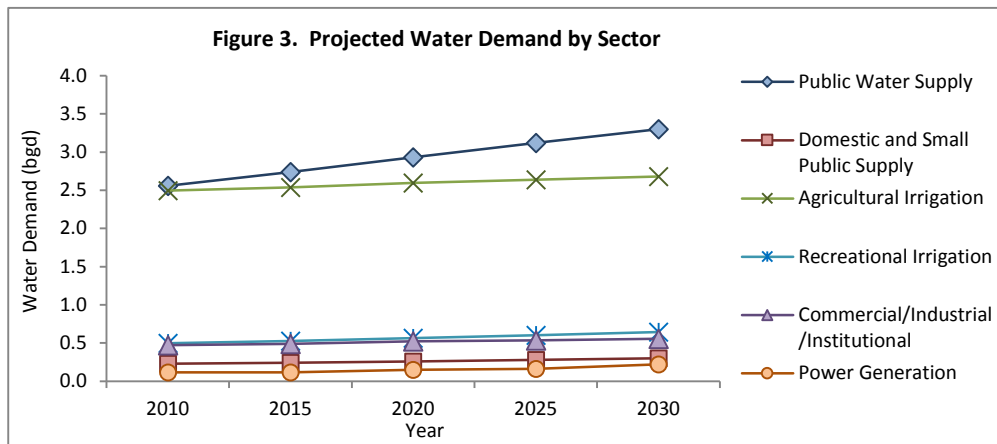
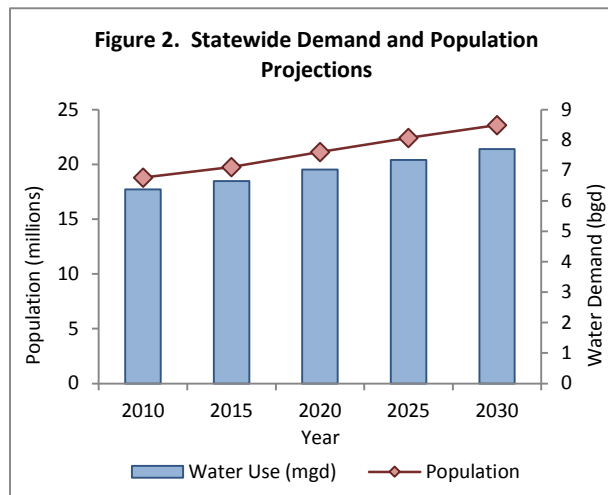
Water Use Projections

By the year 2030, Floridians will need an estimated 1.3 billion gallons of additional water per day, nearly a 21 percent increase compared to 2010 demands, for a total of 7.7 bgd (Figure 2). During this same period, demographers predict Florida's population will increase by more than 25 percent, from 18.8 million to approximately 23.6 million (Smith and Rayer 2013). This 2030 demand estimate is less than past projections because of a slower population growth rate over the last several years.

Public supply and agricultural irrigation are, by far, the largest categories of water use (Figure 3). The water management districts predict the public supply sector's projected demand will increase by almost 29 percent

between 2010 and 2030, and will account for the majority of the demand increase statewide. In contrast, the districts expect agricultural irrigation demand will grow by almost 7.5 percent. Anticipated reduction in production acreage and increases in agricultural water conservation efforts are projected to keep increases in agricultural irrigation demand to a minimum. Continued progress in implementing water conservation programs and improving efficiency in both of these sectors is needed to meet Florida's water supply demands and resource protection goals.

Links to more information on water use in Florida can be found under *Water Use Information* at: <http://www.dep.state.fl.us/water/waterpolicy/links.htm>.



Water Conservation

Florida’s past and current emphasis on water conservation is one reason that the rate of increase in water use is predicted to be slower than the rate of population growth. For the public supply sector, per capita water use estimates are an important tool for identifying how water is being used, projecting future water demands, targeting water conservation programs, and assessing the success of water conservation efforts and other water management policies. Per capita use can be calculated as either a gross measurement (all uses supplied by a utility, including residential, commercial, industrial, and other uses) or as a residential measurement (water delivered for domestic uses only).

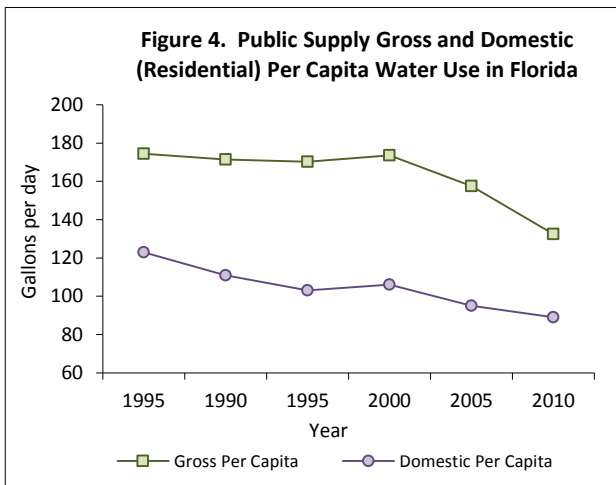


Figure 4 shows statewide per capita trends. In 1995, the gross per capita average was 175 gallons per capita per day (gpcd) and the residential per capita was 123 gpcd. In 2010, the gross per capita average had dropped to 133 gpcd, a 21 percent reduction, and the residential per capita had dropped to 89 gpcd, almost a 16 percent reduction (Marella 2009, 2012). These decreases result from the implementation of water conservation measures, adoption of year-round landscape irrigation restrictions, increased use of reclaimed water, use of Florida-Friendly landscaping techniques, and installation of private irrigation wells.

More information on DEP’s water conservation efforts can be found at:

<http://www.dep.state.fl.us/water/waterpolicy/conservation.htm>, and under *Fact Sheets* at:

<http://www.dep.state.fl.us/water/waterpolicy/pubs.htm>.

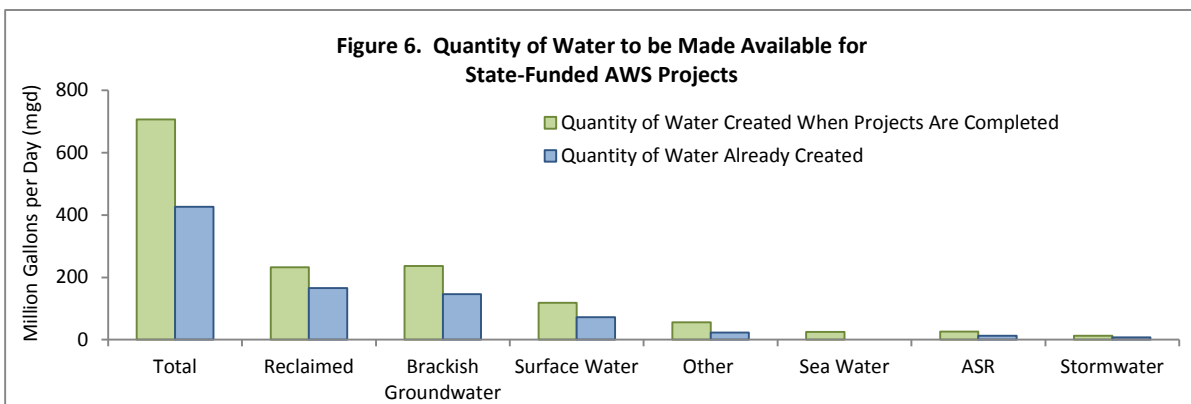
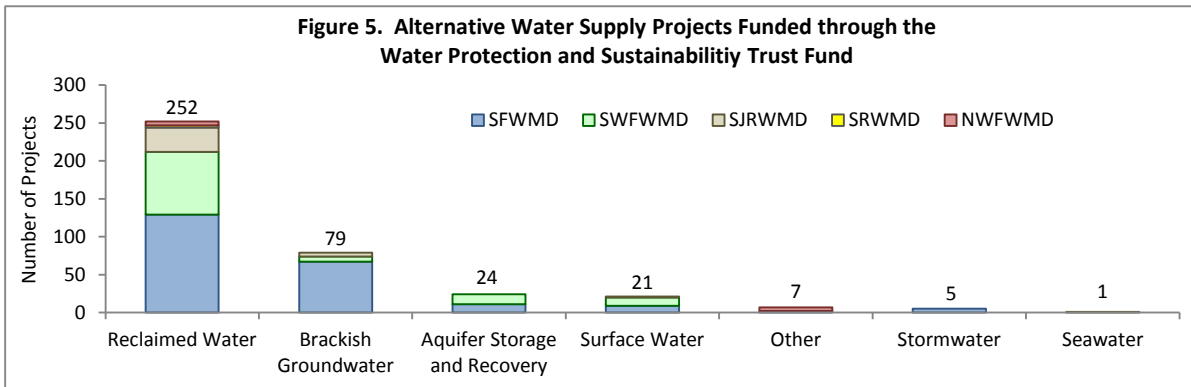
The water management districts also sponsor a variety of water conservation programs. Links to more information on district water conservation programs can be found under *Water Conservation Information* at: <http://www.dep.state.fl.us/water/waterpolicy/links.htm>.

Alternative Water Supplies

The regional water supply plans promote source diversification to create a water supply system that is more reliable than a system that relies on a single source of supply. Traditionally, most of Florida has relied on fresh groundwater to meet demand (Marella 2012). Supplies of fresh, inexpensively treated groundwater increasingly are limited in many parts of the state. Because these traditional sources are nearing their sustainable limits, the development of alternative water supplies (AWS), such as reclaimed water, brackish ground and surface water, seawater, and surface water captured during wet weather flows, is a key component of the water management districts' regional water supply plans and is essential to meeting future demands. Some AWS projects, such as the use of reclaimed water and the capture of stormwater, can improve source water quality by preventing excess nutrients and stormwater pollutants from entering the environment.

the 2005 Florida Legislature created the Water Protection and Sustainability Program (WPSP) to provide funding assistance to local water suppliers for the construction of alternative water supply projects. These state funds, coupled with matching funds from the water management districts and local water suppliers, resulted in the construction of 389 alternative water supply projects (Figure 5). Of these, reclaimed water projects have been the most numerous, making up almost 65 percent of the total projects funded. To date, funded projects already have made available approximately 427 mgd of additional water for consumptive use (Figure 6). The districts estimate that when all currently planned alternative water supply projects under this program are complete they will make available approximately 707 mgd of additional water, more than 50 percent of the additional water needed to meet 2030 demands. Reclaimed water projects are expected to produce the largest amount of water, approximately 233 mgd, or about 18 percent of the additional 1.3 bgd of water needed by 2030.

As an incentive to develop alternative water supplies,



The total construction¹ costs of WPSP-funded alternative water supply projects selected to receive assistance are approximately \$3.4 billion (Figure 7). The Water Protection and Sustainability Program, including funding matches contributed by the water management districts, has provided more than \$730 million, or about 21 percent of the total alternative water supply construction costs. The estimated costs for reclaimed water projects are over \$1.4 billion and account for approximately 42 percent of the construction costs for all alternative water supply projects.

In most cases, the statute requires a project’s local sponsor to be responsible for at least 60 percent of the total construction costs. Thus far, water suppliers have committed to provide almost \$2.7 billion toward construction of these projects, representing about 77 percent of the total funding. Other entities, such as the federal government, have provided the remaining small percentage of funding.

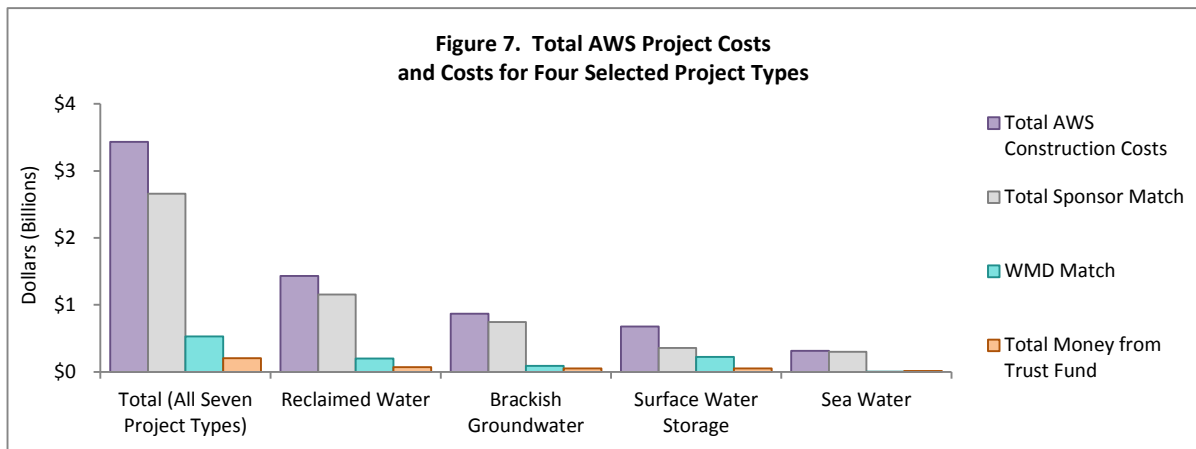
Although WPSP-funded projects are only a subset of the total water supply projects identified by the districts to meet 2030 demands, the program has been successful in providing incentives to begin the construction of many alternative water supplies. Nevertheless, more alternative water supply projects identified in the

regional water supply plans will need to be constructed in order to meet the remaining 2030 demand.

The Department’s State Revolving Fund (SRF) program also provides funding assistance for alternative water supply projects. This program, under agreements with the U.S. Environmental Protection Agency, provides low-interest financing to plan, design and build wastewater, stormwater, and drinking water systems. Funded by federal capitalization grants, state matching funds, loan repayments, interest earnings, and periodic bond issues, SRF loans are offered at interest rates substantially below current market rates and help make loans affordable to utilities. Repayments from earlier loans fund new loans, allowing the program to operate in perpetuity.

Since 1989, Florida has invested more than \$4 billion of SRF monies to upgrade and improve water and wastewater facilities and to clean up stormwater pollution. For Fiscal Year (FY) 2013, \$14.3 million, or 5 percent of the program’s funding, was used for alternative water supply projects.

More information on the SRF can be found at <http://www.dep.state.fl.us/water/wff/>.



¹ The total construction costs are reported for the life of the project and may include funding before the Water Protection and Sustainability Program started as well as funding from other sources. As a result, the total of sponsor match, WMD match, and Water Protection and Sustainability Program match may not equal total construction costs.

Regional Water Supply Plan Updates

While Florida has made significant progress in the development of alternative water supplies, continued efforts on all regional water supply plan components, including traditional and alternative water source development and water conservation, are required to ensure that supplies keep pace with demand over the

long term. Table 1 summarizes the current status of each district's regional water supply planning efforts. The following pages provide additional information on these efforts. Links to the district RWSPs can be found under *Water Supply Planning* at:

<http://www.dep.state.fl.us/water/waterpolicy/links.htm>.

Table 1. Status of Regional Water Supply Plans			
Water Management District/ Planning Region	Anticipated Plan Completion Date	2010-2030 Net Demand Change (mgd)	Potential Water from RWSP Projects (mgd)
Northwest Florida WMD			
Region II	2012 Completed/2017	25	59
Region III	2014	14	35
Region V	Not Needed	-2	Sources Sufficient
Regions I, IV, VI and VII	Not Needed	16	Sources Sufficient
Districtwide		54	94
St. Johns River WMD			
Region 1	2015	105	248
Region 2	2014	42	253
Region 3	2013	109	154
Region 4	2016	-6	73
Districtwide		250	728
South Florida WMD			
Kissimmee Basin	2006 Completed/2014	145	41
Upper East Coast	2011 Completed/2016	109	93
Lower East Coast	2013 Completed/2018	214	76
Lower West Coast	2012 Completed/2017	292	220
Districtwide		760	430*
Southwest Florida WMD			
Northern	2011 Completed/2015	62	242
Tampa Bay	2011 Completed/2015	81	238
Heartland	2011 Completed/2015	66	124
Southern	2011 Completed/2015	44	334
Districtwide		253	938
Suwannee River WMD			
Alapaha River Basin	2015	Plans Pending	Plans Pending
Lower Santa Fe River Basin	2015	Plans Pending	Plans Pending
Upper Santa Fe River Basin	2015	Plans Pending	Plans Pending
Upper Suwannee River Region	2015	Plans Pending	Plans Pending
Districtwide		12	
Central Florida Water Initiative			
Portions of SJRWMD, SWFWMD, and SFWMD	2014	Included Above	Plan Pending
North Florida Regional Partnership			
Portions of SJRWMD and SRWMD	2015	Included Above	Plan Pending
Statewide Total		1,329	2,190

*Most utilities within SFWMD have sufficient capacity to meet 2030 demands. Projects are in addition to existing constructed unused capacity. The combined capacity of existing and future projects exceeds projected needs.

Northwest Florida Water Management District (NFWWMD)

In 2010, water use in the NFWWMD was about 357 mgd (Table 2). By 2030, the district expects water use to increase by 15 percent to more than 410 mgd. Public water supply was the largest use sector in 2010, followed by commercial/industrial/institutional. By 2030, the district estimates that these will remain the two largest water use sectors. Projections indicate that domestic/small utilities will experience the largest growth, followed closely by recreational irrigation.

Regional Water Supply Plans

NFWWMD has developed regional water supply plans for Regions II, III, and V (Figure 8). Each of these regions



Figure 8. NFWWMD Planning Regions

has areas of special concern along their coasts because of the threat of saltwater intrusion from long-term pumping of the coastal Floridan aquifer or from storm surge. In response, the district initiated the Coastal Water Systems Interconnection Project, focused on increasing water supply reliability in coastal communities. This project is a cooperative effort with local utilities to construct pipelines that will enable water transfer among utilities should the need arise because of droughts, natural disasters, water shortages, or system failures. A Basis of Design Report for the project has been completed.

During FY 2013, Region II utilities completed two pipelines to convey inland groundwater south to meet coastal demand. Work also continued on reclaimed water facilities in Okaloosa and Walton counties, and planning began for developing surface water sources in inland Okaloosa County. The district continued hydrologic monitoring throughout the region, focusing on the Floridan and Sand and Gravel aquifers. In Region III, staff continued implementation of the Deer Point

Water Use Sector	2010	2030	Change	Percent Change
Public Water Supply	169.57	188.78	29.21	18.31%
Domestic and Small Public Supply	23.25	28.51	5.26	22.62%
Agricultural Irrigation	47.22	55.55	8.33	17.64%
Recreational Irrigation	25.91	30.91	5.00	19.30%
Commercial/Industrial /Institutional	66.44	72.39	5.95	8.96%
Power Generation	34.82	34.64	-0.17	-0.49%
TOTAL	357.21	410.79	53.58	15.00%

Lake Watershed Hydrologic Monitoring network and started work on the next RWSP update. In Region V, the district provided funding and technical assistance to the City of Port St. Joe to complete repairs and upgrades to its Chipola River pump station, and to help resolve water quality issues originating in its water distribution system.

By the end of FY 2013, over \$73 million of WPSP, sponsor, and other monies had been spent on 10 alternative water supply projects. These projects already have made available more than 28 mgd of water, and the district estimates they will produce 62-94 mgd by 2030. In FY 2104, NFWWMD expects to spend almost \$6 million for RWSP-specific projects and \$10 million under the district's Water Supply Development Community Assistance Initiative.

Only two of ten WPSP projects remain to be completed. In FY 2013, Wakulla County finished construction of its reuse line and began work on its wastewater treatment plant upgrades, scheduled for completion by the end of 2015. Previously, Bay County had been considering groundwater as an alternative source in case hurricane storm surge inundates the Deer Point Lake Reservoir with saltwater or damages the impoundment structure. In FY 2013, the county instead began considering use of an alternative raw water pump station and force main to be located in the upper portion of the reservoir. The County expects a pumping station at this location to be able to avoid any potential effects of storm surge.

St. Johns River Water Management District (SJRWMD)

In 2010, water use in the SJRWMD was about 1,202 mgd (Table 3). By 2030, the district expects water use to increase by almost 21 percent to about 1,452 mgd.

Public water supply was the largest use sector in 2010, followed by agricultural irrigation. By 2030, the district estimates that public supply and agricultural irrigation will remain the two largest use sectors, even though agricultural irrigation is predicted to decrease by seven percent and recreational irrigation will have the largest growth at nearly 52 percent.

Regional Water Supply Plans

The SJRWMD has identified the need for RWSPs in all four in of its planning regions (Figure 9). One major issue to be addressed by these plans is the development of minimum flow and level (MFL) recovery strategies in

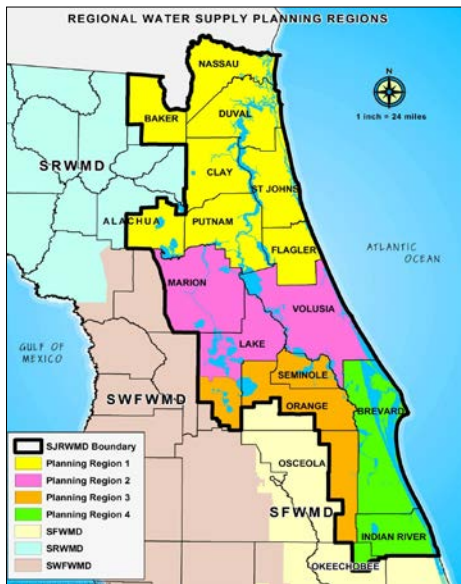


Figure 9. SJRWMD Planning Regions

seven counties throughout the district. (MFLs are water flows or levels established to prevent significant harm to the water resources or ecology of an area resulting from permitted water withdrawals.) During FY 2013, district staff completed the recovery strategy for seven Volusia County water bodies. The Governing Board approved this strategy in November 2013. For four lakes in the Clay-Putnam area, district staff evaluated the project

Water Use Sector	2010	2030	Change	Percent Change
Public Water Supply	626.64	819.12	193.48	30.93%
Domestic and Small Public Supply	56.74	74.24	17.50	30.84%
Agricultural Irrigation	345.44	321.27	-24.17	-7.00%
Recreational Irrigation	40.49	61.39	20.90	51.62%
Commercial/Industrial /Institutional	119.59	159.18	39.59	33.10%
Power Generation	14.02	16.87	2.85	20.33%
TOTAL	1,201.92	1,452.07	250.15	20.81%

options previously developed by stakeholder work groups. Staff began preparing the recovery strategy document that will be presented to the Governing Board in April 2014. Another issue is the decline in the Upper Floridan aquifer along the Region 1 border with the Suwannee River WMD (SRWMD). In FY 2013, staff continued working with SRWMD on a joint RWSP for this area, known as the North Florida Regional Water Supply Partnership. A third issue is groundwater withdrawals have reached, or are approaching, their sustainable limits in the southern part of the district. In this region, staff continued to work with the South and Southwest Florida WMDs on a joint RWSP effort known as the Central Florida Water Initiative (CFWI). In FY 2014, the district will continue working on these issues.

During FY 2013, the district completed the Lake Jessup reclaimed water project. By the end of FY 2013, almost \$704 million of district, sponsor, and WPSP monies had been spent on construction of 39 alternative water supply projects. These projects already have made available almost 98 mgd of water, and the district estimates they will produce over 155 mgd by 2030.

In FY 2014, SJRWMD plans to use WPSP monies to continue work on the Lake Apopka reuse augmentation, Tavares reclaimed water expansion, and Taylor Creek Reservoir projects. In addition, the district has approved over \$20 million of cost-share funding for 22 new projects.

South Florida Water Management District (SFWMD)

In 2010, water use in the SFWMD was almost 3,254 mgd (Table 4). By 2030, the district expects water use to increase by more than 23 percent to around 4,013 mgd. Agricultural irrigation was the largest use sector in 2010, followed by public water supply. By 2030, the district estimates that agricultural irrigation and public supply will remain the two largest use sectors. Projections indicate power generation quantities will almost triple and experience the largest growth.

Regional Water Supply Plans

The district has regional water supply plans for each of its four planning regions (Figure 10). Water supply

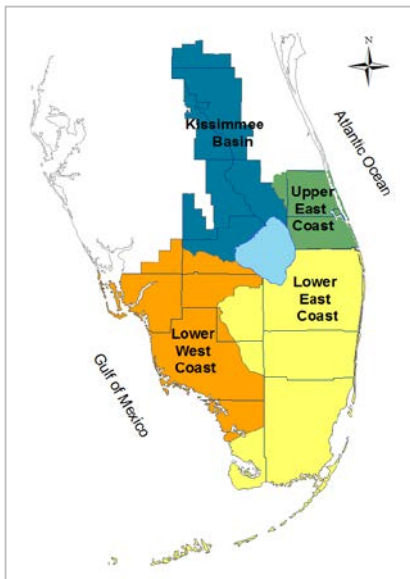


Figure 10. SFWMD Planning Regions

issues include: a continuing need for additional hydrogeologic studies and groundwater models in all planning regions, developing methods to meet water supply needs for users and MFLs in the Lower East Coast region, utility compliance with the 2008 Ocean Outfall Act, completion of Comprehensive Everglades Restoration Plan projects, and meeting water demands related to the increase or decrease in citrus acreage. In general, the water supply plans have concluded that the regions' needs can be met with appropriate management, diversification of water supply sources, increased water storage, and enhanced conservation.

Water Use Sector	2010	2030	Change	Percent Change
Public Water Supply	1,166.74	1,524.86	358.12	30.69%
Domestic and Small Public Supply	56.15	56.84	0.69	1.23%
Agricultural Irrigation	1,567.01	1,759.84	192.83	12.31%
Recreational Irrigation	320.76	405.33	84.57	26.37%
Commercial/Industrial /Institutional	110.39	138.81	28.42	25.75%
Power Generation	32.81	127.71	94.90	289.24%
TOTAL	3,253.86	4,013.39	759.53	23.34%

During FY 2013, the SFWMD adopted the Biscayne Bay Coastal Wetlands Water Reservation. The district awarded a contract to the STOPR utility group to develop a conceptual design for a "water wheeling" system that will optimize transmission and distribution of water from the recently permitted Cypress Lakes wellfield to multiple Central Florida utilities. In Polk and Osceola counties, the district modified two test wells to better characterize the Lower Floridan Aquifer as a water supply source. Work continued on the East Coast Floridan Aquifer Model and on the saltwater interface maps for coastal surficial aquifers. These projects will be completed in FY 2014. During FY 2014, the district expects to complete rule development on the C-43 West Basin Storage Reservoir Reservation. The district also will continue working with SWFWMD and SJRWMD on the CFWI water supply plan.

By the end of Fiscal Year 2013, SFWMD had spent almost \$7.3 million on implementing projects identified in their RWSPs. Moreover, almost \$1.6 billion of district, sponsor, and WPSP monies had been spent on construction of 223 alternative water supply projects. These projects already have made available more than 258 mgd of water, and the district estimates they will produce almost 400 mgd by 2030. For Fiscal Year 2014, the district has budgeted almost \$7 million for nine water supply development projects. These funds are in addition to the district's own Water Savings Incentive and Alternative Water Supply funding programs.

Southwest Florida Water Management District (SWFWMD)

In 2010, water use in the SWFWMD was about 1,303 mgd (Table 5). By 2030, the district expects water use to increase by more than 19 percent to about 1,556 mgd. Public water supply was the largest use sector in 2010, followed by agricultural irrigation. By 2030, the district estimates that public supply and agricultural irrigation will remain the two largest use sectors, even though agricultural irrigation is predicted to grow very little over this time period. Domestic users and small utilities are expected to have the largest growth at nearly 57 percent.

Regional Water Supply Plans



Figure 11. SWFWMD Planning Regions

In 2011, the Governing Board adopted updated regional water supply plans for all four planning areas (Figure 11). Major water supply concerns, throughout the district including the CFWI, are existing impacts to natural systems (saltwater intrusion, MFLs) and limited traditional groundwater resources. The RWSPs identify several solutions, including: developing alternative water

supplies for the public supply use sector, particularly in coastal areas, to conserve groundwater resources for inland and agricultural users who have fewer AWS options; developing water systems that use multiple water source types (e.g., surface and groundwater); and reducing water demands through water conservation and reclaimed water use.

Water Use Sector	2010	2030	Change	Percent Change
Public Water Supply	584.30	738.93	154.63	26.46%
Domestic and Small Public Supply	75.01	117.52	42.51	56.68%
Agricultural Irrigation	410.00	417.70	7.70	1.88%
Recreational Irrigation	109.70	146.00	36.30	33.09%
Commercial/Industrial /Institutional	92.99	99.03	6.04	6.50%
Power Generation	31.21	36.96	5.76	18.45%
TOTAL	1,303.21	1,556.16	252.95	19.41%

During FY 2013, SWFWMD provided over \$33 million for 35 AWS projects to meet more than 14 mgd of traditional water demands and supply more than 14.94 mgd of reclaimed water. In addition, the district funded \$144,000 for five water conservation and research projects to conserve 0.65 mgd of traditional water supplies. SWFWMD also continued working with SJRWMD and SFWMD on the regional water supply plan for the Central Florida Water Initiative region.

By the end of FY 2013, almost \$941 million of district, sponsor, and WPSF monies had been spent on construction of 114 alternative water supply projects. These projects already have made available over 41 mgd of water, and the district estimates they will produce almost 85 mgd by 2030. When also considering the flow from reclaimed water projects, SWFWMD estimates the water resource benefits from all 114 projects were over 58 mgd by the end of FY 2013, and will be over 122 mgd by 2030.

SWFWMD has completed 31 of their 41 WPSF projects. At completion the 41 total projects will provide more than 60 mgd of water resources of which more than 40 mgd will be potable water supplies, and more than 20 mgd will be reclaimed water supplies. In FY 2014, SWFWMD will continue working on these alternative water supply projects, as well as on the 2015 updates to their existing regional water supply plans.

Suwannee River Water Management District (SRWMD)

In 2010, water use in the SRWMD was approximately 259 mgd (Table 6). By 2030, the district expects water use to increase by about 4.5 percent to more than 270 mgd. Agricultural irrigation was the largest use sector in 2010, and projections indicate it will continue to be the largest use sector in 2030, with the anticipated demand quantity staying at 127 mgd. The district estimates that the commercial/industrial/institutional and public water supply will remain the second and third largest use sectors, respectively. Projections indicate that power generation will experience the largest growth at more than 56 percent.

Regional Water Supply Plans



Figure 12. SRWMD Planning Regions

In 2010, SRWMD’s Governing Board approved the 2010 Water Supply Assessment, which indicated a need for a regional water supply plan for four planning regions (Figure 12).

In 2011, the district completed a draft regional water supply plan for one of these regions, the Upper Santa Fe River Basin (USFRB). The plan found that this basin has experienced a significant decline in the potentiometric surface of the Florida aquifer and will require a recovery

Table 6. Projected Water Demand (mgd) SRWMD 2010-2030				
Water Use Sector	2010	2030	Change	Percent Change
Public Water Supply	23.30	27.27	3.97	17.04%
Domestic and Small Public Supply	18.87	23.76	4.89	25.91%
Agricultural Irrigation	127.46	127.46	0.00	0%
Recreational Irrigation	1.81	2.20	0.39	21.55%
Commercial/Industrial /Institutional	84.72	85.47	0.98	1.16%
Power Generation	2.59	4.06	1.47	56.76%
TOTAL	258.75	270.45	11.70	4.52%

strategy to ensure that existing and future needs can be met while protecting the environment.

The USFRB information will be incorporated into the inter-district RWSP under development with the St. Johns River Water Management District. This RWSP will cover all four SRWMD planning regions as well as the adjacent SJRWMD Region 1 area that also is affected by the decline in regional groundwater levels. The joint RWSP is being developed as one component of the North Florida Regional Water Supply Partnership.

In FY 2013, the district completed an outline for the RWSP, and assembled 2001 and 2009 water use data for use in their regional groundwater modeling efforts. In conjunction with SJRWMD, they began developing resource protection criteria and methods for estimating water conservation potential in the planning regions.

In FY 2014, the districts are scheduled to complete development of the regional groundwater model. They will use this model to help estimate 2035 demand projections, and will develop a MFL recovery and prevention strategies for the region.

All previously funded alternative water supply projects are complete, and none are proposed for funding in FY 2014.

Interdistrict Regional Water Supply Plans

In many areas, Florida has encouraged regional solutions to water supply challenges. In the past, regional solutions have been accomplished primarily through establishment of water supply authorities that have several member utilities. Advantages offered by water supply authorities include the abilities to transfer water among members, reduce individual utility cost, and spread financial risk for large water supply projects

among members. More recently, another type of regional solution has been the joint development of regional water supply plans among two or more water management districts. Florida currently has two inter-district water supply planning efforts, the North Florida Regional Water Supply Partnership and the Central Florida Water Initiative.

North Florida Regional Water Supply Partnership (NFRWSP)

The North Florida Regional Water Supply Partnership (NFRWSP) is a joint effort by DEP, SJRWMD, SRWMD, and other stakeholders to address current and future water supply needs along the shared boundaries between the two water management districts (Figure 13). Water withdrawals in both districts have contributed to a regional decline to water sources in the Upper Floridan aquifer.

The NFRWSP has several initiatives, including:

- Creating a Stakeholder Advisory Committee – This committee is an advisory body to the districts and DEP in coordinating water resource management activities within the region. Committee members include public water supply, agriculture, commercial/power generation, environmental, industrial/mining, and local government representatives. Monthly stakeholder meetings took place throughout 2013 and are planned for 2014.
- Developing a Regional Joint Groundwater Model - SRWMD and SJRWMD, in collaboration with other stakeholders, are developing a North Florida Southeast Georgia Regional Groundwater Flow Model to assess and predict water resource impacts. The model, scheduled

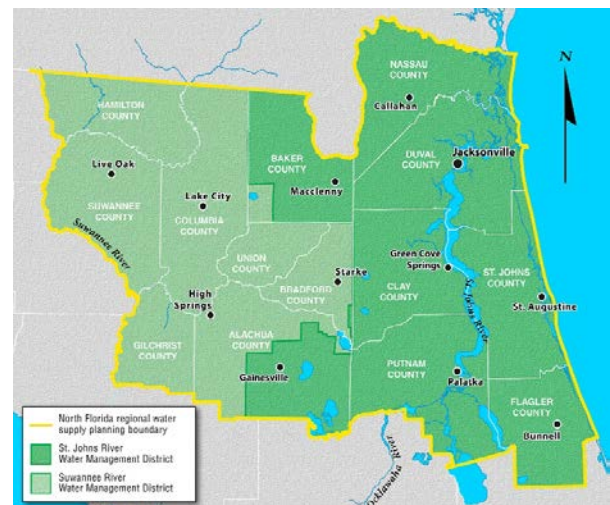


Figure 13. Map of NFRWSP.

for completion in 2014, will be used in both regional water supply planning and water use permitting.

- Developing a Regional Water Supply Plan - Development of the joint regional water supply plan is underway with completion anticipated in 2015.

More information on the NFRWSP can be found at:

<http://northfloridawater.com/>.

Central Florida Water Initiative (CFWI)

The CFWI is a joint effort by DEP, SWFWMD, SJRWMD, SFWMD, the Florida Department of Agriculture and Consumer Services, area utilities and other stakeholders to address current and long-term water supply needs in a five-county area of central Florida where the three districts' boundaries meet (Figure 14). Historically, the Floridan aquifer system has supplied the vast majority of fresh water used in this area.

Demand projections in the CFWI area for 2010-2035 predict a 40 percent demand increase to about 1,100 mgd (Table 7). Public water supply demands constitute two thirds of this total projected increase. The districts estimate recreational irrigation will have the largest growth at about 80 percent. Both recreational and agricultural irrigation will account for approximately 10 percent each of the total 2010-2035 demand increase.

The CFWI process has determined that the Upper Floridan Aquifer in the CFWI area has a sustainable groundwater withdrawal limit of 850 mgd. To meet the projected demands through 2035, an additional 250

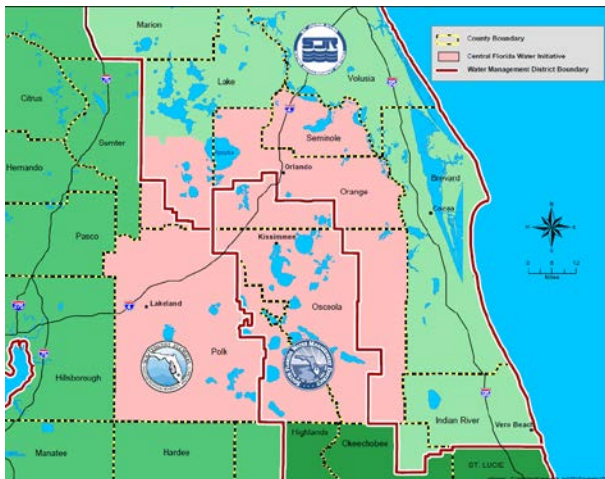


Figure 14. Map of CFWI.

Water Use Sector	2010	2035	Change	Percent Change
Public Water Supply	435	653	218	50%
Domestic and Small Public Supply	20	24	4	20%
Agricultural Irrigation	185	215	30	16%
Recreational Irrigation	40	72	32	80%
Commercial/Industrial/Institutional	74	96	22	29%
Power Generation	17	22	5	30%
TOTAL	771	1,082	311	40%

mgd will be needed from alternative water supply or non-traditional groundwater sources. CFWI participants completed a Draft Regional Water Supply Plan in November 2013 and expect to finalize the plan in early 2014. The draft plan is available to the public.

In the CFWI, the three districts are focused on obtaining water not only for human consumption, but also for areas where recovery is needed to maintain MFLs and to restore wetlands. During 2014, a Solutions Planning Team, comprised of agency senior management staff and stakeholders, will build on the Regional Water Supply Plan to further develop alternatives for meeting future water needs and achieving resource recovery. The team will develop water supply and water conservation project options, identify potential partnerships to encourage regional interconnects and maximize economies of scale and efficiencies, and identify funding needs and options.

More information on the CFWI, including a copy of the draft RWSP, can be found at: <http://cfwiwater.com/>.

Water Resource Development Work Programs

The regional water supply plans identify both water supply development and water resource development projects to meet 20-year projected demands. Annually, after adoption of their budgets, each water management district prepares a Five-Year Water Resource Development Work Program which describes the districts' implementation and funding strategies for the water resource, water supply and alternative water supply development portions of their regional water supply plans. The districts submit the work program to the Department for review and approval.

Water resource development projects primarily are the responsibility of the water management districts. Typically, these projects focus on assuring long-term availability of adequate water supplies and supporting local and regional water supply development. Types of water resource development projects found in the RWSPs include collection and evaluation of water source data needed to make water supply decisions, programs to manage water resources, public works projects for flood control and water storage, regional storage projects, utility interconnections, water conservation programs, and technical assistance to local governments and utilities.

The water resource development component of a RWSP should include:

- Lists of water resource development projects that support water supply development.
- Estimates of the water each project will make available, the timeframe and cost of the project, a funding strategy, and identification of the local government or other water supplier recommended to implement the project.

In contrast, water supply development includes planning, design, construction, operation, and maintenance of public or private facilities for water collection, production, treatment, transmission, or

distribution. These project types, discussed earlier in this report, primarily are the responsibility of local water suppliers.

The RWSP should include a list of water supply development project options with a total capacity that exceeds the estimated increase in 20-year demand, and should provide the following information on each project:

- An estimate of the amount of water to become available through the project.
- The timeframe for implementation.
- Estimated planning-level costs for construction, operation and maintenance.
- An analysis of funding needs and sources.
- Identification of the entity that should implement each project option and the current status of project implementation.

Within 6 months of RWSP adoption, the districts must notify local water suppliers about projects identified in the plan. Water suppliers can choose from these projects and incorporate those selected into their corresponding local government-required water supply facilities work plans. Within 12 months of notification, water suppliers must respond about their intentions to develop projects in the RWSP, or provide a list of other projects or methods that will meet their future water needs. One advantage of selecting a RWSP project is the water supplier can have confidence that the project is feasible and the supplier likely will be able to obtain a permit.

The Department reviewed the current work programs of each district and found they were consistent with the regional water supply plans and the included expenditures reasonably contribute to meeting the districts' future water supply needs.

Acronyms

AWS – Alternative Water Supply

BGD – billion gallons per day

CFWI – Central Florida Water Initiative

FY – Fiscal Year (ends September 30 for WMDs)

GPCD – gallons per capita per day

MFL – Minimum Flow and Level

MGD – million gallons per day

NFWWMD – Northwest Florida Water Management District

NFRWSP – North Florida Regional Water Supply Partnership

RWSP – Regional Water Supply Plan

SFWMD – South Florida Water Management District

SJRWMD – St. Johns River Water Management District

SRF – State Revolving Fund

SRWMD – Suwannee River Water Management District

STOPR – St. Cloud, Toho, Orange County, Polk County, Reedy Creek (a utility group)

SWFWMD – Southwest Florida Water Management District

USFRB – Upper Santa Fe River Basin

WMD – Water Management District (or district)

WPSP – Water Protection and Sustainability Program

References

Florida Demographic Estimating Conference. 2013. Florida Legislature, Office of Economic and Demographic Research. 2010 Census Data Extracted on October 29, 2013 from: <http://edr.state.fl.us/Content/population-demographics/data/>.

Marella, R. L. 2009. *Water Withdrawals, Use, and Trends in Florida, 2005*. U.S. Geological Survey. Scientific Investigations Report 2009-5125. Tallahassee, FL. 49 pp. Available at: <http://pubs.usgs.gov/sir/2009/5125/>.

Marella, R. L. 2012. Data for *Water Withdrawals, Use, and Trends in Florida, 2010*. U.S. Geological Survey. Available at: <http://fl.water.usgs.gov/infodata/wateruse/datatables2010.html>.

Smith, S.K. and Rayer, S. 2013. Florida Population Studies: Population Projections by County, 2015-2040, with Estimates for 2012. University of Florida, Bureau of Economic and Business Research. 8 pp. Available at: <http://www.bebr.ufl.edu/bebr-products/series/Florida%20County%20Population%20Projections>.

