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ALTERNATIVE WATER SUPPLIES



WATER CONSERVATION

REGIONAL SOLUTIONS



SOURCE DIVERSITY



STORAGE

Annual Report on
REGIONAL WATER SUPPLY PLANNING

2014



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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 (DEP) pursuant to 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. By 2035, increased demand likely will reach over 1.4 bgd. Traditional sources of fresh groundwater will not 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, identify traditional and alternative water supply projects that can, if constructed, produce approximately 2.0 bgd of water by 2030-2035. This quantity is more than adequate to meet projected needs.

WMD/ Planning Region	Net Demand Change (mgd)	Future Demand Not Met with Existing Allocation, Capacity or Source	Potential Conservation Savings Identified in RWSP (mgd)	Future Demand Not Met After All Conservation Implemented	Potential Water from Alternative Water Supply Projects Identified in RWSP (mgd)
Northwest Florida WMD	2010-2035				
Region II	27	3	6.5	0	59
Region III	16	0	9.5	0	35
Regions I, IV, V, VI, & VII	17	0	2.9	0	n/a
Districtwide	60	3	19	0	94
St. Johns River WMD	2010-2035				
Region 1	130	74	43 to 108	0 - 31	up to 199
Region 2	53	64	18-41	23 -46	up to 213
Region 3	See CFWI	See CFWI	See CFWI	See CFWI	See CFWI
Region 4	-5	3	11-23	0	up to 93
Districtwide	178	141	72 - 172	23 - 77	Up to 425
South Florida WMD	2010-2030				
Lower Kissimmee Basin	28	0	0	0	0
Upper Kissimmee Basin	See CFWI	See CFWI	See CFWI	See CFWI	See CFWI
Upper East Coast	110	8	12	0	88
Lower East Coast	213	18	52	0	235
Lower West Coast	292	86	41	45	128
Districtwide	643	112	105	45	451
Southwest Florida WMD	2010-2030				
Northern	62	27	26	1	125
Tampa Bay	81	3	25	0	140
Heartland (excluding CFWI)	5	0	6	0	22
Southern	44	2	14	0	269
Districtwide	192	32	71	1	556
Central Florida Water Initiative (CFWI)	2010-2035				
Portions of SJR, SWF & SF	311	250	42	208	455

Florida Department of Environmental Protection, Annual Report on Regional Water Supply Planning

WMD/ Planning Region	Net Demand Change (mgd)	Future Demand Not Met with Existing Allocation, Capacity or Source	Potential Conservation Savings Identified in RWSP (mgd)	Future Demand Not Met After All Conservation Implemented	Potential Water from Alternative Water Supply Projects Identified in RWSP (mgd)
Suwannee River WMD	2010-2030				
Alapaha River Basin	To Be Determined as Part of the North Florida Regional Water Supply Plan				
Lower Santa Fe River Basin					
Upper Santa Fe River Basin					
Upper Suwannee River					
Rest of District	10	0	0	0	n/a
North Florida RWSP	2010-2035				
Portions of SJR & SR	Plan Under Development				
Statewide Total	1,394	538	309 - 409	277 - 331	1,981

- Funds from the Water Protection and Sustainability Program, water management districts and local water suppliers have been used for the construction of 426 alternative water supply projects. To date, these projects have made almost 439 million gallons per day (mgd) of additional water available for consumptive use. Completion of all funded projects is expected to make available more than 778 mgd of additional water, or almost 59 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.
- DEP reviewed the districts' Five-year Water Resource Development Work Programs and found they are consistent with the regional water supply plans. The proposed 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. Sustainable water use, while protecting the environment, becomes increasingly important. The Florida Water Resources Act, Chapter 373, Florida Statutes, directs the state's five water management districts (*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 the next 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 and 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.
- Traditional and alternative water supply options and projects that exceed projected 20-year demands and may be implemented by local governments or other water suppliers.
- Estimates of the amount of water each project will make available.
- Identification of the entity that should implement each project option and the current status of project implementation.
- Time frame 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.

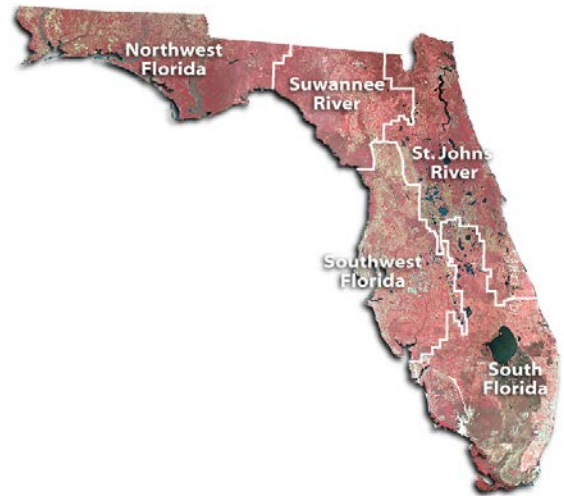
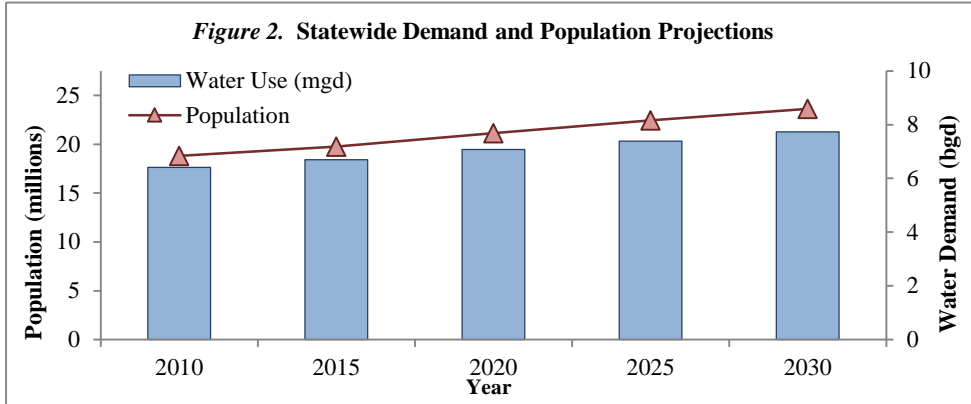


Figure 1. Florida's Water Management Districts

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>.

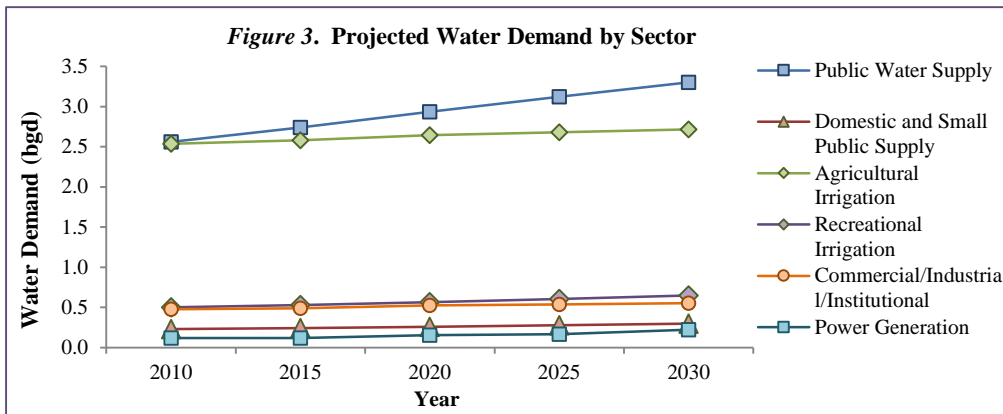
Water Use Projections

By the year 2030, Floridians will need an estimated 1.3 billion gallons of additional water per day (bgd), 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.^{1 2} This 2030 demand estimate is less than previous 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 7.2 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>.

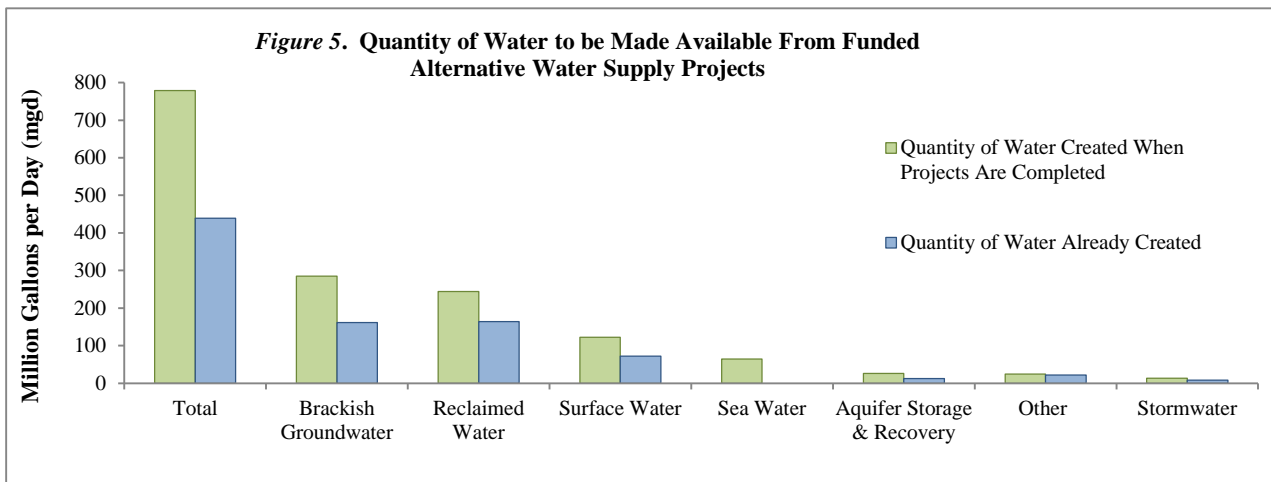
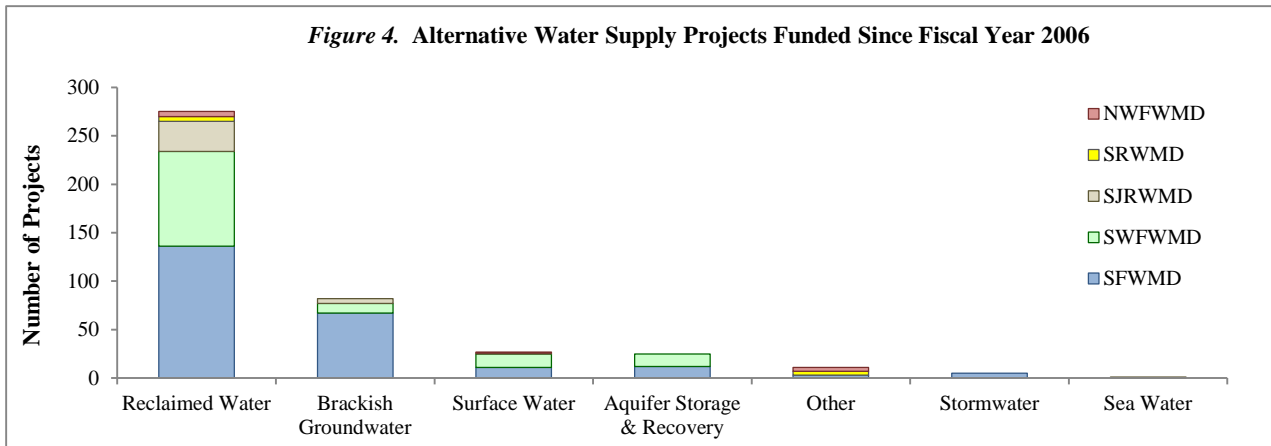
¹ Florida Demographic Estimating Conference. 2014. Florida Legislature, Office of Economic and Demographic Research. 2010 Census Data Extracted on October 20, 2014 from: <http://edr.state.fl.us/Content/population-demographics/data/>

² Smith, S.K. and Rayer, S. 2014. Florida Population Studies: Population Projections by County, 2015-2040, with Estimates for 2013. 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>

Alternative Water Supplies

Diversification of water sources is needed to maintain a reliable water supply. Traditionally, most of Florida has relied on fresh groundwater to meet water demand.³ Supplies of fresh, inexpensively treated groundwater are increasingly limited in many parts of the state, and these traditional sources will not be able to meet all of the future demand. The development of alternative water supplies, such as reclaimed water, brackish water, seawater and surface water, is a key component of the districts' regional water supply plans and is essential to meeting future demands.

Between Fiscal Years (FY) 2006-09, the Florida Legislature funded the Water Protection and Sustainability Program (WPSP) to assist with construction costs for alternative water supply projects. Use of WPSP funds, along with additional monies from the water management districts and local water suppliers, resulted in the construction of 426 alternative water supply projects (Figure 4). 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 439 mgd of additional water for consumptive use (Figure 5).

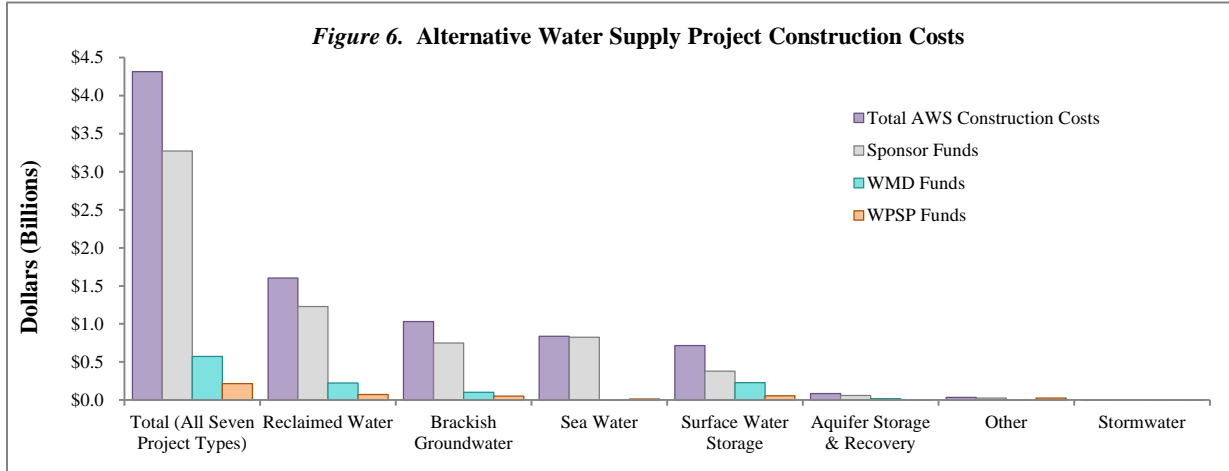


The districts estimate that when all currently planned alternative water supply projects are complete they will make available over 778 mgd of additional water, almost 59 percent of the additional water needed, to meet 2030 demands. Brackish groundwater projects are expected to produce the largest amount of water,

³ 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>.

approximately 285 mgd or almost 22 percent of the additional 1.3 bgd of water needed by 2030. The total construction costs⁴ of alternative water supply projects are more than \$4.3 billion (Figure 6).

The WPSP and the water management districts have provided more than \$790 million, or about 18 percent, of the total alternative water supply construction costs.



In most cases, the statute requires a project’s local sponsor to be responsible for at least 60 percent of the total construction costs for WPSP projects. Thus far, water suppliers have committed to provide almost \$3.3 billion toward construction of these projects, representing about 76 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.

DEP’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, the SRF program has provided around \$4 billion in low interest loans for wastewater and stormwater infrastructure improvements that reduce or eliminate sources of water pollution. For FY 2013-14, \$31.8 million, or 13 percent of the \$249 million in low interest loans provided by the program, was used for alternative water supply projects. More information on the SRF is available at <http://www.dep.state.fl.us/water/wff/>.

⁴ The total construction costs are reported for the life of the project and may include funding before the WPSP started as well as funding from other sources. As a result, the total of sponsor match, water management district match and WPSP match may not equal total construction costs.

Senate Bill 536 (2014)

In order to better meet future water supply needs and increase drought resilience throughout the state, in 2014 the Florida Legislature passed Senate Bill 536 (SB 536). The bill directs DEP to:

- Conduct a comprehensive study, in coordination with stakeholders, on the expansion of the beneficial use of reclaimed water, stormwater and excess surface water.
- Determine the feasibility, benefit and cost estimate needed to construct regional storage features for the beneficial use of reclaimed water, stormwater and excess surface water.
- Hold a minimum of two public meetings to gather input on the study.
- Provide an opportunity for public comment before submitting the report.
- Submit the report to the Governor, Senate President and Speaker of the House no later than December 1, 2015.

Since July 2014, DEP has been working with the water management districts, Florida Department of Agriculture and Consumer Services, Florida Department of Transportation and stakeholders on this study. To date, DEP has established a web page and email address for stakeholder communication, conducted an online survey to gather information from stakeholders, formed work teams for five subject areas covered in the report and held five public workshops - one in each WMD - to present preliminary survey results and solicit further comments from stakeholders.

In the online survey, respondents were asked to rate the importance of a list of impediments, incentives and storage methods on a scale of 1 – 5. Table 1 shows the issues rated as most important by survey takers. Across all categories, funding and regulatory changes were common concerns among the 949 survey respondents.

Table 1. Preliminary Survey Results – Most Important Issues by Category

Impediments	Incentives	Storage Methods	Indirect Potable Reuse
<ul style="list-style-type: none"> • Fiscal constraints • Infrastructure availability • Storage availability 	<ul style="list-style-type: none"> • Funding for projects • Regulatory changes • Funding for education 	<ul style="list-style-type: none"> • Wetlands/natural areas • Aquifer recharge 	<ul style="list-style-type: none"> • Fiscal constraints • Public perception • Regulations/regulatory actions

In the first half of 2015, the work teams will continue coordinating with stakeholders to identify issues and develop recommendations. DEP anticipates the draft study report will be available for public comment in July 2015 and the report’s recommendations will be discussed with stakeholders in five water management district workshops in August 2015. DEP will prepare the final report in fall 2015.

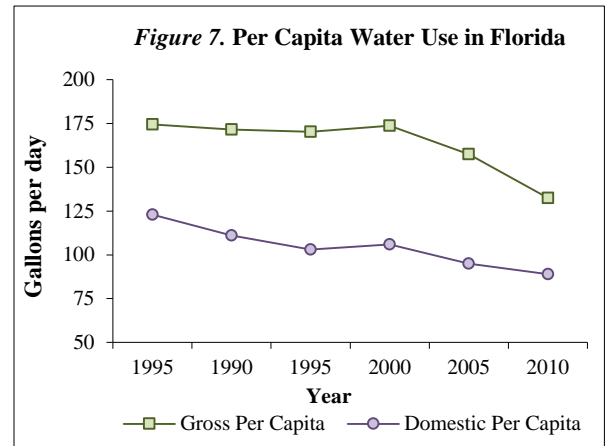
More information on the SB 536 study, including the work team teleconference schedule and instructions, is available at <http://www.dep.state.fl.us/water/reuse/study.htm>.

Water Conservation

Florida's past and current emphasis on water conservation is one reason the rate of increase in water use is predicted to be slower than the rate of population growth. The regional water supply plans include information on potential water savings from water conservation projects.

For the public supply water use sector, per capita water use estimates are an important tool for identifying how water is 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 7 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.^{5 6} 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 sponsor a wide variety of water conservation programs:

- Utilities can receive assistance through water audits that test for leaks and check the efficiency of a water delivery system, as well as cooperative funding for water conservation projects.
- Agricultural users can receive technical and funding assistance for implementing agricultural best management practices.
- Water Conservation Hotel and Motel Program (Water CHAMPSM) is a towel and linen reuse program that encourages hotel and motel guests to use their towels and linens more than once during their stay. Participation in this program saves water and electricity, and reduces detergent use.
- Florida Water StarSM is a voluntary certification program for new residential and commercial construction and existing home renovation. The program encourages water efficiency in appliances, plumbing fixtures, irrigation systems and landscapes.
- Florida-Friendly Landscaping principles protect water quality and some sensitive habitats while saving home and business owners' time, energy and money. Districts strongly encourage local governments to adopt Florida-Friendly Landscaping ordinances.

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>.

⁵ 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/>.

⁶ 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>.

Regional Water Supply Plan Updates

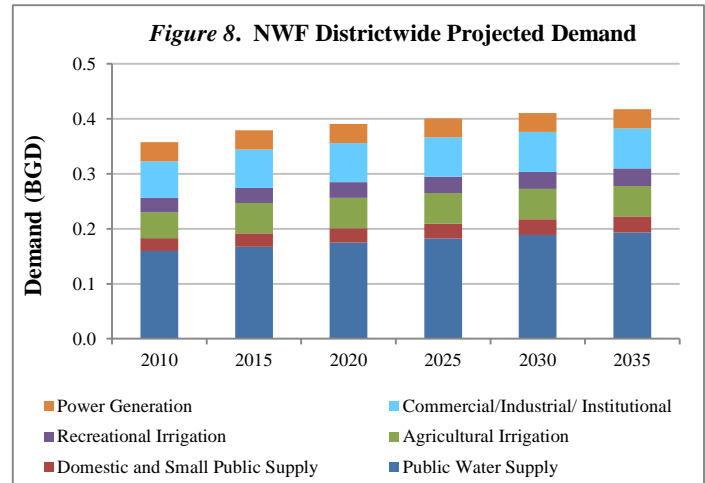
The water management districts are transitioning from their 2010-2030 regional water supply plans to their 2015-2035 plans. Table 2 summarizes the status of RWSPs in the districts. By 2030, statewide demand for fresh water is estimated to increase by about 1.3 bgd. By 2035, increased demand likely will reach around 1.4 bgd. To date, the RWSPs have identified traditional and alternative water supply projects that could, if constructed, produce approximately 2.0 bgd of water by 2030-2035. This quantity is more than adequate to meet projected 2030 - 2035 needs.

Table 2. Status of Regional Water Supply Plans

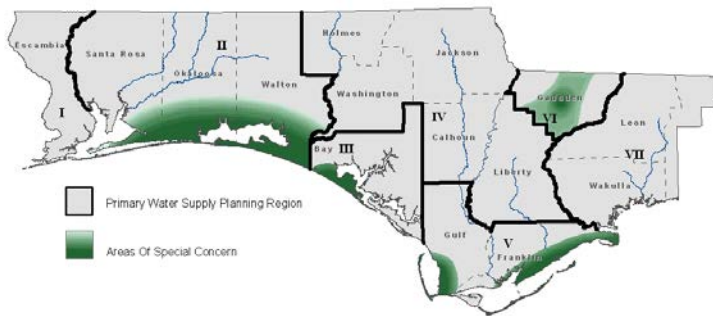
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North Florida RWSP	2010-2035				
Portions of SJR & SR					
Statewide Total	1,394	538	309 - 409	277 - 331	1,981

Northwest Florida Water Management District

In 2010, water use in the Northwest Florida Water Management District (NFWMD) was about 357 mgd (Figure 8). By 2035, the district expects water use to increase by almost 17 percent to more than 417 mgd. Public water supply was the largest use sector in 2010, followed by commercial/industrial/institutional. Together, these two sectors accounted for 63 percent of the water used. By 2035, the District estimates these will remain the two largest water use sectors, accounting for almost 64 percent of the estimated water use. Projections indicate that domestic and small public supply will experience the largest growth rate at nearly 24 percent, followed closely by recreational irrigation at over 23 percent.



The NFWMD has developed RWSPs for Regions II and III (Figure 9). In Region II, protection of the coastal Floridan aquifer continues to be the major concern and the District has worked with utilities to develop inland groundwater sources that serve the region’s coastal areas. The NFWMD also has expanded hydrologic data collection to include new monitoring wells in the sand and gravel aquifer in Santa Rosa County as well as additional surface water data stations in the region. As part of its new water supply development grant program, the District awarded seven water supply development grants, including three reclaimed water projects, to public supply utilities in the region. In Region III, the district updated the RWSP in 2014. Protecting Deer Point Lake Reservoir, the main water source for Bay County, is the major water supply issue. The reservoir is vulnerable to saltwater intrusion from coastal storm surge and development of an alternate upstream intake for water supply is underway. The District also has initiated a restoration project at Williford Springs on Econfina Creek, upstream of the reservoir, to help protect the groundwater recharge area for the reservoir.



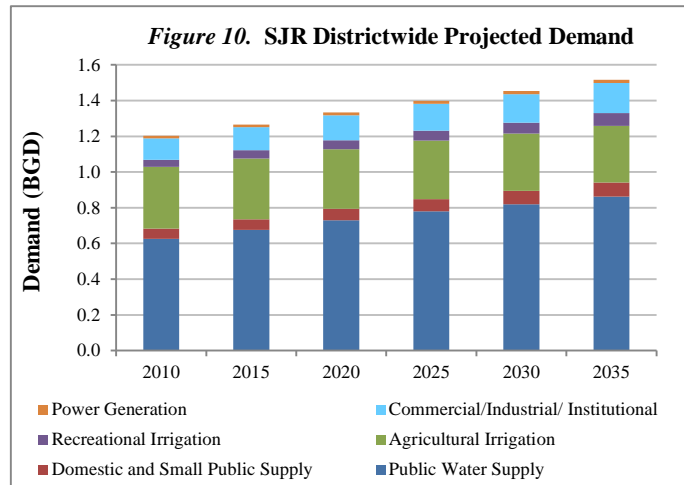
The NFWMD has discontinued regional water supply planning for Region V. Major projects included in the region’s 2007 plan are complete, and the District’s 2013 *Water Supply Assessment Update* concluded that the region can meet its 2035 water needs.

Figure 9. NFWMD Planning Regions By the end of FY 2013-14, over \$98 million of WSP, sponsor and other monies had been spent on 10 alternative water supply projects. These projects already have made available more than 22 mgd of water, and the District estimates they will produce over 30 mgd by 2035. In FY 2014-15, the NFWMD expects to spend almost \$2.5 million for RWSP-specific projects and more than \$11 million for water supply development throughout the district. The District has expended all of its WSP funds.

The District continues to work with Wakulla County and the U.S. Department of Agriculture (USDA) to ensure wastewater treatment facility improvements associated with the County’s reclaimed water project are fully funded and completed. The USDA approved project funding in 2014. This work also is associated with efforts to protect spring systems by connecting areas currently served by septic systems to central sewer.

St. Johns River Water Management District

In 2010, total water use in the St. Johns River Water Management District (SJRWMD), including the portion within the Central Florida Water Initiative (CFWI), was around 1,200 mgd (*Figure 10*). By 2035, the District expects water use to increase by about 26 percent to more than 1,500 mgd. Public water supply was the largest use sector in 2010, followed by agricultural irrigation. Together, these two sectors accounted for about 81 percent of the water used. By 2035, 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 eight percent. Together, these two sectors will account for nearly 78 percent of the water used. Recreational irrigation will have the largest estimated growth rate at more than 76 percent.



In December 2013, the District drafted a water supply plan for planning regions 1, 2 and 4 (*Figure 11*). The District has been developing the Region 1 plan in coordination with Suwannee River Water Management District, referred to as the North Florida Regional Water Supply Partnership. Preliminary results for Regions 1 and 2 indicate that the potential for additional water conservation and reuse is significant and will be needed to satisfy projected 2035 water demands. In addition, aquifer replenishment and other alternative water supply

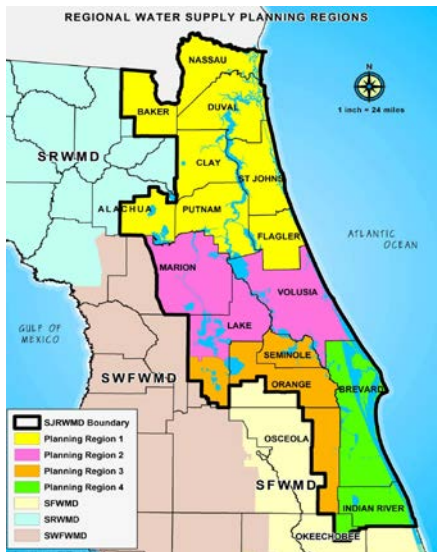


Figure 11. SJRWMD Planning Regions

projects may be needed for these regions. In Region 4, the projected increase in water demand is much smaller and future demands can be met with the very limited naturally occurring fresh groundwater along with the brackish groundwater and surface water sources already being used. Additional water conservation and reuse will also be needed in this region in the future. For all regions, the District is investigating indirect potable reuse as a future option to meet water supply needs.

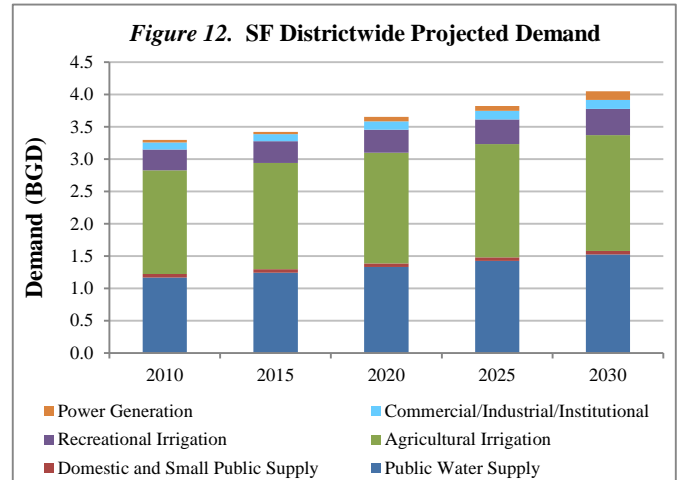
One major issue the plans will address is the development of minimum flow and level (MFL) recovery strategies in seven counties. MFLs are water flows or levels established to prevent significant harm to the water resources or ecology of an area resulting from permitted water withdrawals. During FY 2013-14, District staff began implementing the 2013 recovery strategy for seven Volusia County water bodies. The District anticipates completion of draft prevention/recovery strategies for water bodies in Marion County and the Clay-Putnam area in 2015. Recovery strategies for water bodies in Region 3, within the CFWI area, are under development.

During FY 2013-14, the District completed the Tavares reclaimed water project, creating an additional 3.5 mgd of water. The District anticipates completing the Apopka reuse augmentation project, creating an additional 5 mgd, by the end of 2015.

By the end of FY 2013-14, more than \$1.2 billion of district, sponsor and WSP monies had been spent on construction of 39 alternative water supply projects. These projects have already made available more than 82 mgd of water, and the District estimates they will produce more than 192 mgd by 2035.

South Florida Water Management District

In 2010, total water use in the South Florida Water Management District (SFWMD), including the portion within the CFWI, was almost 3,300 mgd (*Figure 12*). By 2030, the District expects water use to increase by almost 23 percent to almost 4,050 mgd. Agricultural irrigation was the largest use sector in 2010, followed by public water supply. Together, these two sectors accounted for 84 percent of the water used. By 2030, the District estimates that agricultural irrigation and public water supply will remain the two largest use sectors, accounting for almost 82 percent of the estimated water use. Projections indicate that water quantities needed for power generation will more than triple and this sector will experience the largest growth rate at 258 percent.



The District has RWSPs for each of its four planning regions (*Figure 13*). Water supply 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, complying with the 2008 Ocean Outfall Act, completing Comprehensive Everglades Restoration Plan projects, meeting water demands related to the increase or decrease in citrus acreage and alleviating the impact of Lake Okeechobee releases on the Caloosahatchee and St. Lucie estuaries. In general, the water supply plans have concluded that the regions' 2030 needs can be met with appropriate management, diversification of water supply sources, increased water storage and enhanced conservation.

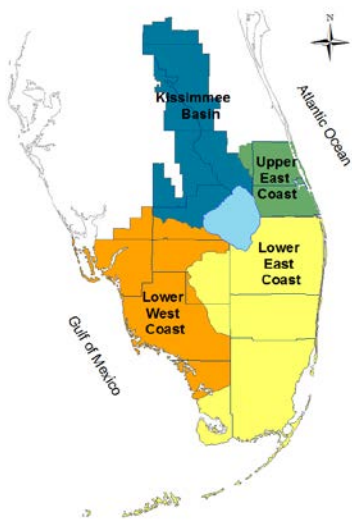


Figure 13. SFWMD Planning Regions

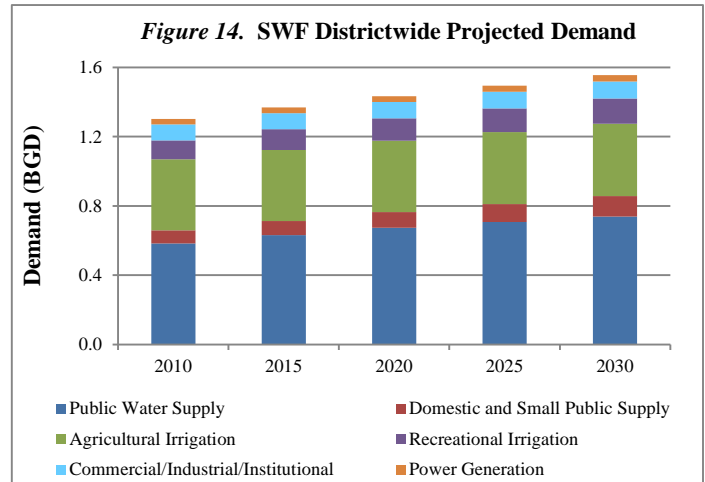
During FY 2013-14, the SFWMD's Governing Board approved the RWSP for the Lower Kissimmee Basin. For the Upper East Coast region, District staff began working on the 2016 RWSP plan update. For the Lower West Coast and Lower East Coast regions, District staff provided technical assistance to local governments required to submit Water Supply Facilities Work Plans pursuant to recent district RWSP updates in those regions. The District also continued working on the Upper Kissimmee Basin portion of the CFWI water supply plan.

In 2014, the SFWMD adopted the C-43 West Basin Storage Reservoir Reservation. This reservation supports ongoing restoration in the Caloosahatchee River and Estuary and will help maintain MFLs. The District also initiated establishment of a water reservation for the Upper Chain of Lakes and the Kissimmee River and anticipates rule adoption in 2015. During the year, the SFWMD completed data collection for and drafted new saltwater interface maps. The 2014 map update will be complete in early 2015. The District also worked on updating several of their groundwater models that are used in regional water supply planning.

By the end of FY 2013-14, the SFWMD had spent almost \$6.9 million on implementing projects identified in their RWSPs. Moreover, almost \$1.6 billion of District, sponsor and WSPSP monies had been spent on construction of 234 alternative water supply projects. These projects already have made available more than 287 mgd of water, and the District estimates they will produce more than 432 mgd by 2030. For FY 2014-15, the District has budgeted \$6.7 million for water supply development. The District has expended all of its WSPSP funds.

Southwest Florida Water Management District

In 2010, total water use in the Southwest Florida Water Management District (SWFWMD), including the portion within the CFWI, was about 1,303 mgd (Figure 14). 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. Together, these two sectors accounted for 76 percent of the water used. 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 (less than 2 percent) over this time period. Together, these two sectors will account for 74 percent of the water used. Domestic users and small public supply are expected to have the largest growth rate at nearly 57 percent.



In 2014, the SWFWMD continued updating the RWSPs for its four planning areas (Figure 15). The District anticipates completion in 2015. Major water supply concerns throughout the District are the existing impacts to MFLs, limited availability of traditional groundwater resources and saltwater intrusion (in the Tampa Bay and Southern Planning Regions). The District's solutions to these challenges include reducing water demands through increased water conservation and reclaimed water use, developing other alternative water supply sources, reallocating unused water during land use transitions, establishing MFLs and participating in regional and interdistrict water supply planning and research efforts.



During FY 2013-14, the SWFWMD approved almost \$33 million for 37 alternative water supply and water conservation projects. These projects involved 24 utilities/entities and will result in more than 62.22 mgd of water. As of September 30, 2014 the District has budgeted a total of \$427.24 million toward 105 projects that were identified the 2010-2030 RWSP.

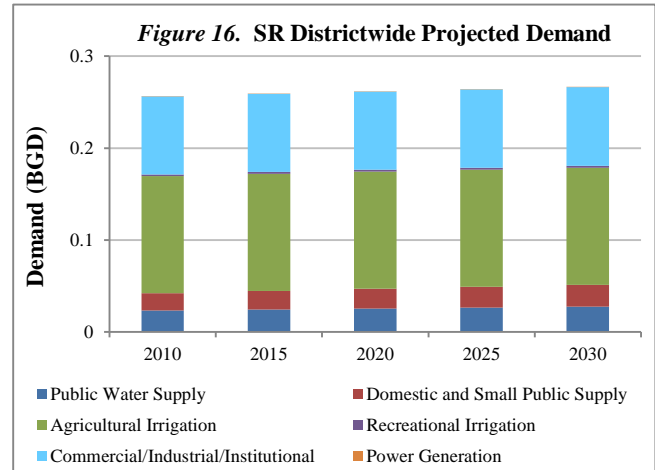
By the end of FY 2013-14, the SWFWMD had provided almost \$470 million in funding and approximately \$54 million in WSPSP funding towards 135 projects (\$1.34 billion in total project costs) that will provide water resource benefits of nearly 168 mgd by 2030. Of this amount, more than 58 mgd already has been created.

The SWFWMD has expended all of its WSPSP funds and 35 of 41 WSPSP-funded projects are complete. Upon completion, these 41 projects will provide more than 60 mgd of water resources, with more than 40 mgd of potable water supplies and approximately 20 mgd of reclaimed water supplies. For FY 2014-15, the SWFWMD budgeted an additional \$41.47 million for 30 alternative water supply projects, including work on the six remaining WSPSP projects.

Figure 15. SWFWMD Planning Regions

Suwannee River Water Management District

In 2010, water use in the Suwannee River Water Management District (SRWMD) was approximately 256 mgd (Figure 16). By 2030, the District expects water use to increase by about 4 percent to more than 266 mgd. Agricultural irrigation was the largest use sector in 2010, followed by commercial/industrial/institutional accounting for almost 83 percent of the estimated water use. Projections indicate these will continue to be the two largest use sectors in 2030, accounting for 80 percent of the water used. Public water supply, the third largest water use sector in 2010, will remain third in 2030. Demand estimates indicate that the domestic and small public supply sector will experience the largest growth rate at almost 26 percent.



The SRWMD's 2010 Water Supply Assessment concluded that regional groundwater withdrawals over the past 75 years have caused Upper Floridan aquifer levels to decline significantly in the northeastern portion of the District, and aquifer levels in this area will continue to decline during the 2010–2030 planning period. As a result, the District divided its northeastern area into four water supply planning regions, designating them as Water Resource Caution Areas (WRCAs) in October 2011 (Figure 17).

In 2011, the SRWMD, SJRWMD and DEP entered into an Interagency Agreement to coordinate regional water resource management among these WRCAs and the northern nine counties of SJRWMD, creating the North Florida Regional Water Supply Partnership. Under this partnership, the two WMDs are developing the North Florida Regional Water Supply Plan. In 2014, the districts worked on developing 2035 water demand projections and estimating water conservation potential for the region. Additionally, district staff are working to create the new North Florida Southeast Georgia (NFSEG) regional groundwater flow model that will be used in the plan's analysis. The districts anticipate completion of the draft plan by the end of 2015 and implementation of plan projects between 2016 and 2020.

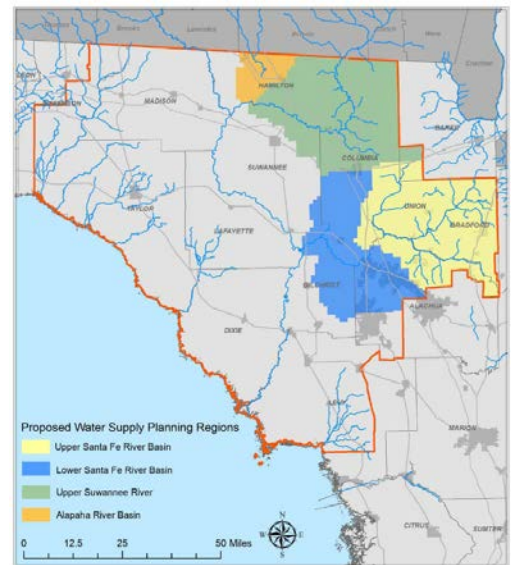


Figure 17. SRWMD Planning Regions

While development of the North Florida RWSP is in progress, the SRWMD is investigating the feasibility of and implementing aquifer recharge projects, alternative water supply projects and water resource development projects in its WRCAs. The Eagle Lake project, a priority alternative water supply project, was approved for funding in 2014 and will offset up to 20 mgd of groundwater with a surface water source. The Middle Suwannee River and Springs Restoration and Aquifer Recharge Project, initiated in the fall of 2013, and the Brooks Sink Project, approved in 2014, are other priority projects that will direct excess surface water runoff into existing natural features and recharge the aquifer. The District has expended all of its WPSP funds.

Water conservation also is critical for meeting future water supply needs. In FY 2012-13, the District initiated an agricultural cost-share program to reduce groundwater withdrawals through increased irrigation efficiencies. Thus far, the District has funded 460 irrigation efficiency projects that are estimated to have a water savings of 13.5 mgd.

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

The North Florida Regional Water Supply Partnership (NFRWSP) is a joint effort by the SJRWMD, SRWMD, DEP and other stakeholders to address current and future water supply needs along the shared boundaries between the two water management districts (*Figure 18*). Water withdrawals in both districts have contributed to a regional decline in the Upper Floridan aquifer.

The NFRWSP has several initiatives, including:

- **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 2014 and are planned for 2015.
- **Regional Joint Groundwater Model** – The SRWMD and SJRWMD, in collaboration with other stakeholders, are developing a North Florida Southeast Georgia (NFSEG) Regional Groundwater Flow Model to assess and predict water resource impacts. The model, which has been under development since 2012, will be calibrated and ready to use for preliminary simulations in early 2015. When complete and peer-reviewed, the NFSEG model will be used in both regional water supply planning and water use permitting by both water management districts.
- **Regional Water Supply Plan** – Development of the joint RWSP is underway with completion of a draft document projected for the end of 2015, with workshops and governing board acceptance anticipated by the end of 2016.

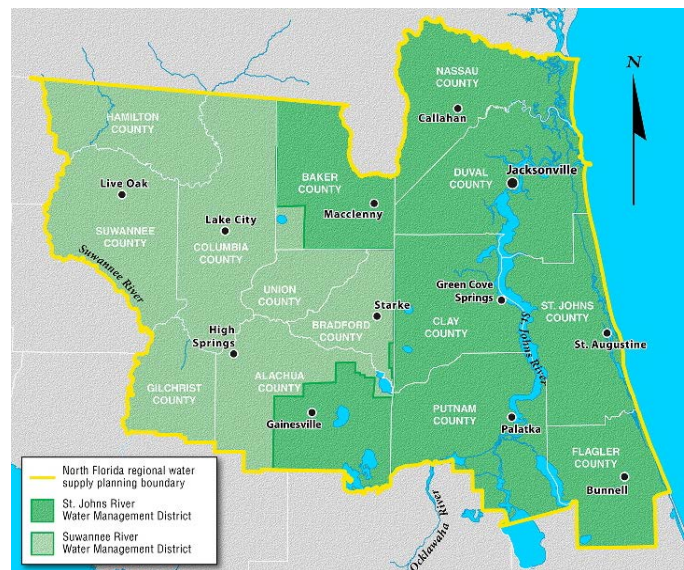


Figure 18. Map of NFRWSP

More information on the NFRWSP can be found at <http://northfloridawater.com/>.

Central Florida Water Initiative

The Central Florida Water Initiative (CFWI) is a joint effort by DEP, the SWFWMD, SJRWMD, SFWMD, 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 19). 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 (Figure 20). Public water supply demands constitute 70 percent of this total projected increase, with recreational and agricultural irrigation accounting for approximately 10 percent each of the total 2010-2035 demand increase.

Groundwater studies indicate 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 mgd will be needed from conservation, alternative water supplies or non-traditional groundwater sources. CFWI participants completed a draft RWSP in April 2014. The Governing Boards of SWFWMD, SFWMD and SJRWMD acknowledged delivery of the draft plan in May 2014 and directed staff to continue work supporting implementation of the CFWI Guiding Document.

In the CFWI, the three districts are charged with identifying sufficient sources of water for both human use and to maintain or recover MFLs and wetlands.

During 2014, a Solutions Planning Team, comprised of district and DEP senior management staff and stakeholders, met to further develop alternatives for optimizing the use of existing groundwater, meeting future water needs and achieving resource recovery. The team developed alternative water supply and water conservation project options, identified potential partnerships to encourage regional interconnects and maximize economies of scale and efficiencies, and also identified funding needs and options. The team's final work product will be a CFWI 2035 Water Resources Protection and Water Supply Strategies document, which will be incorporated into the CFWI Regional Water Supply Plan. The projected final completion date for the CFWI Regional Water Supply Plan is fall 2015.

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

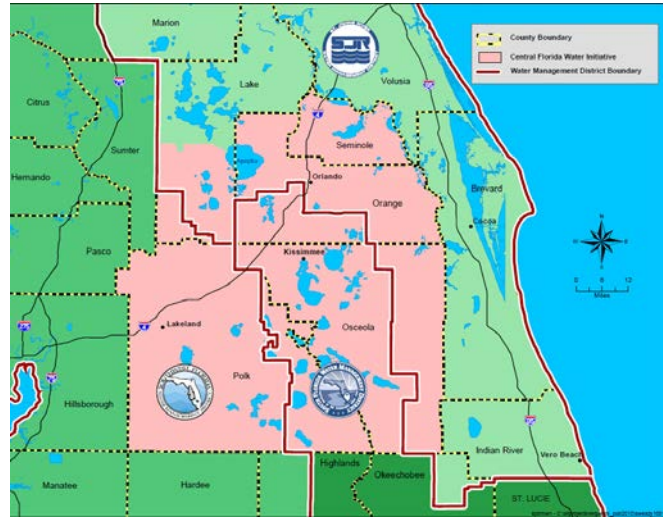


Figure 19. Map of CFWI

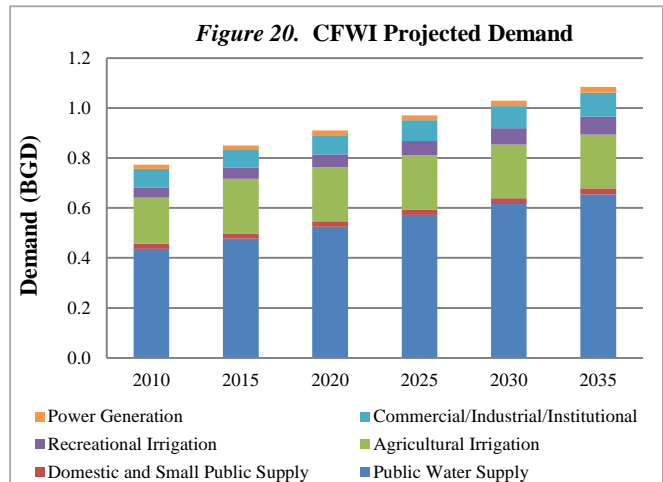


Figure 20. CFWI Projected Demand

Water Resource Development Work Programs

The RWSPs 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 RWSPs. The districts submit the work program to DEP 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 must 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.

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

Regional Water Supply Plans and Growth Management

In order to ensure adequate water supplies, the Florida Legislature established a coordinated planning process that conveys RWSP information from the water management districts to local governments within a plan's region. Pursuant to Chapter 163, Part II, Florida Statutes, local governments must amend their comprehensive plans to address water supply sources needed to meet existing and projected water needs for the established planning period. Within six months of RWSP adoption, a water management district must notify local water suppliers about projects identified in the plan. Local government water suppliers can choose from the plan's projects or propose their own, and must incorporate the selected projects into a local water supply facilities work plan, as required by section 163.3177(6)(c)(3), Florida Statutes. Within 12 months of notification, local governments must notify the districts 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.