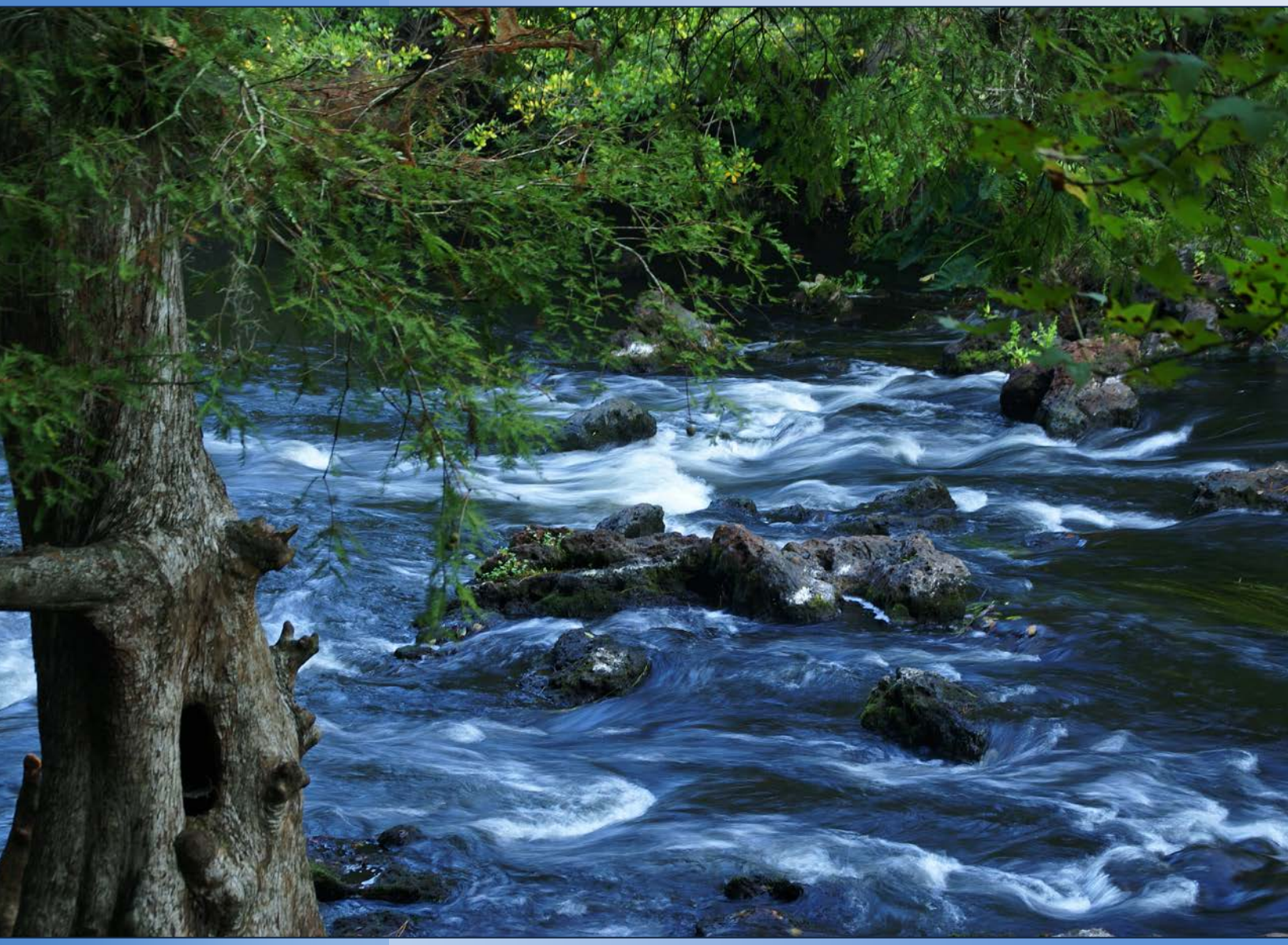
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Regional Water Supply Planning



Annual Report

December 2012

Front photo: Hillsborough River, Florida

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 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, Florida's demand for fresh water is estimated to increase by about 1.4 billion gallons per day (bgd) for a total of 7.9 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 alternative water supply projects that can, if constructed, produce approximately 2.0 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 320 alternative water supply projects. To date, funded projects have made approximately 416 million gallons per day (mgd) of additional water available for consumptive use. Completion of all funded projects is expected to make available almost 701 mgd of additional water, approximately 50 percent of the projected 2030 needs.
- 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 the 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 (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.

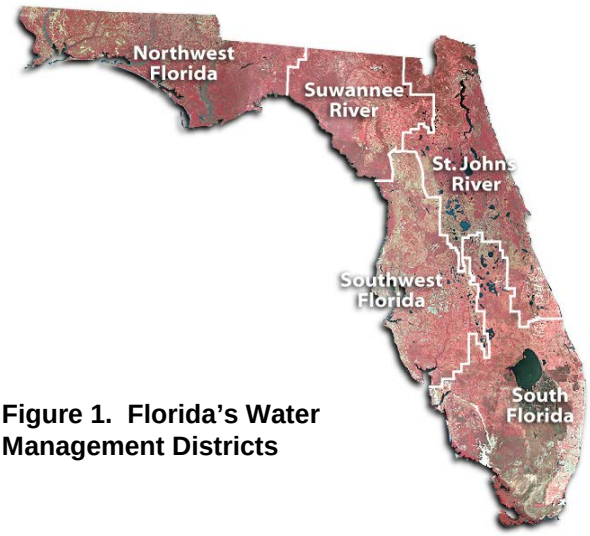


Figure 1. Florida's Water Management Districts

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

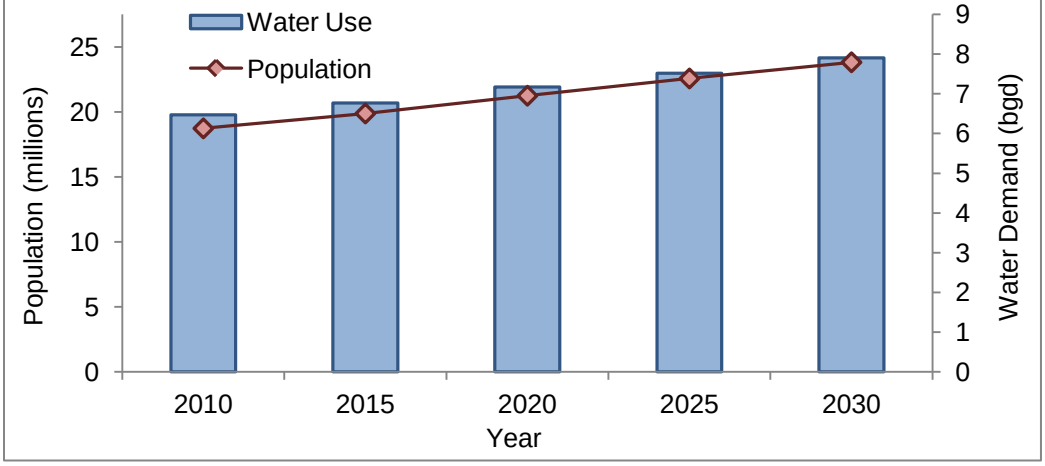
- Quantification of water needs for all projected uses for a 20-year period.
- Lists of traditional and alternative water supply options and projects, which together exceed projected 20-year demands, that local governments and other public water suppliers may implement to meet their future demand.
-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

Water Use Projections

By the year 2030, Floridians will need an estimated 1.4 billion gallons of additional water per day, a 22 percent increase compared to 2010 demands, for a total of 7.9 bgd (Figure 2). During this same

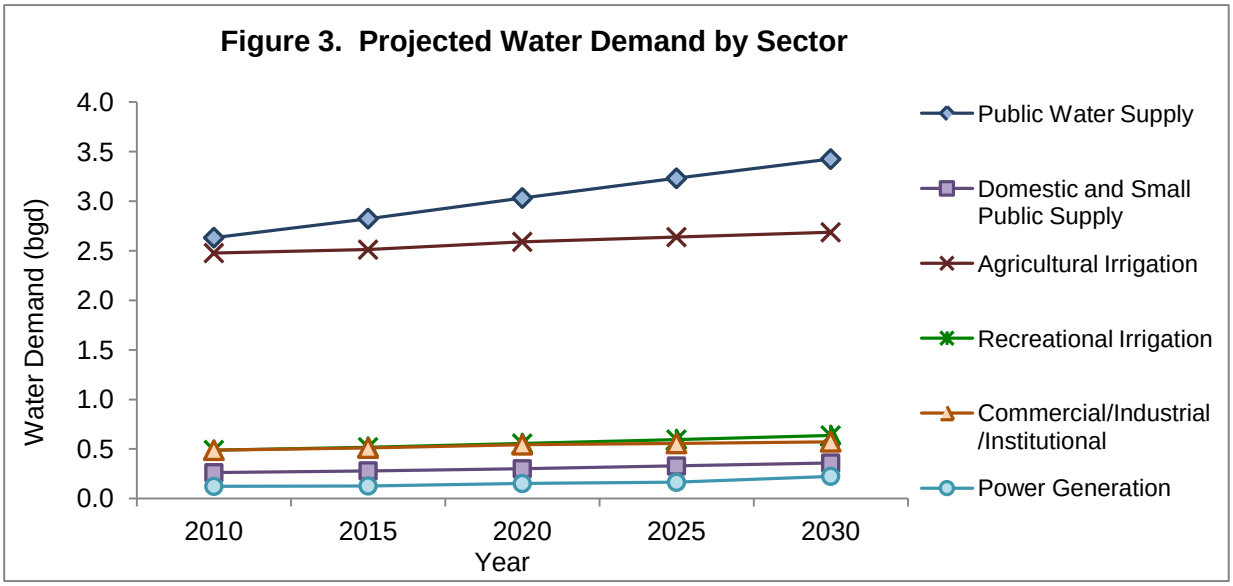
period, demographers predict Florida's population will increase by 27 percent, from 18.7 million to approximately 23.8 million (Smith and Rayer 2010). This 2030 demand estimate is less than past projections because of a slower population growth rate over the last several years.

Figure 2. Statewide Demand and Population Projections



Agricultural irrigation and public supply 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 more than 30 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 8.5 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.

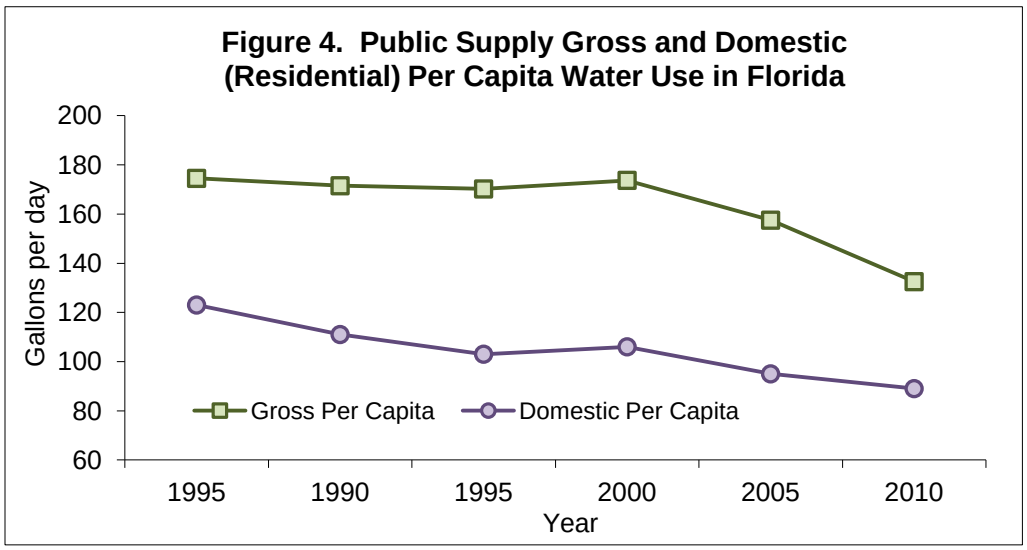
Figure 3. Projected Water Demand by Sector



Water Conservation

Florida's past and current emphasis on water conservation is one reason that the rate of growth 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 efforts, 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 169 gallons per capita per day (gpcd) and the residential per capita was 103 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.



Regional Water Supply Plan Updates

While Florida has made significant progress in the development of alternative water supplies (AWS), 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. Further information on alternative water supplies and the Water Protection and Sustainability Program (WPSP) can be found in the Alternative Water Supplies section that follows this section.

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 (Santa Rosa, Okaloosa, Walton Counties)	Completed (2012)	26	57
Region III (Bay County)	2013	27	TBD
Region V (Gulf, Franklin Counties)	Under Review	2	9
Regions I, IV, VI and VII	Not Needed	40	Sources Sufficient
Districtwide		**95**	**65**
Suwannee River WMD			
Districtwide	2015	**12**	Plans Pending
St. Johns River WMD			
Districtwide	2013	**271**	**378**
Southwest Florida WMD			
Northern	Completed (2011)	62	242
Tampa Bay	Completed (2011)	81	238
Heartland	Completed (2011)	66	124
Southern	Completed (2011)	44	334
Districtwide		**253**	**938**
South Florida WMD			
Kissimmee Basin	2013	131	234
Upper East Coast	Completed (2011)	109	93
Lower East Coast	2013	270	239
Lower West Coast	Completed (2012)	292	141
Districtwide		**802**	**707**
Central Florida Water Initiative			
Portions of SJRWMD,SWFWMD, and SFWMD	2013	*Included Above	TBD
North Florida Regional Partnership			
Portions of SJRWMD and SRWMD	2015	*Included Above	TBD
Statewide Total		**1,433**	**2,088**

TBD = To Be Determined *Demand estimates included in district totals and will be updated in future plans

Northwest Florida Water Management District (NWFWMD)

In 2010, water use in the NWFWMD was almost 401 mgd. By 2030, the district expects water use to increase by about 24 percent to more than 496 mgd. Public water supply was the largest use sector in 2010, with a demand of more than 180 mgd. Demand projections indicate public water supply will continue to be the largest use sector in 2030, with an increase of 43 percent to more than

258 mgd. The commercial/industrial/institutional sector ranked second, with a water use increase of almost 10 mgd, or over 12 percent, to about 91 mgd. By 2030, the district estimates that agricultural irrigation, the third largest water use sector, will remain at nearly 55 mgd, about the same as in 2010.

Regional Water Supply Plans

The district has developed regional water supply plans for Regions II, III, and V (Figure 5). Each of these 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. The district is addressing this issue through the construction of major transmission pipelines to deliver potable water from inland well fields to coastal communities and to interconnect coastal utilities.

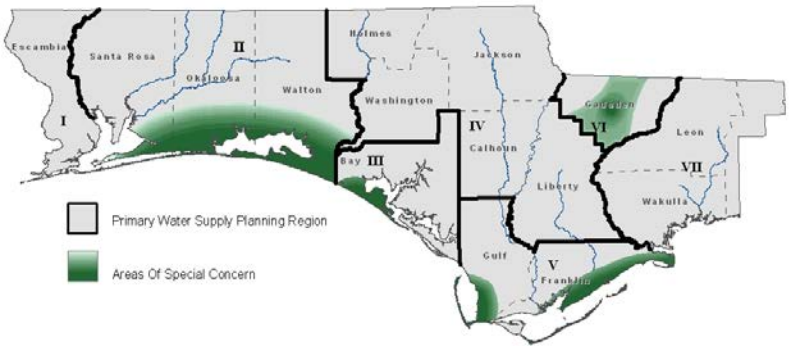


Figure 5. NWFWMD Planning Regions

Over the past year, the district made considerable progress on the construction of transmission pipelines from the inland Floridan aquifer well field to coastal communities in Walton and Okaloosa counties. In addition, work progressed on the Santa Rosa County-Okaloosa County and the Walton County-Bay County coastal utility interconnections. From 2009-2012, the district provided funding assistance to the City of Callaway for extending a potable water transmission main within the Allanton Peninsula, and for a water and sewer systems interconnection with Sandy Creek Utility Services, Inc. During 2012, district staff provided technical assistance to the City of Port St. Joe to help address persistent water color and corrosion problems within its distribution system.

By the end of Fiscal Year 2012, over $75 million of district, sponsor, and WPSP monies had been spent on construction of 10 alternative water supply projects. These projects already have made available more than 22.5 mgd of water, and the district estimates they will produce over 26 mgd by 2030.

During Fiscal Year 2013, the district plans to further develop the hydrologic monitoring network in Regions II and III. The district has allocated funds to assist Okaloosa County in developing a new surface water source to meet public supply needs beyond 2020, and to help the City of Port St. Joe

repair its primary pump station on the Chipola River. The district also plans to complete the update of their districtwide water supply assessment.

Of the ten alternative water supply projects funded under the WPSP, all but two are complete. In 2013, Wakulla County plans to continue trying to obtain additional funding for water treatment improvements to its reclaimed water project. In Bay County, the district will continue working with local governments and utilities to identify AWS projects that will ensure the long-term reliability and sustainability of the county's potable water resources.

Suwannee River Water Management District (SRWMD)

In 2010, water use in the SRWMD was approximately 259 mgd. By 2030, the district expects water use to increase by about 4.5 percent to approximately 271 mgd. Agricultural irrigation was the largest use sector in 2010, with a demand of more than 127 mgd. Demand projections indicate agricultural irrigation will continue to be the largest use sector in 2030, and the anticipated 2030 demand quantity will remain steady at 127 mgd. The district estimates that the commercial/ industrial/institutional use sector will remain the second largest, with an estimated one percent increase to about 86 mgd. Public water supply, the third largest water use sector, will increase by almost 17 percent from 23 mgd to more than 27 mgd during the 2010-2030 time period.

Regional Water Supply Plans

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 6).

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 aquifer and will require a recovery strategy to ensure that existing and future needs can be met while protecting the environment. The draft USFRB plan is currently on hold pending the development of

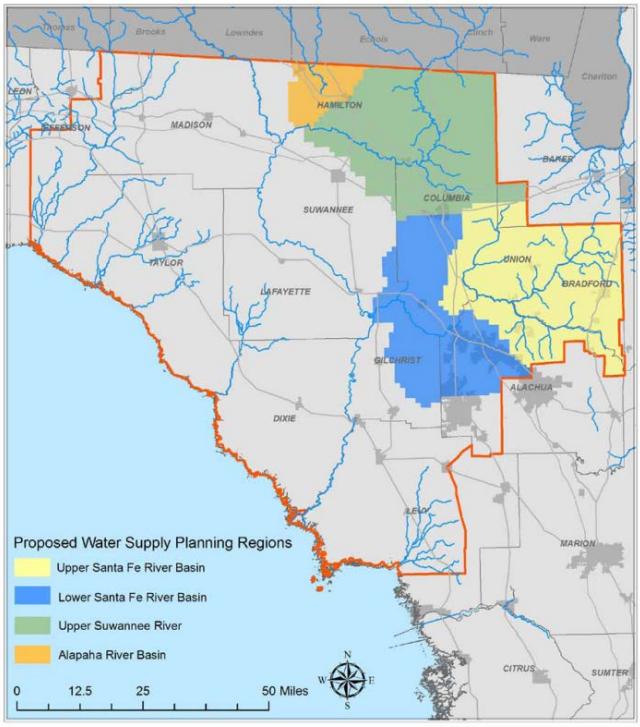


Figure 6. SRWMD Planning Regions

an inter-district RWSP with the St. Johns River Water Management District (SJRWMD). The RWSP will cover all four planning areas identified in the SRWMD Water Supply Assessment, as well as the adjacent SJRWMD Region 1 planning region, which 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 (NFRWSP), described in more detail in a section below.

All previously funded alternative water supply projects are complete. There were no alternative water supply projects funded in the past year, and none are proposed for funding in Fiscal Year 2013. However, SRWMD continues to work in partnership with agricultural water users on water conservation programs.

Southwest Florida Water Management District (SWFWMD)

In 2010, water use in the SWFWMD was about 1,303 mgd. By 2030, the district expects water use to increase by about 31 percent to nearly 1,556 mgd. Public water supply was the largest use sector in 2010, with a demand of about 584 mgd. Demand projections indicate public water supply will continue to be the largest use sector in 2030, with an increase of almost 46 percent to more than 739 mgd. During this time period, the district estimates that agricultural irrigation, the second largest water use sector, will increase by about four percent from 400 mgd to nearly 418 mgd.

Regional Water Supply Plans

In 2011, the Governing Board adopted updated regional water supply plans for all four planning areas (Figure 7). Major water supply concerns continue in the Northern Tampa Bay, Dover/Plant City, and Southern Water Use Caution Areas. The RWSPs identify several solutions, including:

- development of alternative water supplies for the public supply sector, particularly in coastal areas, to conserve groundwater resources for inland and agricultural users who have fewer AWS options;
- development of conjunctive use water systems (water systems that use multiple water source

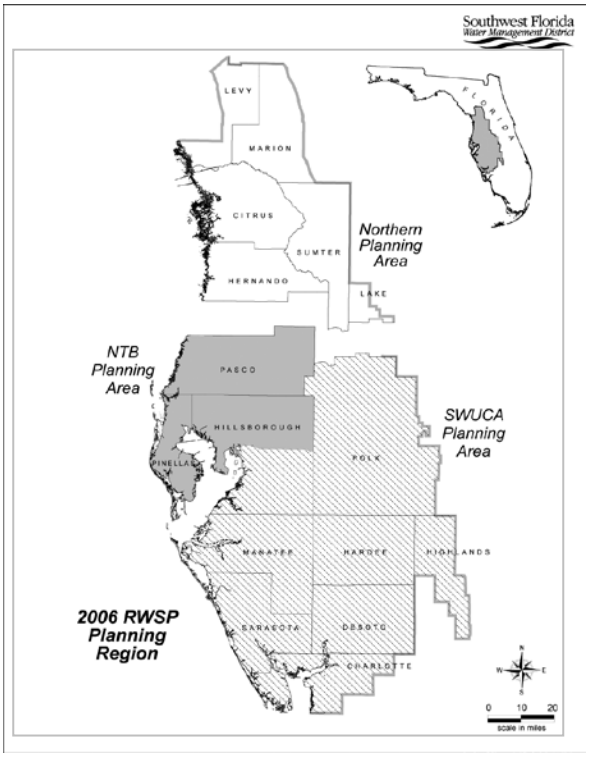


Figure 7. SWFWMD Planning Regions

types, such as surface and groundwater) that conserve fresh groundwater by using more surface water sources during wet periods;

- continuation of the Lake Hancock project to help recover the minimum flows in the upper Peace River; and
- reduction of water demands through water conservation and reclaimed water use.

During the past year, with funding assistance from the district, Tampa Bay Water completed its System Configuration II project, adding 25 mgd of surface water to its regional supply system and ensuring that regional water needs will be met while keeping groundwater withdrawals within permitted limits. There was significant progress on the Lake Hancock project, and the district anticipates project completion in 2013. The district also continued working closely with Polk County to develop cost effective strategies for alternative water supplies. Furthermore, a major interconnect between Charlotte County and Punta Gorda, across the Peace River, became operational, providing rotational capacity and emergency backup supplies for the area. In addition to these activities, SWFWMD also continued participating with the SJRWMD and the South Florida Water Management District (SFWMD) on a RWSP for the area known as the Central Florida Water Initiative (CFWI), the area where the borders of these three districts meet. There are more details on the CFWI in a separate section below.

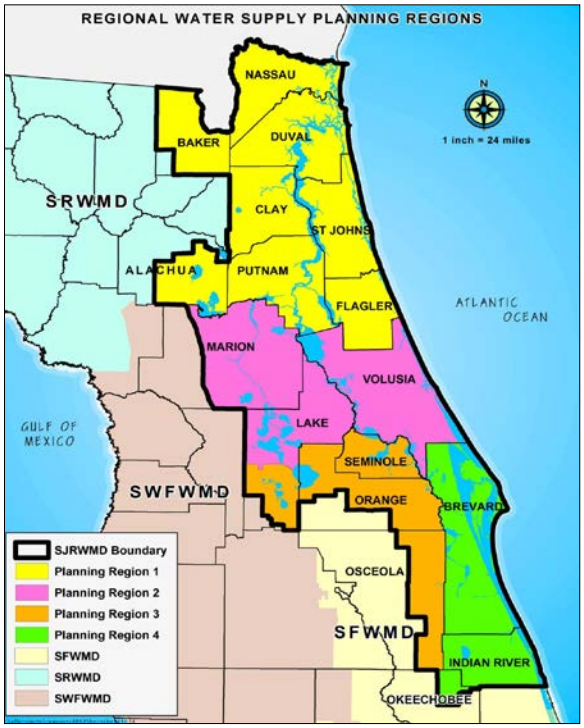
By the end of Fiscal Year 2012, over $344 million of district, sponsor, and WPSP funds had been spent on construction of 41 alternative water supply projects. These projects already have made available 51 mgd of water, and the district estimates they will produce 77 mgd by 2030. Moreover, 70 non-WPSP projects that have received district funding since Fiscal Year 2009 will produce an additional 73.9 mgd of potable water, reclaimed water, or water made available through conservation.

Most alternative water supply projects using WPSP monies are now complete. In Fiscal Year 2013, work will begin on 31 agricultural projects in the district's Facilitating Agricultural Resource Management Systems (FARMS) Program, a production-scale agricultural best management practices cost-share program that funds Upper Floridan aquifer withdrawal reduction/water conservation and water quality improvement projects. Currently, 93 operational FARMS projects have an actual groundwater offset (potable-quality water saved through the use of reclaimed water) of 14.5 mgd. Work also will continue on nine reclaimed water projects making 3.4 mgd of reclaimed water available and offsetting 2.3 mgd of potable water. In addition, work will continue on six water conservation projects that will save an estimated 0.2 mgd of potable water. The district's Fiscal Year 2013 budget for water resource development projects is about $35 million.

St. Johns River Water Management District (SJRWMD)

In 2010, water use in the SJRWMD was about 1,309 mgd. By 2030, the district expects water use to increase by almost 21 percent to about 1,580 mgd. Public water supply was the largest use sector in 2010, with a demand of about 680 mgd. Demand projections indicate public water supply will continue to be the largest use sector in 2030, with an increase of 30 percent to more than 882 mgd. During this time period, the district estimates that agricultural irrigation, the second largest water use sector, will decrease by more than 10 percent from about 371 mgd to around 332 mgd. Nevertheless, the district anticipated that agricultural irrigation will remain the second largest water use sector in 2030.

Regional Water Supply Plans



The SJRWMD has identified the need for regional water supply planning in the entire district because of a number of issues. There is a need for minimum flow and level (MFL) recovery and prevention strategies in Clay, Putnam, Brevard, Volusia, Seminole, Lake, and Orange counties. In the northern part of the district, along the border with the SRWMD, there is evidence of a decline in the Upper Floridan aquifer. In the CFWI area in the southern part of the district, groundwater withdrawals have reached, or are approaching, their sustainable limits.

In response, the district will update its district-wide water supply plan (last updated in 2009), by the end of 2013. The district's four planning regions (Figure 8) will be addressed in separate chapters of the plan. The supporting data for the overall RWSP will be updated annually, while the individual regional chapters will be updated on a staggered four-year cycle:

- Region 3, part of the CFWI, is scheduled for completion in 2013. This update involves the development of an inter-district RWSP with SWFWMD and SFWMD. See the separate CFWI section below for details on this effort.
- Region 2, which will be coordinated with SWFWMD, is under development and is scheduled for completion in 2014. The two districts also are coordinating with Marion County and the Withlacoochee Regional Water Supply Authority on expanding

SWFWMD's Northern District Groundwater Model to better understand groundwater resources in the border region.

- Region 1, part of the NFRWSP, is scheduled for completion in 2015. This update involves the development of a joint RWSP with SRWMD. See the separate NFRWSP section below for more details.
- Region 4, which will be coordinated with SFWMD, will be started in 2013 and is scheduled to be completed in 2016.

During the past year, the district worked on the North Florida Aquifer Replenishment Initiative for the area along the border with SRWMD. The districts are evaluating several options for their potential to achieve regional scale aquifer recharge. In the Clay-Putnam area, the district has facilitated a series of stakeholder meetings to develop MFL recovery and prevention strategies. In Volusia County, the district has been working with water suppliers in the region in preparation for MFL recovery/prevention strategy development. Work continues on expansion and improvement of groundwater models, feasibility studies for a variety of resource recovery strategies, as well as the joint planning efforts in the CFWI and NFRWSP.

Last year, the district also contributed funding for construction of five reclaimed water projects to reduce dependency on groundwater by 4.6 mgd. The district anticipates these projects will benefit impacted MFL water bodies by reducing groundwater withdrawals.

By the end of Fiscal Year 2012, over $1.2 billion of district, sponsor, and WPSP monies had been spent on construction of 43 alternative water supply projects. These projects already have made available almost 83 mgd of water, and the district estimates they will produce over 193 mgd by 2030.

In Fiscal Year 2013, three AWS projects remain to be completed:

- the City of Winter Springs Lake Jessup project,
- the City of Apopka and the Lake Apopka North Shore restoration project, and
- the City of Tavares wastewater expansion project.

The Coquina Coast Desalination project currently is on hold, pending identification of new financial partners in order to move the project forward. During Fiscal Year 2013, the district expects to spend $3 to $5 million on new projects.

South Florida Water Management District (SFWMD)

In 2010, water use in the SFWMD was about 3,202 mgd. By 2030, the district expects water use to increase by about 25 percent to nearly 4,004 mgd. Agricultural irrigation was the largest use sector in 2010, with a demand of more than 1,514 mgd. Demand projections indicate agricultural irrigation will continue to be the largest use sector in 2030, with a 16 percent increase to more than 1,754 mgd. During this time period, the district estimates that public water supply, the second largest water use sector, will increase by more than 30 percent from 1,165 mgd to nearly 1,519 mgd.

Regional Water Supply Plans

The district has regional water supply plans for each of its four planning regions (Figure 9). The Governing Board adopted updated regional water supply plans for the Upper East Coast in 2011 and for the Lower West Coast in 2012. Much of the work for the Lower East Coast plan update is finished, and the anticipated completion date is 2013. The district has divided the Kissimmee Basin into the CFWI area and the Lower Kissimmee Basin area, and expects water supply plans for these two areas to be completed in 2013.

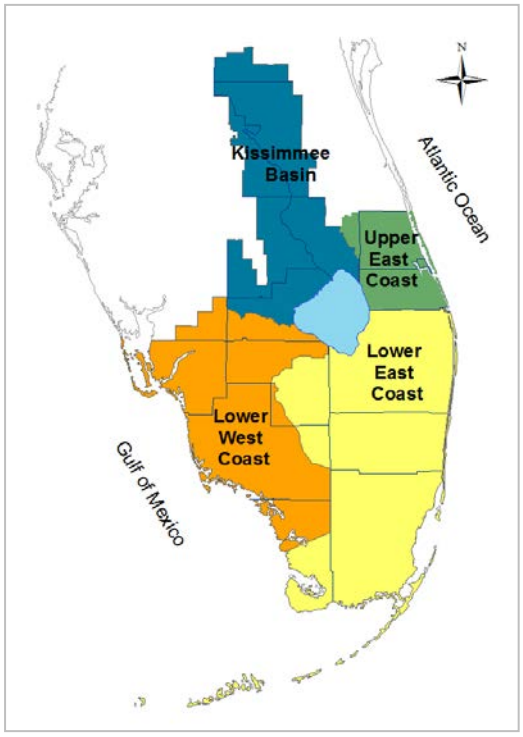


Figure 9. SFWMD Planning Regions

Water supply issues include:

- In all planning regions, there is a continuing need for additional hydrogeologic studies and groundwater models to better understand the aquifers, their areas of available fresh water, their limitations, and the effects of climate change/sea level rise.
- In several areas, increased withdrawals from the fresh ground and surface water sources generally are limited.
- The 2008 Ocean Outfall Act requires six utilities to submit detailed plans by 2013 related to meeting the wastewater treatment, management, and outfall elimination requirements that have deadlines in 2018 and 2025.
- The Lower Kissimmee Basin planning area is primarily agricultural and additional fresh water will need to be identified to meet future needs.

- There have been delays in the construction of Comprehensive Everglades Restoration Plan Projects, including Caloosahatchee River (C-43) West Basin Storage Reservoir Project.

In general, the water supply plans have concluded that the regions' needs can be met with appropriate management, diversification of water supply sources including alternative water supply development, increased water storage, and enhanced conservation. The slowed economy and growth generally have reduced immediate needs for new water. Furthermore, in the most recent water supply plans, utilities identified sufficient projects to meet 2030 demand.

During the past year, the district completed saltwater interface maps for surficial aquifers in St. Lucie, Martin, Palm Beach, Broward, Lee, and Collier counties. Staff use these maps to evaluate water use permit applications, develop regional water supply plans, determine future effects of sea-level rise, and model water movement in surficial aquifers. The district continued to work with SWFWMD and SJRWMD on the water supply plan for the CFWI area, described below. In the Kissimmee Basin, the district installed four wells into the Lower Floridan aquifer to evaluate the suitability of this aquifer as an alternative water supply source in the Central Florida area. Staff also completed the Lower West Coast Floridan Aquifer Model. In addition, the district completed technical support documents for the C-43 West Basin Storage Reservoir Reservation and the Biscayne Bay Water Reservation.

By the end of Fiscal Year 2012, SFWMD 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 2013, the district has budgeted almost $10.1 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.

Central Florida Water Initiative (CFWI)

The CFWI is a joint effort by DEP, SWFWMD, SJRWMD, SFWMD, the Florida Department of Agriculture and Consumer Services, 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 10). Historically, the Floridan aquifer system has supplied the vast majority of fresh water used in this area. The CFWI process will determine if the Floridan aquifer system is reaching its sustainable use limits and will explore the need to develop alternative water sources.

The guiding principles of the CFWI include:

- Identify the sustainable quantities of traditional groundwater sources available for water supplies that can be used without causing unacceptable harm to the water resources and associated natural systems.
- Develop strategies to meet water demands that are in excess of the sustainable yield of existing traditional groundwater sources.

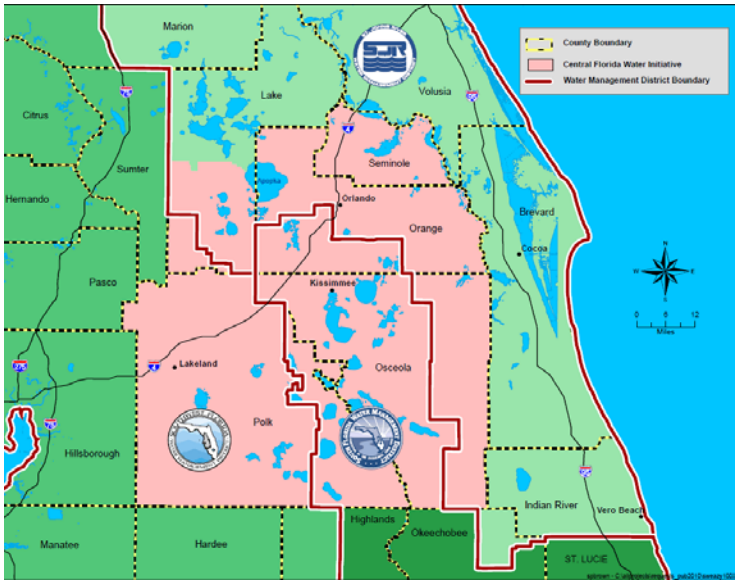


Figure 10. Central Florida Water Initiative Area

A joint regional water supply plan will be developed for the area within the CFWI. Completion of the draft RWSP is scheduled for October 2013.

North Florida Regional Water Supply Partnership (NFRWSP)

The North Florida Regional Water Supply Partnership (NFRWSP), established in 2012, 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 districts (Figure 11). Water withdrawals in both districts have contributed to a regional decline in the Upper Floridan aquifer. To address these concerns, the districts are working to:

- study the regional groundwater decline in north Florida;
- develop a shared groundwater flow model, encompassing several counties in north Florida and southeast Georgia, to assess and predict water resource impacts;
- create consistency in and coordinate the setting of MFLs; and

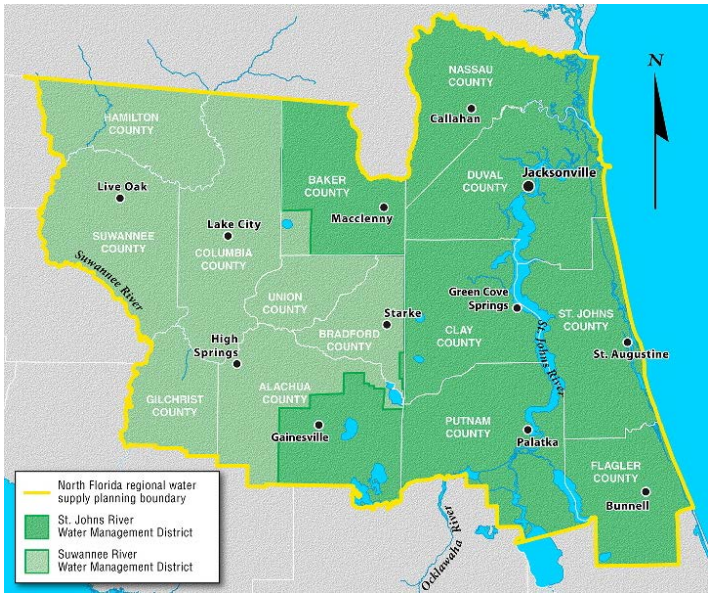


Figure 11. North Florida Regional Water Supply Partnership Area

- develop a joint regional water supply plan.

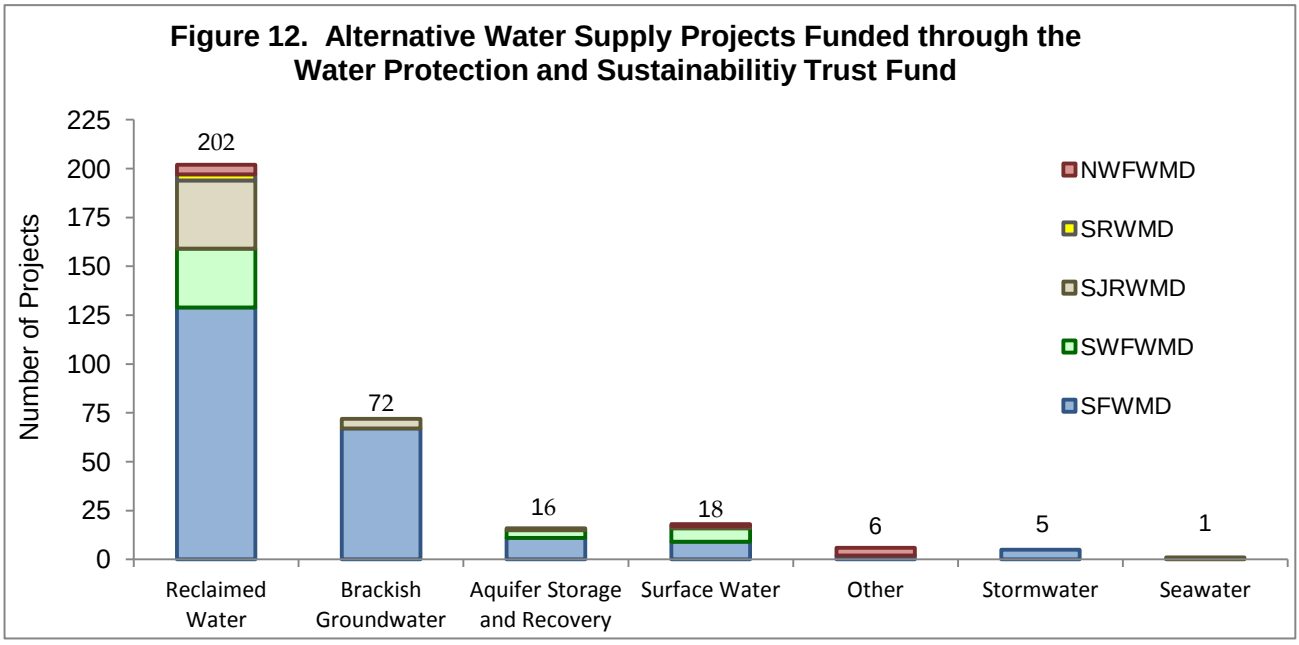
The districts have begun working on the joint regional water supply plan. They completed a draft Work Plan and a Communication Plan in 2012. In 2013, the districts are scheduled to assemble available water use and demand data, and develop demand projections from 2015 to 2035 in 5-year increments. They also will develop a consistent approach to using resource protection criteria. In addition, they will develop a water conservation component, including a methodology for determining the water conservation potential for each water use sector. Lastly, the districts will develop consistent MFL prevention and recovery strategy methodologies. The RWSP will describe those MFL strategies in general and will provide the detailed approach to be taken when developing future MFL prevention or recovery strategies. The anticipated completion date for the joint RWSP is 2015.

To provide public input on the joint RWSP, the districts have established an advisory committee of stakeholders representing various interests in both districts. The stakeholders committee will meet monthly for the duration of the RWSP development process.

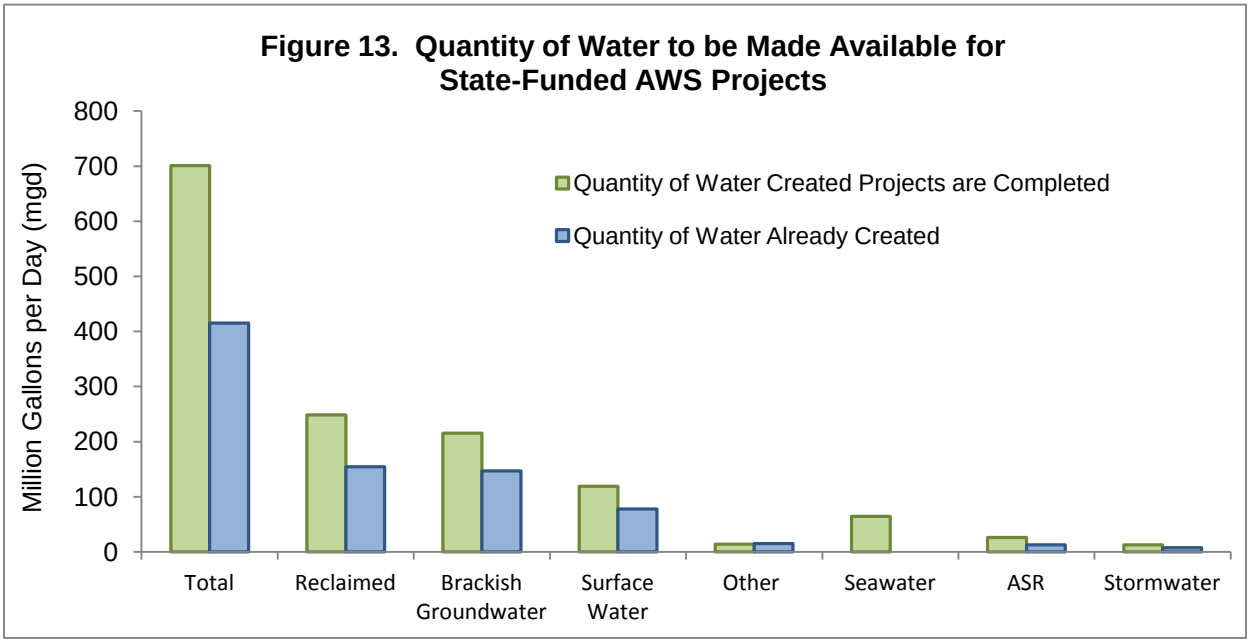
Alternative Water Supplies

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 are increasingly limited in many parts of the state. Because these sources are nearing their sustainable limits, the development of alternative water supplies, 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 will be essential to meeting future demands.

As an incentive to develop alternative water supplies, the 2005 Florida Legislature created the Water Protection and Sustainability Program 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 320 alternative water supply projects (Figure 12). Of these, reclaimed water projects have been the most numerous, making up about 63 percent of the total projects funded.

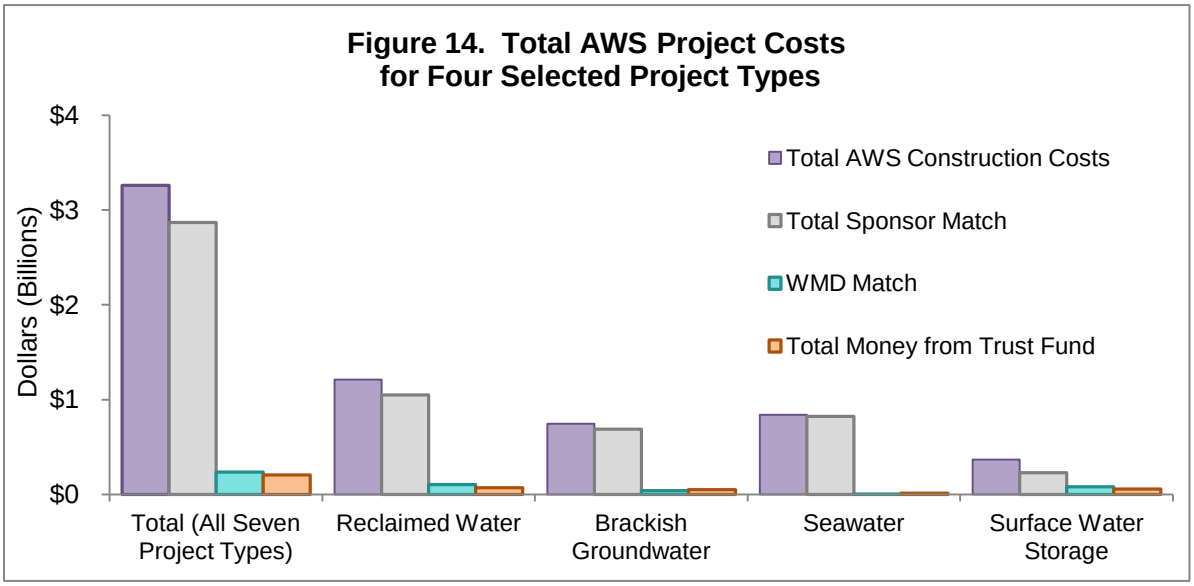


To date, funded projects already have made available approximately 416 mgd of additional water for consumptive use (Figure 13). The districts estimate that when all currently planned alternative water supply projects under this program are complete they will make available approximately 701 mgd of additional water, nearly 50 percent of the additional water needed to meet 2030 demands. Reclaimed water projects are expected to produce the largest amount of water, approximately 248 mgd, or about 17 percent of the additional water needed by 2030.



The total construction[1] costs of WPSP-funded alternative water supply projects selected for funding assistance are approximately $3.3 billion (Figure 14). The Water Protection and Sustainability Program, including funding matches contributed by the water management districts, has provided more than $439 million, or about 13 percent of the total alternative water supply construction costs. The estimated costs for reclaimed water projects are over $1.2 billion and account for approximately 37 percent of the construction costs for all alternative water supply projects.

Figure 14. Total AWS Project Costs for Four Selected Project Types



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 $2.9 billion toward construction of these projects, representing about 88 percent of the total funding. Other entities have provided the remaining small percentage of funding.

Projects funded through the WPSP 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 alternative water supplies. However, 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

[1] The total construction costs are reported for the life of the project which may have been funded before the Water Protection and Sustainability Program started. Additionally, some projects receive funds from other sources, which is why the total of sponsor match, WMD match, and Water Protection and Sustainability Program match may not equal total construction costs.

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. 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 2012, $60.3 million, or 19 percent of the program's funding, was used for alternative water supply projects.

Water Resource Development Work Programs

The regional water supply plans identify both water supply development and water resource development projects to meet the 20-year projected demands. Generally, water supply development projects, discussed previously in this report, are the primary responsibility of local water suppliers. In contrast, water resource development projects generally are the primary responsibility of the water management districts. These latter projects typically are large and focus on supporting water supply development at the regional and local level, as well as assuring the long-term availability of adequate water supplies.

Each year, after adoption their budgets, the water management districts prepare 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.

The types of water resource development projects found in the RWSPs include collection and evaluation of surface and groundwater data necessary to develop 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. Projects vary according to the needs of each region. For example, in areas where traditional sources appear to be nearing their sustainable limits, a water resource development project might focus on information gathering and model development to quantify existing source limits and to identify and quantify alternative sources for new water supply development. In areas where the limits of existing sources are known, water resource development projects might include the development of large regional reservoirs to increase available supplies, or

utility interconnects to improve regional water source reliability. In general, water resource development projects benefit a large area and multiple users, rather than a single utility.

The water resource development component of the regional water supply plan 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 the local government or other water supplier recommended to implement it.
- Identification of MFLs or MFL recovery or prevention strategies established in the RWSP, and any reservations of water adopted by rule pursuant to section 373.223(4), Florida Statutes.

Water supply development is defined in Subsection 373.019(24), Florida Statues, as the planning, design, construction, operation, and maintenance of public or private facilities for water collection, production, treatment, transmission, or distribution for sale, resale, or end use. The RWSP should include a list of water supply development project options, including traditional and alternative water supply projects, with a total capacity that exceeds the increased 2030 demand. The water supply development component of the regional water supply plan should include:

- 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 the adoption of a RWSP, the districts are required to notify local water suppliers about the 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. The water suppliers must respond within 12 months about their intentions to develop and implement the projects identified by the RWSP, or provide a list of other projects or methods to meet their future water needs (Section 373.709(8)(a), Florida Statutes). Water suppliers are not required to choose a water supply development project identified in a regional water supply plan. However, if they do select a project from a RWSP, the water supplier should have confidence that the project was screened for feasibility and has a likelihood of being permittable.

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.

References

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.

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. 2010. Florida Population Studies: Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and Its Counties, 2009-2030. University of Florida, Bureau of Economic and Business Research. 75 pp.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