Five-Year

Water Resource Development Work Program

Fiscal Year 2014-2015 Update

Proposed October 2014

Northwest Florida

Water Management District

Program Development Series 2014-01

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Table of Contents

List of Tables

List of Figures

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Introduction

The Florida Water Resources Act (Chapter 373, Florida Statutes) directs the state's five water management districts to conduct water supply planning through a two-step process that involves: (1) assessing the water supply needs and sources of each water supply planning region; and (2) developing regional water supply plans (RWSPs) for those regions where existing sources of water are considered inadequate to supply water for all existing and future reasonable-beneficial uses while sustaining water resources and natural systems over a twenty-year planning period. Regional water supply plans are governed by section 373.709, Florida Statutes (F.S.), and must include both water resource development and water supply development components, with supporting data and analysis, to exceed the projected water demands through the planning horizon.

Section 373.536(6)(a)4, F.S., requires each district to prepare a Five-Year Water Resource Development Work Program (WRDWP or Work Program) to describe the implementation strategy and funding plan for the water resource, water supply, and alternative water supply development components of each approved RWSP. In accordance with the statute, the Work Program is submitted to the Governor, the President of the Senate, the Speaker of the House of Representatives, the Secretary of the Department of Environmental Protection, the chairs of legislative committees with substantive or fiscal jurisdiction over the districts, and the governing boards of counties in which the districts have jurisdiction. The Department of Environmental Protection (DEP) then conducts a review of the Work Program, to include a "written evaluation of the program's consistency with the furtherance of the district's approved regional water supply plans, and the adequacy of proposed expenditures."

Water resource development and water supply development are complementary components of the RWSP. Water resource development projects are typically regional and broad in scope and can support development of non-traditional water sources. Water supply development projects are more localized and address water treatment, storage, and delivery to end users. In statute, water management districts are responsible largely for water resource development, while water supply development is primarily the responsibility of local governments, water supply authorities, and utilities. Despite the primary focus on water resource development, the districts do provide technical and financial assistance for water supply development.

Implementation of strategies detailed in the WRDWP will help make additional water available to meet future needs in a timely manner through the planning period. Sources of water identified include the inland Floridan aquifer, Sand-and-Gravel aquifer, reclaimed water, and surface waters. Water conservation is emphasized to improve water use efficiency and long-term water resource sustainability. It should be noted that the consumptive use permitting program also plays a major role in ensuring that water resources are available to meet future demands in a sustainable manner.

Regional Water Supply Planning in Northwest Florida

The Northwest Florida Water Management District (NWFWMD or "District") established seven water supply planning regions in 1996 (Figure 1). The initial District Water Supply Assessment (WSA) (NWFWMD 1998) evaluated the sufficiency of supplies to meet demands through 2020 and concluded that only Region II (Santa Rosa, Okaloosa, and Walton counties) required a RWSP. The primary resource concern identified in Region II is a pronounced drawdown in the coastal Floridan aquifer caused by long term pumping.

In 2006, the NWFWMD Governing Board determined that the need for planning alternative surface water development in Gulf County and resource constraints in coastal Franklin County (Region V) warranted development of a RWSP. Similarly, in 2008, the Governing Board concluded that the need for additional source redundancy and sustainability warranted development of a RWSP for Region III (Bay County).

A 2008 WSA update extended water demand projections and an evaluation of sources through 2030. The update concluded that no additional RWSPs were required and that water supply planning and implementation efforts should continue in regions II, III, and V (Coates et al. 2008).

The District again updated the WSA in 2013, projecting water demands and evaluating source sufficiency through 2035 (Countryman et al. 2014). The report showed that public supply remains the largest use category for the District, accounting for approximately 45 percent of the demand in 2010. It is expected that this will continue to hold true through the 2015-2035 planning period. The Governing Board discontinued regional water supply planning for Region V due to the completion of surface water source development in Gulf County and adequacy of water supplies in Franklin County under revised growth projections.

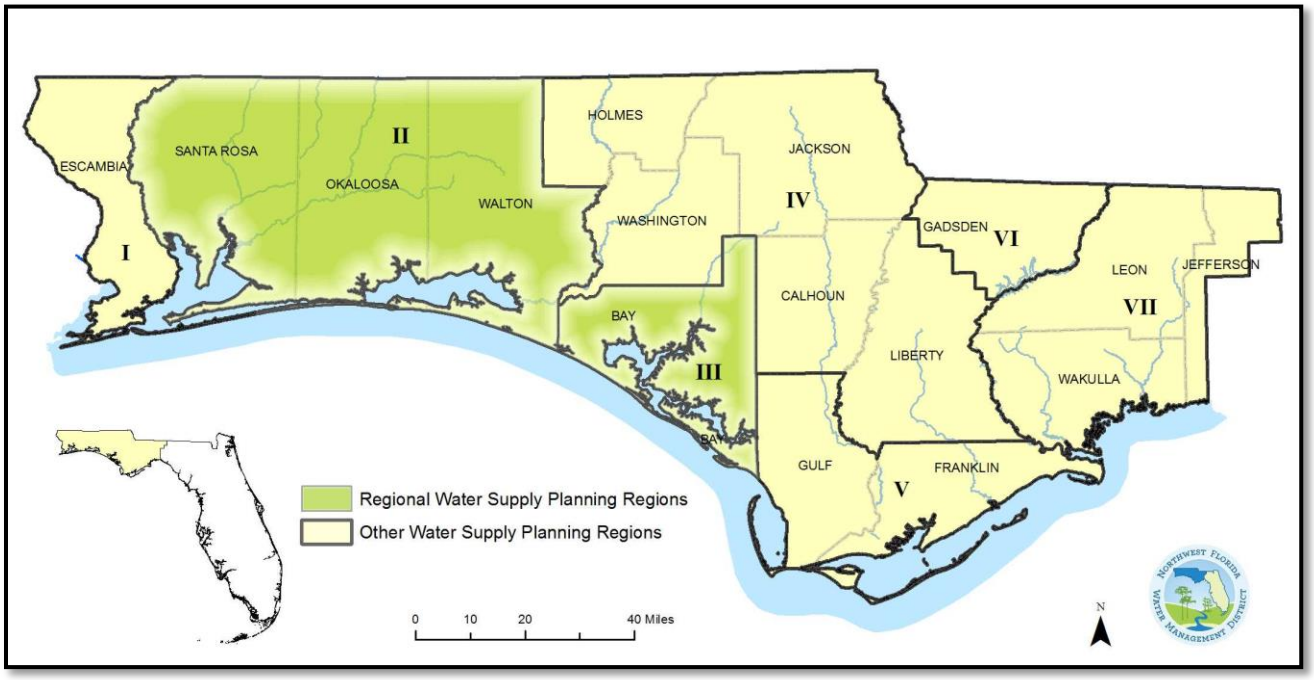

Figure 1. Water Supply Planning Regions

Changes from Previous Work Plan Report

As indicated above, regional water supply planning has been discontinued for Region V, given completion of the major alternative water supply development project within the Region V RWSP and the sufficiency of current and anticipated water sources to meet water needs through the 2035 (Countryman et al. 2014). Reflecting this, the FY 2014-2015 WRDWP no longer includes a separate section describing water resource development project implementation within Region V. The District continues to work with Region V communities to address resource needs and concerns and is continuing hydrologic data collection and analysis associated with resource monitoring and development of minimum flows and levels.

Funding for Water Resource and Supply Development

The state constitution limits the NWFWMD to 0.05 mills of *ad valorem* taxing authority, which is 1/20th of that afforded the other four water management districts. The District's fiscal year (FY) 2013-2014 tax millage rate, as set by the Governing Board, was 0.04. The budget for FY 2014-2015 includes a millage rate of 0.039. Based on taxable values provided by the 16 counties in the District, tax collections are projected to be $3,381,733 for FY 2014-2015. With a recurring operating budget of $16,103,937, the Northwest Florida Water Management District must rely on state and other revenue sources to conduct many of its programs. Among those the District looks to for water supply planning and water resource development are the following:

- Water Management Lands Trust Fund;
- Legislative special appropriations;
- District General Fund;
- Federal grants;
- Water Protection and Sustainability Program Trust Fund;
- Florida Forever; and
- Local government and water supply utility cost sharing.

Water resource development in northwest Florida has depended primarily on funding from the Water Management Lands Trust Fund (WMLTF). To the extent possible, the District applies limited *ad valorem* funding to augment state appropriations for basic water supply planning functions. Because *ad valorem* funding is inadequate to support implementation of major water resource and supply development projects and initiatives, the District also applies available encumbered funds and reserves for priority projects.

The Water Protection and Sustainability Program Trust Fund (WPSPTF), established by the 2005 Legislature, enabled the District to provide cost-share assistance for construction of alternative water supply development projects and priority water resource development and springs protection activities. Projects funded under the WPSPTF are listed in Appendix A. No funding has been appropriated for the WPSPTF since FY 2009-2010.

The Florida Forever Trust Fund has supported acquisition of lands throughout northwest Florida that provide critical water resource functions, including water quality protection and aquifer recharge. Additionally, Florida Forever has been a potential source of construction funding for reclaimed water storage facilities. Florida Forever, however, has not had significant appropriations since FY 2010-2011.

Local government and utility funding participation is especially important for several types of water resource development projects, notably including reuse of reclaimed water, water conservation, and aquifer storage and recovery. All projects require substantial local investment once they reach the water supply development stage.

In FY 2013-2014, the District approved $10 million from reserve funds for water supply development assistance grants across northwest Florida. The District expects to extend the grant program another year with approximately $15 million of new and carryover reserve funds dedicated to water supply development assistance during FY 2014-2015. This represents approximately 74% of the reserve funds within the District's FY 2014-2015 budget.

Funding budgeted for water resource development is listed below in summary tables for regions II and III (tables 2 and 5, respectively). The proposed water resource development funding for FY 2014-2015 is $2,481,500. The anticipated five year water resource development implementation cost through FY 2018-2019 is $7,203,700.

Region II: Santa Rosa, Okaloosa, and Walton Counties

Since the 1940s, Santa Rosa, Okaloosa, and Walton counties (Figure 2) have been characterized by significant growth in water demands within coastal portions of the region. Long-term pumping of the coastal Floridan aquifer caused formation of a substantial cone of depression, creating a risk of significant salt water intrusion and damage to public supply wells. Resource regulation and water supply planning and development over the past two decades have focused on reducing coastal withdrawals, constraining coastal demand, and developing inland water supply sources as alternatives to coastal groundwater.

Chapter 40A-2, Florida Administrative Code (F.A.C.), established the coastal Water Resource Caution Area (WRCA) across the southern reach of all three counties (Figure 2). Within the coastal WRCA, regulatory approaches to resource sustainability are applied, including stringent conservation and reporting requirements and the prohibition of new allocations of coastal Floridan aquifer water for non-potable uses.

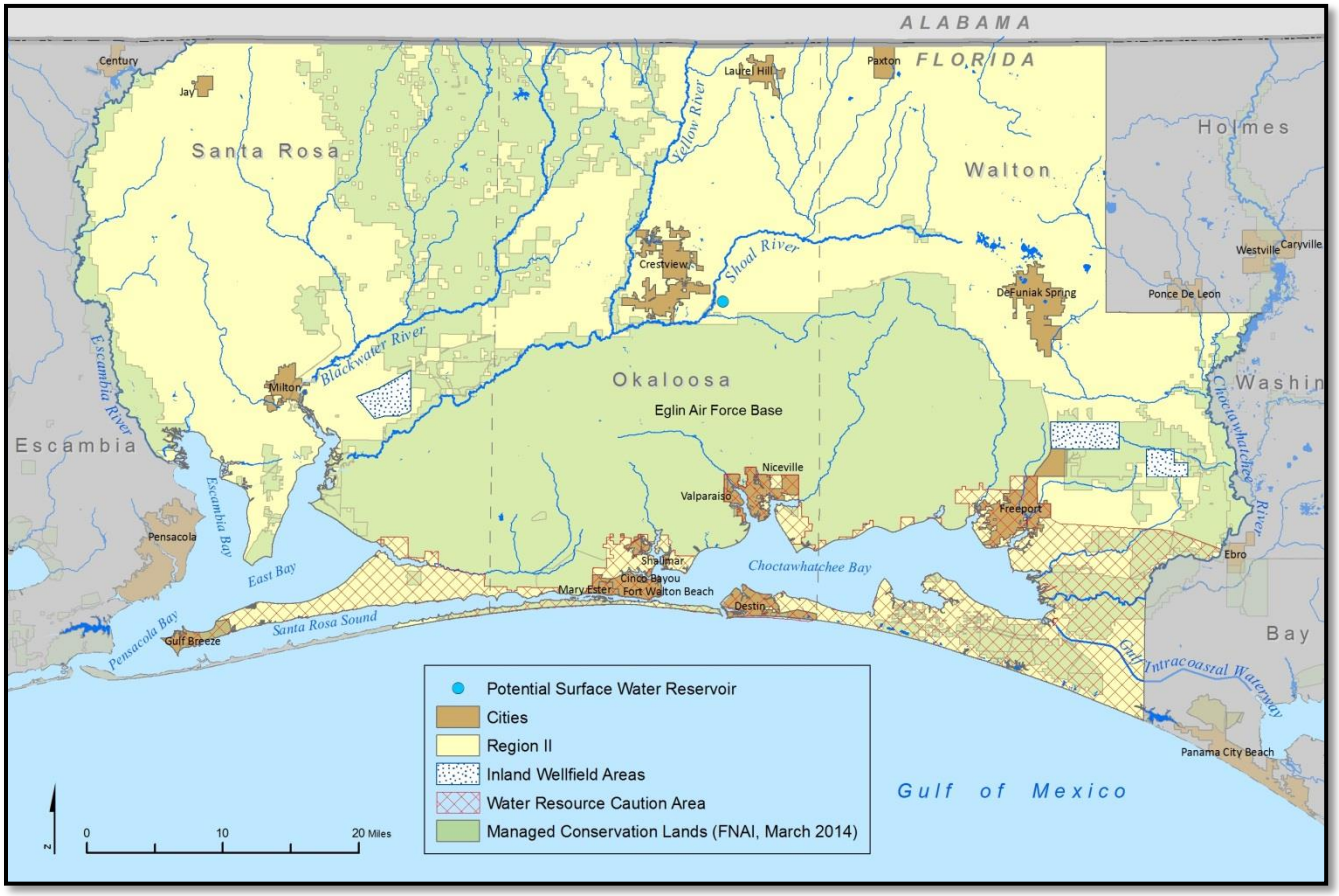

Figure 2. Water Supply Planning Region II

The District's first RWSP was approved by the Governing Board for Region II in February 2001 (Bartel et al. 2001). The Region II RWSP described the region's water supply needs, identified traditional and alternative water sources, and analyzed the ability of these sources to meet future demands to 2020. Updates to the plan were approved in 2006 (NWFWMD 2006) and again in 2012 (Busen and Bartel 2012). In the process, water resource and water supply development components have been revised, progress on project implementation was described, and water demands were projected to 2030. According to the 2013 WSA Update, public supply accounted for approximately 46 million gallons per day (MGD), or 62 percent of 2010 water use in Region II, with recreational water use comprising an additional 14 MGD, or nearly 19 percent (Countryman et al. 2014). It is expected that

public supply demand within the region will continue to increase through the planning horizon, though its relative proportion of water use will decline slightly.

Region II Water Resource Development

The Region II RWSP includes ten water resource development projects encompassing strategies for developing water resources in support of alternative water supply development. These are summarized in Table 1. Descriptions of the strategies and their current progress follow. The quantities of water identified in the table indicate preliminary figures based on regional scale model simulations of groundwater systems, as well as regional planning objectives and application of literature-based factors for reuse and water conservation. The amounts will be refined upon completion of the identified activity.

Table 1. Region II Water Resource Development Projects

Project	Activity	Water Identified (MGD)
Floridan Aquifer Sustainability Modeling	Development and application of a regional groundwater flow model and salt water intrusion models to identify regional availability from the coastal Floridan aquifer.	30
Inland Sand-and-Gravel Aquifer Development and Sustainability	Development and application of a three-dimensional, transient groundwater flow model.	18
Development of Surface Water Sources	Identification and development of feasible surface water sources and optimal facilities.	25
Aquifer Storage and Recovery Feasibility	Development of aquifer storage and recovery systems, primarily to support the reuse of reclaimed water.	2
Water Reuse Coordination	Assistance in the development of reclaimed water to offset and conserve potable water resources.	5
Water Conservation Coordination	Assistance to local governments and utilities in the conservation of potable water resources.	3
Regional Water Supply Planning	Development and implementation of regional water supply plans.	N/A
Interconnection of Water Supply Conveyance Systems	Interconnection of coastal utility infrastructure to enhance the resilience of the coastal water systems.	N/A
Hydrologic Data Collection and Analysis	Collection and analysis of surface and groundwater data throughout the region.	N/A
Abandoned Well Plugging	Assistance to local governments and utilities in the plugging of abandoned wells.	N/A

Floridan Aquifer Sustainability

Limiting further salt water intrusion into the coastal Floridan aquifer and sustaining the aquifer as a viable water supply source is a primary focus of the Region II RWSP. Models of the Floridan aquifer were previously developed to include a western domain encompassing Santa Rosa and western Okaloosa counties and an eastern domain that includes eastern Okaloosa and Walton counties. The model has been used to evaluate alternative withdrawal scenarios from the coastal Florian aquifer.

Model simulations were made to predict the extent of salt water intrusion through 2100 for the eastern and western model domains. Results indicate that salt water intrusion into potable portions of the Floridan aquifer continue to occur at a slow rate (HydroGeoLogic, Inc., 2007b, HydroGeoLogic, Inc. and Hazlett-Kincaid, Inc. 2007). Principal pathways of saline water intrusion identified include lateral intrusion within the upper Floridan aquifer from beneath the Gulf of Mexico, lateral intrusion from the lower to the upper Floridan aquifer around the edge of the Bucatunna Clay confining unit, intrusion of saline waters where the Bucatunna Clay confining unit is absent (easternmost Choctawhatchee Bay area), and downward vertical leakage through the Intermediate System.

The District plans to refine its groundwater models during the next few years to incorporate newer data and information and updated water demand projections. The new models are anticipated to be used to evaluate future withdrawal scenarios as part of the RWSP update due in 2017. The models will also enable analysis of drawdown effects of increased pumping of the Floridan aquifer in inland areas.

Inland Sand-and-Gravel Aquifer Development and Sustainability

Due to its high recharge rate, the inland Sand-and-Gravel aquifer in Region II is capable of providing regionally-significant quantities of water. A three-dimensional, transient groundwater flow model has been developed for a portion of the Sand-and-Gravel aquifer. The study area for this effort lies between the Blackwater and Yellow Rivers in Santa Rosa and Okaloosa counties. The model includes the transient response of the aquifer to drought and climatic variability. Considerable data were gathered, which involved constructing project-specific monitoring wells, determining aquifer hydraulic properties, mapping aquifer unit thicknesses, and measuring groundwater levels and stream discharge. The groundwater flow model was subsequently developed and calibrated.

Development of an inland Sand-and-Gravel aquifer wellfield was initiated in 1999 within the Santa Rosa County portion of the study area. Prior to the development of the wellfield, approximately 1.0 MGD were being withdrawn from the area for public supply. A pipeline from the inland Sand-and-Gravel aquifer wellfield to the coastal area was completed in late 2003. Since then, public supply water withdrawals from the wellfield and vicinity have increased to 5.6 MGD in 2013. Water from the wellfield is being conveyed south to alleviate pumping demand from the Floridan aquifer along the coast.

Previous District evaluations indicate that total groundwater production of up to 18 MGD, inclusive of current withdrawals, may be available from the Sand-and-Gravel aquifer. The ability of the aquifer to sustain a production of 18 MGD and avoid or minimize impacts to natural resources will depend on the management of withdrawals. Withdrawals can be managed by the proper placement of wells, variable pumping scenarios, and limiting drawdown in wells. Applicants may be required to assess potential local-scale drawdown impacts associated with a proposed well distribution and pumping schedule, prior to obtaining or modifying an Individual Water Use Permit.

Preliminary mapping of the extent and quality of wetlands in the study area has been completed. Further investigation is needed to verify wetland quality and assess potential impacts to seepage wetlands and streams sourced by Sand-and-Gravel aquifer groundwater. The District has completed development of backwater models of the Yellow and Blackwater rivers, which are useful for accurately delineating floodplains of these rivers. In 2012-2013, the District provided technical assistance to Santa Rosa County in its wellfield protection efforts by using the existing inland Sand-and-Gravel aquifer groundwater flow model to delineate capture zones for wells in the wellfield area. Based on the capture zone analysis, Santa Rosa County expanded its wellfield protection ordinance to include additional public supply wells and aquifer recharge areas. Additional application and assessment, including evaluation of potential wetland effects from future withdrawals, may also be needed.

Development of Surface Water Sources

In 2006, the District and its water supply consultants prepared an analysis of potential surface water supply sources in Okaloosa County, presented in the report "Conceptual Alternative Water Supply Development Projects and Planning Level Cost Estimates" (PBS&J 2006). This study reviewed the technical and economic feasibility of several alternatives, including direct river withdrawal and riverbank filtration. The District also concurrently reviewed an evaluation of a proposed Yellow River Reservoir and concluded that the proposal was not economically feasible and that its implementation would cause significant environmental impacts and mitigation requirements. Okaloosa County is continuing to evaluate surface waters in the Yellow and Shoal rivers basins as potential future water supply sources. Potential facilities may include direct withdrawal and treatment systems, as well as offline reservoir or other storage facilities.

Aquifer Storage and Recovery Feasibility

Aquifer storage and recovery (ASR), depending on the particular hydrogeologic and economic considerations of an area, has the potential to support storage of large quantities of water more effectively and at a lower cost than above-ground storage. Aquifer storage and recovery systems, with a single exception, have not been developed, within Region II due to hydrogeologic conditions, economic feasibility, the need for water quality evaluations, and other technical constraints. Destin Water Users has recently developed an ASR system for storage of reclaimed water in the Sand-and-Gravel aquifer. The system's seven wells are permitted for a total of 2.125 MGD annual average daily flow capacity. This reclaimed water is available to meet irrigation demands, helping to conserve potable water resources.

The use of ASR in the future for storage of reclaimed water or perhaps as a salinity barrier may require a regional approach, since water introduced into a geologic formation could affect the groundwater beneath jurisdictions or service areas of multiple utilities. In coordination with evaluations of surface water supply and reclaimed water alternatives, and if additional funding becomes available, the District may conduct preliminary groundwater model analyses of the feasibility of additional ASR activities within Region II. A cooperative approach between utilities, the District, and DEP will be sought for any project development.

Water Reuse Coordination

As of 2013, 25 reuse applications associated with 11 reuse systems in Region II were permitted for public access reclaimed water, producing an estimated 9.1 MGD for public access reuse (DEP 2013). These facilities supported landscape irrigation for approximately 2,341 residences, 19 golf courses, 13 parks, five schools, and two cooling towers.

In response to regulatory and cooperative planning efforts, significant investments in reuse have been made in the region, particularly for golf course irrigation in coastal areas. Most of the wastewater utilities serving coastal Santa Rosa, Okaloosa, and Walton counties provide some public access reuse water that offsets potable demand. Past District funding assistance has helped provide for construction of new reuse facilities near the City of Freeport and in north-central Okaloosa County. A District-wide grant program initiated in FY 2013-2014, the Water Supply Development Community Assistance Initiative, funded three reuse projects. In Okaloosa County, the City of Niceville received $144,000 for a Highway 285 reclaimed water main upgrade to increase line capacity. In Santa Rosa County, the City of Gulf Breeze was awarded $345,500 to fund a reclaimed water elevated storage tank for the South Santa Rosa Utility System, and Pace Water System, Inc., was awarded $160,000 for a reclaimed water extension to the Santa Rosa Soccer and Horse Complex. Each of these utilities is matching District grant funds. This grant program is anticipated to continue in FY 2014-2015, with reuse projects eligible for funding.

The Region II RWSP previously identified approximately 5 MGD of new beneficial reuse to offset demands on the coastal Floridan aquifer within Region II. There appears to be considerable opportunity to expand the use of reclaimed water to meet non-potable water needs.

The District is developing a reuse evaluation for northwest Florida that details facility characteristics, issues of concern, and priorities for expanding water reclamation and reuse. Assisting utilities and local governments in developing beneficial reuse projects will remain a priority, with implementation depending on funding availability. Future project emphasis will be focused on opportunities that reduce demand for potable water and provide environmental benefit.

Water Conservation Coordination

A significant effort at water conservation has been underway in Region II for some time, substantially due to regulatory requirements and incentives established within the coastal WRCA. As a result, the potential for additional potable water conservation within the coastal portion of the region was thought to be relatively low (estimated previously at 2.5 MGD) (PBS&J 2000a). Water conservation remains a priority, however, so as to build upon current water use efficiency and further enhance resource sustainability. In support of this, an updated evaluation of water conservation potential is under development. This includes a review of existing programs in the region as well as identification of potential water savings achievable from additional water conservation measures. The Conserve Florida Water EZ Guide tool is being utilized to identify cost effective water conservation options and quantify water conservation potential in Region II.

Under Chapter 40A-2, F.A.C., new withdrawals from the Floridan aquifer for non-potable uses are generally not permitted within the coastal WRCA. Additionally, in response to resource limitations, cooperative planning, and regulatory requirements and incentives, numerous utilities implement water conservation measures that include inclining block rates, conservation plans, and the reuse of reclaimed water. Goals for utility conservation measures for withdrawals proposed within the WRCA include reducing the annual average residential per capita water consumption to 110 gallons per day or lower and reducing water leakage to 10 percent or less of the water withdrawn. Utilities withdrawing an average of over 100,000 gallons per day are required to report withdrawals annually, and requirements to report residential per capita values are being phased in. Most utilities in Region II reporting these values are achieving the 110 residential gallons per capita per day (gpcd) goal.

In cooperation with other water management districts, the District participated in the statewide study of the effects of water rate pricing structures on public supply water demand (Whitcomb 2005). This report is available on the District's website (see References section below).

In FY 2013-2014, the District made a significant information technology investment, including a redesigned website. There is now a conservation page to provide easy-to-access water conservation tools and educational materials for utilities, residents and other water users. Budgeted funding is not specific to regions or projects. Staff members continue to promote water conservation education and awareness through the website and through such activities as distribution of water conservation brochures and information and facilitating the Water Conservation Hotel and Motel Program (Water CHAMP) to reduce washing of linens and towels at participating lodging facilities.

Water conservation projects that achieve quantifiable water savings are eligible for grant funding under the District's FY 2014-2015 Water Supply Development Community Assistance Initiative grant program (www.nwfwater.com/water-resources/wsp/grants/).

Regional Water Supply Planning

Development and refinement of regional strategies, project planning and development, and RWSP updates are essential components of water resource development. Related activities include technical support and coordination with local governments and utilities to ensure a regional focus in the planning and development of alternative water supply projects. Associated administrative activities include project and funding management, coordination with DEP and other agencies, and progress reporting.

The District provides assistance with hydrogeology and related technical evaluations for development of new and alternative water sources, including the inland Floridan aquifer, the Sand-and-Gravel aquifer, surface water, and reclaimed water. The District has also assisted local governments and utilities in development of water transmission facilities extending from inland wellfields to the coastal WRCA. District staff also works with local governments and state and regional agencies to better coordinate land use and water supply planning. The District previously distributed guidelines and provided technical assistance to local governments for preparing water supply comprehensive plan amendments and water supply facilities work plans.

In FY 2013-2014, substantial staff resources were devoted to completion of a District-wide WSA update. A major component of the update included an updated source assessment, as well as revised water demand projections, for Region II. District staff also reviewed the first Florida Statewide Agricultural Irrigation Demand (FSAID) study, developed by the Florida Department of Agriculture and Consumer Services (DACS), and provided additional planning and technical assistance for future updates. Additionally during FY 2013-2014, District staff worked cooperatively with DEP staff to evaluate the status of the coastal WRCA and to enhance coordination of reuse planning between District staff and wastewater permitting staff.

Seven of 24 water supply development grants were awarded to Region II public supply utilities as part of a new water supply development grant program for the District. Okaloosa County received $1.25 million for a new elevated water tank for their Mid-County water system, and grants were awarded for reuse projects in Okaloosa and Santa Rosa counties. The grant program is discussed further under District-wide Initiatives and in Appendix A.

Interconnection of Water Supply Conveyance Systems

The Coastal Water Systems Interconnection Project is a District initiative focused on increasing water supply reliability in coastal communities. The goal of the initiative is to enhance the resilience of the coastal water systems by enabling transfer of water between utilities should the need arise due to droughts or other contingencies. Multi-jurisdictional and regional water conveyance systems will better ensure water availability for emergency response and disaster recovery in the event of water shortages, natural disasters, environmental emergencies, or system failures. This is a cooperative effort with local utilities.

A comprehensive Basis of Design Report (BODR) was completed in FY 2013-2014 to evaluate potential interconnections that would serve multiple utilities. Existing interconnections were also evaluated to determine their capacity and ability to meet emergency needs of interconnected utilities. The evaluation was conducted for current and future conditions (2030) and assessed emergency production capacities and demands. The evaluation identified two priority major interconnections that would significantly enhance emergency water supplies for coastal communities. An interconnection between southern Walton and Bay counties would improve water system reliability for Bay County Utilities and Regional Utilities in Walton County. A second interconnection between the Fairpoint Regional Utility System in Santa Rosa County and the Okaloosa County West water system would enhance reliability in coastal Santa Rosa and Okaloosa counties.

Participating local governments and utilities will own, operate, and maintain any constructed interconnection pipelines and associated facilities. Implementation would require negotiation of cooperative agreements between utilities to provide for funding, engineering specifications, and operational requirements.

Hydrologic Data Collection and Analysis

The District has a data collection network of rainfall gauges, stream gauges, and monitoring wells throughout Region II. Groundwater and surface water monitoring capabilities have been enhanced by continuing cooperation with the U.S. Geological Survey surface water gauging network and developing an expanded monitoring network for the Sand-and-Gravel and Floridan aquifers where new water sources have been developed or are planned. In addition, the District continues to monitor conditions within the coastal WRCA for salt water intrusion and aquifer sustainability. This monitoring is essential for ensuring the success of long-term water supply initiatives, as well as for refining groundwater models and analyses to support future management decisions.

Increased expenditures over the previous fiscal year reflect continued expansion of water resource monitoring in Region II to support resource evaluations and development of improved modeling tools for both planning and consumptive use permitting. During the year, additional water level, water quality, and rainfall stations were established. In 2014, the District added ten wells to its quarterly level monitoring network and performed a detailed round of groundwater level measurements in the Fairpoint Regional Utility System (FRUS) wellfield area. Over the long-term, it is also expected that this expanded monitoring will also help support establishment of minimum flows and levels (MFLs). Additionally during FY 2013-2014, a salt water intrusion monitoring well in Navarre Beach was rehabilitated.

Abandoned Well Plugging

The District's resource regulation program includes an active effort to plug abandoned artesian wells. The overall goal of the program is to protect available groundwater resources from aging, uncontrolled, or improperly constructed wells that are no longer in use. The District achieves proper abandonment of such wells through two methods: requiring contractors to plug abandoned wells found on site during new well construction or initiating a well abandonment contract with a well owner or local government.

The District provides technical assistance and funding to utilities for plugging abandoned wells identified as having the potential to adversely affect groundwater quality. Well abandonment is an ongoing effort and is likely to continue as more wells are identified for plugging in the future. The District will continue to implement this project through regulatory programs, where feasible. This project supports District efforts to sustain coastal water supply sources. To date, the District has facilitated the plugging of 5,029 abandoned wells within Region II, approximately 185 of which were plugged in FY 2013-2014.

Funding Summary: Region II Water Resource Development Projects

Table 2 displays past year expenditures, current year budget, and anticipated future expenditures for water resource development within Region II.

Table 2. 2015-2019 Region II WRDWP Project Funding

Water Resource Development Projects	FY 13-14 Expenditures[1]	Anticipated Five Year Work Program					FY15-FY19 Cost Estimate
		FY 14-15 Budget[2]	FY 15-16	FY 16-17	FY 17-18	FY 18-19	
Floridan Aquifer Sustainability	$12,738	$360,300	$130,000	$130,000	TBD	TBD	≥$620,300
Inland Sand-and-Gravel Aquifer	$1,415	$19,000	TBD	TBD	TBD	TBD	≥$19,000
Surface Water Sources	$0	$0	TBD	TBD	TBD	TBD	$0
Aquifer Storage and Recovery	$0	$0	$0	$0	$0	$0	$0
Water Reuse	$18,190	$22,100	$15,000	$15,000	$15,000	$15,000	$82,100
Water Conservation	$9,692	$10,000	$5,000	$5,000	$5,000	$5,000	$30,000
Regional Water Supply Planning	$38,767	$19,900	$20,000	$40,000	$30,000	$20,000	$129,900
Interconnect	$2,186	$0	$0	$0	$0	$0	$0
Hydrologic Data	$119,492	$117,900	$90,000	$90,000	$90,000	$90,000	$477,900
Abandoned Well Plugging[3]	$7,715	$0	$0	$0	$0	$0	$0
TOTAL	$210,194	$549,200	$260,000	$280,000	$140,000	$130,000	$1,359,200

[1]Preliminary figures; final costs will be provided in the March 1, 2015, Consolidated Annual Report.
[2]FY 2015 figures based on adopted budget.
[3]Funding in future years will be budgeted as assistance needs are identified.

The budget for FY 2014-2015 reflects an increase in anticipated spending as compared to that presented in the previous WRDWP. This substantially reflects a planned effort to develop an improved groundwater flow model to support water supply planning, water resource development, and consumptive use permitting in Region II. The modeling will principally address the Floridan aquifer, but may also be integrated with a Sand and Gravel aquifer model. Additionally, the planned budget provides for an increased level of effort for water reuse and water conservation, addressing both ongoing District priorities as well as support for the statewide reuse planning effort. A focused effort to develop an enhanced hydrologic monitoring network will also continue, as described above.

Region II Water Supply Development

Water supply development strategies of the Region II RWSP, including preferred alternative water supply development projects, are listed in Table 3.

Table 3. Region II Water Supply Development Projects

Project	Activity	Estimated Cost	Estimated Water Available (MGD)
Inland Floridan Aquifer Alternative Water Supply	Development of the inland Floridan Aquifer wellfield and transmission infrastructure to bring inland groundwater to serve coastal utilities in Walton and Okaloosa counties.	$48,100,268	15[1]
Inland Sand and Gravel Aquifer Alternative Water Supply	Development of the Inland Sand and Gravel Aquifer wellfield and associated infrastructure to bring inland groundwater to serve coastal utilities in Santa Rosa County.	$9,588,500	18[2]
Surface Water Supply Development	Development of alternative surface water supply source, storage system, conveyance, and conjunctive use.	TBD	TBD[3]
Water Reuse Facilities	Assist utilities and local governments in the development of reclaimed water to achieve potable water offset.	TBD	5
Water Supply Management Projects	Development of conveyance and interconnection facilities, facilitating development of alternative water supplies.	$41,200,000	N/A

[1] Represents new inland wellfield pumping capacity; total pumping capacity approximately 28 MGD.

[2] Represents total estimated capacity of the inland wellfield region. Approximately 8 MGD currently permitted.

[3] Okaloosa County pursuing development of specific project options

Major water supply development projects completed to date have included construction of inland groundwater wells and associated facilities serving coastal utilities in all three counties. These include the inland Sand and Gravel aquifer wellfield in Santa Rosa County, inland Floridan aquifer wells and transmission facilities in Okaloosa County, and inland Floridan aquifer wellfield and transmission facilities in Walton County. Recently, WRP, Inc. completed a 15-mile potable water transmission pipeline from an inland wellfield in Walton County, south across Choctawhatchee Bay to serve coastal service areas in Walton and Okaloosa counties. Additionally, Regional Utilities of Walton County constructed over five miles of water transmission pipeline along the U.S. Highway 98 corridor. This pipeline also conveys inland groundwater to meet coastal demand.

To date, Region II water supply development projects have made approximately 21 MGD of water available, including 13 MGD from the inland Floridan aquifer and eight MGD from the inland Sand and Gravel aquifer. Additional water is expected to be available for future needs, including from the inland Sand and Gravel aquifer, surface water, and reclaimed water. These water supplies, together with traditional water supply sources, are anticipated to be sufficient to meet demands through 2030 under both normal and 1-in-10 year drought conditions. Additionally, through the District's competitive grant program for water supply development, funding was awarded for six projects in Region II during FY 2013-2014, increasing reuse storage and transmission capacity and improving the reliability and capacity of potable water supply systems (Appendix A, Table 8).

Region III: Bay County

The RWSP for Region III (Figure 3) was developed initially in 2008 and updated in 2013 (NWFWMD 2008; Brooks et al. 2014). The plan describes concerns about the long-term sustainability of water supply resources within the region and presents strategies to increase source reliability and minimize vulnerability of Deer Point Lake Reservoir, the region's primary public supply source, to a major hurricane storm surge. Pursuant to the RWSP, the NWFWMD provided over $5 million in grant funding to Bay County for a $23 million project to develop an alternate intake at the lower end of Econfina Creek, the primary tributary for the reservoir. The location of new facility will minimize vulnerability to storm surge impacts.

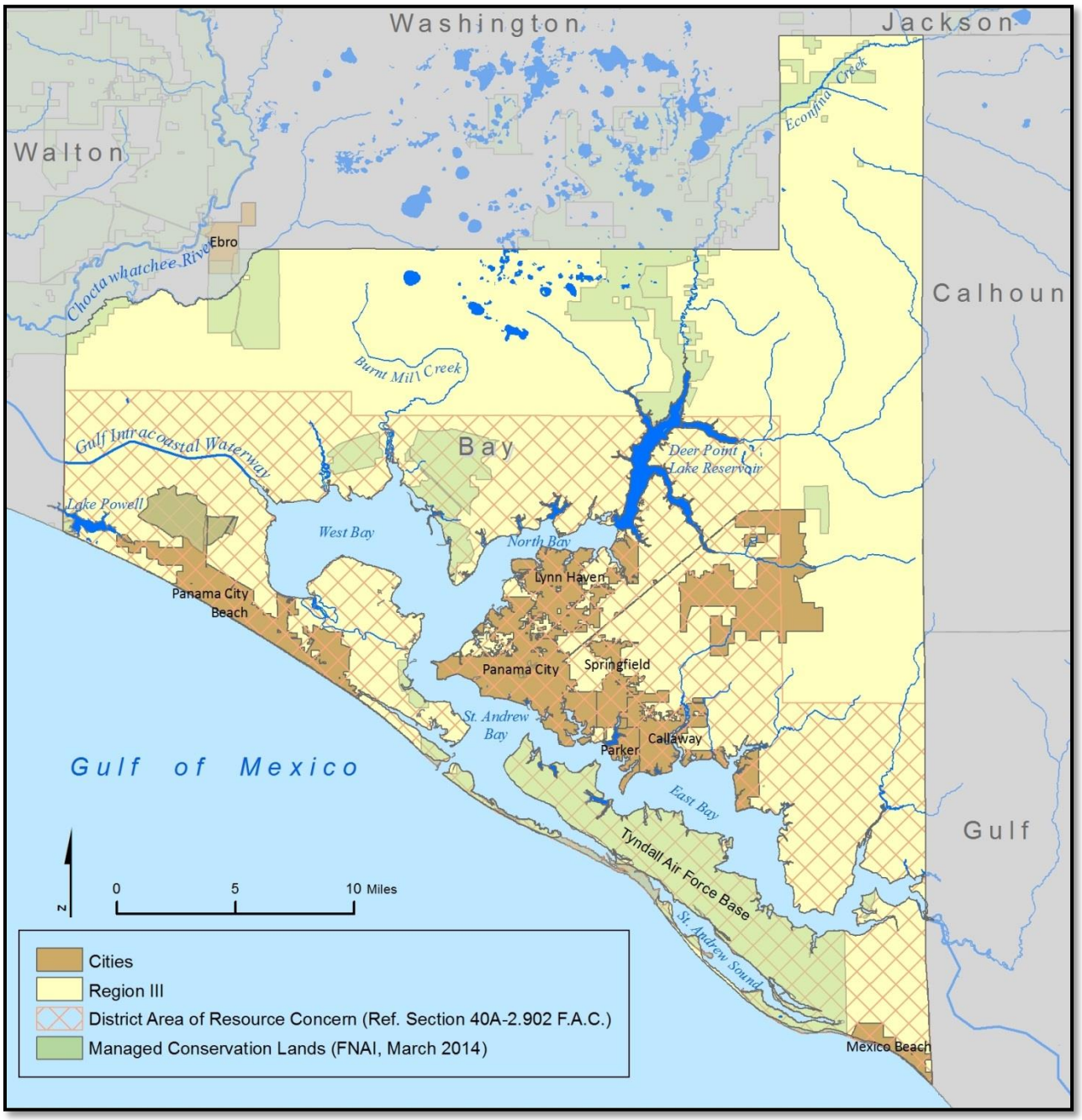

Figure 3. Water Supply Planning Region III

The 2013 WSA Update showed that public supply and industrial-commercial-institutional (ICI) water use together comprised approximately 72 percent of the water use in 2010, accounting for 38 percent and 34 percent of use respectively (Countryman el al. 2014). The report concluded that existing and reasonably anticipated surface water supplies are adequate to meet projected regional demands through 2035, although the reservoir remains vulnerable to salt water intrusion from storm surge associated with tropical storm events (Countryman et al. 2014).

Region III Water Resource Development

The Region III RWSP update includes five water resource development strategies. These are summarized in Table 4. Descriptions of the strategies and progress to date follows.

Table 4. Region III Water Resource Development Projects

Project	Activity	Water Identified (MGD)
Econfina Creek and Groundwater Recharge Area Protection	Land protection and management of the Econfina Creek WMA, a regionally significant groundwater recharge area.	N/A
Hydrologic and Water Quality Data Collection and Analysis	Hydrologic data collection, monitoring, analysis, and modeling to identify baseline conditions and trends, evaluate current and potential water supply sources, and sustainably manage withdrawals.	N/A
Water Reuse Funding and Technical Assistance	Assistance to local governments and utilities in developing reclaimed water uses to extend potable water supplies and improve water quality of St. Andrew Bay.	5
Water Conservation Funding and Technical Assistance	Assistance to local governments and utilities in enhancing water conservation and efficiency efforts.	TBD
Regional Water Supply Planning, Coordination, and Technical Assistance	Technical assistance, support for utility interconnections, and development and update of the regional water supply plan.	NA

The water resource development project that best lends itself to additional water being made available is Water Reuse Funding and Technical Assistance. Reuse of reclaimed water is implemented by local governments and utilities. The District, however, can lend technical, planning, and potentially financial assistance.

Econfina Creek and Groundwater Recharge Area Protection

This project continues land protection and management of a regionally significant groundwater recharge area, the Econfina Creek Water Management Area (WMA). The District manages over 43,000 acres in the WMA to protect water and related resources while also providing public access and a resource for compatible public use and recreation. Land management activities include habitat enhancement and restoration, as well as development and maintenance of public access facilities. Additional acquisitions of inholdings and additions may be planned in the future depending on funding availability. These activities are funded and accomplished through the District's Land Management and Acquisition program.

Hydrologic and Water Quality Data Collection and Analysis

This project provides the water resource data collection, analysis, and modeling needed for characterizing conditions and evaluating current and potential water supply sources. The project also incorporates long-term monitoring as needed to help ensure future withdrawals are managed to protect water resources and associated natural systems.

In cooperation with Bay County, the District continues implementation of the Deer Point Lake Watershed Hydrologic Monitoring program. This effort includes operation of stream stage/discharge and rainfall monitoring stations that provide a continuous record of precipitation and surface water flows during both dry weather and storm conditions. The District operates additional groundwater level, stream flow, and lake level monitoring sites within the county, all intended to characterize water resource conditions and trends within the region.

Additional evaluations of groundwater flow and salt water intrusion may be conducted to investigate the persistence of a depression in the coastal Floridan aquifer potentiometric surface despite discontinuation of major groundwater withdrawals on the coast. The work would involve review of consumptive uses of water and hydrologic data and would be conducted in coordination with the District's MFL program. A groundwater flow model may be developed and applied if necessary.

Water Reuse Funding and Technical Assistance

In 2013, an estimated 2.4 MGD of reclaimed water were used for public access reuse in Region III (DEP 2014). This included irrigation of 1,086 residences, two golf courses, four parks, and three schools. The Region III RWSP identifies approximately 5.2 MGD of new beneficial reuse that could offset the use of potable water sources. In addition to extending water supplies, further development of water reuse would help improve water quality in St. Andrew Bay and coastal waters by reducing wastewater discharges to the environment. Projected wastewater flows of almost 20 MGD by 2035 (Countryman et al. 2014), suggest substantial opportunity for additional application of reclaimed water for non-potable needs to reduce the use of potable water.

District staff will work with utilities and local governments to identify opportunities for expanded water reuse to meet non-potable water needs, as well as feasible funding sources and strategies. This may include assessments matching reclaimed water generators with users, feasibility studies, pilot projects, and demonstration projects. Projects of highest priority to the District are those that offset and reduce the consumption of potable quality water, as well as those that protect natural systems and achieve integrated water resource management. Currently, the District is conducting a District-wide reuse planning effort, as well as supporting a statewide reuse initiative.

Water Conservation Funding and Technical Assistance

This project supports conservation and efficiency programs, practices, and measures on the part of local governments and utilities. Water conservation serves the public interest by enhancing efficiency, reducing costs to the public, and limiting impacts to natural resources. An updated evaluation of water conservation potential in Region III is currently being conducted by District staff. This includes a review of existing programs as well as identification of potential water savings achievable from additional water conservation measures. The Conserve Florida Water EZ Guide tool is being utilized to identify cost effective water conservation options and quantify water conservation potential. Staff will work with local governments and utilities to further identify cost effective means of improving water use efficiency for public supply and other water use categories. This strategy may include implementation of pilot and demonstration projects, as well as assistance in identifying funding sources.

Water conservation projects that achieve quantifiable water savings are eligible for grant funding under the District's Water Supply Development Community Assistance Initiative for FY 2014-2015 (www.nwfwater.com/water-resources/wsp/grants/). The District also continues to distribute water conservation brochures to utilities and local governments in the region and to coordinate the Water CHAMP program for participating hotels.

Regional Water Supply Planning, Coordination, and Technical Assistance

This project continues funding for the District to manage implementation of the Region III RWSP. The work involves coordinating and tracking projects and programs, completing administrative tasks related to plan implementation, and fulfilling statutory reporting requirements. This project also provides for technical assistance to local governments and water suppliers, educational and outreach materials and programs within the region, and other related tasks and activities.

Funding Summary: Region III Water Resource Development Projects

Table 5 displays past year expenditures, current year budget, and anticipated future expenditures for water resource development within Region III.

Table 5. 2015-2019 Region III WRDWP Project Funding

Water Resource Development Projects	FY 13-14 Expen-ditures[1]	Anticipated Five Year Work Program					FY15-FY19 Cost Estimate
		FY 14-15 Budget[2]	FY 15-16	FY 16-17	FY 17-18	FY 18-19	
Econfina Creek & Groundwater Recharge Area	$1,281,802	$1,834,500	$884,500	$884,500	$884,500	$884,500	$5,372,592
Hydrologic Data	$44,990	$59,800	$59,800	$59,800	$59,800	$59,800	$299,000
Water Reuse	$14,779	$18,000	$10,000	$10,000	$10,000	$10,000	$58,000
Water Conservation	$9,692	$10,000	$5,000	$5,000	$5,000	$5,000	$30,000
Regional Water Supply Planning	$44,426	$10,000	$15,000	$15,000	$15,000	$30,000	$85,000
TOTAL	$1,395,688	$1,932,300	$974,300	$974,300	$974,300	$989,300	$5,844,500

[1]Preliminary figures; final costs will be provided in the March 1, 2015, Consolidated Annual Report.
[2]FY 2015 figures based on adopted budget.

Reduced regional water supply planning funding in FY 2014-2015 reflects completion of the RWSP update during the previous year. Projected funding going forward reflects continuing technical assistance to local governments and utilities, with emphasis on identifying potential reuse projects, identifying the potential for enhanced water conservation, and for continuing hydrologic monitoring and analysis. With the updated RWSP for Region III, the WRDWP recognizes the significant ongoing level of effort for management of the Econfina Creek Water Management Area, which includes the primary recharge area for Floridan aquifer springs contributing to Econfina Creek and Deer Point Lake Reservoir. In addition to land management activities, significant capital expenditures are planned during FY 2014-2015 for restoration projects at Williford and Devils Hole springs along Econfina Creek.

Region III Water Supply Development

Water supply development strategies identified in the Region III RWSP Update are listed in Table 6.

Table 6. Region III Water Supply Development Projects

Project	Activity	Estimated Cost	Water Made Available or Anticipated (MGD)
Development of Upstream Intake for Surface Water Supply	Develop an alternative raw water pump station near the mouth of Econfina Creek and nine-mile force main to tie in with existing raw water main.	$23,400,000[1]	30[2]
Water Reuse Facilities	Construction of water reuse facilities to provide reclaimed water for landscape irrigation and other non-potable uses.	TBD	5
Utility Interconnections and Infrastructure Enhancements	Assist with delivery system interconnections and facility improvements. Specifically includes potential 48" pipeline emergency interconnect between southern Bay and Walton counties.	$25,700,000[3]	N/A
Water Conservation Projects that Result in Quantifiable Water Savings	Implementation of water conservation and efficiency programs and practices by local utilities.	TBD	TBD

[1] Updated cost estimate.
[2] Capacity of alternate raw water intake.
[3] Cost for Bay-Walton emergency interconnect project. May be potential for additional interconnections and enhancements within Region III.

The District granted $5.47 million to Bay County in FY 2013-2014 for development of the alternate upstream intake for Deer Point Lake Reservoir. Funding was provided from the Water Protection and Sustainability Trust Fund.

District-Wide Initiatives

As noted above, an update to the district-wide Water Supply Assessment was completed in the current fiscal year. This assessment incorporated demand projections through year 2035 for all regions and all water use categories, and evaluated the status and sufficiency of water supply sources.

Water Supply Development Grant Initiative

The District continues to emphasize water supply development assistance for local governments and utilities. The Governing Board approved a $10 million water supply development assistance grant initiative, which was implemented beginning in FY 2013-2014. The Governing Board has approved an additional $8 million in assistance for this program in the FY 2014-2015 budget.

Coastal Interconnects

The Basis of Design Report for the Coastal Water Systems Interconnection Initiative was completed in 2013. The report provides a detailed analysis of coastal water supply interconnect alternatives and design parameters. Two interconnection projects were selected for potential future implementation. The basis of design report includes conceptual designs for a coastal interconnection between Santa Rosa and Okaloosa counties and a coastal interconnection between Walton and Bay counties. The report also describes key issues and challenges, including utility emergency capacities and water blending analysis. Implementation of the two recommended interconnection alternatives will require significant financial commitment to complete.

Water Reuse

District staff are developing approaches for integrated planning of water and wastewater resources. Projected reuse availability derived from 2035 wastewater projections has been incorporated into the 2013 WSA Update. In FY 2013-2014, staff developed geographic information system (GIS) coverages and attributes of wastewater treatment plants and the associated network of facilities receiving effluent and biosolids, as well as monitoring sites for groundwater, surface water and wetlands. There are multiple uses for this GIS data at the District such as setbacks for well permits, online lookup by non-potable permit applicants, planning and coordination for more integrated water management, environmental monitoring, and more. A District-wide reuse plan is under development to provide detailed information on reclaimed water systems and priorities for future reuse facility development. Assisting utilities and local governments in developing beneficial reuse projects will remain a priority, with implementation depending on future funding availability.

Agricultural Best Management Practices Cost Share Program

Significant efforts are underway to enhance agricultural water use efficiency and to support implementation of associated water quality best management practices (BMPs), targeted primarily for the Jackson Blue Spring basin of the Apalachicola River watershed. For FY 2013-2014, the District budgeted $752,000 of legislatively appropriated spring restoration funding for these activities. The funding is being used to provide a 75 percent cost share to help producers retrofit center pivot irrigation systems and to implement fertigation and other more efficient nutrient application systems, as well as to help expand the northwest Florida mobile irrigation laboratory. Together, these efforts are expected to achieve significant reductions in both water use and pollutant loading within the Jackson Blue Spring basin. As of the end of the third quarter (June 30, 2014), 60 percent of the available cost-share funds were under contract to producers for implementation of best management practices. For FY 2014-2015, the District anticipates $927,500 in additional legislatively-approved funding to continue this effort. The funding includes $487,500 to support agricultural BMPs and $440,000 to investigate the Claiborne aquifer as a possible alternative water source to offset a portion of withdrawals from the Floridan aquifer.

Well Abandonment

The District continues its program to properly plug abandoned or contaminated wells for financially constrained public water systems, in water resource caution areas, in areas identified under Chapter 62-524, Florida Administrative Code (F.A.C.) (Escambia, Santa Rosa, Jackson, and Leon counties), and in other areas as necessary. The program at one time had matching funding from DEP and was able to cover 100 percent of costs. The program currently pays up to 50 percent of costs to plug and abandon eligible wells. During 2014, approximately 666 wells were plugged at no cost to the District other than staff time, and one well was plugged at a cost of $240 to the District.

References

Many of these references may be found on the District's website under Publications & Data, Reports & Plans: www.nwfwater.com/data-publications/reports-plans/.

Barrios, K., R. L. Bartel, N. Wooten, and M. Lopez. 2011. Hydrologic Monitoring Plan: Version 1.0. Northwest Florida Water Management District, Program Development Series 2011-04. www.nwfwater.com/system/assets/840/original/HydrologicMonitoringPlanPDS11-4.pdf

Bartel, R. L., T. R. Pratt, T. L. Macmillan, R. R. Potts, C. J. Richards, R. D. Womble, J. A. Bonekemper, and R. A. Countryman. 2001. Regional Water Supply Plan for Santa Rosa, Okaloosa, and Walton Counties. Northwest Florida Water Management District. Water Resources Assessment 2000-1. Havana, Florida. nwfwater.com/system/assets/604/original/rwsp2Title_page.pdf

Bonekemper, J. 2003. Northwest Florida Water Management District Water Supply Projections 2005-2025. Northwest Florida Water Management District Water Resources Assessment 03-01. Havana, Florida. www.nwfwater.com/system/assets/647/original/water_supply_projection2003.pdf

Brooks, L., A. Chelette, and P. Thorpe. 2014. 2014 Regional Water Supply Plan Update, Region III, Bay County, FL. Northwest Florida Water Management District. Program Development Series 14-01. Havana, Florida. www.nwfwater.com/system/assets/1189/original/Region_III_RWSP_Update_-_2014.pdf

Busen, K. and R. Bartel. 2012. 2012 Regional Water Supply Plan Update for Santa Rosa, Okaloosa, and Walton Counties, Water Supply Planning Region II. Northwest Florida Water Management District Water Resources Assessment 2012-01. Havana, Florida. nwfwater.com/system/assets/1236/original/Region_II_RWSP_2012_Update_Final.compressed.pdf

Coates, K., C. Coger, R. A. Countryman, M. Pritzl, and C. J. Richards. 2008. 2008 Water Supply Assessment Update. Northwest Florida Water Management District. Water Resources Assessment 08-02. Havana, Florida. www.nwfwater.com/system/assets/645/original/WSA_Final2008.pdf

Countryman, T.C., L. Brooks, K. Busen, E. Chelette, K. Coates, F. Florida, and P. Thorpe. 2014. 2013 Water Supply Assessment Update. Havana: Northwest Florida Water Management District. Water Resources Assessment 13-01. www.nwfwater.com/system/assets/1338/original/WSA2013_Final_Compressed.pdf

DeFosset, K. L. 2004. Availability of Ground Water from the Sand-And-Gravel Aquifer in Coastal Okaloosa County, Florida. Northwest Florida Water Management District, Water Resources Technical File Report 04-1. August 2004. www.nwfwater.com/system/assets/827/original/wrtfr04-01.pdf

Florida Department of Environmental Protection. 2013. 2012 Reuse Inventory. DEP Water Reuse Program. May 2013. Tallahassee, FL. www.dep.state.fl.us/water/reuse

Florida Natural Areas Inventory. 2013. Florida Conservation Lands, June 2013. www.fnai.org/gisdata.cfm

HydroGeoLogic, Inc. 2000. Modeling of Ground Water Flow in Walton, Okaloosa and Santa Rosa Counties, Florida. May 2000. www.nwfwater.com/system/assets/828/original/hgl_gwmodel.pdf

HydroGeoLogic, Inc. 2005. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Western Domain Model. May 2005.

HydroGeoLogic, Inc. 2007a. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Eastern Domain Model, Final Report. September 2007.
ftp.nwfwmd.state.fl.us/pubs/hgl_eastern_domain/hgl_eastern_domain.html

HydroGeoLogic, Inc. 2007b. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Eastern Domain Forecast Simulations. March 2007.

HydroGeoLogic, Inc. and Hazlett-Kincaid, Inc. 2007. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Western Domain Forecast Simulations. March 2007.

Northwest Florida Water Management District. 2006. Regional Water Supply Plan for Santa Rosa, Okaloosa, and Walton Counties, Plan Update. Water Resource Assessment 2006-1. September 2006.
www.nwfwater.com/system/assets/585/original/rwspfinal.pdf

Northwest Florida Water Management District. 2007. Regional Water Supply Plan: Region V, Franklin and Gulf Counties. Water Resources Assessment 07-01. January 2007.
www.nwfwater.com/system/assets/583/original/Region_V_RWSP.pdf

Northwest Florida Water Management District. 2008. Region III Regional Water Supply Plan, Bay County, Florida. Program Development Series 08-02. August 2008.
www.nwfwater.com/system/assets/587/original/Region_III_RWSP_08-12-08_FINALweb_version.pdf

Northwest Florida Water Management District. 2014. Consolidated Annual Report. March 1, 2014.
www.nwfwater.com/system/assets/310/original/CAR2014.pdf

PBS&J. 2000a. Water Conservation Task Summary Report. August 2000.

PBS&J. 2000b. Reuse Task Summary Report. August 2000.

PBS&J. 2006. Water Supply Planning Region II Final Report: Conceptual Alternative Water Supply Development Projects and Planning Level Cost Estimates. October 2006.
nwfwater.com/system/assets/1333/original/Final_Water_Supply_Study_Report.compressed.pdf

Pratt, T. R. 2001. Results of Floridan Aquifer Drilling Program in Santa Rosa, Okaloosa, and Walton Counties, Florida. Technical File Report 01-1. nwfwater.com/system/assets/1341/original/tfr01-1.pdf

Ryan, P. L., T. L. Macmillian, T. R. Pratt, A. R. Chelette, C. J. Richards, R. A. Countryman, and G. L. Marchman. 1998. District Water Supply Assessment. Northwest Florida Water Management District. Water Resources Assessment 98-2. Havana, Florida. nwfwater.com/system/assets/1235/original/WSA_Final1998.pdf

Whitcomb, J.B. 2005. Florida Water Rates Evaluation of Single Family Homes.
nwfwater.com/system/assets/1331/original/water_rate_report.pdf

Appendix A. Water Supply Projects in the NWFWMD

Table 7 presents expected Water Protection and Sustainability Program Trust Fund expenditures for alternative water supply development and water resource development projects. If future funding becomes available from the WPSPTF or other sources, the District will consider potential projects in accordance with Section 373.703, F.S.

Table 8 presents additional water supply development assistance and alternative water supply development projects. These projects are included in this report to demonstrate how complementary programs and activities, including regional water supply planning, water resource development, alternative water supply development, water supply development assistance, and the district-wide water supply assessment, work together to ensure sustainable long-term water supplies.

Additional information will be provided with the March 1, 2015, Consolidated Annual Report.

Table 7. Projects Funded under the Water Protection and Sustainability Program

Project	Region	Local Sponsor	Activity	Status	WPSPTF FY Approp.	Anticipated Water (MGD)[1]	WPSPTF Contribution	Local Contribution	Total	Local %
Area-wide Alternative Water Supply Source Expansion	II	Regional Utilities, South Walton Utility Co.	Inland wellfield expansion	Complete	FY 2006	15.1	$6,500,000	$9,991,891	$16,491,891	61%
Tram Road Public Access Reuse Facility	VII	Tallahassee	Water reuse/ spring protection	Complete	FY 2006; FY 2007	1.2	$1,350,000	$5,250,000	$6,600,000	80%
Bob Sikes Reuse Project	II	Okaloosa County	Water reuse	Complete	FY 2006	0.7	$2,000,000	$4,509,132	$6,509,132	69%
Inland Floridan Aquifer Source - WRD	V	NWFWMD; Franklin County Utilities	Inland source evaluation	Complete	FY 2006	3.0	$300,000	$0	$300,000	0%
Ground Water Modeling & Aquifer Testing - WRD	III	Bay County	Inland source evaluation	Complete	FY 2006; FY 2007	0.0	$350,000	$800,000	$1,150,000	70%
Surface Water Treatment Plant	V	Port St. Joe	Surface water	Complete	FY 2007	6.0	$4,000,000	$12,736,700	$16,736,700	76%
City of Chipley Reuse Project	IV	Chipley	Water reuse	Complete	FY 2007	1.2	$500,000	$4,500,000	$5,000,000	90%
Wakulla County Reuse Project	VII	Wakulla County	Water reuse	Reuse line complete; WWTP upgrade funded	FY 2007	0.4	$500,000	$6,495,000	$6,995,000	93%
Advanced Wastewater Treatment & Water Reuse Facilities	VII	Tallahassee	Water resource development/ springs protection	Complete	FY 2007	4.5	$500,000	$5,800,000	$6,300,000	92%
Alternative Pump Station	III	Bay County	Alternative raw water pump station and force main	Engineering and Permitting	FY 2008; FY 2009	30.0[2]	$5,470,000	$17,930,000	$23,400,000	77%
			Total			**62.1**	**$21,470,000**	**$68,012,723**	**$89,482,723**	**76%**

[1]Anticipated water made available rounded to the nearest 100,000 gallons per day.
[2]Capacity of alternate raw water intake.

Table 8. Additional Water Supply Development Assistance Projects

Project	Local Sponsor	Region	Activity	Status	Completion	NWFWMD Contribution	District Funding Source
City of Freeport Reuse Project	Freeport	II	Water reuse storage and transmission system construction	Complete	FY 2010	$3,000,000	SWIM, Florida Forever
East Okaloosa County Water and Sewer Extension	Okaloosa County	II	Water supply transmission and interconnection	Complete	FY 2010	$750,000	District General Fund
Allanton Peninsula Water and Wastewater Extension Project	Callaway	III	Water supply transmission and distribution system construction	Complete	FY 2010	$100,000	WMLTF
Walton County Phase II Regional Water Supply	Regional Utilities	II	Construction of transmission and Storage Facilities; associated with inland wellfield AWSD	Complete	FY 2011	$2,000,000	EMRTF; District General Fund
Carrabelle-Alligator Point Interconnection Feasibility Study	Carrabelle	V	Interconnection feasibility assessment; enactment of conservation rate structure	Complete	FY 2011	$100,000	WMLTF
Port St. Joe Water Distribution System Improvements	Port St. Joe	V	Water supply improvements	Complete	FY 2011	$50,000	District General Fund
Wewahitchka Water Supply System Improvements	Wewahitchka	V	Water supply development; test production well construction	Complete	FY 2011	$400,000	District General Fund
Water Transmission Line Construction and Interconnection	Freeport	II	Transmission line and interconnection construction	Complete	FY 2012	$800,000	District General Fund
Water and Sewer Systems Interconnections	Callaway	III	Interconnections of water systems and sewer systems between Callaway and Sandy Creek Utility	Complete	FY 2012	$53,998	District General Fund
Water Supply Improvements; Preliminary Engineering	Gretna	VI	Preliminary engineering and environmental analysis	Complete	FY 2012	$50,000	District General Fund
Gretna to Greensboro Watermain Extension	Gretna; Gadsden County	VI	Water supply transmission and distribution facility construction	Complete	FY 2012	$449,888	District General Fund
U.S. Highway 98 Water Line Extension	Regional Utilities	II	Water main extension along U.S. Highway 98 in Walton County	Complete	FY 2013	$750,000	District General Fund
Water Main Construction	WRP, Inc.	II	Construction of transmission facilities and subaqueous pipeline from inland wellfield to serve coastal Walton and Okaloosa counties	Complete	FY 2013	$2,500,000	District General Fund
Pine Island Water Distribution System Expansion	Calhoun County	IV	Preliminary engineering for expansion of water distribution system to unincorporated community	Complete	FY 2013	$98,607	District General Fund
Chipola Pump Station Repairs	Port St. Joe	V	Complete repairs to existing pump station; including diesel power supply replacement	Complete	FY 2013	$106,000	District General Fund

Project	Local Sponsor	Region	Activity	Status	Completion	NWFWMD Contribution	District Funding Source
Test Well Development	Panacea Area Water System	VII	Test well development and data analysis	Planning	FY 2015	$30,500	District General Fund
CWRF Reclaimed Water System Expansion	Emerald Coast Utilities Authority	I	Reuse extension to Scenic Hills Golf Course and UWF main campus	Engineering and permitting	FY 2015	$522,000	District General Fund
Chumuckla Water System Upgrades	Chumuckla Water System	II	Well and SCADA upgrade; equipment acquisition for water line improvements	Construction	FY 2015	$100,721	District General Fund
Water Main Replacement	City of DeFuniak Springs	II	Replacement of asbestos cement water main; installation of additional hydrants	Engineering and permitting	FY 2015	$473,750	District General Fund
Highway 285 Reclaimed Water Main Upgrade	City of Niceville	II	Replacement and upgrade of reuse lines to increase capacity	Construction	FY 2015	$144,000	District General Fund
Mid-County Tank #4	Okaloosa County Water and Sewer	II	Construction of 1 MG elevated water tank for northern wellfield	Engineering and permitting	FY 2015	$1,250,000	District General Fund
Santa Rosa Soccer and Horse Complex Reclaimed Water Extension	Pace Water System, Inc.	II	Reuse transmission main construction	Construction	FY 2015	$160,000	District General Fund
Town of Jay Asbestos Watermain Replacement	Town of Jay	II	Replacement of asbestos cement water main	Bid/award/ procurement	FY 2015	$663,024	District General Fund
Pine Island Water System	Calhoun County BOCC	IV	Development of water distribution system for the Pine Island community	Engineering and permitting	FY 2015	$409,844	District General Fund
State Road 20 Waterline Replacement	City of Blountstown	IV	Construction of water main; installation of hydrants	Construction	FY 2015	$471,690	District General Fund
City of Bonifay Waterline Replacement	City of Bonifay	IV	Replacement of asbestos cement and lead joint water main	Engineering and permitting	FY 2015	$268,900	District General Fund
Water Storage Capacity	City of Bristol	IV	Construction of ground storage tank; installation of high service pumps	Engineering and permitting	FY 2015	$537,500	District General Fund
Highway 77/I-10 Infrastructure Improvements Project	City of Chipley	IV	Construction of new well with transmission system improvements	Bid/award/ procurement	FY 2015	$440,000	District General Fund
Chipola River Protection and Stormwater Reuse Project	City of Marianna	IV	Expand pond to provide stormwater reuse and provide additional water quality treatment	Engineering and permitting	FY 2015	$671,340	District General Fund
Altha Water System Phase 3	Town of Altha	IV	Construction of water main; installation of hydrants	Engineering and permitting	FY 2015	$540,000	District General Fund
Water Main Replacement	Town of Esto	IV	Water distribution system replacement	Bid/award/ procurement	FY 2015	$149,690	District General Fund

Project	Local Sponsor	Region	Activity	Status	Completion	NWFWMD Contribution	District Funding Source
Water Extension to I-10 Interchange	Town of Grand Ridge	IV	Construction of water main extension to I-10 interchange	Bid/award/ procurement	FY 2015	$321,339	District General Fund
Greenwood/Marianna Interconnecting Water Mains	Town of Greenwood	IV	Construct of interconnection; with additional distribution line replacement	Bid/award/ procurement	FY 2015	$230,308	District General Fund
Noma Water Line Replacement Project	Town of Noma	IV	Water distribution system replacement	Bid/award/ procurement	FY 2015	$415,292	District General Fund
Water System Upgrades	City of Gretna	V	Design and surveying for two new wells with additional transmission and treatment improvements	Engineering and permitting	FY 2015	$150,000	District General Fund
Chipola River Pump #2 Rehabilitation	City of Port St. Joe	V	Rehabilitate pump #2 and add a new diesel electric generator	Procurement	FY 2015	$195,000	District General Fund
Monticello Water Extension	City of Monticello	VII	Extend water main approximately two miles north of the city, abandoning several private systems	Engineering and permitting	FY 2015	$837,000	District General Fund
South Santa Rosa Utility System Reclaimed Water Elevated Storage Tank	City of Gulf Breeze	II	Construction of a 300,000 gallon elevated reclaimed water storage tank	Engineering and permitting	FY 2016	$345,500	District General Fund
Town of Havana Water System Improvements	Town of Havana	V	Construction of new well, ground storage tank, and treatment facilities	Engineering and permitting	FY 2016	$500,000	District General Fund
Panacea Area Water System - Sopchoppy Water System Interconnect	Panacea Area Water System, Inc.	VII	Construct potable water system interconnection with Sopchoppy	Engineering and permitting	FY 2016	$348,947	District General Fund
			Total			**$21,384,838**	