Northwest Florida Water Management District

Consolidated Annual Report

March 1, 2014

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

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ANNUAL REPORT 2014-01

On the cover, clockwise from upper left: Pitt Spring on Econfina Creek after restoration; sod-based rotation in Jackson County; well being completed into the Claiborne Formation in Jackson County; contract crew planting longleaf pines at Econfina Creek Water Management Area; District staff checking hydrologic monitoring station near the Chipola River.

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Executive Summary

This Consolidated Annual Report fulfills the requirement of section 373.036(7)(a), Florida Statutes (F.S.), that the Northwest Florida Water Management District ("NWFWMD" or "District") annually prepare and submit a report on management of water resources to the Governor, the President of the Senate, and the Speaker of the House of Representatives. Copies are provided to the chairs of legislative committees with substantive or fiscal jurisdiction over water management districts and the governing boards of counties with jurisdiction or deriving funds for operations of the District, as well as the Department of Environmental Protection (DEP). The report is also made available to the public online at www.nwfwmd.state.fl.us/pubs/consolidatedAR/consolAR.html.

The March 1, 2014, NWFWMD Consolidated Annual Report includes seven required reports, as specified in section 373.036(7)(b), F.S. These are:

- The Strategic Water Management Plan Annual Report;
- The Minimum Flows and Levels Annual Priority List (section 373.042(2), F.S.);
- The Annual Five-Year Capital Improvement Plan (section 373.536(6)(a)3, F.S.);
- The Five-Year Water Resource Development Work Program (section 373.536(6)(a)4, F.S.);
- The Alternative Water Supplies Annual Report (section 373.707(8)(n), F.S.);
- The Florida Forever Work Plan Annual Report (section 373.199(7), F.S.); and
- The Mitigation Donation Annual Report (section 373.414(1)(b)2, F.S.).

Also included is one optional element, a Surface Water Improvement and Management (SWIM) Program Summary Report that describes projects implemented to protect and improve water quality and watershed resources.

Together, the reports that follow provide the status of Northwest Florida Water Management District programs that work toward the protection, restoration, and sustainability of northwest Florida's water and related resources. Priorities adopted by the Governing Board in the fiscal year (FY) 2013-2014 budget and outlined in the preliminary FY 2014-2015 budget are springs restoration and protection, Apalachicola-Chattahoochee-Flint River Basin, minimum flows and levels and water resource monitoring, water supply, and watershed resource protection and restoration. Highlights of the reports are:

- **Springs Protection and Restoration** – The Econfina Springs Complex Phase II restoration for Williford Spring in Washington County was initiated, and construction is scheduled to begin early spring 2014. Additional projects are underway for Holmes Creek, Jackson Blue Spring, and Devil's Hole Spring. **(Chapter One – Strategic Water Management Plan Annual Work Plan Report; Chapter Five – Florida Forever Work Plan Annual Report)**
- **Minimum Flows and Levels (MFLs)** – The District advanced its implementation of minimum flows and levels in Northwest Florida. The water resource monitoring program was expanded to fill data gaps, and consulting firms were retained to provide technical and ecological work plans for MFL development. Data collection and work plan development has begun for the St. Marks River Rise, Wakulla Spring, and Sally Ward Spring. **(Chapter Two – Minimum Flows and Levels Annual Priority List)**
- **Apalachicola-Chattahoochee-Flint (ACF) Rivers Basin** – District staff provided substantial technical support to the state of Florida in its effort to achieve sufficient interstate freshwater

allocations to protect the economic and ecological viability of the Apalachicola River and Bay. **(Chapter One – Strategic Water Management Plan Annual Work Plan Report)**

- **Water Supply Development** – The District rolled out a competitive grant program, the Water Supply Development Community Assistance Initiative, providing $10 million to local governments and utilities to meet local water supply needs. Additionally, the City of Blountstown was provided $235,845 to replace a water distribution line and the City of Port St. Joe $106,000 to upgrade a pump station. **(Chapter One – Strategic Water Management Plan Annual Work Plan Report; Chapter Four – Water Supply)**
- **Water Supply Assessment (WSA)** – A five-year update to the WSA has been completed and was presented to the Governing Board in February 2014. The report provides a comprehensive assessment of the adequacy of water supplies across northwest Florida and identifies regions that require regional water supply planning. **(Chapter Four – Water Supply)**
- **Regional Water Supply Planning** – The District is scheduled to complete an update to the Region III Regional Water Supply Plan (RWSP) in March 2014. Regional water supply plan implementation continues for Region II. It is recommended that regional water supply planning for Region V be discontinued based on the results of the WSA. **(Chapter Four – Water Supply)**
- **Agricultural Best Management Practices (BMPs)** – The District continued cooperative assistance for the Mobile Irrigation Lab and Sod-Based Crop Rotation programs that promote water conservation and reduced use of pesticide and fertilizer. A new initiative for FY 2013-2014 is to fund the implementation of agricultural BMPs and irrigation retrofits in the Jackson Blue Spring basin. **(Chapter One – Strategic Water Management Plan Annual Work Plan Report)**
- **Habitat Restoration** – Extensive restoration activities were completed on District lands and other public lands across northwest Florida. These include streambank restoration, reforestation and groundcover habitat restoration, and hydrologic restoration. **(Chapter Five – Florida Forever Work Plan Annual Report)**
- **Water Quality Protection and Restoration** – The District is working with local governments in the Apalachicola River and Bay and St. Andrew Bay watersheds to implement stormwater retrofit projects for water quality improvement. Staff have also assisted with RESTORE Act planning and are implementing stormwater projects funded by MOEX Offshore, LLC, to benefit St. Andrew and Choctawhatchee bays **(Chapter Seven – Surface Water Improvement and Management Program Summary Report)**
- **Water Resource Monitoring** – Expansion of the District's water resource monitoring network continued. This network is essential for water resource and water supply development, MFLs, and watershed protection and restoration. **(Chapter One – Strategic Water Management Plan Annual Work Plan Report; Chapter Four – Water Supply)**
- **Flood Protection and Floodplain Management** – The development of digital flood maps for northwest Florida counties is scheduled to be completed by the end of 2014. The District continues to act as an advocate for the public in the FEMA watershed Risk Mapping, Assessment and Planning (Risk MAP) program. District web sites provide detailed flood information, portal.nwfwmdfloodmaps.com, and elevation data, www.nwfwmdlidar.com. **(Chapter One – Strategic Water Management Plan Annual Work Plan Report)**

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Chapter One: Strategic Water Management Plan Annual Work Plan Report

1.1 Introduction

Section 373.036(2)(e), Florida Statutes (F.S.), gives the Governing Board the option of substituting an annual strategic plan for the five-year district water management plan (DWMP) and the DWMP annual report. The statute requires the strategic plan to include separately an annual work plan report on its implementation for the previous fiscal year, addressing success indicators, deliverables, and milestones. The Governing Board approved substituting the Strategic Water Management Plan (SWMP) for the DWMP in November 2010 (NWFWMD 2011). The 2011-2015 SWMP was completed and posted in January 2011 (www.nwfwmd.state.fl.us/pubs/swmp/swmp.html).

To address changing conditions and priorities, as well as emerging water resource challenges, a comprehensive review and update of the SWMP is anticipated to be completed in FY 2013-2014. For the purposes of this report, strategic priorities are as specified by the Governing Board in the District's adopted FY 2013-2014 budget and outlined in the District's preliminary FY 2014-2015 budget, and are described below.

- **Apalachicola-Chattahoochee-Flint River Basin** – Management of water resources in the Apalachicola-Chattahoochee-Flint (ACF) basin continues to be a major emphasis of the District in partnership with other state agencies and regional stakeholders. As in the current year, budget priorities for FY 2014-2015 include providing technical assistance to the Governor's Office and Florida Department of Environmental Protection (DEP) on an array of issues related to interstate freshwater allocation. The District additionally intends to complete development and initiate application of an updated three-dimensional hydrodynamic model of Apalachicola Bay. This model will support resource assessments and evaluations of potential actions to improve and maintain a healthy bay environment, including management of freshwater inflows and implementation of cooperative water quality improvement projects in coastal Franklin County. Stormwater retrofit projects have been initiated in cooperation with the City of Apalachicola to improve water quality in Apalachicola Bay.
- **Minimum Flows and Levels** – The District is expending significant effort to develop minimum flows and levels (MFLs) according to the approved schedule. Beginning in FY 2014-2015, recurring program costs are estimated to average $2.3 million annually. By 2016, the current schedule will have six waterbodies in various stages of assessment simultaneously. Work planned for FY 2014-2015 includes data collection to support hydrologic and hydrodynamic modeling for St. Marks River Rise and Wakulla Springs, and data collection to support development of groundwater flow and saltwater intrusion models for the coastal Floridan aquifer in Franklin County and in Planning Region II (Santa Rosa, Okaloosa and Walton counties). Work planned for the following year includes technical assessments for the St. Marks River Rise and Wakulla Systems, coastal Franklin County and coastal Region II, as well as enhanced hydrologic data collection for Jackson Blue Spring.
- **Water Resource Monitoring** – Major objectives and priorities for FY 2014-2015 include further expansion of the hydrologic monitoring network in support of the MFL program and continued network improvements to improve efficiency to expand real time access to hydrologic data on the District's website. The District renewed revenue agreements with DEP to monitor water quality in aquifers, streams, and lakes and renewed revenue agreements with Bay County, Leon County, and the City of Tallahassee to monitor surface water discharge and rainfall for stormwater management and flood warning. The District additionally continues its joint funding agreement with the U.S.

Geological Survey to collect hydrologic data on the Apalachicola River, Yellow River, Telogia Creek, and the Spring Creek Springs Group

- **Springs Protection and Restoration** – Protection and restoration of northwest Florida's springs and associated systems are a continuing priority. Current activities include restoration and protection projects for Williford Spring and Devil's Hole Spring within the Econfina Creek Water Management Area (WMA) and within the Holmes Creek WMA (Washington County), assistance implementing agricultural best management practices (BMPs) for irrigation and fertilization and funding irrigation retrofits in the Jackson Blue Springs basin (Jackson County), and enhanced monitoring and resource assessment for major systems District-wide.
- **Water Supply Development Assistance** – The District is continuing implementation of its Water Supply Development Community Assistance Initiative. Through this initiative, the District is providing competitive grant funding for local governments and utilities, with emphasis on supporting financially disadvantaged communities. The District has allocated $10 million from the FY 2013-2014 budget for water supply development assistance. It is anticipated that 24 separate communities within 13 counties will receive direct assistance.
- **Water Resource Development** – The districtwide water supply assessment update has been completed, with recommendations being presented to the Governing Board in February 2014 for regional water supply planning needs. Additionally, consulting services will be engaged to support development of a Floridan aquifer groundwater model in the eastern portion of the District, which will support the MFL, RWSP, and Resource Regulation programs. District staff will further work with Okaloosa and Bay counties to support development of alternative water supply projects.
- **Watershed Resource Protection and Restoration** – A focused effort of the District has been cooperative stormwater retrofit, water quality, and habitat restoration projects in the Apalachicola River and Bay and St. Andrew Bay watersheds. Specific efforts include financial support of a Mobile Irrigation Laboratory (MIL) in cooperation with Florida Department of Agriculture and Consumer Services (FDACS) and the Natural Resources Conservation Service (NRCS), cooperative funding with producers for agricultural BMPs within the Jackson Blue Spring groundwater contribution area, financial support for research and outreach on University of Florida's Institute of Food and Agricultural Services (IFAS) Sod-Based Crop Rotation Program, restoration of Williford Springs and stormwater retrofit projects to improve water quality in St. Andrew Bay and Apalachicola Bay. District staff are also continuing participation in multi-agency project planning associated with the federal RESTORE Act. The District is further providing engineering services to support stormwater retrofit projects within St. Andrew and Choctawhatchee bays funded by the MOEX Offshore settlement.
- **Land Management and Restoration** – District staff continue extensive efforts to manage and restore water and related resources within District lands. These activities are focused on protecting and restoring water resources and natural systems while keeping lands and adjacent waters accessible for compatible public use.

- **Flood Protection and Floodplain Management** – The District continues to work in cooperation with the Federal Emergency Management Agency (FEMA) on flood map modernization and the Risk Mapping, Assessment, and Planning (Risk MAP) program. It is anticipated that final effective digital flood insurance rate maps (DFIRMs) will be issued for Franklin and Jefferson counties in February 2014 and in Wakulla County in September 2014. Detailed coastal remapping studies continue for Escambia, Santa Rosa, Okaloosa, Walton, Bay and Gulf counties. Detailed floodplain and elevation data respectively are provided to the public online at portal.nwfwmdfloodmaps.com and www.nwfwmdlidar.com.
- **Florida Department of Transportation (FDOT) Wetland Mitigation** – The District continues to serve FDOT wetland mitigation needs in areas outside of existing private mitigation bank service areas. Restoration, long-term management, and monitoring activities are ongoing at existing FDOT mitigation sites. For newly identified mitigation needs, private mitigation banks are given first consideration.
- **Information Technology (IT) Initiatives** – The District is conducting a strategic assessment of IT needs and investing in modernization of IT infrastructure to improve automation of District process. Associated priorities are the development of land management database and implementation of e-permitting.

All of these priorities are consistent with the broader state goal of enhanced water resource protection to promote Florida's economic well-being and quality of life. Accomplishments and current objectives are organized below by statutory areas of responsibility (section 373.036, F.S.). Where applicable, strategic priorities are indicated, as are quantitative indicators of progress.

1.2 Water Supply

Section 373.701, F.S., declares the state's policy to promote the availability of sufficient water for all existing and future reasonable-beneficial uses and natural systems. The District implements this policy through cooperative, interrelated initiatives and programs focused on the water resources of northwest Florida. Among these are water resource development, water supply development assistance, regional water supply planning, regulation of wells and consumptive uses, and development of MFLs.

The NWFWMD is divided into seven regions for the purpose of evaluating current and anticipated water supply needs (Figure 1-1). RWSPs are developed for regions where existing sources of water are considered inadequate for meeting water demands over a 20-year planning horizon while also sustaining water resources and natural systems. These plans include water resource and water supply development components with supporting data and analysis, and they identify priority projects and funding strategies.

Figure 1-1. Water Supply Planning Regions of the Northwest Florida Water Management District

The District's 2013 Water Supply Assessment (WSA) Update (NWFWMD 2014) has been completed. The WSA evaluates the adequacy of existing and anticipated water sources across Northwest Florida to meet future water demands while also sustaining water resources and associated natural systems. The 2013 WSA Update includes water use estimates for the 2010 base year, demand projections for a 20-year planning period (2015–2035), and water resource assessments for each of the District's seven water supply planning regions. Based on the WSA Update, the Governing Board approved the continuation of regional water supply planning in Region II (encompassing Santa Rosa, Okaloosa, and Walton counties) and Region III (Bay County), and discontinued regional water supply planning in Region V (Gulf and Franklin counties). Discontinuation of the Region V plan reflects past completion of the primary project priority within the region, as well as lower growth rates than has been origionally projected.

According to the 2013 WSA Update, public supply demand is anticipated to increase 14 million gallons per day (MGD) in Region II and 9 MGD in Region III by 2035. Overall, water demand projections declined significantly from the 2008 WSA due to generally reduced population growth projections. An update to the RWSP for Region II was completed in 2012. Considerable progress has been made in the development of inland groundwater sources within that region. In Region III, potential vulnerability of the primary public water supply reservoir to effects of major hurricanes is the primary focus of the plan. An update to the Region III RWSP is in progress.

Accomplishments from the past year and current activities are described below.

- The districtwide 2013 WSA Update was completed and regional water supply planning recommendations were presented to the Governing Board in February 2014. The RWSP for Region III is being updated and will be considered by the Governing Board in March 2014. www.nwfwmd.state.fl.us/rmd/water_supply_planning/regional_water_supply_planning.html
- As reported through statewide water management district performance metrics, approximately 86% of the increase in Public Supply water demand anticipated between 2010 and 2030 has thus far been realized and fully allocated through the permitting process.

- A District contractor completed the Basis of Design Report for the Coastal Water Systems Interconnect Project. Potential project priorities are identified to enhance coastal water system reliability by enabling transfer of water between utilities if necessary due to droughts or other water shortages. The work also included blending analyses, hydraulic network modeling, and development of preliminary designs and cost estimates. The final design phase, followed by permitting and construction, will follow if additional funding becomes available.
- Regional Utilities of Walton County completed construction of pipeline facilities with District funding assistance. Through this project, the utility extended water transmission lines along approximately five miles of U.S. Highway 98 in south Walton County. The District provided $750,000 in grant funding, matched by over $1.36 million in local funding.
- Construction was completed on a major transmission pipeline from the inland wellfield in Walton County to the coastal service areas of South Walton Utility Company and Destin Water Users. The District provided a grant of $2.5 million for the project, matched by over $19 million in local funding.
- The District continued to assist rural communities in the development of sustainable water supplies. The District provided $106,000 to assist the City of Port St. Joe with a vital upgrade to the Chipola Pump Station surface water withdrawal facility. The Governing Board also awarded a grant of $235,845 to the City of Blountstown to assist with the installation of a new 12-inch water distribution main along State Road 20.
- The District rolled out a $10 million competitive grant program, the Water Supply Development Community Assistance Initiative. The program's purpose is to help local governments and utilities meet local water supply challenges while addressing regional priorities for water resource protection and management. An emphasis was given to projects that further accomplish District plans and priorities, as well as those that serve financially disadvantaged communities. It is anticipated that grant funded projects will be initiated during FY 2013-2014.
- A Districtwide potentiometric surface map of the Floridan Aquifer was developed in GIS to reflect 238 water level measurements from June 2012. It shows regional scale features such as depression cones, which are the result of cumulative groundwater withdrawals.
- The District continues to work with DEP and the other four water management districts in an intensive effort to improve the statewide consistency of consumptive water use permitting. Goals of this effort, termed "CUPcon" (consumptive use permitting consistency), include making programs more predictable, ensuring equitable treatment statewide, providing consistent environmental protection, promoting streamlining and efficiency, and incentivizing behavior that protects water resources. The draft rule is in review by participating agencies, as well as the Legislature and Governor's office.
- In the past year, the Consumptive Use program reduced the annualized median in-house processing time of all individual water use applications by 49% and cost per permit by 3.3%. The cost per permit decreased by 39% between the fourth Quarter of FY 2011-2012 to the third Quarter of FY 2012-2013; however, the cost in the fourth Quarter of FY 2012-2013 increased somewhat to support training of new staff. Emphasis is on having pre-application meetings to address issues prior to permit application submittal to minimize the number of Requests for Additional Information (RAIs). The Marianna field office was closed to achieve cost savings. The program continues to explore ways to reduce costs to process permits.
- As described below, the District continues support for the MIL and Sod-Based Crop Rotation programs. These efforts are focused within the Apalachicola River watershed and improve both agricultural water use efficiency and water quality protection.

1.3 Water Quality and Natural Systems

A number of District programs are focused on protection and restoration of water quality and aquatic, wetland, and riparian habitats. These include land acquisition and management, FDOT mitigation, the Surface Water Improvement and Management (SWIM) program, and the MFL program.

To date, the District has acquired over 224,000 acres, primarily through fee simple acquisition. These lands support natural systems and protect wetland and floodplain functions, groundwater recharge, surface and groundwater quality, and fish and wildlife habitat. District-owned lands are all open to the public and are managed to sustain public access and enjoyment, as well as water resource quality. Management and restoration efforts, including prescribed burns, vegetation enhancement, and timber harvesting, continue across 212,380 managed acres. In addition, the District maintains and improves public access and recreational amenities, such as boat ramps, primitive campsites, and day use (swimming and picnic) areas.

District lands include the majority of the Escambia and Choctawhatchee river floodplains, as well as extensive lands along the Yellow, Shoal, Blackwater, Chipola, Perdido, and Apalachicola rivers; Holmes and Econfina creeks; Garcon Point; Live Oak Point; and Perdido Bay. The District has also acquired the majority of the recharge area for springs that discharge into Econfina Creek and form a major component of the water contribution to Deer Point Lake Reservoir. Additionally, the District helped Escambia County preserve Jones Swamp as a conservation and greenway area and has assisted with local government land acquisitions in Leon County.

The in-lieu fee mitigation program is implemented in conjunction with the Umbrella, Watershed-based Regional Mitigation Plan (UWRMP). This plan serves FDOT wetland mitigation needs in areas outside of existing mitigation bank service areas and is accessible at nwfwmdwetlands.com. The program includes projects such as the Sand Hill Lakes Mitigation Bank and Tate's Hell State Forest hydrologic restoration, among many others.

The SWIM program provides the planning framework, based on the District's major riverine-estuarine watersheds (Figure 1-2), for addressing watershed protection and restoration. Implementation is accomplished through a variety of projects, including stormwater retrofits for water quality improvement and protection from flooding, wetland and aquatic habitat restoration, and resource assessments.

Figure 1-2. NWFWMD Watersheds

The SWIM program and approved plans are described in Chapter Seven of the Consolidated Annual Report, as well as at www.nwfwmd.state.fl.us/rmd/swim/swimdesc.htm.

Accomplishments over the last fiscal year and ongoing activities include the following:

- The District is continuing focused efforts to develop MFLs according to the approved schedule. Staff initiated an expanded monitoring program to fill data gaps for the St. Marks River Rise and Wakulla Springs-Spring Creek systems, as well as for the coastal Floridan Aquifer in Franklin County. Enhancements made to the District's water resource monitoring network include installation of additional water level, water quality and rainfall stations, and substantially increased monitoring frequency.
- The District provided technical support to the Governor's Office and DEP on a variety of issues related to freshwater allocation within the ACF basin. These include development of alternative operating procedures for the U.S. Army Corps of Engineers' (ACOE) reservoir system through revisions to the Water Control Manual; review and comment on the ACOE's unimpaired flow data set that is the base for much of the hydrologic modeling of the system; and exploring options for interstate water management.
- Staff continue to work with the Governor's office, other state agencies, including FDACS, DEP and Florida Fish and Wildlife Conservation Commission (FWCC), as well as local governments, to understand and counter the effects of the recent collapse of the Apalachicola Bay fisheries. These efforts include participation in the Apalachicola Bay Oyster Recovery Task Force, planning for construction of a series of local water quality improvement projects, development of a bay management plan, and additional studies targeting freshwater needs of the system.
- Throughout the year, District staff collaborated in developing a plan to achieve significant restoration and protection of coastal waterbodies pursuant to the federal RESTORE Act. In addition to ensuring an optimal response to impacts caused by the Deepwater Horizon incident,

the District and other state and federal agencies are working in collaboration with a broad base of public and private stakeholders to achieve restoration and protection of coastal ecosystems and associated economic resources and public uses.

- As a part of the Deepwater Horizon oil spill settlement with MOEX Offshore, LLC, DEP identified several stormwater projects for implementation in the Choctawhatchee Bay and St. Andrew Bay watersheds. DEP has retained the District to provide engineering design, permit preparation and limited construction administration services for four of these projects: the Lisenby Avenue stormwater management facility (St. Andrew Bay), as well as the Lovejoy, Hill Avenue, Overbrook and Tanglewood stormwater facilities (Choctawhatchee Bay). In March 2013, a notice to proceed was issued to the District for the Lisenby Avenue project. A task order for the remaining projects assigned to the District is undergoing the approval process.
- District staff completed a screening assessment of Apalachicola River and Bay nonpoint source pollutant loading across the watershed and identified focal areas for water quality improvement projects. Detailed project planning for retrofit and restoration needs continued through the year. Following the above screening assessment, the District entered into an agreement with the City of Apalachicola to fund, design and construct a stormwater retrofit project that will improve water quality and provide flood relief within the Battery Park basin. Additional priority projects have been identified in cooperation with the city, and implementation is expected to begin over the coming year.
- District staff are working with local governments in the St. Andrew Bay watershed to implement priority urban stormwater retrofit projects to improve water quality within St. Andrew Bay.
- In January 2013, the Governing Board agreed to assist Washington County in funding stream bank restoration and protection measures and repairs and improvements to Hightower, Spurling and Live Oak Landings within the Holmes Creek WMA. The county has finalized the designs and is awaiting permit modifications for the construction of vegetated retaining walls; however, previously permitted construction has been delayed due to flooding.
- Designs for the Williford Spring restoration project have been completed. Staff evaluated the project for cost savings and revised plans to realize an estimated project savings of $300,000 - $400,000 (subject to bids). Installation is expected to be completed during FY 2013-2014.
- The District continues to provide funding for the Northwest Florida Mobile Irrigation Laboratory. The MIL supports water conservation within the Jackson Blue Spring basin and other agricultural areas. Piped agricultural irrigation systems are evaluated to estimate potential and actual water savings, and recommendations are provided as needed for repairs and retrofits. Results include improved water use efficiency and reduced costs. This program is supported cooperatively with FDACS and the U.S. Department of Agriculture (USDA).
- With grant funding assistance from the District, University of Florida IFAS researchers are continuing efforts in Jackson County to refine and implement farming techniques that decrease irrigation demands, increase nitrogen use efficiency, reduce the incidence of plant pests, improve soil and water quality, diversity farm income, and manage economic risk. Through these efforts, the sod-based crop rotation system has demonstrated improved yields and reduced costs, while also reducing water and fertilizer use.
- Significant land management activities included prescribed burns on approximately 9,700 acres of District lands, as well as vegetation management (herbicide) and habitat enhancements on approximately 1,300 acres.

- A cooperative project with Walton County to improve a popular boat ramp and camping area at Dead River Landing was substantially completed. Completion of the final phase was delayed due to high water conditions.
- A shoreline restoration project was completed along approximately 225 feet of Seven Runs Creek in Walton County. This project applied a non-structural approach utilizing geotextile bags to stabilize the shoreline with a vegetated retaining wall. The project was constructed by Walton County crews, with the District providing materials and construction oversight assistance.
- In its ongoing reforestation and groundcover habitat restoration program, the District completed hand planting of 621 acres of disturbed longleaf pine, wet pine flatwoods, and wiregrass habitat across northwest Florida. These habitat restoration activities enhance groundwater recharge, improve wetland functions, and offset wetland losses caused by FDOT projects. Additionally, over 284,000 longleaf pine tubelings were planted within five WMAs and the Sand Hill Lakes Mitigation Bank. The District also reestablished groundcover habitat, planting over 372,000 plugs of wiregrass and toothache grass on disturbed habitat sites at the Sand Hill Lakes Mitigation Bank and the Perdido River WMA.
- Seeds for many District groundcover projects were collected from District land on the Econfina Creek WMA. The District continues to research, refine, and establish new habitat restoration techniques that increase species diversity and ecosystem health.
- District staff completed draft updates to the mitigation plan to be compliant with mitigation banking and in-lieu fee rules under 40 CFR Part 230.
- At the Dutex mitigation site (Escambia County), a helicopter burn was conducted in March for the entire 820 acres. The burn greatly reduced shrub cover and helped stimulate the seed bank. Additional shrub reduction was conducted for 102 acres within the western parcel. In 2014, restoration activities will continue in the western tract. In the eastern tract, the initial shrub reduction will commence within 120 acres of former hydric pine flatwoods and wet prairie converted to titi swamp in the absence of fire.
- The Yellow River Ranch mitigation site in Santa Rosa County is progressing towards success. The 102-acre hydric pine flatwoods restoration area was burned in 2013. The burn was successful and fire carried well across the site. Exotic species control continued in 2013. Control of exotic grasses and popcorn tree has been successful with the cover of invasive exotic species well below the 1% cover required in the permit.
- The Lafayette Creek restoration site in Walton County has responded well to shrub reduction within the 50-acre hydric pine flatwoods and wet prairie. Colonies of white topped pitcher plants have re-emerged with the removal of the black titi shrub cover. Toothache grass and wiregrass are common in the understory. Shrub sprouts will continue to be treated as needed in 2014. In addition, a successful burn was conducted on 423 acres, including 50 acres of hydric pine flatwoods mixed with wet prairie and 373 acres of sand hill and mesic pine flatwoods.
- Five hundred acres of uplands and wetlands were burned at the Sand Hill Lakes Mitigation Bank (Washington County) in 2013. Shrubs within the hydric pine flatwoods have been reduced to less than 5% cover, below permit requirements. An evaluation of planted wiregrass plugs revealed an average of 70% survival within the wetlands and 80% survival in uplands. Wiregrass seedlings were observed at all sites. Appropriate native species continue to increase in number and cover. Hardwoods and sand pine seedlings were eradicated in 102 acres of sand hill restoration that had previously been converted to a sand pine plantation. This area continues to progress towards a diverse sandhill community.

- Hydrologic restoration activities are continuing in Tate's Hell State Forest. The District and the Florida Forest Service are working to complete Phase I and begin Phase II of restoration activities in the Whiskey George, Doyle Creek, and Juniper Creek drainage area (approximately 20,800 acres), including installing 16 low-water crossings, 25 culvert improvements and 39 ditch blocks. These efforts will enhance flows and improve water quality in East Bay, one of the primary nursery areas of Apalachicola Bay.
- Maintenance and monitoring continued on 20 mitigation projects associated with the Umbrella Regional Mitigation Plan. Sites are evaluated for wetland community development, hydrologic condition, exotic species control, and wildlife usage. All sites successfully met restoration objectives.
- The District provided 1.31 mitigation credits from the Sandhill Lakes Mitigation Bank and purchased 3.14 credits from the private Nokuse Plantation Mitigation Bank for FDOT District Three impacts. Two new mitigation efforts, St. Joseph Bay State Buffer Preserve Hydrologic Enhancements and an Eglin Air Force Base mitigation project, were planned during FY 2012-2013 as offsetting mitigation for three FDOT projects outside of any private mitigation bank service area and remote from any existing District mitigation site.
- At the St. Joseph Bay State Buffer Preserve, six low-water crossings and associated ditch plugs were installed to restore the natural hydrology of adjacent hydric pine flatwoods and forested wetlands. This restoration offsets wetland impacts associated with the FDOT road improvements to SR 30A.
- In FY 2013-2014, FDOT is anticipating the addition of one new project involving District mitigation. The proposed US 331 Bridge improvements in Walton County will have estuarine wetland impacts, a minor portion of which will have mitigation provided by the District. There are no other new FDOT District mitigation projects anticipated for FY 2013-2014.With funding assistance from the District and other partners, the Blueprint 2000 Intergovernmental Agency has completed the Cascades Park Watershed Restoration Project. Components include major stormwater ponds, retaining walls, utility relocations, landscaping to support littoral vegetation, and stream reconstruction, all within the St. Marks River watershed.
- The Environmental Resource Permitting (ERP) program reduced the annualized median in-house processing time of all authorizations combined (individuals, exemptions, noticed general permits, extensions, and modifications) by 79% and cost per permit by 65%. There was a focus on having pre-application meetings to address issues prior to permit application submittal to minimize the number of Requests for Additional Information (RAIs). The Crestview and Tallahassee field offices were moved onto smaller facilities, significantly reducing costs. The program continues to explore new ways to reduce in-house processing time and improve efficiency to decrease cost to process permits.
- The ERP and Management and Storage of Storm Water (MSSW) programs were combined as a result of the adoption of the Statewide Environmental Resource Permitting (SWERP) rules in chapter 62.330, F.A.C. SWERP brought greater consistency to these regulatory programs for all five water management districts and DEP while allowing differing design criteria to consider the specific geological and hydrological conditions found throughout the state. Besides streamlining the regulatory process, it allowed the NWFWMD to eliminate one entire Bureau (MSSW) which reduced costs. SWERP also eliminated the chapter 40A-4 rules for the district.
- Watershed restoration activities were conducted in the Apalachicola and St. Marks River watersheds through the SWIM and Florida Forever programs. Hydrologic restoration within Tate's Hell State Forest in the Apalachicola Bay watershed included construction of two hardened low water crossings, three earthen ditch plugs, and one culvert modification. Within the

St. Marks River watershed, stormwater treatment for a 760-acre drainage area was completed as a component of the Cascades Park project. Project features include major stormwater ponds, an alum treatment system, retaining walls, utility relocations, landscaping to support littoral vegetation, and stream reconstruction. Pollutant load reductions for these facilities are expected to exceed 90% in total suspended solids, 22% in total nitrogen, 66% in total phosphorus, and 29% in biochemical oxygen demand, as well as an annual reduction of over 22,000 pounds of sediment.

1.4 Flood Protection and Floodplain Management

In 2003, the NWFWMD accepted delegation and responsibility for modernizing flood hazard maps into a digital format for all of its jurisdictional area through a Cooperating Technical Partner (CTP) agreement with the Federal Emergency Management Agency (FEMA).

As a result of this partnership and associated efforts, all of northwest Florida now has digital flood insurance rate maps (DFIRMs). FEMA has also initiated the Risk Mapping, Assessment, and Planning (Risk MAP) program, which is the focus of the District's current effort. This effort includes collaboration with state and local agencies to deliver quality data to increase public awareness of and support for actions that reduce flood-related risks. The general goal of the program is to foster informed risk management decisions and actions that mitigate flood risk through a consistent approach to assessing potential vulnerability and losses.

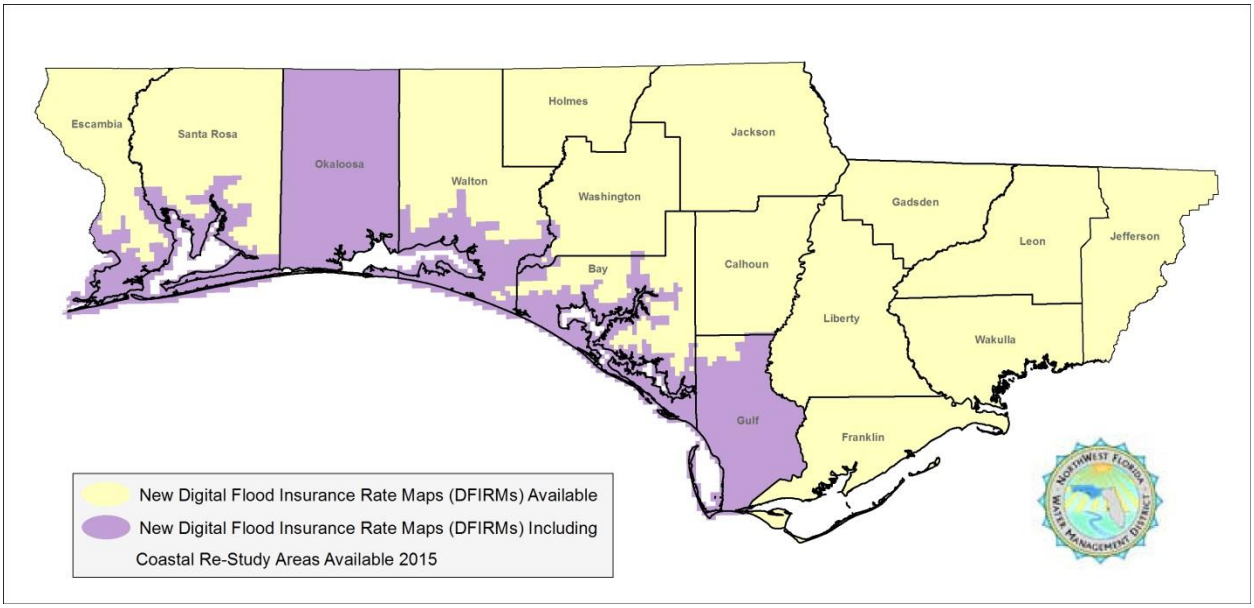

Figure 1-3. Floodplain Mapping Status

Recent Flood Protection and Floodplain Management accomplishments and objectives include the following:

- DFIRMs have now been developed through the Map Modernization process for all of the counties of northwest Florida. Final effective DFIRMs have been completed for Escambia, Santa Rosa, Bay, Gulf, Walton, Gadsden, Leon, Holmes, Washington, Jackson, Calhoun, Liberty, Franklin, and Jefferson counties. Preliminary DFIRMs have been completed for Wakulla County. Approximately 98 percent of the 1,254 DFIRM map panels completed have thus far been adopted by local

governments. Additional coastal re-studies are in progress across several counties to further update and enhance available data (Figure 1-3).

- The District's Flood Information Portal is available online for all of northwest Florida at portal.nwfwmdfloodmaps.com. The portal, through an intuitive online interface, makes detailed flood information down to the individual parcel level available to the public.
- The District launched a public website providing detailed Light Detection and Ranging (LiDAR)-based elevation and surface feature data for properties across northwest Florida. The data provided is ten times more detailed than most previous topographic maps. This provides an important tool for many of the District's water resource management and flood protection functions. Residents and technical experts can also use the data to plan for activities including landscaping, resource protection, flood risk evaluation, and construction. The website is available at www.nwfwmdlidar.com.
- Work continues on the Risk MAP program funded by FEMA through a CTP agreement.
- Detailed coastal remapping studies continue for Escambia, Santa Rosa, Okaloosa, Walton, Bay and Gulf counties. Additionally, county-wide mapping, floodplain mapping, assessment, and planning evaluations at the watershed level are ongoing for the Lower Ochlockonee River, Apalachicola River, New River, Chipola River, Pensacola Bay, Perdido Bay, Perdido River, and Apalachee Bay – St. Marks River watersheds. This nonstructural effort contributed greatly to the accomplishment of the District's floodplain management and protection area of responsibility. It also enhances the District's ability to protect and manage floodplains without acquiring land or making structural modifications.

Chapter Two: Minimum Flows and Levels Annual Priority List

Section 373.042, F.S., requires each water management district to develop minimum flows and levels (MFLs) for specific surface and groundwaters within their jurisdiction. The MFL for a given waterbody is the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. MFLs are calculated using best available data and consider natural seasonal fluctuations; non-consumptive uses; and environmental values associated with coastal, estuarine, riverine, spring, aquatic, and wetlands ecology as specified in section 62-40.473, Florida Administrative Code (F.A.C.).

Establishment of an MFL involves a series of steps ranging from identification of priority waterbodies to the adoption of DEP rules codifying each MFL. Adopted MFLs are considered when reviewing consumptive use permit applications. A recovery or prevention strategy must be developed for any waterbody where consumptive uses are currently or anticipated to result in flows or levels below an adopted MFL.

The NWFWMD FY 2013-2014 MFL priority list and schedule were developed based on recommendations of an internal, multi-disciplinary working group. Review criteria included resource status and vulnerability, data availability, the sufficiency of existing modeling tools, statutory requirements and guidance provided by DEP. The list represents an environmentally protective MFL program, scheduled to be implemented in a realistic, technically sound, and achievable manner. Twenty-two priority waterbodies were identified and prioritized based on the working group assessment.

The technical evaluation for each MFL is expected to require approximately five years of data collection and analysis. Data collection has begun and will occur concurrently for several waterbodies. Starting in 2018, one MFL assessment is expected to be completed annually. It is anticipated that the technical assessment for the St. Marks River Rise, a first magnitude spring in southeastern Leon County that shares a substantial portion of its groundwater contribution area with Wakulla Springs, will be completed in 2018. The second assessment is scheduled to be completed in 2019 for the Floridan Aquifer in coastal Franklin County. Completion of each technical assessment will be followed by a rulemaking process. The data and MFL assessments developed for the St. Marks River Rise will also assist in establishing an MFL for Wakulla Springs.

The FY 2013-2014 priority list and timelines are subject to the availability of funds, data collection and analysis needs, climatic conditions, peer review, and rule challenges. The list and schedule will be re-evaluated annually, and adjustments will be made as appropriate. The 2013-2014 priority list has been submitted to DEP (Table 2-1).

Table 2-1. Northwest Florida Water Management District MFL Priority List (2014)

Waterbody	WB Type[2, 3]	County	MFL Initiation	Estimated Completion	
				Technical Assessment[4]	Rule Adoption[5]
St. Marks River Rise	Spr (1st)	Leon	2013	2018	2020
Wakulla Springs	Spr (1st)	Wakulla	2013	2021	2023
Sally Ward Spring	Spr (2nd)	Wakulla	2013	2021	2023
Floridan – Coastal Franklin County	A	Franklin	2014	2019	2021
Floridan – Coastal Region II	A	Coastal Santa Rosa, Okaloosa, Walton	2015	2020	2022
Jackson Blue Spring	Spr (1st)	Jackson	2016	2022	2024
Floridan – Coastal Bay County	A	Bay	2018	2023	2025
Econfina Creek & Spring complex	Spr (1st & 2nd)/R	Bay, Jackson, Washington	2019	2024	2026
Deer Point Lake	L	Bay	2020	2025	2027
Yellow River/Shoal River	R	Santa Rosa, Okaloosa, Walton	2021	2026	2028
Floridan – Inland Walton County	A	Walton	MFL Technical Assessments will be initiated as soon as fiscal and staffing resources allow.		
Floridan – Coastal Gulf County	A	Gulf			
Floridan – Inland Franklin County	A	Franklin			
Inland Sand and Gravel	A	Santa Rosa, Okaloosa			
Morrison Spring	Spr (2nd)	Walton			
Holmes Blue Spring	Spr (2nd)	Holmes			
Blue Hole Spring	Spr (2nd hist.)	Jackson			
Ponce de Leon Spring	Spr (2nd)	Holmes			
Washington Blue & Potter Spring Complex	Spr (2nd)	Washington			
Baltzell Spring group/upper Chipola Spring complex	Spr (2nd)/ R	Jackson			
Holmes Creek & Spring complex	Spr (2nd)/ R	Washington			
Telogia Creek	R	Liberty, Gadsden			

Waterbodies Subject to Regulatory Reservations			
Apalachicola River	R	Jackson, Calhoun, Gulf, Gadsden, Liberty, Franklin	The magnitude, duration and frequency of observed flows are reserved, essentially in total, all seasons for the protection of fish and wildlife of the Chipola River, Apalachicola River, associated floodplains and Apalachicola Bay (40A-2.223, F.A.C.).
Chipola River	R	Jackson, Calhoun, Gulf	

Footnotes

[1] Priority list and schedule will be re-evaluated on an annual basis.

[2] WB Type: A=aquifer, L=lake, R=river, Spr=spring (1st or 2nd magnitude).

[3] All first magnitude springs, and second magnitude springs on state lands are required to be listed according to section 373.042, F.S.

[4] It is anticipated that each proposed MFL will be submitted for scientific peer review following the technical assessment.

[5] Based on an estimated 18-24 months from completion of technical assessments to final rule adoption.

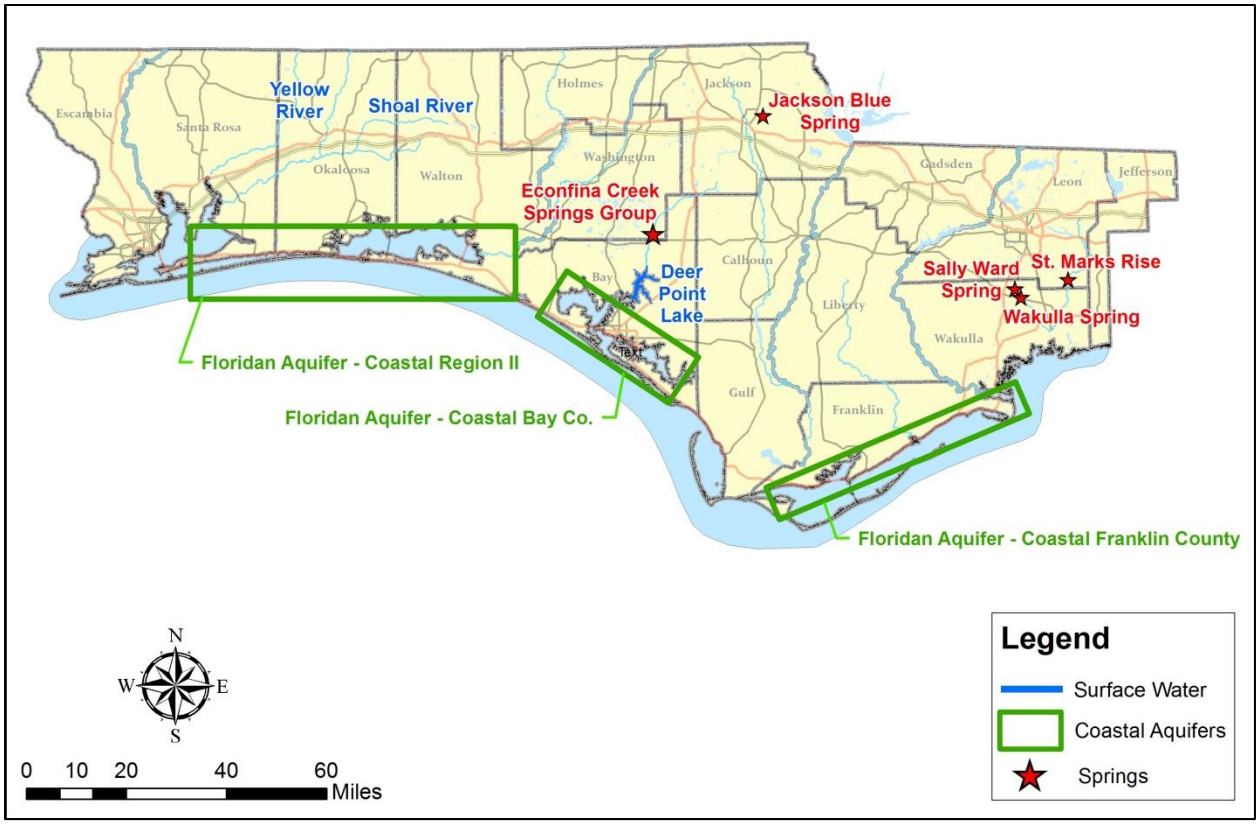

Figure 2-1. NWFWMD MFL Priority Waterbodies (2013-2014 Schedule)

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Chapter Three: Annual Five-Year Capital Improvements Plan

3.1 Introduction

The five-year capital improvements plan (CIP) includes projected revenues and expenditures for capital improvements from fiscal years 2013-2014 through 2017-2018. As directed by section 373.536(6)(a)(3), F.S., the CIP has been prepared in a manner comparable to the fixed capital outlay format set forth in section 216.043, F.S. The format for this plan is drawn from the standard budget reporting format prescribed by the Executive Office of the Governor. Capital improvement projects may be budgeted in either of two standard program categories. Those programs and their activities and sub-activities are represented below:

2.0 Acquisition, Restoration and Public Works

- 2.1 Land Acquisition
- 2.2 Water Source Development
  - 2.2.1 Water Resource Development Projects
  - 2.2.2 Water Supply Development Assistance
  - 2.2.3 Other Water Source Development Activities
- 2.3 Surface Water Projects
- 2.4 Other Cooperative Projects
- 2.5 Facilities Construction & Major Renovations
- 2.6 Other Acquisition and Restoration Activities

3.0 Operation and Maintenance of Lands and Works

- 3.1 Land Management
- 3.2 Works
- 3.3 Facilities
- 3.4 Invasive Plant Control
- 3.5 Other Operation and Maintenance Activities

The only activities and sub-activities under program *2.0 Acquisition, Restoration and Public Works* that may include capital improvement projects are: 2.1 Land Acquisition, 2.2.1 Water Resource Development Projects, 2.2.3 Other Water Source Development Activities, 2.3 Surface Water Projects, and 2.5 Facilities Construction and Major Renovations. The Northwest Florida Water Management District has projects in each of these categories.

The only activities under program *3.0 Operation and Maintenance of Lands and Works* that may include capital improvement projects are: 3.1 Land Management and 3.2 Works. Of these, the Northwest Florida Water Management District only has capital improvement projects in activity 3.1.

The CIP includes expenditures for basic construction costs (permits, inspections, site development, etc.) and other project costs (land, survey, existing facility acquisition, professional services, etc.).

A district's CIP contains only those projects that will be owned and capitalized as fixed assets by the district. The District does not capitalize construction projects having a total project cost of less than $50,000.

3.2 Five-Year Capital Improvements Plan

The purpose of the Five-Year Capital Improvements Plan (CIP) is to project future needs and anticipate future funding requirements to meet those needs. The CIP includes expenditures for basic construction costs (permits, inspections, site development, etc.), other project costs (land, survey, existing facility acquisition, professional services, etc.) and anticipated changes in program costs, changes in maintenance costs and changes in utility costs. The development and construction of all capital projects are budgeted either under program heading *2.0 Acquisition, Restoration and Public Works* or under program heading *3.0 Operation and Maintenance of Lands and Work*s.

The District's capital improvements projects are categorized according to the following activities:

- Land Acquisition;
- Surface Water Projects;
- Facilities Construction and Major Renovations; and
- Land Management.

The District's Florida Forever Work Plan, Land Acquisition Plan, Five-Year Water Resource Development Work Plan, Land Management Plan and Northwest Florida Umbrella, Watershed-based, Regional Mitigation Plan may also provide valuable insight to the District's long range capital improvements plan.

Table 3-1. NWFWMD Five Year Capital Improvements Plan, Fiscal Years 2014-2018

2.0 ACQUISITION, RESTORATION, AND PUBLIC WORKS

2.1 Land Acquisition

Revenues ($)	Fiscal Year				
	2013-14	2014-15	2015-16	2016-17	2017-18
Water Management Lands Trust Fund	0	0	0	0	0
Florida Forever	0	0	0	0	0
District Land Acquisition Reserve	48,612	47,094	50,000	50,000	50,000
Land Management Fund	0	0			
TOTAL	**48,612**	**47,094**	**50,000**	**50,000**	**50,000**

Expenditures ($)	Fiscal Year				
	2013-14	2014-15	2015-16	2016-17	2017-18
Florida Forever - Land Acquisitions	0	0	0	0	0
Land Acquisition	48,612	47,094	50,000	50,000	50,000
Water Management Lands Trust Fund	0	0	0	0	0
Land Management Fund	0	0	0	0	
TOTAL	**48,612**	**47,094**	**50,000**	**50,000**	**50,000**

2.2 Water Source Development

Revenues ($)	Fiscal Year 2013-14	2014-15	2015-16	2016-17	2017-18
Florida Forever	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**

Expenditures ($)	Fiscal Year 2013-14	2014-15	2015-16	2016-17	2017-18
Florida Forever - Land Acquisitions	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**

2.3 Surface Water Projects

Revenues ($)	Fiscal Year 2013-14	2014-15	2015-16	2016-17	2017-18
FDOT Mitigation Funds	2,500,000	2,250,000	1,500,000	1,500,000	1,500,000
TOTAL	**2,500,000**	**2,250,000**	**1,500,000**	**1,500,000**	**1,500,000**

Expenditures ($)	Fiscal Year 2013-14	2014-15	2015-16	2016-17	2017-18
FDOT Mitigation	2,500,000	2,250,000	1,500,000	1,500,000	1,500,000
TOTAL	**2,500,000**	**2,250,000**	**1,500,000**	**1,500,000**	**1,500,000**

2.5 Facilities Construction and Major Renovations

Revenues ($)	Fiscal Year 2013-14	2014-15	2015-16	2016-17	2017-18
Florida Forever	0	0	0	0	0
Water Management Lands Trust Fund	0	0	0	0	0
Land Management Fund	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**

Expenditures ($)	Fiscal Year 2013-14	2014-15	2015-16	2016-17	2017-18
None Projected	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**

3.0 OPERATION AND MAINTENANCE OF LANDS AND WORKS

3.1 Land Management

Revenues ($)	Fiscal Year				
	2013-14	**2014-15**	**2015-16**	**2016-17**	**2017-18**
Water Management Lands Trust Fund	0	0	0	0	0
Florida Forever	0	0	0	0	0
Land Management Fund	1,315,713	75,000	50,000	50,000	50,000
Line Item 1638A - 2013-2014 GENERAL APPROPRIATIONS ACT.	377,000	0	0	0	0
FWCC AHRE Section Funds (anticipated)	70,000	55,000	0	0	0
TOTAL	**1,762,713**	**130,000**	**50,000**	**50,000**	**50,000**

Expenditures ($)	Fiscal Year				
	2013-14	**2014-15**	**2015-16**	**2016-17**	**2017-18**
Canoe/Small Boat Launch(s)	0	0	0	0	0
ESC - Spring Restoration & Protection Project; Phase II - Williford Spring	1,507,713	75,000	0	0	0
Streambank Restoration & Public Recreation – Cooperative with Local Governments	255,000	0	0	0	
Public Access Road Construction	0	0	0	0	0
Streambank and Solution Hole Restoration and Protection	0	55,000	50,000	50,000	50,000
TOTAL	**1,762,713**	**130,000**	**50,000**	**50,000**	**50,000**

TOTAL CAPITAL EXPENDITURES ($)	**4,311,325**	**2,427,094**	**1,600,000**	**1,600,000**	**1,600,000**

3.3 Project Descriptions

The following pages provide a brief description of each capital improvements plan activity.

PROGRAM: 2.0 ACQUISITION, RESTORATION, AND PUBLIC WORKS

ACTIVITY: 2.1 LAND ACQUISITION

Project Title: Save Our Rivers, Preservation 2000 and Florida Forever Land Purchases - No land acquisitions are anticipated in FY 2013-2014.

Type: Unimproved Land

Physical Location: Undetermined - Within the District's 16-county boundaries

Square Footage/Physical Description: N/A

Expected Completion Date: N/A

Historical Background/Need for Project: To protect and preserve the water resources within the District's 16-county boundaries.

Plan Linkages: Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): None

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): Purchase price of land is unknown at this time.

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): Land acquisition ancillary costs are unknown at this time.

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): N/A

Anticipated Additional Operating Costs/Continuing: Varied. Maintenance costs to be determined based on the locations and types of lands ultimately acquired.

PROGRAM: 2.0 ACQUISITION, RESTORATION, AND PUBLIC WORKS

ACTIVITY: 2.2 WATER SOURCE DEVELOPMENT

Project Title: Save Our Rivers and Florida Forever Land Purchases - No land acquisitions are anticipated in FY 2013-2014.

Type: Unimproved Land

Physical Location: Undetermined - Within the District's 16-county boundaries

Square Footage/Physical Description: N/A

Expected Completion Date: N/A

Historical Background/Need for Project: To protect and preserve the water resources within the District's 16-county boundaries.

Plan Linkages: Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): None

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): Purchase price of land is unknown at this time.

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): Land acquisition ancillary costs are unknown at this time.

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): N/A

Anticipated Additional Operating Costs/Continuing: Varied. Maintenance costs to be determined based on the locations and types of lands ultimately acquired.

PROGRAM: 2.0 ACQUISITION, RESTORATION, AND PUBLIC WORKS

ACTIVITY: 2.3 SURFACE WATER PROJECTS

Project Title: Regional Mitigation for FDOT Wetlands Impacts

Type: Wetlands, waterbodies and buffers that qualify as mitigation for FDOT wetland impacts

Physical Location: Various locations - Watersheds within the District

Square Footage/Physical Description: Land purchases, land management restoration activities (shrub reduction, herbicide, vegetative planting, etc.), and/or construction of various capital restoration structures (e.g., bridges, low water crossings, water control structures).

Expected Completion Date: Program is ongoing, year-to-year.

Historical Background/Need for Project: Section 373.4137, F.S., provides that the districts mitigate for FDOT wetland impacts that are not within the service area of a private mitigation bank or when credits from a mitigation bank are not deemed appropriate.

Plan Linkages: Northwest Florida Umbrella, Watershed-based, Regional Mitigation Plan, Florida Forever Work Plan, SWIM plans.

Area(s) of Responsibility: Water Quality, Flood Protection and Natural Systems.

Alternative(s): Specific projects may be excluded from the mitigation plan, in whole or in part, upon the election of the FDOT, a transportation authority if applicable, or the District.

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): Unknown at this time. Multiple projects. Costs are determined by project type (land acquisition, bridge construction, low water crossing, etc.).

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): An amount equal to 15 percent of the total construction and land acquisition costs are estimated for engineering design work, surveying, land appraisals, environmental audits, etc.

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): Unknown at this time. Multiple projects. Costs are determined by project type (land acquisition, bridge construction, low water crossing, etc.).

Anticipated Additional Operating Costs/Continuing: Unknown at this time. Multiple projects. Costs are determined by project type (land acquisition, bridge construction, low water crossing, etc.)

PROGRAM: 2.0 ACQUISITION, RESTORATION, AND PUBLIC WORKS

ACTIVITY: 2.5 FACILITIES CONSTRUCTION AND MAJOR RENOVATIONS

Project Title: No facilities construction or major renovations are anticipated in FY 2013-2014

Type:

Physical Location:

Square Footage/Physical Description:

Expected Completion Date:

Historical Background/Need for Project:

Plan Linkages: Florida Forever Work Plan, District Strategic Plan, District Budget

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s):

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other):

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other):

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses):

Anticipated Additional Operating Costs/Continuing:

PROGRAM: 3.0 OPERATION AND MAINTENANCE OF LANDS AND WORKS

ACTIVITY: 3.1 LAND MANAGEMENT

Project Title: Public Waterway Access

Type: Canoe/Small Boat Launch(s)

Physical Location: TBD

Square Footage/Physical Description: TBD

Expected Completion Date: TBD

Historical Background/Need for Project: Suitable public waterway access, especially in sensitive riparian, lacustrine and floodplain areas on District lands.

Plan Linkages: District's Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): NWFWMD could delay potential projects when sites are identified, however adverse stormwater and shoreline impacts will continue, i.e., erosion, siltation and sedimentation issues, which would adversely impact water quality in stream, lakes and rivers.

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): N/A

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): N/A

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): N/A

Anticipated Additional Operating Costs/Continuing: N/A

PROGRAM: 3.0 ACQUISITION, RESTORATION, AND PUBLIC WORKS

ACTIVITY: 3.1 FACILITIES CONSTRUCTION AND MAJOR RENOVATIONS

Project Title: Econfina Springs Complex - Spring Restoration & Protection Project; Phase II - Williford Spring.

Type: Spring Restoration and Protection Project

Physical Location: Econfina Creek Water Management Area

Square Footage/Physical Description: Proposed restoration and protection of Williford Spring, a second magnitude spring. Engineering designs include, but are not limited to, the following: 1) spring vent sediment removal; 2) spring bank and shoreline restoration and protection utilizing geotechnical materials and native vegetation; 3) enhanced spring and spring-run protection with the construction of an elevated mono-pile boardwalk which provides access to a canoe dock/gangway for use by canoeists/kayakers; 4) associated stormwater facilities to prevent sediment from entering the spring pool; 5) spring entry steps and limestone terrace for public access; 6) connector and interpretative trail construction in sensitive karst areas to protect water resources, provide public access and link to Pitt and Sylvan Springs (Phase I); 7) island and shoreline restoration; 8) associated public access and recreation facilities including parking area, picnic pavilions, a compositing toilet, sidewalks, boardwalks, a spring view deck, etc. and; 9) landscape restoration utilizing native species at all sites. Final engineering designs have been completed; an DEP permit has been received; and approval of the ACOE permit and Washington County Development Order is anticipated on or before February 28, 2014. Bid preparation, bidding and bid approval for Phase II are anticipated to be completed by on or before April 10, 2014. Construction of Phase II is scheduled to begin on or before May 1, 2014.

Expected Completion Date: Construction for Phase II is slated to be completed on or before December 31, 2014. A site stabilization and landscape plant grow-in period will occur after facilities construction and is anticipated to last until May 1, 2016 or for a minimum 15-month period. Signage will be completed during the grow-in period. The site is scheduled to open on or before May 1, 2016, subject to weather factors, etc.

Historical Background/Need for Project: Project will restore and protect a significant second magnitude spring by removing from one to three feet of sediment, addressing stormwater issues, preventing erosion, enhancing water quality, protecting natural systems and restoring and enhancing riparian and associated aquatic habitats adversely impacted in the past due to unregulated public access and recreational use.

Plan Linkages: District's Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): NWFWMD could delay the project, which would adversely impact Williford Spring and the water quality of Econfina Creek (a Class I Waterbody).

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): Estimated at $1,400,000, subject to final architecture/engineering design, permitting and bidding.

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): $448,452 for engineering services (preconstruction, bidding and construction phase services), archaeological oversight (sediment removal), survey (next to adjacent private landowner) and security fencing. [$75,000 proposed in FY 2014-2015 for resource protection, public safety and interpretive signage]

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): None

Anticipated Additional Operating Costs/Continuing: N/A

PROGRAM: 3.0 OPERATION AND MAINTENANCE OF LANDS AND WORKS

ACTIVITY: 3.1 LAND MANAGEMENT

Project Title: Streambank Restoration and Protection and Repairs and Improvements to Hightower, Spurling and Live Oak Landings – Cooperative Local Government Agreement (Washington County).

Type: Streambank Restoration and Protection and Public Access and Recreation

Physical Location(s): Hightower, Spurling and Live Oak Landings (Washington County) – Choctawhatchee River/Holmes Creek WMA.

Square Footage/Physical Description: The restoration and protection of approximately 500 feet of eroded shoreline or streambank at three boat launch locations along Holmes Creek utilizing geotextile bags to create a vegetative retaining wall, as well as the repair and improvement of these boat launch sites, including but not limited to: 1) the construction of four stormwater facilities; 2) the demolition, regrading and construction of a boat launch at Live Oak Landing; 3) access road improvements; 4) parking area improvements at all three sites; 5) the construction of a bank fishing pier at Live Oak Landing; 6) a short boardwalk and spring observation deck at Hightower Landing spring; 7) the installation of protective wooden rail fencing at all sites and; 8) the development of picnic areas and four primitive campsites at Spurling Landing.

Expected Completion Date: On or before January 11, 2015, subject to permits and water levels.

Historical Background/Need for Project: Significant streambank erosion is occurring at all three sites and lack of stormwater treatment facilities are causing significant siltation and sedimentation issues at all three sites, especially at Hightower and Live Oak Landings. In addition, the boat launch at Live Oak Landing cannot be used properly during low water periods, limiting public access and recreation. Enhanced public access and recreation facilities are also needed, especially at Live Oak and Spurling Landings.

Plan Linkages: District's Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): NWFWMD could delay the project and shorelines or streambanks will continue to erode; stormwater will continue to impact the water quality of Holmes Creek; the public will have difficulty accessing Holmes Creek and adjacent District lands for recreation purposes, and; public recreation opportunities will be diminished.

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): 200,000.

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): $55,000 ($45,000 for District-provided geotextile bags and $10,000 for rail fencing, picnic tables, grills, fire rings, etc. for primitive campsites).

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): None. Per the agreement, Washington County will maintain, cleanup sites and provide law enforcement patrols.

Anticipated Additional Operating Costs/Continuing: County responsibility.

PROGRAM: 3.0 OPERATION AND MAINTENANCE OF LANDS AND WORKS

ACTIVITY: 3.1 LAND MANAGEMENT

Project Title: No Public or Land Management Access Road Construction (Materials Only) Project(s) are anticipated in FY 2013-2014 due to lack of adequate funds.

Type: Single or Double Lane Paved Public Access Road (Approx. 30-foot wide)

Physical Location(s): St. Andrew's Tract - Section 9 (Hwy. 167, SW Jackson Co.); Altha Tract - Johnny Boy Landing and Look And Tremble Roads (Calhoun County) and; Beaverdam Creek Tract - Harry Donar Road (Liberty County).

Square Footage/Physical Description: – TBD, approx. _____ square feet

Expected Completion Date: N/A

Historical Background/Need for Project: _____ Road(s) is (are) currently sand or clay that experience(s) considerable stormwater impacts (erosion/wetland habitat sedimentation and siltation) during heavy rainfall events. Paving the road(s) will lessen stormwater impacts and provide enhanced public/land management access to a portion of the _____WMA(s).

Plan Linkages: District's Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): NWFWMD could delay the project, which would allow the road to continue to erode and impact adjacent water resources, hinder vehicular access by the public to District lands, etc.

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): Cooperative project(s) [Local Govt. Agreements] with Calhoun, Jackson or Liberty Counties – Funding for asphalt only. Counties will provide all labor and equipment. Zero dollars in FY 2012-2013 and beyond due to lack of adequate funds.

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): N/A.

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): None

Anticipated Additional Operating Costs/Continuing: County responsibility.

PROGRAM: 3.0 OPERATION AND MAINTENANCE OF LANDS AND WORKS

ACTIVITY: 3.1 LAND MANAGEMENT

Project Title: Streambank and Solution Hole Restoration and Protection

Type: Shoreline and/or Solution Hole Restoration and Protection

Physical Location: District-wide - TBD

Square Footage/Physical Description: Shoreline and/or solution hole bank restoration and protection utilizing geotextile bags and providing for public access while protecting water resources, subject to engineering design and permitting.

Expected Completion Date: TBD

Historical Background/Need for Project: Shorelines and solution holes are experiencing significant bank erosion and sedimentation due to adverse impacts caused by unregulated public use on sensitive slope areas. Projects will stabilize highly erodible slopes while providing public access and recreational use.

Plan Linkages: District's Florida Forever Work Plan

Area(s) of Responsibility: Water Supply, Water Quality, Flood Protection and Natural Systems

Alternative(s): District could delay project(s), which may lead to further degradation of shorelines and/or solution holes, which may cause these areas to be closed to public access and use.

Basic Construction Costs (includes permits, inspections, communications requirements, utilities outside building, site development, other): $\geq$ $50,000.

Other Project Costs (includes land, survey, existing facility acquisition, professional services, other): The District will utilize in-house staff for engineering design services and in-house staff and Public Works Inmate Crew for construction.

Anticipated Additional Operating Costs/Initial (includes salaries, benefits, equipment, furniture, expenses): $0

Anticipated Additional Operating Costs/Continuing: None. Public Works Inmate Crew will conduct site cleanup and maintenance.

3.4 Appendix

Water Management District Standard Format Program Definitions for Programs and Activities Found in the Northwest Florida Water Management District's Capital Improvements Plan.

2.0 Acquisition, Restoration and Public Works

This program includes the development and construction of all capital projects (except for those contained in Program 3.0), including water resource development projects/water supply development assistance, water control projects, and support and administrative facilities construction; cooperative projects; land acquisition (including Save Our Rivers/Preservation 2000/Florida Forever) and the restoration of lands and water bodies.

2.1 Land Acquisition: The acquisition of land and facilities for the protection and management of water resources. This activity category does not include land acquisition components of "water resource development projects," "surface water projects," or "other cooperative projects."

2.2 Water Source Development: The acquisition of land and facilities for the protection and management of water resources. This activity category includes land acquisition components of "water resource development projects," "water supply development assistance projects," or "other water source development activities."

2.3 Surface Water Projects: Those projects that restore or protect surface water quality, flood protection, or surface-water related resources through the acquisition and improvement of land, construction of public works, and other activities.

2.5 Facilities Construction and Major Renovations: Design, construction, and significant renovation of all district support and administrative facilities.

3.0 Operation and Maintenance of Lands and Works

This program includes all operation and maintenance of facilities, flood control and water supply structures, lands, and other works authorized by Chapter 373, F.S.

3.1 Land Management (P2000/Save Our Rivers/Florida Forever): Maintenance, custodial, public use improvements, and restoration efforts for lands acquired through Save Our Rivers, Preservation 2000, Florida Forever or other land acquisition programs.

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Chapter Four: Water Supply

4.1 Five-Year Water Resource Development Work Program: FY 2013-2014 Update

Introduction

In 1997, the Florida Legislature amended the Florida Water Resources Act (section 373, F.S.) to provide direction to the state's five water management districts on regional water supply planning. This amendment provided a two-step process that involves: (1) dividing the jurisdictions of each water management district into water supply planning regions and assessing the water supply needs and sources of each region; and (2) developing regional water supply plans for those regions where existing sources of water are considered inadequate to supply water for all existing and future reasonable-beneficial uses and to sustain water resources and related natural systems over a twenty-year planning period.

Each water management district is required by section 373.536(6)(a)4, F.S., as amended in 2012, to prepare a Five-Year Water Resource Development Work Program to describe the District's implementation strategy and funding plan for the water resource, water supply, and alternative water supply development components of each approved regional water supply plan (RWSP) developed or revised under section 373.709, F.S. 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 constituting each of the five districts. 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, while water supply development projects are more localized and address water treatment, storage, and delivery to end users. Water resource development supports and facilitates future alternative water supply development, which provides for the development of non-traditional water sources. Water management districts are statutorily responsible primarily for water resource development, while water supply development is primarily the responsibility of local governments, water supply authorities, and utilities. The districts do, however, also provide technical and financial assistance for water supply development projects. Alternative water supply and water resource development projects supplement dedicated regulatory efforts to ensure the long-term sustainability of water resources.

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 4-1). The initial District Water Supply Assessment (WSA) (NWFWMD 1998) evaluated whether supplies would be sufficient to meet demands through 2020, and it was determined 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 District-wide WSA update was completed in 2008 (approved May 2009), extending 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 has updated the WSA for 2013 (Countryman et al. 2014). The 2013 update retained the conclusion that regional water supply planning should continue for region's II and III, but recommended that the plan for Region V be discontinued based on project completion and reduced growth rates. The governing board approved this recommendation in February 2014.

Figure 4-1. Water Supply Planning Regions

As required by section 373.709(2)(a)1, F.S., the RWSP level of certainty planning goal is to identify and meet existing and future reasonable-beneficial water needs during a 1-in-10 year drought event. While water supply sources can become constrained during drought conditions, demands can increase for certain uses, such as agricultural irrigation and outdoor water use. District RWSPs include strategies to help drought-proof northwest Florida communities through alternative water supply development, the interconnection of water systems, reuse of reclaimed water, and water conservation. The 2008 Water Supply Assessment Update (Coates et al., 2008) provides a more thorough discussion of the quantification of 1-in-10 year drought demands.

Implementation of strategies detailed in the Water Resource Development Work Program (WRDWP) will 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.

Preliminary results from the 2013 WSA update (in progress) indicate that public supply remains the largest use category for the District, accounting for approximately 44 percent of the demand in 2010. It is expected that this will continue to hold true through the 2015-2035 planning period. Public supply accounted for approximately 63 percent of 2010 water use in Region II, with recreational water use comprising an additional 17 percent. In Region III, public supply and industrial-commercial-institutional (ICI) water use together accounted for approximately 70 percent of the water demand, with 36 percent and 34 percent of use respectively. In Region V, public supply and ICI comprised approximately 53 percent and 30 percent of water use respectively in 2010.

Funding for Water Resource and Supply Development

The state constitution limits the NWFWMD to 1/20th (.05 mills) of the ad valorem taxing authority afforded the other four water management districts. The District's fiscal year (FY) 2012-2013 ad valorem tax millage rate, as set by the Governing Board, was .04. To fulfill legislatively mandated water supply planning and water resource development activities under this revenue constraint, the District looks to other sources of funding, when available, including the following:

- Water Management Lands Trust Fund;
- Water Protection and Sustainability Program Trust Fund;
- Legislative special appropriations;
- Florida Forever;
- District General Fund;
- Federal grants; 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), however no appropriations from the WMLTF for water resource and supply development have been made since FY 2010-2011. To the extent possible, the District is applying limited ad valorem funding to accomplish basic water supply planning functions and augmenting these funds using previously encumbered funds and reserves for priority projects. Ad valorem funding available to the NWFWMD, however, is inadequate to support implementation of major water resource and supply development projects and initiatives.

The Water Protection and Sustainability Program Trust Fund (WPSPTF), established by the 2005 Florida Legislature, allowed 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 and are described in the March 1 Consolidated Annual Report. 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.

Funding budgeted for water resource development is listed below in summary tables for regions II, III, and V (tables 2, 5, and 8, respectively). The proposed water resource development funding for FY 2013-2014 is $325,400. The anticipated five year water resource development implementation cost through FY 2017-2018 is $1,447,600. Additionally, the district expects to spend approximately $10 million of reserve funds during FY 2013-2014 for water supply development assistance grants across northwest Florida. This represents approximately 26% of the reserve funds within the District's FY 2013-2014 budget.

Where enhanced monitoring and water resource development needs are identified, District reserve funds are being used to support these activities during the short term. Efforts to identify adequate funding for long-term water resource and supply development will continue.

Region II: Santa Rosa, Okaloosa, and Walton Counties

Since the 1940s, Santa Rosa, Okaloosa, and Walton counties (Figure 4-2) have been characterized by rapid population growth and a concentration of development and water demands within coastal portions of the region. Long-term pumping of the coastal Floridan Aquifer in southern Santa Rosa, Okaloosa, and Walton counties 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 ground water.

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 4-2). 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.

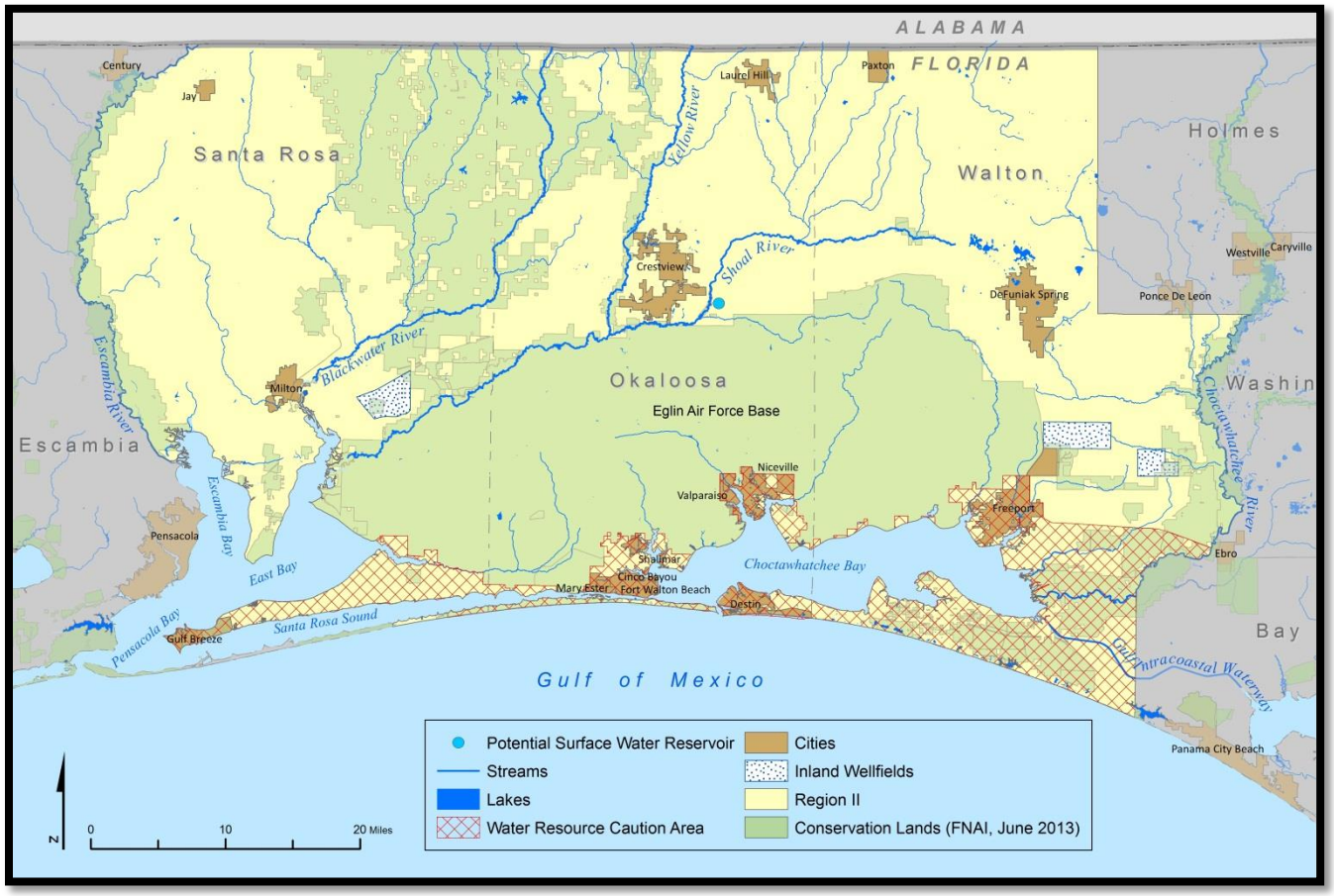

Figure 4-2. Water Supply Planning Region II

The District's first RWSP was approved by the Governing Board for Region II in February 2001 (NWFWMD 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.

Preliminary estimates for 2010 indicate that public supply accounted for 46 MGD, or 63 percent of the region's water use. It is expected that the relative importance of public supply within the region will continue to increase through the planning horizon.

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 4-1. Descriptions of the strategies and their current progress follow.

Table 4-1. Region II Water Resource Development Projects

Project	Activity	Water Identified or Made Available (MGD)
Floridan Aquifer Sustainability Modeling	Development and application of a regional ground water flow model and salt water intrusion models.	30
Inland Sand-and-Gravel Aquifer Development and Sustainability	Development and application of a three-dimensional, transient ground water 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 ground water data throughout the region.	N/A
Abandoned Well Plugging	Assistance to local governments and utilities in the plugging of abandoned wells.	N/A

* Preliminary update for 2010-2030.
** Additional anticipated quantities to be determined.

Floridan Aquifer Sustainability Modeling

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 RWSP. The Floridan Aquifer Sustainability Model was 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 long-term safe yields from the coastal aquifer, pumpage from consumptive use permits, and future withdrawal scenarios to evaluate cumulative impacts.

Model simulations have been run to predict the extent of salt water intrusion through 2100 for the eastern and western model domains. The simulations incorporated historical withdrawals and proposed future pumping rates. Results indicate that salt water intrusion into potable portions of the Floridan Aquifer continue to occur at a slow, manageable 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.

Under current pumping conditions, it is estimated that the coastal Floridan Aquifer is sustainable through 2050 and likely beyond (Busen and Bartel 2012). Future model applications will be directed toward analysis of drawdown effects of increased pumping of the Floridan Aquifer in inland areas and alternative withdrawal scenario development.

Funding reflected over the next two years (Table 4-2) includes a portion of funding allocated for development and improvement of groundwater models District-wide.

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. Through this project, a three-dimensional, transient ground water flow model has been developed to assess the volume of water sustainably available from the 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. In previous years, considerable data were gathered, which involved constructing project-specific monitoring wells, determining aquifer hydraulic properties, mapping aquifer unit thicknesses, and measuring ground-water levels and stream discharge. The ground water 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 one 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, potable water withdrawals from the wellfield and vicinity have increased to over five MGD. Water from the wellfield is being conveyed south to alleviate pumping demand from the Floridan Aquifer along the coast.

Modeling results to date indicate that an additional 12 MGD may be allocated from the inland Sand-and-Gravel Aquifer study area for a ground water production total of approximately 18 MGD. 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.

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 ground water. 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. It is anticipated that the model will also be applied to the resource assessment portion of the WSA update. Additional application and assessment, including evaluation of potential wetland effects from future withdrawals, may also be conducted depending on funding availability.

As with the Floridan Aquifer Sustainability model, funding reflected over the next two years (Table 4-2) includes a portion of funding allocated for development and improvement of groundwater models District-wide.

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 various technically and economically feasible 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 is not economically feasible and that its implementation would cause significant environmental impacts and mitigation requirements. Surface waters in the Yellow and Shoal rivers basins are being further evaluated as potential future water supply sources for Okaloosa County. Potential facilities may include direct withdrawal and treatment systems, as well as offline reservoir or other storage facilities. Funding reflected over the next two years (Table 4-2) provides for further coordination between District and Okaloosa County staff to fully explore options and needs based on current and projected conditions.

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 have not been developed on a widespread basis within Region II due to hydrogeologic conditions, economic feasibility, the need for water quality evaluations, and other technical constraints. Destin Water Users recently developed an ASR system that is permitted for a 2.125 MGD annual average daily flow capacity. The system consists of seven wells for storage of reclaimed water in the Sand and Gravel Aquifer. 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 ground water 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 ground water 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 2012, 21 reuse applications associated with 10 reuse systems in Region II were permitted for public access reclaimed water, producing an estimated 8.83 MGD for public access reuse (DEP 2013). These facilities supported landscape irrigation for approximately 2,083 residences, 19 golf courses, eight parks, three schools, and one cemetery.

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 Freeport and in north-central Okaloosa County. A District-wide grant program initiated for FY 2013-2014 will make funding available for reuse projects, as well as other priority water supply development assistance projects.

The Region II RWSP previously identified approximately 5 MGD of new beneficial reuse to offset demands on the coastal Floridan Aquifer within Region II. This estimate has been updated to 5.4 MGD for the RWSP 2010-2030 planning horizon. The District will revise this estimate as additional data become available.

Reuse planning activities over the previous year were incorporated into efforts to update reuse and recreation water use portions of the WSA update. Significant progress has been achieved in identifying potential resources for water reclamation and reuse District-wide through 2035. 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. Note that the District has allocated a portion of its reserve funds over the next two years for local water supply development assistance grants. It is anticipated the beneficial reuse projects proposed by local governments and utilities will receive priority consideration for grant funding.

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 estimated potential for additional potable water conservation within the coastal portion of the region is relatively low (estimated previously at 2.5 MGD) (PBS&J 2000a). Water conservation remains a priority, however, to build upon current water use efficiency and resource sustainability.

Under chapter 40A-2, F.A.C., new withdrawals from the Floridan Aquifer for non-potable uses are 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. The goal for utility conservation measures is to reduce the annual average residential per capita water consumption to 100 gallons per day or lower and to reduce 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 reporting these values are achieving the 100 residential gallons per capita per day (gpcd) goal, and overall reported residential per capita use in the District is 100 gpcd or less.

The District's 2013-2014 budget includes a significant investment in information technology (IT) enhancements and improvements, including a complete rebuild of the District's website. The District intends for the website to better educate residents about how they can participate in water management, including providing easy-to-access water conservation tools and educational materials. Budgeted funding is not specific to regions or projects. District staff continue to promote water conservation education and awareness through such activities as the distribution of water conservation brochures and information and through the Water Conservation Hotel and Motel Program (Water CHAMP), which reduces washing of linens and towels. As of August 2013, 32 hotels were participating in the program, including 16 in Region II.

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). The NWFWMD coordinates distribution of the associated water rates model to utilities in cooperation with the author.

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 work with local governments and state and regional agencies to enhance coordination of land use and water supply planning. District staff previously distributed guidelines and provided technical assistance to local governments for preparing water supply comprehensive plan amendments and water supply facilities work plans.

In 2012, the District completed an update to the Region II RWSP. Additional activities included coordination of program funding sources and grant agreements. Two major grant funded projects were completed during the year. WRP, Inc. (a partnership between Destin Water Users, Inc., and South Walton Utility Company, Inc.) completed construction of a 15-mile potable water transmission pipeline from the inland wellfield in Walton County, south across Choctawhatchee Bay to the coastal region. Regional Utilities of Walton County also completed construction of over five miles of water transmission pipeline along the U.S. Highway 98 corridor. These facilities are interconnected with the inland wellfield, conveying inland ground water to meet coastal demand. Additionally, the 2012-2013 WRDWP Annual Report was completed and incorporated into the March 1, 2013, Consolidated Annual Report.

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 project 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.

The Coastal Water Systems Interconnect Project includes a comprehensive Basis of Design Report (BODR) to evaluate potential interconnections that would serve multiple utilities. Existing interconnections were evaluated to determine their capacity and ability to meet the emergency needs of the interconnected utilities. The evaluation was conducted for current and future conditions (2030) and assessed utility 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 emergency water system reliability for customers of 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 emergency water supply 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 interconnection 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 development of 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 will continue to monitor conditions within the coastal WRCA for salt water intrusion and aquifer sustainability. The monitoring network is essential for ensuring that long-term water supply initiatives are successful and sustainable, as well as for refining groundwater models and analyses needed to make future management decisions and to further develop water management strategies.

Details of monitoring conducted as part of the Water Resource Development Work Program, as well as other programs, may be found in the Hydrologic Monitoring Plan (Barrios et al., 2011), available at: www.nwfwmd.state.fl.us/pubs/hydrologic_monitoring_plan/hydrologic_monitoring_plan.html.

The need has been identified to further expand and enhance the District's water resource monitoring network to support resource sustainability and cumulative impact assessments, to develop alternative water supplies, and to establish minimum flows and levels (MFLs). Among the enhancements planned are additional water level, water quality, and rainfall stations, and substantially increased monitoring frequency. Plans for an expanded hydrologic and water quality monitoring network were completed in 2013 with the network expansion for Region II planned for completion in 2014.

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 ground water 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 ground water 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 4,844 abandoned wells within Region II, 242 of which were plugged in FY 2012-2013.

Funding Summary: Region II Water Resource Development Projects

Table 4-2 displays past year expenditures, current year budget, and anticipated future expenditures for water resource development within Region II.

Table 4-2. 2014-2018 Region II WRDWP Project Funding

Water Resource Development Projects	FY 12-13 Expenditures	Anticipated Five Year Work Program					FY14-FY18 Cost Estimate
		FY 13-14 Budget[1]	FY 14-15	FY 15-16	FY 16-17	FY 17-18	
Floridan Aquifer Sustainability[2]	$0	$11,400	$12,600	$10,000	$15,000	$20,000	$69,000
Inland Sand-and-Gravel Aquifer	$27,791	$24,800	$25,600	$10,000	$15,000	$20,000	$95,400
Surface Water Sources	$1,624	$1,900	$15,000	TBD	TBD	TBD	$16,900
Aquifer Storage and Recovery	$0	$0	$0	$0	$0	$0	$0
Water Reuse	$10,907	$9,000	$15,000	$15,000	$15,000	$15,000	$69,000
Water Conservation[3]	$3,194	$8,200	$5,000	$5,000	$5,000	$5,000	$28,200
Regional Water Supply Planning	$48,407	$18,000	$15,000	$20,000	$25,000	$30,000	$108,000
Interconnect	$2,453	$2,600	$0	$0	$0	$0	$2,600
Hydrologic Data	$62,122	$83,900	$90,000	$90,000	$90,000	$90,000	$443,900
Abandoned Well Plugging[4]	$0	$0	$0	$0	$0	$0	$0
TOTAL	**$156,499**	**$159,800**	**$178,200**	**$150,000**	**$165,000**	**$180,000**	**$833,000**

[1] FY 14 figures based on adopted budget.

[2] Funding for application of the Floridan Aquifer Sustainability Model during the Water Supply Assessment (WSA) update and subsequent evaluations is captured within budget listed for the Regional Water Supply Planning project

[3] Water conservation expenditures and budgets shown are for resource management and planning activities and do not include significant efforts extended through Resource Regulation.

[4] Funding in future years will be budgeted as assistance needs are identified.

The budget for FY 2013-2014 reflects a decrease in anticipated spending as compared to budgets of previous years. Significant budget items previously accomplished include the major contractual expenses for development of the coastal interconnect BODR, the Floridan Aquifer Sustainability Model, the Sand and Gravel Aquifer model, and earlier contractual work in support of feasibility assessments of surface water sources in Okaloosa County. Staff resources during FY 2012-2013 were shifted substantially toward completion of a District-wide WSA update as well as to the MFL program, support for state efforts with respect to the Gulf of Mexico RESTORE Act, and springs protection and restoration initiatives. Resources over the next five years will be similarly focused on MFL development and water supply development funding.

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 4-3.

Table 4-3. Region II Water Supply Development Projects

Project	Activity	Estimated Cost	Water Made Available or Anticipated (MGD)
Inland Floridan Aquifer Alternative Water Supply	Development of the inland Floridan Aquifer wellfield and transmission infrastructure to bring inland ground water to serve coastal utilities in Walton County.	$48,100,268	28[1]
Inland Sand and Gravel Aquifer Alternative Water Supply	Development of the Inland Sand and Gravel Aquifer wellfield and associated infrastructure to bring inland ground water 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	25
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 total capacity of inland wellfield. New capacity is approximately 15 MGD. Approximately 13 MGD are currently permitted.

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

Major water supply development projects completed to date have included inland ground water sources for 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 an inland Floridan Aquifer wellfield and transmission facilities in Walton County. As stated above, two major construction projects were completed during the past year. WRP, Inc. completed a 15-mile potable water transmission pipeline from the 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. These facilities also convey inland ground water to meet coastal demand.

To date, Region II water supply development projects have made approximately 21 MGD of water available for the region, including 13 MGD from the inland Floridan Aquifer and eight MGD from the inland Sand and Gravel Aquifer. An additional 40 MGD is estimated to be available from these sources for future development, including 10 MGD from the inland Sand and Gravel Aquifer, 25 MGD from surface water, and at least 5 MGD from reclaimed water. These water supplies, together with traditional water supply sources, are anticipated to be sufficient to meet projected demands through 2030 under both normal and 1-in-10 year drought conditions. Additional detail is available in the 2012 Region II RWSP update (Busen and Bartel 2012).

Region III: Bay County

The Governing Board approved a RWSP for Region III (Figure 4-3) in August 2008 (NWFWMD 2008). 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 the vulnerability to a major hurricane storm surge. The region depends on Deer Point Lake Reservoir as the primary public supply source of water. Major storm surge has been identified as a potential threat to the resource given the possibilities of salt water entering the reservoir and of damage to or loss of the impoundment structure.

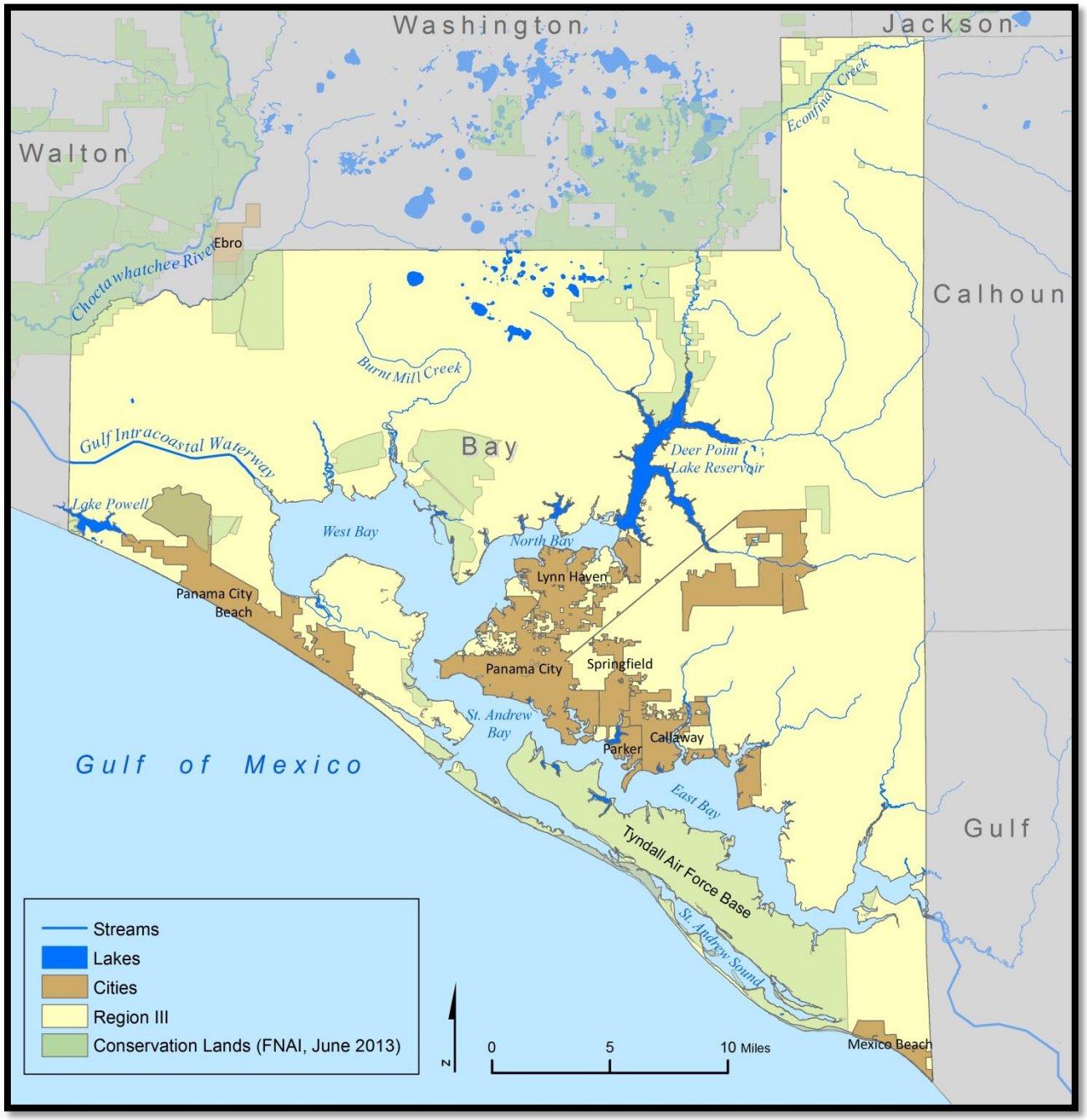

Figure 4-3. Water Supply Planning Region III

Existing and reasonably anticipated surface water supplies in the region are considered adequate to meet projected water demands through 2030 while sustaining water resources and related natural systems (Coates et al., 2008). However, the surface water reservoir is the sole source of potable water for most of the region's population, and concerns have been identified about its potential vulnerability to the effects of major hurricanes. The NWFWMD will continue to work with local governments and utilities in the region to address this issue and otherwise ensure the long-term reliability and sustainability of potable water resources. Efforts have been initiated to update the Region III RWSP.

Region III Water Resource Development

The Region III RWSP includes three water resource development strategies. These are summarized in Table 4-4. Descriptions of the strategies and their current progress follow.

Table 4-4. Region III Water Resource Development Projects

Project	Activity	Water Identified or Made Available (MGD)
Hydrologic and Water Quality Data Collection, Monitoring, and Analysis	Hydrologic data collection, analysis, and modeling to identify baseline conditions and trends to support alternative water supply development.	TBD
Water Reuse and Conservation Assistance	Assistance to local governments and utilities in developing reclaimed water and to enhance water conservation efforts.	5*
Regional Water Supply Coordination and Technical Assistance	Technical assistance, support for utility interconnections, and development and update of the regional water supply plan.	TBD

* This represents a preliminary estimate of potential potable water offset that may be available from 2010-2030, based on projected wastewater flows compared to current reuse within the region.

Among the water resource development projects, the primary project that would lend itself to additional water being made available is Water Reuse and Conservation assistance. Reuse of reclaimed water and water conservation are activities implemented by local governments and utilities. The District, however, can lend technical, planning, and potentially financial assistance.

Hydrologic and Water Quality Data Collection, Monitoring, and Analysis

Implementation of this project provides the water resource data collection, analysis, and modeling needed for characterizing baseline conditions and subsequently identifying and evaluating future alternative water supply sources. The data collection and analysis developed will also facilitate the long-term monitoring needed to 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.

Details of monitoring conducted as part of the Water Resource Development Work Program, as well as other work programs, may be found in the Hydrologic Monitoring Plan (Barrios et al., 2011), available at: www.nwfwmd.state.fl.us/pubs/hydrologic_monitoring_plan/hydrologic_monitoring_plan.html.

Water Reuse and Conservation Assistance

The reuse of reclaimed water is an important regional strategy, given its potential for reducing and constraining potable water demand, improving efficient use of available resources, and supporting sustainable long-term management. District staff coordinate with DEP as that agency carries out its reuse regulation responsibilities. In 2012, an estimated three MGD of reclaimed water were used for public access reuse in Region III (DEP 2013). This included irrigation of an estimated 980 residences, three golf courses, four parks, and three schools. Based on an analysis of current water reuse (DEP 2013) compared with projected wastewater flows, a preliminary estimate is that reclamation of nearly 10 MGD of additional wastewater (annual average daily flow) may be feasible by 2030. Of that, it is estimated that approximately five MGD of potable water offset could be achieved through beneficial reuse activities, such as landscape irrigation. Successful implementation could assist in the discontinuation of surface water discharges by two wastewater treatment plants into St. Andrew Bay. Additional reuse could be achieved if industrial applications of reclaimed water are identified in the region.

Enhanced water conservation efforts may reduce water use and limit long-term demand. Application of conservation rate structures, conservation measures in local building codes and ordinances, consumptive use permitting conditions, water loss prevention and correction efforts, and public outreach and education are expected to be especially important. The District continues to coordinate the Water CHAMP program and distribute water conservation brochures to utilities and local governments in the region.

Regional Water Supply Coordination and Technical Assistance

Through this strategy, the District provides technical assistance to local governments and water suppliers. Local governments in regions subject to a RWSP must address statutory requirements to effectively coordinate land use and water supply planning. Such local governments are required to amend their comprehensive plans as necessary to include a Water Supply Facilities Work Plan and to otherwise ensure water supplies are planned and developed to meet future growth in a manner consistent with the RWSP.

The coastal water systems interconnection initiative described above also considers interconnections within Region III. Utility interconnections, in concert with continued development of alternative water supply sources, enhance the resilience of water supplies within the coastal regions in the face of droughts, major storms, and other possible events. The initial evaluation included three utilities within Bay County.

It is anticipated that an update to the RWSP for Region III will be developed during 2013. Through this process, the allocation of alternative water supply development funding will be further evaluated based on a current assessment of the optimal strategies for addressing water resource needs identified in the RWSP and WSA.

Funding Summary: Region III Water Resource Development Projects

Table 4-5 displays past year expenditures, current year budget, and anticipated future expenditures for water resource development within Region III.

Table 4-5. 2014-2018 Region III WRDWP Project Funding

Water Resource Development Projects	FY 12-13 Expenditures	Anticipated Five Year Work Program					FY14-FY18 Cost Estimate
		FY 13-14 Budget[1]	FY 14-15	FY 15-16	FY 16-17	FY 17-18	
Hydrologic and Water Quality Data Collection, Monitoring, and Analysis	$22,891	$50,100	$55,000	$20,000	$20,000	$20,000	$165,100
Water Reuse and Conservation Assistance	$4,259	$10,000	$8,000	$8,000	$8,000	$8,000	$42,000
RWS Coord. and Technical Assist.	$25,442	$28,800	$30,000	$20,000	$20,000	$20,000	$118,800
TOTAL	**$52,442**	**$88,900**	**$93,000**	**$48,000**	**$48,000**	**$48,000**	**$325,900**

[1] FY 14 figures based on adopted budget.

Increased funding in FY 2013-2014 reflects an anticipated RWSP update and technical assistance to local governments and utilities in the planning region, as well as an increased focus on identifying potential reuse projects within the region and for continuing to develop the District's hydrologic monitoring network. Funding is also expected to increase in FY 2013-2014 for an enhanced monitoring network to support resource sustainability monitoring.

Region III Water Supply Development

Water supply development strategies identified in the Region III RWSP are listed in Table 4-6.

Table 4-6. Region III Water Supply Development Projects

Project	Activity	Estimated Cost	Water Made Available or Anticipated (MGD)
Inland Ground Water Source Development and Water Supply Source Protection	Alternative project options currently being explored in cooperation with Bay County.	N/A[1]	TBD
Utility Interconnections and Infrastructure Enhancements	Assist with delivery system interconnections and facility improvements. Specifically identified is a potential 42" pipeline connection between southern Bay and Walton counties.	$25,700,000[2]	TBD
Water Reuse Facilities	Construction of water reuse facilities to provide reclaimed water for landscape irrigation and other beneficial uses.	TBD	TBD

[1] Planning level cost estimates and anticipated quantities of water to be made available will be re-evaluated during the update to the Region III RWSP, scheduled for 2013.

[2] Planning level cost estimate to await alternative project planning and engineering.

From 2009-2012, the District provided water supply development 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.

Region V: Gulf and Franklin Counties

The Region V RWSP was approved by the Governing Board in January 2007 (NWFWMD 2007). The primary concern described is salt water intrusion into the coastal Floridan Aquifer, which has implications for the long-term sustainability of coastal ground water supplies within both Franklin and Gulf counties. Although public supply demands are relatively small, they represent three quarters of the total projected demand for 2030. To meet projected demands associated with permanent and seasonal population growth, a surface water supply source has been developed for the City of Port St. Joe and its vicinity in Gulf County, and the inland Floridan Aquifer has been evaluated as a long-term source for coastal Franklin County. Given the completion of the major alternative water supply project and reduced growth rates, the 2013 Water Supply Assessment update recommended that regional water supply planning be discontinued in Region V (Countryman et al. 2014). The Governing Board approved this recommendation in February 2014.

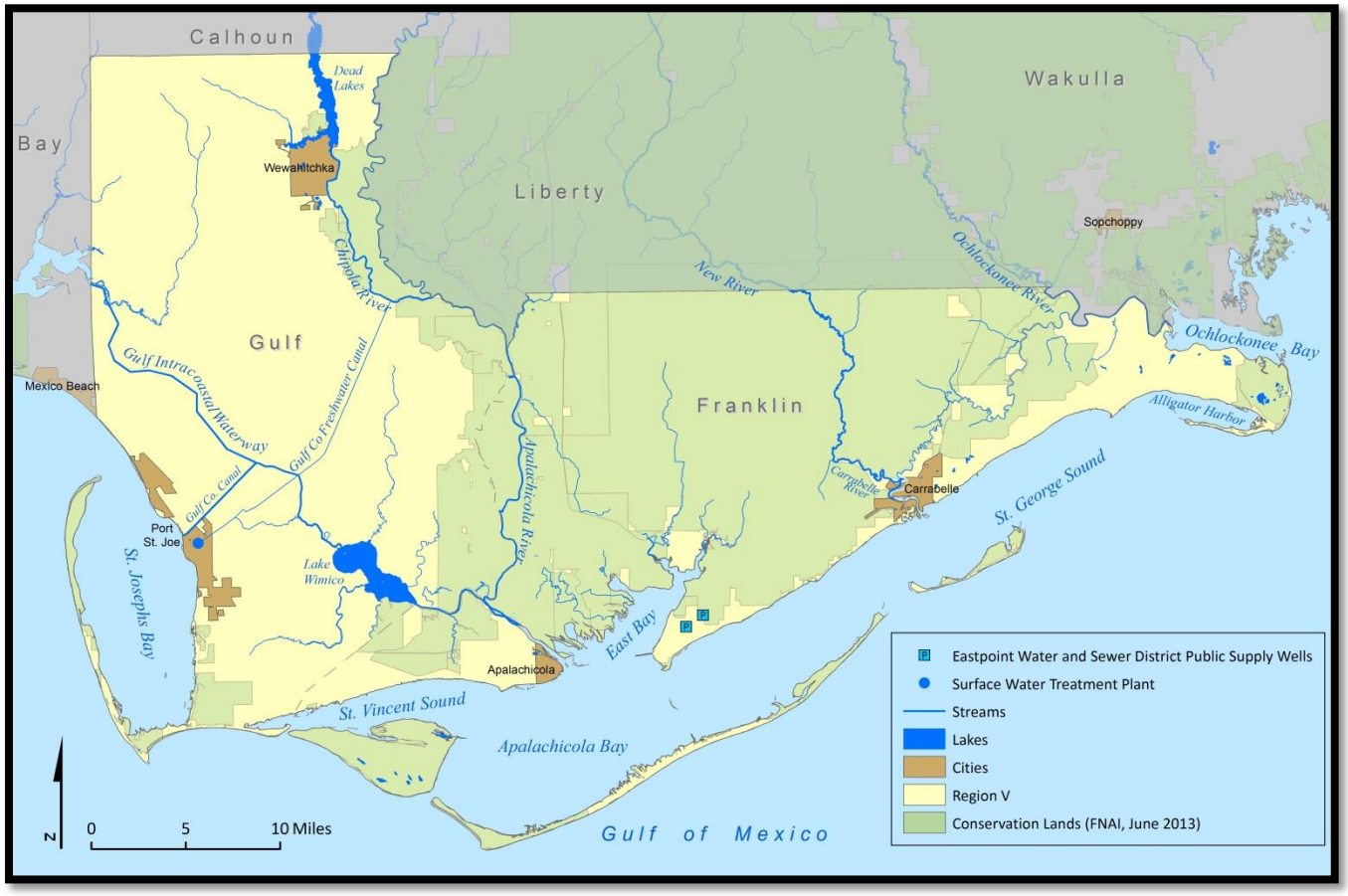

Figure 4-4. Water Supply Planning Region V

Region V Water Resource Development

The Region V RWSP includes four water resource development projects encompassing strategies supporting alternative water supply development. These are summarized in Table 4-7. Descriptions of the strategies and their current progress follow.

Table 4-7. Region V Water Resource Development Projects

Project	Activity	Water Identified or Made Available (MGD)
Hydrologic and Water Quality Data Collection, Monitoring, and Analysis	Water resource data collection, analysis, and modeling to support future alternative water supply development. Inland groundwater resources evaluated in Franklin County.	3
Regional Water Supply Coordination, Source Protection, and Engineering and Technical Assistance	Technical assistance to help local governments and utilities meet water supply-related source protection, project design, and engineering requirements. Assistance provided to Port St. Joe for surface water treatment facility.	6
Water Reuse and Conservation Coordination Assistance	Coordination and assistance to utilities and local governments for development of reclaimed water for beneficial uses.	TBD
Regional Water Supply Plan Implementation	Planning and tracking project implementation, grant administration, fulfilling statutory reporting requirements, and related activities.	N/A

Hydrologic and Water Quality Data Collection, Monitoring, and Analysis

This activity provides for water resource data collection, analysis, and modeling to determine the location and distribution of potential future production wells and other water supply sources to serve Region V communities. Tasks include ground water modeling, water quality sampling and analysis, and hydrologic monitoring and analysis. Long term emphasis includes water quality and hydrologic monitoring to identify and evaluate trends.

The District has conducted data collection and analysis to evaluate inland ground water sources within Franklin County. Approximately three MGD were identified as potentially being available from the inland Floridan Aquifer. In addition, the coastal Floridan Aquifer in Franklin County has been identified as a resource of concern. Consequently, the District included the resource within the updated MFL priority list. Completion of a technical assessment is planned for 2019. Expanded hydrologic data collection in support of the MFL monitoring effort began in 2013.

The District has also assisted the Eastpoint Water and Sewer District (EPWSD) in test well development and aquifer testing. This effort led to the development of a new water supply production well, located further inland from the immediate coastal area. Expected outcomes include reduced withdrawals from the coastal aquifer and a resulting reduced threat to water supply wells from salt water intrusion.

Regional Water Supply Coordination, Source Protection, and Engineering and Technical Assistance

This project provides for technical assistance to help local governments and utilities meet water supply-related source protection, project design, and engineering requirements. The District helps support regional coordination and planning on the part of regional water supply utilities and local governments. Assistance is focused on protecting ground and surface water sources, water resource engineering, intergovernmental coordination, and other technical assistance.

The District's coastal water systems interconnection planning extends to Gulf County. Such interconnections are intended to enhance the reliability of water supplies within the coastal areas in the face of droughts, major storms, and other possible events.

In addition to providing funding assistance to the City of Port St. Joe for construction of its new surface water supply facility (described below), the District has provided additional assistance for improvements to the city's potable water distribution system.

With District assistance, the City of Carrabelle completed an engineering analysis of a potential interconnection with the Alligator Point Water Resources District. Completion of this interconnection would assist in regional drought-proofing and in ensuring system reliability through summer and holiday heavy use periods. The City of Carrabelle has enacted a conservation-oriented rate structure as part of this effort, thereby improving water use efficiency, particularly for new development. Technical and financial assistance has previously been provided to the City of Wewahitchka for test well development.

Water Reuse and Conservation Coordination Assistance

Water reuse is an important component of the long-term regional water supply strategy and is pursued where feasible as a means of providing non-potable water for beneficial uses, thereby offsetting potable demand, and constraining long-term potable demand. The District's role in developing water reuse includes coordination among utilities, inventorying existing and potential reclaimed water sources and beneficial uses, and providing technical and financial assistance for specific reuse projects. As of 2012, an estimated 0.29 MGD of public access reclaimed water was reused in Region V (DEP 2013). This includes irrigation of one golf course and toilet flushing at the Franklin Correctional Institution. Water reuse needs and opportunities to support RWSP implementation and enhance the sustainability of water resources will continue to be pursued by District staff.

Other conservation assistance provided by the District to Region V has included distribution of the water rates model (Whitcomb 2005) and water conservation brochures to utilities, as well as Water CHAMPS coordination with hotels.

Regional Water Supply Plan Implementation

Implementing the RWSP for Region V encompasses planning and tracking project implementation, grant administration, reporting, and related activities. While this project does not directly provide water, the efforts encompassed do support the long-term development of alternative water supply sources, including the approximately nine MGD estimated to be available across the region through development of alternative surface water and inland ground water sources.

During the past year, the District continued RWSP implementation tracking, project planning and coordination of program funding sources and contracts. The WRDWP Annual Report and March 1 Consolidated Annual Report were completed. Given completion of the major alternative water supply project and reduced growth rates, the 2013 Water Supply Assessment update recommended that regional water supply planning be discontinued in Region V (Countryman et al. 2014). The Governing Board approved this recommendation in February 2014.

Funding Summary: Region V Water Resource Development Projects

Table 4-8 displays past year expenditures, current year budget, and anticipated future expenditures for water resource development within Region V. Expenditures for FY 2012-2013 were somewhat greater than had been anticipated largely due to efforts to enhance monitoring within the region, as well as technical assistance provided to the City of Port St. Joe as that city adjusts its water supply facilities to its new surface water supply source. The five-year funding estimates are based on continued RWSP development and implementation in Region V, with an update to the plan following completion of the District-wide WSA. Funding is expected to increase beginning in FY 2013-2014 to support enhanced monitoring and for development and improvement of groundwater models District-wide.

Table 4-8. 2014-2018 Region V WRDWP Project Funding

Water Resource Development Projects	FY 12-13 Expenditures	Anticipated Five Year Work Program					FY14-FY18 Cost Estimate
		FY 13-14 Budget[1]	FY 14-15	FY 15-16	FY 16-17	FY 17-18	
Hydrologic and Water Quality Data Collection and Analysis	$16,096	$58,600	$55,000	$25,000	$25,000	$25,000	$188,600
Coord., Source Protection, Eng. and Tech. Assist.	$10,556	$3,600	$5,000	$5,000	$10,000	$10,000	$33,600
Water Reuse and Conservation Coord. Assist.	$4,259	$7,300	$5,000	$5,000	$5,000	$5,000	$27,300
Regional Water Supply Plan Implementation	$3,453	$7,200	$8,000	$8,000	$8,000	$8,000	$39,200
TOTAL	**$34,365**	**$76,700**	**$73,000**	**$43,000**	**$48,000**	**$48,000**	**$288,700**

[1] FY 14 figures based on adopted budget.

Note: The need for regional water supply planning in Region V is being reevaluated through a new update to the Districtwide Water Supply Assessment, currently under development. This five year work program is based on program continuation, as last approved by the Governing Board.

Region V Water Supply Development

Water supply development strategies within the Region V RWSP are listed in Table 4-9.

Table 4-9. Region V Water Supply Development Projects

Project	Activity	Estimated Cost	Water Made Available or Anticipated (MGD)
Inland Ground Water Source Development and Water Supply Source Protection	Engineering analysis, facility construction, source protection, and hydrologic restoration.	$1,000,000	3
Alternative Surface Water Treatment and Transport Facility Development	Construction of water treatment and transmission facilities, specifically including alternative water supply development in Gulf County.	$16,737,000	6
Utility Interconnections and Infrastructure Enhancements	Assist with delivery system interconnections and facility improvements.	TBD	TBD
Reclaimed Water Use	Construction of water reuse facilities to provide reclaimed water for landscape irrigation and other beneficial uses.	TBD	<1

With funding assistance and cooperation from the District, the City of Port St. Joe constructed a six MGD surface water treatment plant as an alternative water source to reduce reliance on coastal ground water (Appendix A). Development of the new treatment facility shifted the City's public water supply source from naturally constrained ground water to surface water derived from the Chipola River via an existing fresh water canal. This enabled the City to meet projected future demands while reducing the stress on

local ground water resources. In addition to meeting municipal needs, the city may in the future be able to make this resource available for nearby areas outside of the city limits.
Funding and technical assistance provided to the Eastpoint Water and Sewer District has led to development of a water supply production well located further inland from previously existing water supply wells. Withdrawals in the immediate coastal area and the threat of salt water intrusion are, as a result, being reduced.

During FY 2012-2013, the District provided water supply development funding assistance to the City of Port St. Joe to enable the city to complete repairs and upgrades to its pump station on the Chipola River. Additionally, the District provided additional technical assistance to the City to support efforts to address water quality issues associated with the distribution system.

District-wide Initiatives

The 2013 update to the district-wide Water Supply Assessment was completed over the past year. This assessment incorporated demand projections to 2035 for all regions and all water use categories. Evaluations of the status and sufficiency of water resources were also updated as part of the assessment.

The District continues to emphasize water supply development assistance for financially disadvantaged small local governments. Early in the year, the District awarded $106,000 to assist the City of Port St. Joe with a needed upgrade to the Chipola Pump Station surface water withdrawal facility. The District also awarded $235,845 in grant funding to the City of Blountstown, matching City funds needed for the replacement of a major water distribution line along State Road 20. Furthermore, the Governing Board approved a major water supply development assistance grant initiative, scheduled for implementation during FY 2013-2014.

The Basis of Design Report for the Coastal Water Systems Interconnection Initiative, as described above, was completed in 2013. The report provided a detailed analysis of interconnect alternatives and design parameters. Candidate interconnection projects were described, as will key issues and challenges, including utility emergency capacities and water blending analysis. The basis of design report included conceptual designs for a coastal interconnection between Santa Rosa and Okaloosa counties and a coastal interconnection between Walton and Bay counties.

Significant progress has been achieved in identifying potential expansion of wastewater reclamation and water reuse District-wide through 2035. This information is being incorporated into the 2013 WSA update. Assisting utilities and local governments in developing beneficial reuse projects will remain a priority, with implementation depending on future funding availability.

Significant efforts are underway to enhance agricultural water use efficiency and support implementation of associated water quality best management practices, targeted primarily for the Jackson Blue Spring basin of the Apalachicola River watershed. For FY 2013-2014, the District has budgeted $752,000 of legislatively appropriated springs restoration funding for these activities. The funding will provide a 75 percent cost-share to help producers retrofit center pivot irrigation systems, support expansion of the northwest Florida mobile irrigation laboratory program, and provide cost-share funds to implement fertigation and other efficient fertilization systems. Together, these efforts are expected to achieve significant reductions in both water use and pollutant loading within the Jackson Blue Spring basin.

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 2013, 242 wells were plugged at no cost to the District.

References

Many of these references may be found on the District's website under Publications & Data, Technical Publications: www.nwfwmd.state.fl.us/pubsdata/techpubs.html.

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.nwfwmd.state.fl.us/pubs/hydrologic_monitoring_plan/hydrologic_monitoring_plan.html

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. 2000. *Regional Water Supply Plan for Santa Rosa, Okaloosa, and Walton Counties*. Northwest Florida Water Management District. Water Resources Assessment 2000-1. Havana, Florida. www.nwfwmd.state.fl.us/pubs/RWSP_Region2/2000_plan/rwsp.htm

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.nwfwmd.state.fl.us/rmd/water_supply_projections/water_supply_projections.htm

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. www.nwfwmd.state.fl.us/pubs/RWSP_Region2/RWSP_Region2.htm

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.nwfwmd.state.fl.us/rmd/wsa/WSA%20Updates/wsa_update_2008.htm

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.nwfwmd.state.fl.us/rmd/wsa/WSA%20Updates/wsa_update_2013.html

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.nwfwmd.state.fl.us/pubs/wrtfr04-01/wrtfr04-01.htm

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.nwfwmd.state.fl.us/pubs/hglgwmod/hglgwmodel.htm

HydroGeoLogic, Inc. 2005. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Western Domain Model. May 2005. www.nwfwmd.state.fl.us/pubs/hgl_western_domain/hgl_western_domain.html

HydroGeoLogic, Inc. 2007a. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Eastern Domain Model, Final Report. September 2007. www.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.nwfwmd.state.fl.us/pubs/RWSP_Region2/2006_plan/rwsp.htm

Northwest Florida Water Management District. 2007. Regional Water Supply Plan: Region V, Franklin and Gulf Counties. Water Resources Assessment 07-01. January 2007. www.nwfwmd.state.fl.us/pubs/rwsp/plan.htm

Northwest Florida Water Management District. 2008. Region III Regional Water Supply Plan, Bay County, Florida. Program Development Series 08-02. August 2008. www.nwfwmd.state.fl.us/rmd/water_supply_planning/Region%20III%20RWSP_08-12-08%20FINALweb%20version.pdf

Northwest Florida Water Management District. 2013. Consolidated Annual Report. March 1, 2014. www.nwfwmd.state.fl.us/pubs/consolidatedAR/consolAR.html

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. www.nwfwmd.state.fl.us/pubs/final_%20water_Report/Final%20Water%20Supply%20Study%20Report.pdf

Pratt, T.R. 2001. Results of Floridan Aquifer Drilling Program in Santa Rosa, Okaloosa, and Walton Counties, Florida. Technical File Report 01-1. www.nwfwmd.state.fl.us/pubs/tfr01-1/tfr01-1.htm

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. www.nwfwmd.state.fl.us/rmd/wsa/wsamain.htm

Whitcomb, J.B. 2005. Florida Water Rates Evaluation of Single Family Homes. www.nwfwmd.state.fl.us/permits/waterratesreport.pdf

4.2 Alternative Water Supplies Annual Report

Each water management district is required under section 373.707(8)(n), F.S., to submit as part of the Consolidated Annual Report a chapter or section that:

- accounts for the disbursal of all budgeted amounts pursuant to section 373.707, F.S.;
- describes all alternative water supply projects funded;
- describes the quantity of new water to be made available as a result of such projects; and
- accounts separately for any other funding provided through grants, matching grants, revolving loans, and the use of district land or facilities to implement regional water supply plans.

Beginning in 2006, the District began funding a series of alternative water supply and water resource development projects through the Water Protection and Sustainability Program Trust Fund (WPSPTF). These projects helped implement strategies of the District and local utilities to identify and develop alternative water supplies to meet long-term needs in a sustainable manner. Efforts over the past year were focused on continued implementation of approved water supply and water resource development projects pursuant to the RWSPs, as well as water supply development assistance for financially disadvantaged small local governments and associated utilities. Tables 4-10 and 4-11 provide summary information on projects to date.

It should be noted that substantial water supply development assistance has been provided to local governments and utilities using funding sources other than the WPSPTF. In 2013, the District initiated the Water Supply Development Community Assistance Initiative, which will provide approximately $10 million in competitive grant funding across northwest Florida. These funds provide a very significant contribution to addressing widespread needs on the part of utilities and local governments in the region. Additionally, the District has provided over $3 million in additional District grant funding for development of water supply transmission pipelines bringing water from the inland Floridan Aquifer wellfield in Walton County to serve coastal communities. A grant of $106,000 was awarded to the City of Port St. Joe for pump station repairs, and a $235,845 grant was awarded to the City of Blountstown for replacement of a water distribution main along State Road 20. These are in addition to a number of earlier grants, as outlined in Table 4-11.

Table 4-10. Alternative Water Supply and Water Resource Development 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[2]	$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	Construction	FY 2007	0.4	$500,000	$750,000	$1,250,000	60%
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	FY 2008	30.0	$5,470,000	$19,530,000	$25,000,000[2]	78%
Total						**62.1**	**$21,470,000**	**$63,867,723**	**$85,337,723**	**73%**

[1]Anticipated water made available rounded to the nearest 100,000 gallons per day.

Table 4-11. Additional Water Supply Development Assistance Projects

Project	Local Sponsor	Region	Activity	Status	Completion	NWFWMD Contribution	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
Allanton Peninsula Water and Wastewater Extension Project	Callaway	III	Water supply transmission and distribution system construction	Complete	FY 2010	$100,000	WMLTF
East Okaloosa County Water and Sewer Extension	Okaloosa County	II	Water supply transmission and interconnection	Complete	FY 2010	$750,000	District General Fund
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
Port St. Joe Water Distribution System Improvements	Port St. Joe	V	Water supply improvements	Complete	FY 2011	$50,000	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
Wewahitchka Water Supply System Improvements	Wewahitchka	V	Water supply development; test production well construction	Complete	FY 2011	$400,000	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 Transmission Line Construction and Interconnection	Freeport	II	Transmission line and interconnection construction	Complete	FY 2012	$800,000	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
Water Supply Improvements; Preliminary Engineering	Gretna	VI	Preliminary engineering and environmental analysis	Complete	FY 2012	$50,000	District General Fund

Table 4-11. Additional Water Supply Development Assistance Projects (continued)

Project	Local Sponsor	Region	Activity	Status	Completion	NWFWMD Contribution	Funding Source
Pine Island Water Distribution System Expansion	Calhoun County	IV	Expansion of water distribution system to unincorporated community	Complete	FY 2013	$98,607	District General Fund
Water Main Construction (South Walton County)	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
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
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
Test Well Development	Panacea Area Water System	VII	Test well development and data analysis	Planning	FY 2013	$30,500	District General Fund
Okaloosa County AWS - Surface Water	Okaloosa County	II	Assistance to Okaloosa County for surface water development.	Planning	FY 2015	TBD	District General Fund
State Road 20 Water Line Replacement	Blountstown	IV	Installation of approximately 5,500 LF of new 12-inch water main.	Engineering, Permitting	FY 2015	$235,845	District General Fund
			Total			**$11,474,838**	

Chapter Five: Florida Forever Work Plan Annual Report

5.1 Land Acquisition Work Plan

Introduction

Section 373.199(7), F.S. requires the Northwest Florida Water Management District (District) to annually update the Florida Forever Work Plan. To date, this is the 13th annual update of the 2001 Florida Forever Work Plan. Since 2006 this plan has been presented as a separate chapter in the Consolidated Annual Report as required by section 373.036(7), F.S. This plan contains information on projects eligible to receive funding under the Florida Forever Act and also reports on land management activities, lands surplused and the progress of funding, staffing and resource management of projects for which the District is responsible.

Florida Forever Program

In 1999, the Florida Legislature passed the Florida Forever Act (section 259.105, F.S.) which has continued the state's long-term commitment to environmental land acquisition, restoration of degraded natural areas, and high-quality outdoor recreation opportunities.

While previous programs focused almost exclusively on the acquisition of environmentally sensitive lands, the Florida Forever program is somewhat different in that it authorizes the use of up to half of the program funding for certain types of capital improvement projects. Eligible uses of these funds include water resource development, stormwater management projects, water body restoration, recreation facilities, public access improvements, and removing invasive plants, among others. The remaining fifty percent must be spent on land acquisition.

Since the inception of the District's land acquisition program, the goal has been to bring as much floodplain as possible of our major rivers and creeks under public ownership and protection. The Florida Forever Land Acquisition Program continues to increase the acres of wetland, floodplain and aquifer recharge areas acquired by the District. To date, over 224,783 acres have been protected for water resource purposes through the land acquisition efforts of the District either in fee simple or through conservation easements. A summary of acquisitions and surplusing completed in 2013 is provided below.

Summary of Acquisitions and Surplusing Completed in 2013

Fee Simple Acquisitions					
Property	**Date Purchased**	**Acres**	**Cost**	**Funding Source(s)**	**Water Management Area**
Sartor	09/24/13	10	$15,000	Reserves	Econfina Creek
	TOTAL	**10**	**$15,000**		

Surplused Lands					
Property	**Date Surplused**	**Acres**	**Sale Price**	**Funding Source(s)**	**Water Management Area**
Parch Road	12/13/13	0.4	$2,400.00	Preservation 2000	Blackwater River
Old River Road	12/13/13	1.5	$3,400.00	Preservation 2000	Yellow River
	TOTAL	**1.9**	**$5,800.00**		

Acquisition Planning

The District employs a watershed approach to select and prioritize the important water resource and natural systems within the major river basins of northwest Florida. Primary among the considerations in this process are how specific floodplain or buffer areas help satisfy the District's water resources and natural system protection objectives; the availability of funds; the seller's willingness; how different areas fit into the District's land management scheme; and the size, accessibility and overall condition of each property. Recommendations from interest groups, landowners, local governments, agency representatives and other interested parties are given full consideration in the acquisition process.

Subject to receiving funding for Florida Forever, the District's acquisition efforts this year will focus on the purchase of inholdings and additions to the existing water management areas (WMAs) as well as Conservation Easements in each of the existing WMA's. Existing WMAs include the Perdido River, Escambia River, Blackwater River, Yellow River, Garcon Point, Choctawhatchee River/Holmes Creek, Econfina Creek, Chipola River, and Apalachicola River. All of these WMAs will be high priority areas for the acquisition of additions and inholdings. Acquisition efforts will be directed toward acquiring those properties which the District adjoins on one, two or three sides (additions) or those parcels which the District surrounds on all sides (inholdings).

In developing the annual update to the District's Florida Forever Five Year Land Acquisition Work Plan, District staff shall review Florida Forever projects proposed by DEP's, Division of State Lands in order to minimize redundancy and facilitate an efficient and mutually supportive land acquisition effort.

Approved Acquisition Areas

The approved acquisition areas listed below are not presented on a priority basis. For each of these water bodies, it is desirable to acquire both the floodplain and a natural buffer zone to provide further water resource protection.

Rivers & Creeks Originating In Florida	Rivers and Creeks Originating Outside Florida	Springs	Lakes & Ponds	Other Ecosystems, Basins and Buffers
Wakulla River	Apalachicola River	St. Marks River near Natural Bridge	Lake Jackson	Southwest Escambia County Ecosystem
St. Marks River	Lower Apalachicola River Wetland	Spring Lake Spring Group Area	Sand Hill Lakes	Garcon Point Ecosystem
Econfina Creek and other Tributaries of Deer Point Lake	Chipola River	Waddell Springs		West Bay Buffer
Lafayette Creek	Choctawhatchee River including Holmes Creek	Bosel Springs		Sandy Creek Basin
	Escambia River	Hays Springs		Apalachicola Bay and St. Vincent Sound Buffer
	Blackwater River including Juniper, Big Coldwater and Coldwater creeks	Gainer Springs		
	Ochlockonee River and its major tributaries			
	Yellow and Shoal Rivers			
	Perdido River and Bay			

Groundwater Recharge Areas	Donated Lands
Such lands may be designated by the District as Recharge Areas for the Floridan, Sand-and-Gravel and other important aquifers.	The District will accept donations of lands within its major acquisition areas if those lands are necessary for water management, water supply and the conservation and protection of land and water resources.

Exchange Lands
The District may exchange lands it has acquired under the Florida Forever program for other lands that qualify for acquisition under the program. The District's Governing Board establishes the terms and conditions it considers necessary to equalize values of the exchange properties. In all such exchanges, the District's goal will be to ensure that there is no net loss of wetland protection and that there is a net positive environmental benefit.

Mitigation Acquisitions
Under Florida law, unavoidable losses of natural wetlands or wetland functions require "mitigation" through the acquisition or restoration of other nearby wetlands. The District is often the recipient of such lands in the form of donations and also serves as the mitigation agent for the Florida Department of Transportation. Whenever possible, the District attempts to acquire mitigation lands contiguous to its existing ownership, but since proximity to the original wetland impact is often paramount, the District will acquire or manage isolated tracts at times.

Surplus
Section 373.089, F.S., allows the Governing Board of the District to sell (surplus) lands or interest or rights in lands to which the District has acquired title or to which it may hereafter acquire title. Any lands, or interests or rights in lands, determined by the Governing Board to be surplus may be sold by the District at any time for the highest price, but in no case shall the selling price be less than the appraised value.

Surplus Lands

In the fall of 2012, District staff conducted an evaluation of all District lands to determine if there were any parcels appropriate for surplus. The parcels recommended for surplus were small, non-contiguous, isolated tracts or connected only on a corner. The following tracts were declared surplus by the District's Governing Board.

WMA	Acres	County	Acquired Date	Status
Escambia River	110.5	Escambia	April 26, 1994	For Sale
Blackwater River	0.4	Santa Rosa	August 3, 2001	Sold on 12-13-13
Yellow River	1.5	Okaloosa	December 15, 1999	Sold on 12-13-13
Choctawhatchee River	38	Walton	July 31, 1992	Under Contract
Choctawhatchee River	38	Walton	July 31, 1992	For Sale
Econfina Creek	10	Washington	December 19, 1997	For Sale

During FY 2013-2014, District staff will continue to evaluate District lands for potential surplus parcels.

Note to Landowners

It is important to note that the District's land acquisition process only involves willing sellers and is usually initiated by landowners offering parcels for sale.

This plan includes a number of areas the District has identified for potential purchase. If your property is included in any of our acquisition areas or maps and you do not desire to sell your land to the District, Florida Statutes require the District to remove your property from the acquisition plan at the earliest opportunity. Please contact the Division of Land Management and Acquisition at (850) 539-5999 at any time if you wish to remove your property from possible purchase consideration. The District will maintain a list of such requests and annually adjust its acquisition plan accordingly.

Note on Less-Than-Fee Methods of Land Protection

In "less than fee" purchases, the District attempts to acquire only those rights in property (i.e., development and land use conversion rights) that are needed to accomplish specific water resource and environmental protection goals. Such less than fee methods can provide a number of public benefits. First acquisition funding can be conserved, thereby enabling the protection of more land with limited

funds. Also, the property continues in private ownership and thus may remain on local property tax rolls. Moreover, the District does not incur the long-term costs of land management since the property's management and maintenance remains the landowner's responsibility. Not all properties are suitable for less than fee acquisition, but the potential benefits make these kinds of transactions a viable alternative to the District's typical fee-simple land purchases.

DEP Florida Forever Priority List

The Florida Forever Priority List can be found at http://www.dep.state.fl.us/lands/FFplan.htm

Florida Forever Goals and Numeric Performance Measures

As outlined in chapter 18-24, F.A.C., the District is required to report on the goals and measures for lands to be acquired under the Florida Forever program. The following summarizes the goals and measures applicable to Northwest Florida Water Management District.

Florida Forever Goals and Numeric Performance Measures

Reported as of October 1, 2013

Rule No. 18-24.0022

(2)(d)1. For proposed acquisitions, see section 5.1, (Florida Forever) Land Acquisition Five-Year Work Plan in the Consolidated Annual Report.

Acquisitions of lakes, wetlands, and floodplain areas to date = 187,112 Total acres
15,255 Florida Forever acres

(2)(d)2. Acquisitions for water resource development to date = 41,616 Total acres (incl. fee and l-t-f)
3,663 Florida Forever acres (incl. fee and l-t-f)

(3)(a)2. Refer to section 5.2, (Florida Forever) Capital Improvement Work Plan of the Consolidated Annual Report for funded capital improvements identified in SWIM, stormwater, or restoration plans.

(3)(a)3. NWFWMD lands to be treated for upland invasive, exotic plants = <100 acres

The District has not conducted surveys to identify the spatial distribution of invasive exotic plant infestation on District lands. It is known that invasive plant problems exist at varying levels on some District lands, and staff treat with herbicide as needed.

(3)(b) New water to be made available through Florida Forever funding for water resource development -

Major water resource development accomplishment provided by additions to Econfina Creek Water Management Area. Additionally, Florida Forever funding contributed to the construction of a 750,000 gallon reuse storage facility for the City of Freeport to serve a 0.6 MGD reuse water service area. Funding for water supply development, including construction of water reuse facilities, is primarily provided through the Water Protection and Sustainability Program Trust Fund, NWFWMD General Fund, and local funding. See the NWFWMD Five Year Water Resource Development Work Program report and Consolidated Annual Report.

(4)(a)1. All NWFWMD lands are in need of and are undergoing management by the District.

In need of restoration = 15,696 acres
Undergoing restoration = 1,186 acres
Restoration completed = 18,369 acres
Restoration maintenance = 18,369 acres

(4)(a)3. Refer to section 5.2, (Florida Forever) Capital Improvement Work Plan of the Consolidated Annual Report for capital improvements identified in SWIM, stormwater, or restoration plans.

(4)(a)6. NWFWMD lands under upland invasive, exotic plant maintenance control = <3,500 acres

(4)(b) Refer to section 4.1, Five-Year Water Resource Development Work Program: FY 2012-2013 of the Consolidated Annual Report for quantity of new water made available through regional water supply plans.
(4)(c) See section 5.1, (Florida Forever) Land Acquisition Work Plan (Table 2) of the Consolidated Annual Report for resource-based recreation facilities by type.

Land Acquisition Projects

The Florida Forever Act, in particular section 373.199(3), F.S., identifies information that must be included for each Florida Forever Project. Some of the required information is relatively general and applicable to all projects. To reduce the redundancies of this plan, general information is provided separately as part of the District's Five Year Plan for the Florida Forever Program. Specific land acquisition projects are individually identified and detailed information specific to the project is provided in the following pages.

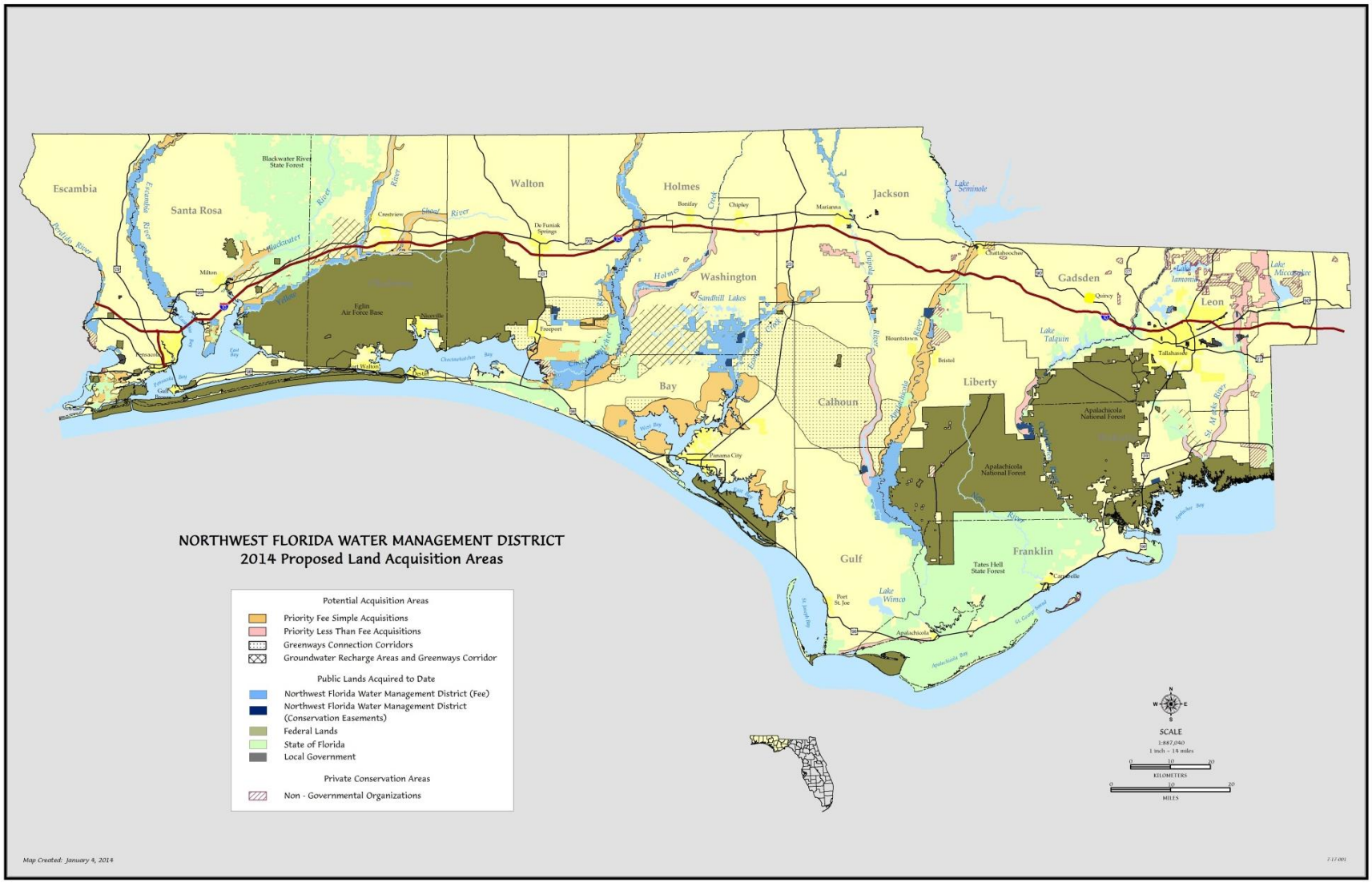

Figure 5-1. Proposed Land Acquisition Areas

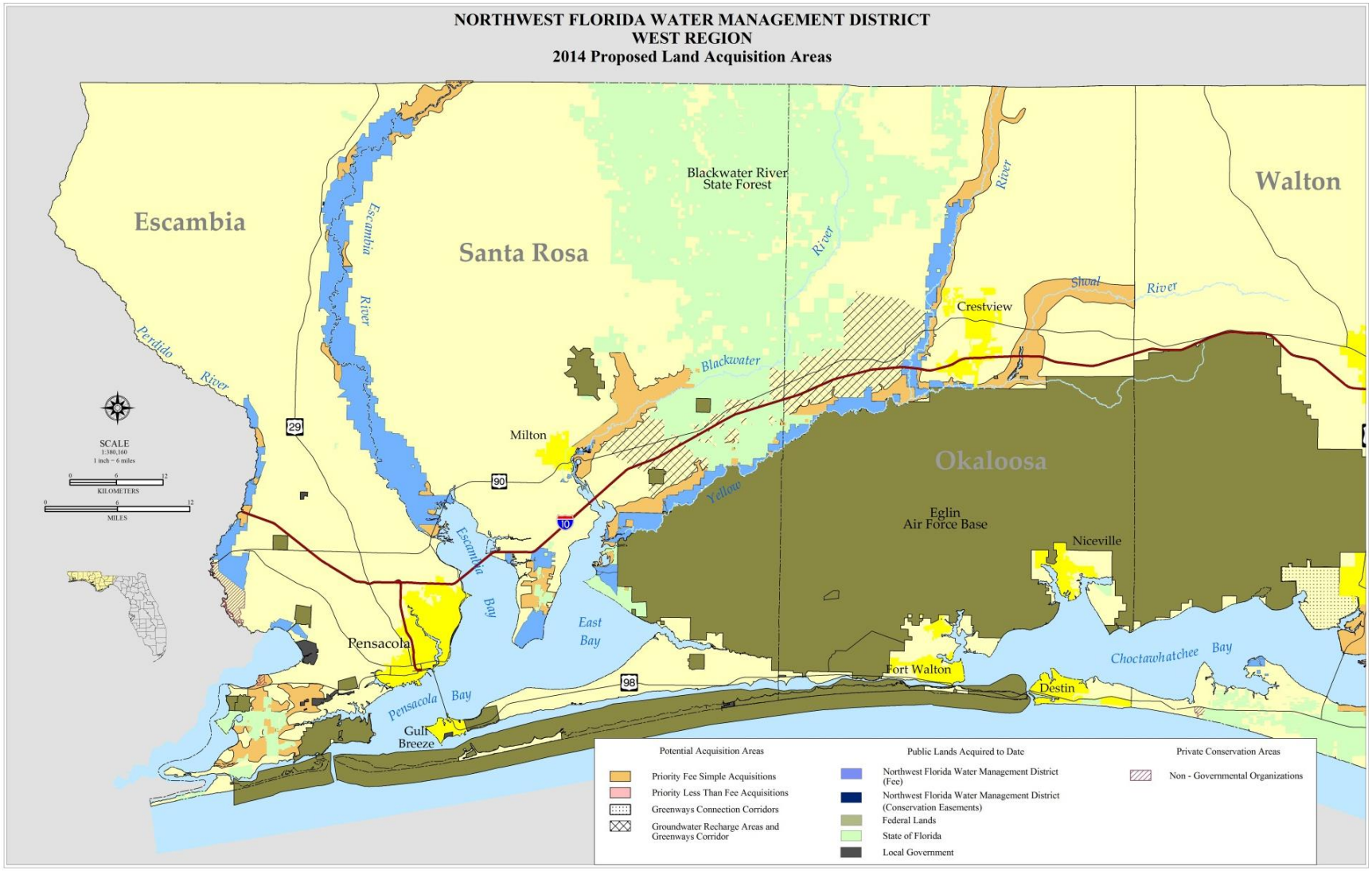

Figure 5-2. Proposed Land Acquisition Areas (West Region)

Florida Forever Land Acquisition Project

Perdido River and Bay Basin

The Perdido River serves as the state line, separating Florida from Alabama. The Perdido River has been designated an Outstanding Florida Water and Special Water system; a canoe trail; and a recreation area. The upper part of the river is a shifting sand river system, unique to portions of Northwest Florida, south Alabama, southern Mississippi and eastern Louisiana, while the lower end of the river is characteristic of a black water stream. The District owns 6,261 acres in fee and 4 acres in less than fee between the Perdido River and Bay.

The project area is mostly undeveloped and contains a diverse list of species. Acquisition of any floodplain area along the Perdido River, whether in fee or less than fee, will significantly protect the water resources of the area as well as enhance water quality protection efforts for the Perdido Bay system.

Priority purchases will be concentrated on parcels adjacent to existing District lands along the river, around the river mouth, and designated tributaries.

The Perdido Bay is an estuarine system which receives fresh water from the Perdido River. Subsidiary embayments within the Perdido Bay estuary include Tarkiln Bay, Arnica Bay, Wolf Bay, Bayou La Launch and Bayou St. John. Perdido Key separates Perdido, Tarkiln, and Arnica bays, Bayou La Launch and Bayou St. John from the Gulf of Mexico. Big Lagoon adjoins Perdido Bay to the east, separating it from Pensacola Bay. Currently, the District owns 810.19 acres along Perdido Bay.

Priority purchases will be concentrated on parcels adjacent to the bay which can enhance water quality protection and mitigate for wetland impacts associated with FDOT highway construction in southern Escambia County.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 1,447 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Southwest Escambia County Ecosystem

Several major estuarine drainages including Jones Swamp, Bayou Grande, Big Lagoon, and Tarkiln Bay, intersect in southwest Escambia County. These, in turn, comprise portions of the Pensacola and Perdido bay watersheds. The proposed acquisition borders a major urban area and is experiencing encroachment from residential and commercial development. The project area is characterized by an undulating topography where remnants of ancient dune lines alternate with lower intervening swales that drain east or west, parallel to the Gulf coast. The wet prairies in the area are some of the last examples of what may be one of the most diverse plant communities in the southeast, supporting large stands of white-topped pitcher plants and almost 100 other plant species.

Protecting the ecological integrity of this area is important to the quality of water resources in the Pensacola and Perdido bay systems. Acquisition will help limit nonpoint pollution and untreated stormwater runoff by preventing channelization. Wetlands and upland buffers will also be preserved, and riparian buffer zones will be maintained. Additionally, public access will be improved and fish, wildlife, and estuarine productivity will be protected.

This acquisition is consistent with a number of major initiatives designed to protect environmental and other public resources in the region. These include water quality treatment systems, acquisition programs for the Jones Swamp Wetland Preserve and the Perdido Pitcher Plant Prairie, and efforts to prevent encroachment on NAS Pensacola. Together with nearby state parks, these acquisitions will provide for a major environmental reserve and greenway system within a rapidly urbanizing area.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 11,000 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Groundwater Recharge Area

Designated area has groundwater recharge potential.

Florida Forever Land Acquisition Project

Escambia River Basin

Beginning at the confluence of the Conecuh River and Escambia Creek above the Florida-Alabama border and discharging into Escambia Bay, the Escambia River corridor contains a rich diversity of plant and animal species, as well as many rare fish and waterfowl. The Escambia River basin is broad and well drained in the upper reaches, and swampy below Molino, Florida. While the overall water quality is considered good, many point and non-point pollution sources empty into the river. Currently, the District owns 35,413 acres in fee and 19 acres in less than fee along the river.

Priority purchases will be concentrated on parcels adjacent to existing District lands around the river mouth and designated tributaries.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 6,644 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Garcon Point Ecosystem

This proposed land acquisition project contains most of the Garcon Point Peninsula, which borders Pensacola, Escambia, East and Blackwater bays. The project area is largely undeveloped and includes a variety of natural communities that are in good to excellent condition. The entire tract provides considerable protection to the water quality of the surrounding estuary, as well as harboring a number of rare and endangered species.

The emergent estuarine marsh that borders several miles of shoreline within the project is an important source of organic detritus and nutrients and serves as a nursery for many of the species found in Pensacola Bay. These wetlands function as both stormwater filtration and a storm buffer area, as well as providing erosion controls to the neighboring uplands. A minimum of 13 endangered or threatened species are known to live in the region including the recently listed federally endangered reticulated flatwoods salamander. The northern wet prairie portion is known to be an outstanding pitcher plant habitat.

Priority purchases will be concentrated on parcels adjacent to existing District lands. Currently the District owns 3,245 acres on Garcon Point.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 3,200 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Blackwater River Basin

Originating in the Conecuh National Forest in Alabama, the Blackwater River has a large portion of its Florida watershed further protected by the Blackwater River State Forest. In all, nearly 50 miles of the river corridor is remote and undeveloped. As a result, the Blackwater River is considered one of Florida's best preserved waterways. Currently the District owns 381 acres along the river.

The acquisition area includes a large area of mature longleaf pine forest; considerable bottomland forest and marsh acreage; upland mixed forest; and blackwater stream and seepage slope communities. Priority purchases will be concentrated on parcels adjacent to existing District lands. Approximately 380 acres have been acquired along the Blackwater River immediately south of Milton in Santa Rosa County.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis prior to acceptance.

Land Acquisition

Approximately 11,449 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over the next five years or more. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Yellow/Shoal River Basin

The Yellow River has its headwaters in Conecuh National Forest in Alabama and forms the northern border of Eglin Air Force Base (AFB) across much of eastern Santa Rosa and western Okaloosa counties. The proposed acquisitions would bring much of the remainder of the Yellow River floodplain in Florida under public ownership. Included in the project is a segment of the lower Shoal River, the largest tributary to the Yellow River. Large private landowners own a majority of the floodplain in this project, but considerable areas of the bordering and buffer lands are being sought to ensure effective management and protection of water resources. Highest priority will be given to tracts in the western portion of the project within the 100-year floodplain. Priority purchases will be concentrated on parcels adjacent to existing District lands. Currently the District owns 17,742 acres along the river.

Although the Yellow and Shoal rivers exhibit good overall water quality, both are fed largely by rainwater runoff and are thus susceptible to pollution from land use activities. The proposed purchase area would provide water quality protection from the Alabama border and encompass roughly 39,000 acres. Purchase of lands northwest of Eglin AFB, along the I-10 corridor, would provide approximately 52,000 acres of land that has the potential for future water resource development to supplement the strained potable water sources in southern Santa Rosa and Okaloosa counties. Acquisitions in this area are recommended by the District Regional Water Supply Plan for Okaloosa, Santa Rosa and Walton counties to protect future supply sources.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 39,140 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Groundwater Recharge Areas

In Escambia and Santa Rosa counties, the Sand-and-Gravel Aquifer is the principal source of potable water for public supply. The Sand-and-Gravel Aquifer is unconfined or poorly confined, making it particularly susceptible to contamination by land uses. Land acquisition along the I-10 corridor between the Yellow and Blackwater rivers in Santa Rosa County would protect recharge areas that are important for future water supply sources.

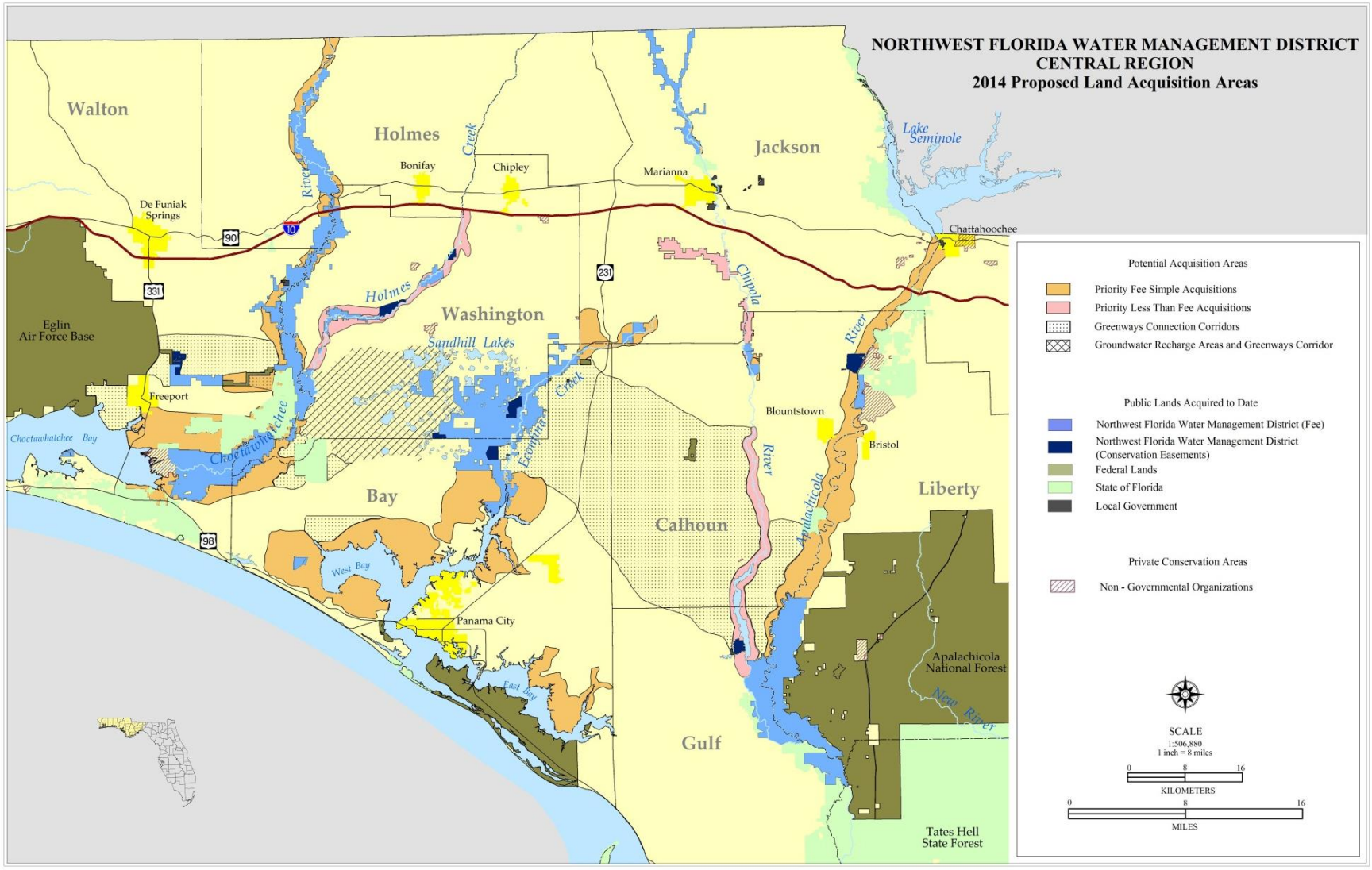

Figure 5-3. Proposed Land Acquisition Areas (Central Region)

Florida Forever Land Acquisition Project

Lafayette Creek

Originating in south central Walton County, the Lafayette Creek drainage basin is located northeast of Freeport, Florida. The main stem of the creek begins about seven miles east of Freeport and runs due west for about six miles before it turns south and empties into LaGrange Bayou/Choctawhatchee Bay. Additional purchases along the creek will protect many diverse natural communities and habitat types. In addition, any proposed acquisitions will also protect a portion of the water resources of Magnolia and Wolf creeks, both of which are significant tributaries to Lafayette Creek. Currently, the District owns 3,160 acres along the creek, including 420 acres for FDOT mitigation purposes.

The area between the Choctawhatchee River and Eglin Air Force Base is part of the Northwest Florida Greenway Corridor which serves to protect open space stretching from the Apalachicola National Forest to Eglin Air Force Base. It is intended to preserve environmentally sensitive areas, sustain existing military lands and airspace, maintain the economic viability of forest lands and provide recreation. The District, in cooperation with Eglin Air Force Base, acquired a 1,095.3-acre conservation easement from Nokuse Plantation utilizing Department of Defense Readiness and Environmental Protection Integration (REPI) funds. Acquisition of this Conservation Easement will ensure the protection of seepage streams within the Magnolia and Lafayette Creeks and buffer Eglin Air Force Base lands to the west.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 5,800 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Choctawhatchee River/Holmes Creek Basin

Originating in Alabama and flowing into Choctawhatchee Bay, the Choctawhatchee River/Holmes Creek basin encompasses the second largest floodplain in the state. Approximately 3,133 square miles of the watershed is in Alabama and 2,052 square miles is in Florida. The river is 170 miles long with about 88 miles in Florida. Although the river basin exhibits localized water quality problems, primarily due to agricultural land use in the upper basin, the overall water quality is considered good. The river basin encompasses several springs and a variety of habitats including bottomland hardwood forests, marshes and Tupelo-Cypress swamps.

Due to the river corridor's undeveloped nature, the basin provides habitat for a variety of native wildlife, including several endangered plant and animal species. The river also serves as a breeding and migratory area for both the Alligator Gar and the Gulf Sturgeon. The District currently owns 63,386 acres along the river and creek in fee and less than fee. Priority purchases will be concentrated on parcels adjacent to existing District lands, around the river's mouth, designated tributaries such as Holmes Creek, and other projects that can mitigate for wetland impacts associated with FDOT highway construction.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 55,064 acres have been identified for fee simple acquisition on the Choctawhatchee River and Holmes Creek, and 7,000 acres have been identified for possible less than fee acquisition on Holmes Creek. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

West Bay Buffer

West Bay is the westernmost embayment of the St. Andrew Bay estuary. The bay supports notable shellfish and seagrass communities, important fisheries, and other environmental and economic resources. The West Bay watershed is characterized by extensive pine flatwoods, as well as hardwood forests, cypress wetlands, mixed-forested wetlands, freshwater marshes, wet prairie, and other wetlands. Salt marshes, inland forested wetlands, and associated upland communities are especially prominent in several areas, including the Breakfast Point peninsula and other lands adjacent to the Burnt Mill and Crooked Creek tributaries.

Like other estuaries, the bay is vulnerable to impacts associated with intensive residential and commercial development. Potential impacts include the long-term degradation as a result of nonpoint source pollution, as well as habitat loss and fragmentation. The proposed acquisition would help prevent such degradation by preserving intact an extensive ecosystem of forests, scrub, salt marshes, and freshwater wetlands. Preserving the associated wetland and upland communities in the vicinity of the bay would also protect water quality by providing a substantial riparian buffer and maintaining the natural hydrology in the vicinity of the bay. The District currently owns 719 acres in the West Bay Buffer.

In addition to providing for water resource protection and public use, this acquisition will be consistent with several ongoing initiatives, including the West Bay Sector Plan. These initiatives also include efforts to restore seagrass communities in the bay and to improve the treatment and management of domestic wastewater.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 47,281 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Econfina Creek

Econfina Creek is the major contributor to Deer Point Lake, which serves as the public water supply for Bay County, including Panama City, Panama City Beach and neighboring communities. The proposed purchases along the creek contain several spring-run streams, which are imperiled biological communities. The slope forest communities that border considerable lengths of the creek contain some of the highest species diversity encountered in Florida. The sand hills portion of the project features high rolling pinelands, steephead ravines, and numerous sandhill upland lakes. Much of the sand hills area is of excellent quality, with a nearly intact ground cover of wiregrass and dropseed. At least 18 species of rare or endangered plants inhabit the sand hills area. The District currently owns over 43,771 acres in fee and less than fee, including the 2,155-acre Sand Hill Lakes Mitigation Bank. Priority purchases will be concentrated on parcels adjacent to existing District lands and parcels with significant aquifer recharge potential.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 39,669 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Groundwater Recharge Areas

The upper portion of the acquisition project is a significant recharge area of the Floridan Aquifer. The majority of the acreage purchased by the District and targeted for future purchase is one of the most important recharge areas for the Floridan Aquifer in northwest Florida. Recharge rates in the area have been estimated at 25 to 40 inches per year, and this recharge drives the spring flows along Econfina Creek, the largest tributary of the Deer Point Lake Reservoir. The reservoir currently provides approximately 50 million gallons per day for residential, commercial and industrial water uses in Bay County.

Florida Forever Land Acquisition Project

Sandy Creek Basin

Sandy Creek is a major tributary of East Bay, the easternmost embayment of the St. Andrew Bay estuary. The creek's basin is characterized by extensive pine flatwoods, as well as hardwood forests, saltmarshes, cypress wetlands, mixed forested wetlands, freshwater marshes, wet prairie, and other wetlands. Salt and freshwater marshes, inland forested wetlands, and associated upland communities are especially prominent along the creek and its tributaries.

Preservation of the Sandy Creek basin will protect a major tributary basin of East Bay. In so doing, it would preserve water quality and a mosaic of interconnected upland, wetland, stream, and estuarine habitats. The acquisition would also protect water quality by providing a substantial riparian buffer and maintaining natural hydrology.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 15,000 acres have been identified for acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

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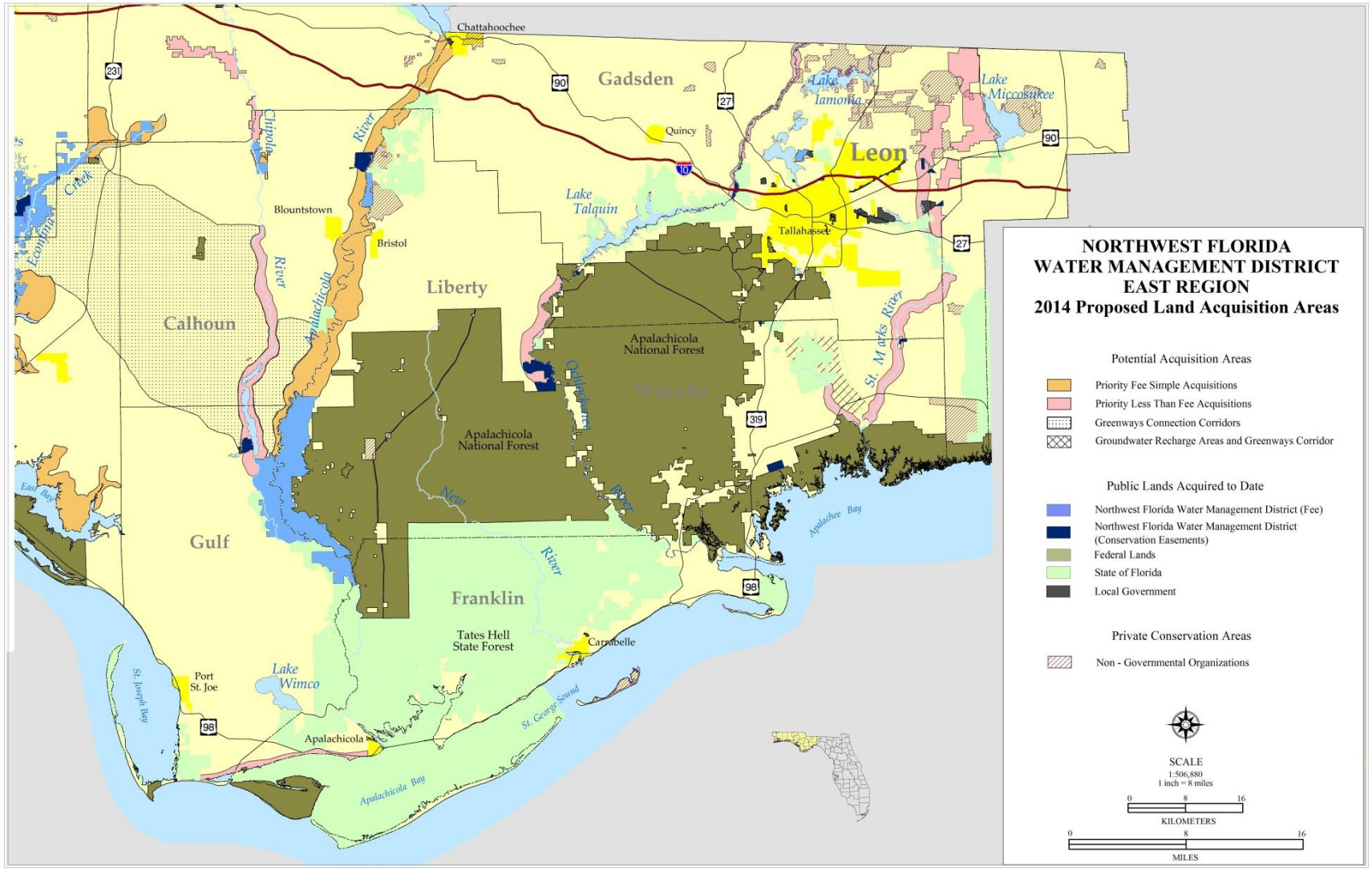

Figure 5-4. Proposed Land Acquisition Areas (East Region)

Florida Forever Land Acquisition Project

Chipola River Basin

A new area along the Middle Chipola River has been identified for less than fee acquisition. The area is comprised of approximately 2,400 acres in northern Calhoun and southern Jackson counties. Acquisition of this tract will help protect over 3.4 miles of the west bank and 4.25 miles of the east bank of the Chipola, River. In 2009, the District acquired 1,377.76 acres in fee along the Middle Chipola River, including the "Look-N-Tremble" rapids. The District now owns a total of 9,094 acres in fee simple and holds a conservation easement on 810 acres in the Chipola River Basin.

Two additional areas have been identified for less than fee acquisition along the Chipola River. The first is comprised of approximately 6,000 acres in the Spring Lake Spring Group area located in central Jackson County. Acquisition of land in the Spring Lake Spring Group area with its numerous springs, and tributaries which end up in the Chipola River, will provide enhanced water resource protection to the area.

The second proposed less than fee acquisition contains a core tract of roughly 20,000 acres in the river basin in Calhoun and Gulf counties. The Chipola River is the largest tributary to the Apalachicola River and its mostly spring-fed waters make an important and consistent contribution of sediment-free water to the Apalachicola. The degree of biological diversity of the Chipola appears to be nearly as high as that of the Apalachicola. Priority purchases will be focused along the middle reaches of the Chipola River.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 1,025 acres has been identified for possible fee acquisition and 28,400 acres have been identified for possible less than fee acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Apalachicola Bay/St. Vincent Sound Buffer

Apalachicola Bay has been recognized as a resource of state, federal, and international significance. The bay has extensive fish and shellfish resources, and it supports noteworthy commercial and recreational fisheries and other recreational and economic activities. It has been designated an Outstanding Florida Water, a State Aquatic Preserve, and an International Biosphere Reserve. It includes the Apalachicola Bay National Estuarine Research Reserve and the St. Vincent National Wildlife Refuge. State and federal agencies, as well as the NWFWMD, have made extensive investments in acquiring and protecting lands throughout the basin. This project would provide an important addition to these efforts.

Like other northwest Florida estuaries, Apalachicola Bay is vulnerable to impacts associated with development. Such potential impacts include the long-term effects of non-point source pollution and habitat loss and fragmentation. The proposed acquisition would help prevent such degradation by preserving the integrated forest and wetland community bordering St. Vincent Sound and Apalachicola Bay. The acquisition would limit new sources of pollution, prevent habitat loss and fragmentation, and protect the stability and integrity of littoral vegetation. The acquisition would also protect water quality by providing a substantial riparian buffer which would help prevent channelization from new impervious surfaces.

The land targeted through this project is immediately adjacent to some of the most productive oyster harvesting areas of the Apalachicola Bay system, including the Indian Lagoon, Scorpion and Paradise bars.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 5,200 acres have been identified for less than fee acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Upper Apalachicola River Basin

The Apalachicola River begins below Lake Seminole at the confluence of Chattahoochee and Flint rivers. It has the largest floodplain in the state and is widely regarded as one of the state's most important natural resources. The Apalachicola River supports the highly productive fishery in Apalachicola Bay, and more endangered plant species can be found along the river's upper stretches than in any comparably-sized river in the state. The District owns 36,823 acres of river floodplain and holds a conservation easement on 1,550 acres.

Major habitat types along the Apalachicola River include coastal marshes, freshwater marshes, flatwoods and bottomland hardwood swamp. Water tupelo, Ogeechee tupelo, Bald cypress, Carolina ash and Swamp tupelo have been identified in the floodplain, as well as numerous species of rare fish. Substantial additional acreage of the Apalachicola system is owned by other public agencies and private conservation organizations. Priority purchases will be concentrated on parcels adjacent to existing District lands, other conservation lands and designated tributaries.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 50,132 acres have been identified for possible fee acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

Ochlockonee River Basin

The Ochlockonee River originates in the coastal plain of Georgia and traverses parts of five Florida counties. Water quality in the river is lowest when it enters Florida and generally improves as it flows closer to the Gulf of Mexico. The Ochlockonee is primarily fed by rainwater runoff, and is therefore susceptible to pollution by land use activities. Large parts of the watershed are publicly owned, including Joe Budd Wildlife Management Area, Lake Talquin State Forest and Apalachicola National Forest. The District's primary focus is to acquire less than fee rights on privately owned floodplain land separating existing federal and state properties. Public ownership of the erosion-prone lands bordering this usually fast flowing river will reduce the likelihood of water quality degradation. The District presently has 3,675 acres in less than fee holdings in the area.

Public Access

All District conservation lands are available for public use. Such uses include fishing, hunting, camping, hiking, boating, swimming, and other recreational and educational activities. Access issues are addressed on a parcel-by-parcel basis.

Land Acquisition

Approximately 11,767 acres have been identified for less than fee acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Florida Forever Land Acquisition Project

St. Marks/Wakulla Rivers

The Wakulla River originates at Wakulla Springs and flows south approximately 10 miles to join the St. Marks River at the town of St. Marks in Wakulla County. The St. Marks River starts east of Tallahassee as a narrow stream, widens considerably below Horn Spring, and then disappears underground at Natural Bridge. After reemerging as a much stronger river at St. Marks Spring, it flows 11 miles to its confluence with the Wakulla River. While the lower reach of the river below the town of St. Marks is protected and preserved as part of the St. Marks National Wildlife Refuge, much of the remainder of the two river watersheds is threatened by active riverfront development and in the adjacent highlands. The St. Marks supports one of the most heavily used inshore saltwater fisheries in north Florida, the viability of which is largely dependent on the quality of freshwater flowing into the estuarine system. Both the Wakulla Springs State Park and the St. Marks National Wildlife Refuge are major refuges for numerous biological species. The District presently has 1,376 acres under less than fee acquisition in the area.

BluePrint 2000

In December 2003, the Northwest Florida Water Management District and the City of Tallahassee-Leon County BluePrint 2000 Intergovernmental Agency entered into a five-year Memorandum of Agreement (MOA) to work cooperatively to acquire conservation easements to protect and preserve the water resources of the St. Marks River basin in Leon County. Although this MOA has now expired, the District and BluePrint 2000 successfully purchased conservation easements on a 132.62-acre tract and 194.5-acre tract, both located in Leon County.

Land Acquisition

Approximately 45,456 acres have been identified for possible acquisition. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition will depend upon such considerations as: Governing Board policy; Threats to the resource; Availability of willing sellers; Tract size; General market conditions; Available staff resources, and Availability of funds.

Implementation of the 2012-2013 Work Plan

Land Acquisition

The District acquired one 10-acre inholding in fee simple in the Econfina Creek WMA.

Land Management

The District completed numerous land management activities during Fiscal Year 2012-2013. Management and restoration efforts including prescribed burns, native species planting and timber harvesting, continue across the District's 212,379 managed acres. In addition, the District maintains and improves public access and recreational amenities such as boat ramps, primitive campsites, and swimming and picnic areas**.** In the pages that follow, Table 5-1 and Table 5-2 provide additional information on specific land restoration activities completed during the year. The projected Fiscal Year 2013-2014 staffing and management budget by WMA can be found in Table 5-3.

To date, the District has conserved and protected 224,782, acres primarily through fee simple acquisition. These lands protect natural systems, wetland and floodplain functions, groundwater recharge, surface and groundwater quality, and fish and wildlife habitat. District-owned lands are all accessible to the public and are managed to protect water resources while providing public access and resource-based recreation.

District lands include the majority of the Escambia and Choctawhatchee river floodplains, as well as extensive lands along the Perdido, Blackwater, Yellow, Shoal, and Apalachicola rivers; Lafayette, Holmes and Econfina creeks; and on Perdido Bay, Garcon Point and Live Oak Point. In addition, the District manages and conducts habitat restoration and maintenance on Yellow River Ranch, Live Oak Point, Ward Creek West and Sand Hill Lakes Mitigation Bank. The District has acquired the majority of the groundwater recharge area for springs that discharge into Econfina Creek and form a crucial component of the water contribution to Deer Point Lake Reservoir.

Land Management Accomplishments (FY 2012-2013)

- Phase II of the Econfina Springs complex restoration program continued with the completion of final designs and permit applications for the Williford Spring component. Funding sources were identified and secured for construction in the spring of 2014.
- Prescribed burns were conducted on approximately 9,700 acres of District-owned land.
- Vegetation management and habitat enhancement activities were conducted on approximately 1,875 acres.
- 249 group camping permits at seven reservation-only sites on District lands.
- 23 special resource area permits were issued for larger events on District property.
- Six timber harvests were conducted on District lands totaling 1,952 acres.
- A cooperative project with Walton County to improve a boat ramp and camping area at Dead River Landing was substantially completed.
- Over 9,000 acres of District-owned land were surveyed for invasive exotic plants, and control measures were implemented for all identified problem areas.

Restoration

The District accomplishes water resource restoration through several interrelated programs, primarily Surface Water Improvement and Management (SWIM), Land Management, and Mitigation.

Approved NWFWMD plans with substantial restoration components include the following:

- *Apalachicola River and Bay Management Plan* (1996)
- *Pensacola Bay System SWIM Plan* (1997)
- *Lake Jackson Management Plan* (1997)
- *Choctawhatchee River and Bay SWIM Plan* (2002)
- *St. Andrew Bay Watershed SWIM Plan* (2000)
- *St. Marks River Watershed SWIM Plan* (2009)
- *Tate's Hell State Forest Hydrologic Restoration Plan* (2010)
- *Florida Forever Capital Improvements Plan*

Restoration Accomplishments (FY 2012-2013)

- A streambank restoration project at Dead River Landing in Walton County totaling approximately 225 feet was implemented using a vegetative retaining wall to stabilize the eroding riverbank at a popular recreation site. The project was built by Walton County staff with assistance from the District.
- The District also completed the hand planting of 621 acres of disturbed longleaf pine, wet pine flatwoods, and wiregrass habitat across northwest Florida. These habitat restoration activities enhance groundwater recharge, improve wetland functions, and offset wetland losses due to Department of Transportation projects.
- Over 284,000 longleaf pine tubelings were planted on the Perdido River, Escambia River, Yellow River, Choctawhatchee River and Econfina Creek WMAs and the Sand Hill Lakes Mitigation Bank.
- The District also reestablished groundcover habitat, planting over 372,000 plugs of upland and wetland wiregrass and toothache grass on disturbed habitat sites on the Sand Hill Lakes Mitigation Bank and the Perdido River mitigation tract.
- Seeds for many District groundcover projects were collected from District land on Econfina Creek WMA. The District continues to research, refine and establish new habitat restoration techniques that increase species diversity and ecosystem health.

Table 5-1. Restoration, Enhancement and Maintenance (2013)

	Acres Burned					Acres Planted					Acres Harvested				Acres Treated
Water Management Area	**Total**	Fuel Reduction	Site Preparation	Growing Season	Wiregrass Propagation	**Total**	Upland/Wetland Wiregrass and Toothache Grass	Longleaf Pine	Slash Pine	Upland Hardwoods	**Total**	Restoration	Thinning	Habitat Restoration	For Invasive, Non-native or Off-site Species
Escambia River						**7**		7							22
Garcon Point	**78**	78													2000
Blackwater River															1
Yellow River						**23**		23							
Perdido River	**850**	850				**205**	27	151		27					862
Choctawhatchee River	**3560**	2504	97	959		**160**		130		30	**49**	11	38		3630
Econfina Creek	**4061**	1493	1302	845	421	**25**		25			**1172**			1172	1019
St. Andrews	**168**	146			22						**351**	301	50		
Carter Restoration	**493**	493				**201**	68	133							
Ward Creek West	**127**	127													
Devils Swamp Restoration															
Chipola River	**77**	77													20
Apalachicola River	**46**	46													
Lake Jackson	**205**	205									**132**		132		
Totals	**9665**	**6019**	**1399**	**1804**	**443**	**621**	**95**	**469**		**57**	**1704**	**312**	**220**	**1172**	**7554**

Table 5-2. Access and Recreation Management (2013)

Water Management Area	Primitive Campsites	Picnic Grounds	Public Parks	Parking Areas	Reserved Group Sites	Boat Landings	Portolet Stations	Horse Trail	Canoe Trail	Hiking Trail	Nature Trail	Bike Trail	Access Road	Group Use Permits	Birding	Nature Trail	General Purpose	Information Signs	Weather Pavilions
	Number Maintained							Miles Maintained						Issued	Maps/Brochures Printed				Installed
Escambia River	13	9	8	9	1	8	11			1	2		27	14				40	2
Garcon Point				3														10	
Blackwater River	1					1					1							6	1
Yellow River	9	2	7	6		4	4		50				47					10	
Perdido River		3	3	4	1	3	4	3	9				32	40				30	1
Choctawhatchee River	8	9	13	12		11	8		15				103						1
Econfina Creek	10	14	8	18	5	4	14	56	22	18	2		130	195				30	
Chipola River	3			3		2	2	4	6	3									
Apalachicola River	1	1		1		1	1			3									
Lake Jackson			1	2			1	7		10		7							
Totals	**45**	**38**	**40**	**58**	**7**	**34**	**45**	**70**	**102**	**35**	**5**	**7**	**339**	**249**				**126**	**5**

Table 5-3. Projected Funding, Staffing and Resource Management for FY 2013-2014

Region	Water Management Area	Acres	Assigned Staff	Total Funding	Funding for Resource Management
Western	Escambia	35,413		$147,043	$93,470
	Escambia Conservation Easements	19		$1,051	$500
	Garcon Point	3,245		$80,810	$39,750
	Yellow/Escribano	17,729		$94,303	$55,750
	Blackwater	381		$20,349	$9,400
	Perdido	6,261		$157,395	$110,450
	Perdido Conservation Easements	4		$1,051	$500
	Western Region Total	**63,052**	**3**	**$ 502,002**	**$309,820**
Central	Choctawhatchee	60,848		$368,612	$219,125
	Choctawhatchee/Holmes Conservation Easements	2,537		$19,905	$13,000
	Econfina	39,184		$903,639	$677,255
	St. Andrew/Econfina Conservation Easements	2,433		$4,923	$500
	Ward Creek West	719		$0	$0
	Carter Restoration	2,155		$57,250	$57,250
	Central Region Total	**107,876**	**5**	**$1,354,329**	**$967,130**
Eastern	Chipola	9,094		$174,941	$101,250
	Apalachicola	36,823		$98,874	$44,350
	Apalachicola/Chipola Conservation Easements	2,359		$3,899	$500
	Lake Jackson	516		$165,440	$131,178
	St. Marks Conservation Easements	1,376		$4,116	$750
	Ochlockonee Conservation Easements	3,675		$4,999	$750
	Eastern Region Total	**53,843**	**2**	**$452,269**	**$278,778**
	Regional Totals	**224,771**	**10**	**$2,308,600**	**$1,555,728**

Other Projects	Acres	Assigned Staff	Total Funding	Funding for Resource Management
Land Management Administration		4	$2,200,347	$1,625,664
IT Initiative			$132,116	$132,116
Land Management Database			$204,107	$134,250
Florida National Scenic Trail - Econfina Creek			$10,000	$10,000
Williford Spring Restoration			$33,439	$0
Live Oak Streambank Restoration			$4,892	$0
Hightower Streambank Restoration			$4,892	$0
Spurling Streambank Restoration			$3,964	$0
Grand Total	**224,771**	**14**	**$4,902,357**	**$3,457,758**

5.2 Capital Improvement Work Plan

As required by section 373.199(2), F.S., the five-year work plan includes capital improvement projects that further the goals of the Florida Forever Act (section 259.105, F.S.). These include priorities identified in approved SWIM plans and other restoration plans, water resource development projects, and other eligible Florida Forever projects and improvements to District lands and facilities approved by the Governing Board.

Priority waterbody and water resource descriptions are outlined in approved SWIM plans and RWSPs. These plans respectively are available at www.nwfwmd.state.fl.us/pubs/swmp/swim.html and www.nwfwmd.state.fl.us/rmd/water_supply_planning/regional_water_supply_planning.html.

From 2003-2008, the District offered grant funding to local governments for capital improvements that help implement SWIM projects, water resource development projects, and projects included within stormwater master plans. Over $23 million has been awarded for 55 stormwater retrofit, restoration, and reuse projects under the program. These grants have leveraged significant additional funding, with over $52 million in local and other match funding being allocated to the approved projects. Facility ownership, permitting, and long-term maintenance remain the responsibilities of the grantees, as provided through cooperative grant agreements. Due to the lack of new Florida Forever funding, grant cycles have not been offered for the past several years.

Performance measures for restoration projects are incorporated within the Strategic Water Management Plan (www.nwfwmd.state.fl.us/pubs/swmp/swmp.html) and described in Chapter 1 of the Consolidated Annual Report. Cooperative local grant project accomplishment is described in this section and in www.nwfwmd.state.fl.us/rmd/swim/fla_forever_grants/fla_forever_grants.htm by SWIM watershed and jurisdiction.

Implementation of the 2012-2013 Five Year Work Plan

Implementation of the Apalachicola River and Bay/Tates Hell Swamp wetland restoration project continued through hydrologic restoration within the Whiskey George Creek basin of Tate's Hell State Forest. Construction completed included two hardened low water crossings, three earthen ditch plugs, and one culvert modification.

Blueprint 2000 and the City of Tallahassee have completed funded watershed restoration components of the Cascades Park Watershed Restoration Project. Project features include major stormwater ponds, retaining walls, utility relocations, landscaping to support littoral vegetation, and stream reconstruction, all within the St. Marks River watershed.

Fiscal Year 2014-2018 Capital Improvement Work Plan

Table 5-4 lists projects currently approved for Florida Forever capital improvement funding. These are funded from prior year appropriations.

Table 5-5 identifies additional projects eligible for Florida Forever capital improvement funding, depending on funding availability. Although the Florida Forever Act was extended to 2018, appropriations have been eliminated and future funding may be unavailable. Final approval of funding for any project requires specific Governing Board approval. Funding from SWIM, legislative special appropriation, Water Management Lands Trust Fund, federal grants, local governments, and potentially other sources may also contribute to project accomplishment. Where implementation is precluded due to current funding limitations, projects are identified to assist in long-term project planning and prioritization. The funding indicated represents current estimates and may be revised based on evolving project needs. There is significant potential for additional projects that would meet challenges described within the Pensacola, Choctawhatchee, St. Marks River, and Lake Jackson watershed SWIM plans, in addition to those listed in the table below.

Figure 5-5 illustrates the distribution of current and past capital improvement projects District-wide. Additional preservation, enhancement, and restoration projects accomplished to meet regional mitigation needs are described in the Northwest Florida Umbrella, Watershed-based, Regional Mitigation Plan ("Umbrella Plan"), available at www.nwfwmdwetlands.com/.

Table 5-4. Currently Approved Florida Forever Capital Improvement Projects

Project	Watershed	Description	Project Partners	Progress (3/1/2014)	Estimated Funding*
Apalachicola River and Bay Stormwater Retrofit Projects	Apalachicola River and Bay	Implementation of cooperative stormwater retrofit projects that improve water quality in the Apalachicola River and Bay watershed.	City of Apalachicola and Carrabelle; Other local governments	Preliminary planning completed for new stormwater retrofit and restoration projects.	$425,000
Tates Hell Swamp Hydrologic Restoration	Apalachicola River and Bay	Previously titled Apalachicola River and Bay Wetland Restoration Project encompassed this work. Continues implementation of the Tate's Hell State Forest Hydrologic Restoration Plan; Provides water quality, hydrologic, and habitat restoration. Currently contracted activities include construction of eight low water crossings, ten earthen ditch plugs, one flashboard riser, and nine culvert modifications, as well as removal of one-half mile of dirt logging road and adjacent ditches.	DOF, DEP, FWCC, local governments	Construction of low water crossings, ditch plugs, and other hydrologic restoration components continue. Completion of work planned for the Whiskey George basin expected in FY 2013-2014.	$160,900
Watson Bayou Stormwater Retrofit	St. Andrew Bay	Stormwater retrofit for water quality and flood control. Spring Avenue cooperative project approved in 2011.	Bay County	Engineering and permitting; construction initiated	$586,200
Cascades Park Watershed Resource Restoration	St. Marks River	Stormwater retrofit and stream restoration. Grant project approved in 2009.	Blueprint 2000	Construction complete	$300,000
* Florida Forever portion of funding only.			**Total**		**$1,472,100**

Table 5-5. Additional Eligible Projects

Project	Description	Status (3/1/2014)	Eligible Funding Sources	Estimated Funding
Apalachicola River and Bay Watershed				
Additional Tates Hell Swamp Hydrologic Restoration	Continues implementation of the Tate's Hell State Forest Hydrologic Restoration Plan; Provides water quality, hydrologic, and habitat restoration.	Planning and Engineering	Florida Forever SWIM Federal Grants	$5,330,000
Stormwater retrofit	Construction of projects identified in the City of Apalachicola Stormwater Master Plan, as well as other stormwater retrofit projects identified through an ongoing SWIM program basinwide assessment. Project objectives include water quality improvement and restoration and enhancement of wetland and aquatic habitat.	Planning through construction	Florida Forever SWIM*	$3,645,000
Shoreline and Tidal Marsh Restoration	Restoration of intertidal habitat, to include salt marsh and seagrass habitat, oyster reef and living shorelines projects, and associated breakwaters.	Planning	Florida Forever SWIM	TBD

Project	Description	Status (3/1/2014)	Eligible Funding Sources	Estimated Funding
St. Andrew Bay Watershed				
Stormwater Retrofit	Implementation of cooperative stormwater retrofit projects that improve water quality in the St. Andrew Bay watershed. Projects may include those identified in the Stormwater Master Plan prepared for Bay County and its municipalities, as well as other projects identified by local governments and watershed stakeholders. Project objectives include water quality improvement and restoration and enhancement of wetland and aquatic habitat.	Planning through construction	Florida Forever SWIM, MOEX	$903,985
Unpaved Road sedimentation abatement	Unpaved road stabilization to abate direct impacts on Econfina Creek, Deer Point Lake, and the St. Andrew Bay estuary. Includes Scotts Road – Econfina Creek crossing and potentially other sites. Project objectives include water quality improvement and restoration and enhancement of wetland and aquatic habitat.	Planning through construction	Florida Forever SWIM	$549,000
Econfina Spring Complex Restoration	Spring restoration at Williford Springs in Washington County. Project components include sediment removal, spring bank restoration and protection, stormwater facilities, canoe dock/boardwalk (to minimize use impacts), and compatible public access improvements.	Planning and permitting	General Fund SWIM Florida Forever FWCC	$1,848,452
Shoreline and Tidal Marsh Restoration	Restoration of intertidal habitat, to include salt marsh and seagrass habitat, oyster reef and living shorelines projects, and associated breakwaters.	Planning	Florida Forever SWIM	TBD
Choctawhatchee River and Bay Watershed				
Shoreline and Tidal Marsh Restoration	Continued salt marsh and littoral habitat restoration and protection at Live Oak Point, in Choctawhatchee Bay. Six oyster shell reefs have been planned, with associated salt marsh planting. Three have been completed thus far. Also includes additional restoration of intertidal habitat elsewhere in the bay, to include salt marsh and seagrass habitat, oyster reef and living shorelines projects, and associated breakwaters	Planning for additional construction	Florida Forever SWIM	$200,000
Stormwater Retrofit	Implementation of cooperative stormwater retrofit projects that improve water quality in Choctawhatchee Bay. Project objectives include water quality improvement and restoration and enhancement of wetland and aquatic habitat.	Planning	Florida Forever SWIM	TBD
Ochlockonee River and Bay Watershed				
Additional Tates Hell Swamp Hydrologic Restoration	Implementation of portions of the Tate's Hell State Forest Hydrologic Restoration Plan within the Ochlockonee River and Bay watershed; provides water quality, hydrologic, and habitat restoration.	Planning and Engineering	Florida Forever SWIM Federal Grants	$1,580,000
Pensacola Bay System				
Stormwater Retrofit	Implementation of cooperative stormwater retrofit projects that improve water quality in the Pensacola Bay System. Project objectives include water quality improvement and restoration and enhancement of wetland and aquatic habitat.	Planning	Florida Forever SWIM	TBD
Shoreline and Tidal Marsh Restoration	Restoration of intertidal habitat, to include salt marsh and seagrass habitat, oyster reef and living shorelines projects, and associated breakwaters.	Planning	Florida Forever SWIM	TBD

* SWIM funding is provided from the Ecosystem Management and Restoration Trust Fund and potentially the Water Management Lands Trust Fund and Water Protection and Sustainability Trust Fund.

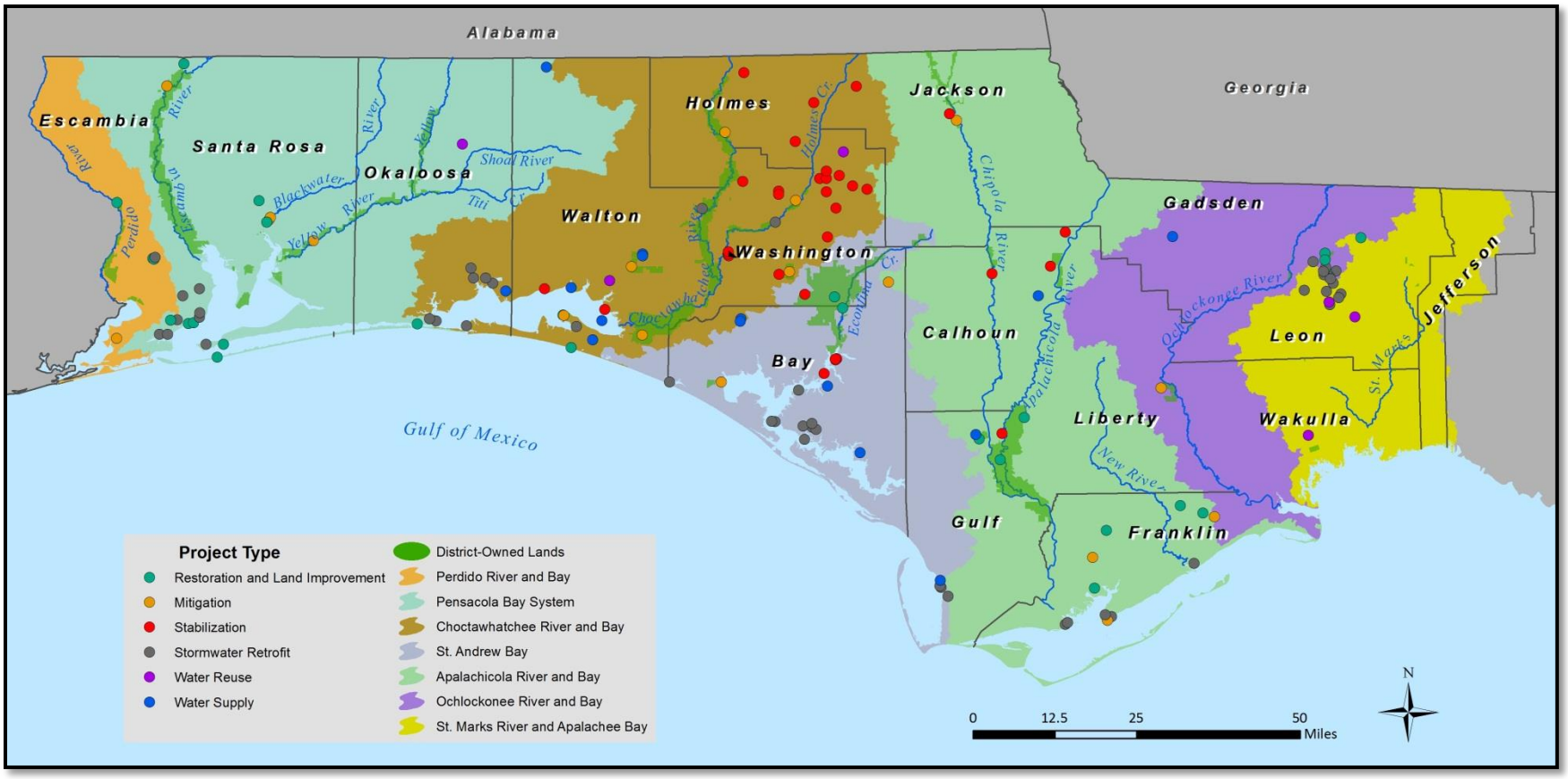

Figure 5-5. NWFWMD Capital Project Distribution

Chapter Six: Mitigation Donation Annual Report

Section 373.414(1)(b)2, F.S., requires the District and DEP to report by March 1 of each year, as part of this report, all cash donations accepted as mitigation for use in duly noticed environmental creation, preservation, enhancement, or restoration projects that offset impacts permitted under Chapter 373, Part IV, F.S., Management and Storage of Surface Waters. The report is required to include a description of the endorsed mitigation projects and, except for projects governed as mitigation banks or regional offsite mitigation, must address, as applicable, success criteria, project implementation status and timeframe, monitoring, long-term management, provisions for preservation, and full cost accounting. The report specifically excludes contributions required under section 373.4137, F.S. (regional mitigation for specified transportation impacts).

The Northwest Florida Water Management District implemented Environmental Resource Permitting (ERP) Phase II (wetland resource permitting), jointly with DEP, beginning on November 1, 2010. The ERP and Management and Storage of Storm Water (MSSW) programs were combined during FY 2012-2013 as a result of the adoption of the Statewide Environmental Resource Permitting (SWERP) rules in chapter 62.330, F.A.C. Any cash donations accepted by the District as mitigation during the current fiscal year will be reported annually in this report. No cash donations were received in FY 2012-2013.

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Chapter Seven: Surface Water Improvement and Management Program Summary Report

7.1 Introduction

Section 373.036(7)(d), F.S., provides that districts may include in the Consolidated Annual Report additional information on the status or management of water resources as deemed appropriate. The NWFWMD has a long-term program to protect and restore watershed resources. The Surface Water Improvement and Management (SWIM) program provides the framework for watershed and project planning for the major riverine-estuarine watersheds indicated below (Figure **7-1**).

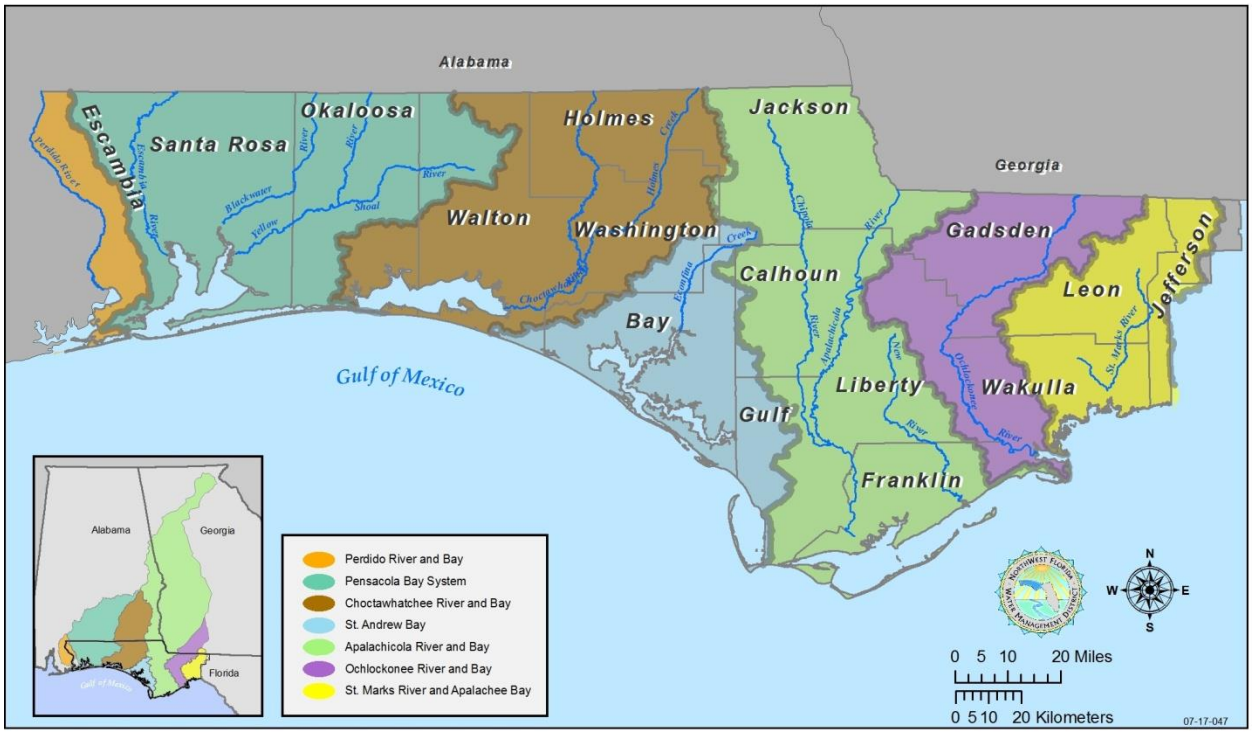

Figure 7-1. NWFWMD SWIM Priority Watersheds

7.2 SWIM Priority List

The Northwest Florida Water Management District's SWIM Priority list is provided in Table 7-1. Pursuant to section 373.453, F.S., the SWIM priority list may be periodically reviewed with updates reflected in this section. In addition to respective watersheds, the list identifies major tributaries and waterbodies. All other tributaries, sub-embayments, and contributing basins are also considered as being within the listed priority waterbodies. A more detailed discussion is provided in the report, Surface Water Improvement and Management Program Priority List (NWFWMD 2006a).

Table 7-1. NWFWMD SWIM Priority List

Watershed		SWIM Plan Status
Apalachicola River and Bay Watershed		
Apalachicola River Apalachicola Bay Chipola River	New River Lake Seminole	Plan update approved 1996
Pensacola Bay System		
Escambia River Blackwater River Yellow River Shoal River East Bay River Pensacola Bay	Escambia Bay East Bay Blackwater Bay Western and Central Santa Rosa Sound Big Lagoon	Plan update approved 1997
Choctawhatchee River and Bay Watershed		
Choctawhatchee River Holmes Creek Choctawhatchee Bay	Eastern Santa Rosa Sound	Plan update approved 2002
St. Andrew Bay Watershed		
St. Andrew Bay North Bay West Bay East Bay	St. Joseph Bay Deer Point Lake Reservoir Econfina Creek	Plan approved 2000
St. Marks River and Apalachee Bay Watershed		
St. Marks River Wakulla River Lake Miccosukee	Lake Lafayette Lake Munson Apalachee Bay	Plan update approved 2009
Ochlockonee River and Bay Watershed		
Ochlockonee Bay Ochlockonee River	Lake Jackson Lake Iamonia	Draft plan completed 2011 Lake Jackson plan update approved 1997
Perdido River and Bay Watershed		
Perdido River	Perdido Bay	Draft plan completed 2011

SWIM plans are developed to address cumulative anthropogenic impacts on water quality and aquatic habitats. They incorporate comprehensive strategies to both restore and to protect watershed resources. Implementation is accomplished through a variety of activities such as planning and constructing stormwater retrofits to improve water quality and flood protection; restoring wetland and aquatic habitats; assessing freshwater needs and other resources; protecting springs; and public outreach and awareness. The SWIM program also supports coordination of state and federal grants and implementation of cooperative capital improvement projects with local governments. Figure 5-5 above (Section 5.2, Florida Forever Capital Improvement Work Plan) illustrates the distribution of past capital improvement projects implemented across the District with SWIM program planning and coordination.

Historically, SWIM plan implementation has integrated and leveraged a variety of funding sources, including SWIM (sections 373.451-373.459, F.S.), the Water Management Lands Trust Fund (section 373.59, F.S.), the Ecosystem Management and Restoration Trust Fund (section 403.1651, F.S.), Florida Forever (section 259.105 and section 373.199, F.S.), legislative special appropriations, the Water Protection and Sustainability Program (section 403.890, F.S.), state and federal grants, and funding through local government partnerships. Cumulatively, the overall effort has resulted in significant protection and improvement of water resources District-wide.

7.3 Current Project Priorities

In 2012, the District established a renewed focus on the Apalachicola River and Bay and St. Andrew Bay watersheds, applying remaining Ecosystem Management and Restoration Trust Fund revenues appropriated by past legislatures to address acute problems apparent within these two systems. Additionally, significant legislative funding has been appropriated to implement priority water quality improvement projects and to update the three dimensional hydrodynamic model for Apalachicola Bay. It is expected that this funding will further leverage and build upon local resources, as well as additional state and federal grant funding.

Table 7-2 lists priority SWIM projects currently in the planning stages or otherwise under consideration. Note that there is overlap between the project priorities listed here and those within the Florida Forever Capital Improvement Plan (Table 5-4), particularly for construction projects requiring multiple funding sources for completion. Additional funding sources, including from local governments and state and federal grant sources, may be identified to complement the funding indicated below.

Table 7-2. Current SWIM Projects

Project	Cooperators	Estimated Cost	Description
Apalachicola River and Bay Watershed			
Battery Park Stormwater Retrofit	City of Apalachicola	$514,500	Stormwater retrofit for 54-acre basin in downtown Apalachicola. Phase 1 ($71,500 for engineering, surveying, and permitting) funded for FY 2012-2013 and FY 2013-2014. Phase 2 ($443,000 for construction) funding anticipated for FYs 14-16.
Mobile Irrigation Lab	FDACS; USDA NRCS; West FL RC&D Council	$72,000	Continued/enhanced implementation within the Jackson Blue Spring basin and other agricultural areas. Cost listed is FY 2013-2014 annual cost.
Sod-based Crop Rotation Program	UF IFAS	$40,000	Continued development and implementation of agricultural BMPs. Cost listed is annual cost for FY 2013-2014.
Additional Data Collection	USGS	$50,000	Continued hydrologic data collection. Project funded for FY 2013-2014.

Project	Cooperators	Estimated Cost	Description
Apalachicola Bay Stormwater Improvements	City of Apalachicola	$2,535,000	Construction of stormwater retrofit projects in three priority basins of the city to improve water quality in Apalachicola Bay.
Apalachicola River and Bay Stormwater Retrofit Projects	City of Apalachicola and Carrabelle; Other local governments	$425,000	Implementation of cooperative stormwater retrofit projects that improve water quality in the Apalachicola River and Bay watershed
Apalachicola Bay Strategic Plan	Watershed stakeholders	$250,000	Multi-agency coordination to identify current needs and priority actions to improve bay water quality.
Bay Freshwater Needs Assessment	Watershed stakeholders	$215,000	Update to and application of the three dimensional hydrodynamic model for Apalachicola Bay.
St. Andrew Bay Watershed			
Stormwater Retrofit and Restoration Grants	Cities of Panama City, Parker, Callaway, Mexico Beach	$1,125,000	Implementation of stormwater retrofit projects within the St. Andrew Bay watershed.
Unpaved Road Sedimentation Abatement	Bay County	$671,000	Implementation of unpaved road sedimentation abatement projects within the St. Andrew Bay watershed.
Williford Springs Restoration	NWFWMD	$400,000	Implementation of aquatic and riparian habitat restoration components of the overall project.
Lisenby Avenue Pond	Panama City	$84,757	Engineering design and surveying for stormwater retrofit. MOEX funding with construction coordinated by DEP.
Choctawhatchee River and Bay Watershed			
Hill/Lovejoy Ponds	Okaloosa County	$63,167	Engineering design and surveying for stormwater retrofit. MOEX funding with construction coordinated by DEP.
Overbrook Pond	Okaloosa County	$40,089	Engineering design and surveying for stormwater retrofit. MOEX funding with construction coordinated by DEP.
Tanglewood Pond	Okaloosa County	$29,294	Engineering design and surveying for stormwater retrofit. MOEX funding with construction coordinated by DEP.

7.4 Potential Funding Related to the Deepwater Horizon Oil Spill

District staff are continuing to assist state agencies and other watershed stakeholders in identifying project priorities and participating in project development for potential funding related to the Deepwater Horizon Oil Spill. The District's SWIM plans and associated watersheds provide the planning context for this evaluation. Federal RESTORE Act, National Fish and Wildlife Foundation, Natural Resource Damage Assessment, MOEX Offshore penalties, and other associated funding have the potential to help address current problems and challenges. This may be particularly important for those watersheds that currently have no available SWIM funding.

Chapter Eight: References

Barrios, K., R.L. Bartel, N. Wooten, and M. Lopez. 2011. Hydrologic Monitoring Plan: Version 1.0. Program Development Series 2011-04. Northwest Florida Water Management District. www.nwfwmd.state.fl.us/pubs/hydrologic_monitoring_plan/hydrologic_monitoring_plan.html

Bartel, R.L., K. Barrios, M. Pritzl, and K. Coates. 2011. Jackson Blue Spring: Water Resources Assessment. Water Resources Assessment 2011-01. Northwest Florida Water Management District. www.nwfwmd.state.fl.us/pubs/wra11-01/WRA11-01.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. 2000. *Regional Water Supply Plan for Santa Rosa, Okaloosa, and Walton Counties*. Northwest Florida Water Management District. Water Resources Assessment 2000-1. Havana, Florida. www.nwfwmd.state.fl.us/pubs/RWSP_Region2/2000_plan/rwsp.htm

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.nwfwmd.state.fl.us/rmd/water_supply_projections/water_supply_projections.htm

Bonekemper, J., Macmillan, T., Bartel, R., Thorpe, P., Marchman, G., Layfield, H., Fisher, G., and Cleckley, W. 2001. Florida Forever 2001 Five-Year Work Plan. Project Development Series 2001-1. Northwest Florida Water Management District. www.nwfwmd.state.fl.us/pubs/florida_forever/florida_forever.htm

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. www.nwfwmd.state.fl.us/pubs/RWSP_Region2/RWSP_Region2.htm

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.nwfwmd.state.fl.us/rmd/wsa/WSA%20Updates/wsa_update_2008.htm

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.nwfwmd.state.fl.us/rmd/wsa/WSA%20Updates/wsa_update_2013.html

DeFosset, Kevin L. 2004. Availability of Ground Water from the Sand-And-Gravel Aquifer in Coastal Okaloosa County, Florida. Water Resources Technical File Report 04-1. August 2004. www.nwfwmd.state.fl.us/pubs/wrtfr04-01/wrtfr04-01.htm

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.nwfwmd.state.fl.us/pubs/hglgwmod/hglgwmodel.htm

HydroGeoLogic, Inc. 2005. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Western Domain Model. May 2005. www.nwfwmd.state.fl.us/pubs/hgl_western_domain/hgl_western_domain.html

HydroGeoLogic, Inc. 2007a. Saltwater Intrusion in the Floridan Aquifer in Walton, Okaloosa, and Santa Rosa Counties, Florida: Eastern Domain Model, Final Report. September 2007. www.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.

Lewis, F.G. 2010. East Bay/Blackwater Bay/Lower Yellow River Preliminary Baseline Resource Characterization: With a Discussion of Flow-dependent Habitats and Species. Water Resources Special Report 2010-02. www.nwfwmd.state.fl.us/pubs/wrsr2010-02_east_bay/wrsr2010-02.html

Northwest Florida Water Management District. 2006a. Surface Water Improvement and Management Program Priority List. Program Development Series 2006-02. Havana, Florida. www.nwfwmd.state.fl.us/rmd/swimpriority%20list%202-06.pdf

Northwest Florida Water Management District. 2006b. Regional Water Supply Plan for Santa Rosa, Okaloosa, and Walton Counties, Plan Update. Water Resource Assessment 2006-01. September 2006 (approved October 26, 2006). Havana, Florida. www.nwfwmd.state.fl.us/pubs/RWSP_Region2/2006_plan/rwsp.htm

Northwest Florida Water Management District. 2007. Regional Water Supply Plan: Region V, Franklin and Gulf Counties. Water Resources Assessment 07-01. January 2007 (approved January 25, 2007). Havana, Florida. www.nwfwmd.state.fl.us/pubs/rwsp/plan.htm

Northwest Florida Water Management District. 2008. Region III Regional Water Supply Plan, Bay County, Florida. Program Development Series 08-02. August 2008. Havana, Florida. www.nwfwmd.state.fl.us/rmd/water_supply_planning/region_III_wsp.html

Northwest Florida Water Management District. 2011. Strategic Water Management Plan. Program Development Series 2010-03. Havana, Florida. www.nwfwmd.state.fl.us/pubs/swmp/swmp.html

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

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

PBS&J. 2006. Final Report: Conceptual Alternative Water Supply Development Projects and Planning Level Cost Estimates. October 2006. www.nwfwmd.state.fl.us/pubs/RWSP_Region2/RWSP_Region2.htm

Pratt, Thomas R. 2001. Results of Floridan Aquifer Drilling Program in Santa Rosa, Okaloosa, and Walton Counties, Florida. Technical File Report 01-1. www.nwfwmd.state.fl.us/pubs/tfr01-1/tfr01-1.htm

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. www.nwfwmd.state.fl.us/rmd/wsa/wsamain.htm

Whitcomb, John B. 2005. Florida Water Rates Evaluation of Single Family Homes. www.nwfwmd.state.fl.us/permits/waterratesreport.pdf