



**2019 DRAFT Regional Water Supply Plan Update for Region II  
(Okaloosa, Santa Rosa, and Walton Counties)**

**September 9, 2019**

# NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

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## EXECUTIVE SUMMARY

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The Northwest Florida Water Management District (NFWWMD or District) completes Districtwide water supply assessments (WSAs) with 20-year planning horizon every five years to determine the need for regional water supply planning. Based on the 2018 WSA Update, the District's Governing Board determined that regional water supply planning for Region II (Okaloosa, Santa Rosa, and Walton counties) should continue. This Region II regional water supply plan (RWSP) updates the water supply development (WSD) and water resource development (WRD) components over the 20-year planning period through 2040. The expected outcome of plan implementation is that sufficient water will be available for all existing and future uses and natural systems, and that any adverse effects stemming from competition for water supplies are avoided.

With an area of close to 3,500 square miles, Region II is the District's largest and fastest growing water supply planning region. The 2015 population estimate for Region II at 415,510 is expected to climb 33 percent to about 623,300 by 2040. Water use was estimated to be about 70 mgd in 2015 and is projected to climb 36 percent to 95 mgd by 2040, for a net demand change of 25 mgd. Public supply and recreational water uses are expected to remain the majority (86 percent) of water demand through the planning horizon. Many of the largest public supply and recreational water users - with fast growing communities and with seasonal impacts - are in coastal areas with water resource constraints.

The development of regional inland wellfields in Santa Rosa, Okaloosa, and Walton counties primarily in the 2000-2010 decade significantly reduced reliance on the Upper Floridan aquifer in coastal areas. The redistribution of coastal Floridan aquifer pumping to inland areas has enabled aquifer levels to experience some measure of recovery along the coast since 2000. However, a significant cone of depression in the Upper Floridan aquifer potentiometric surface is still present and long-term concerns related to saltwater intrusion remain. The potential for diminished water quality, highly variable and poor well yields, and localized upconing still exist for all three counties. Further, increased inland pumping of the Upper Floridan aquifer has resulted in geographically expanded water level drawdowns.

This plan identifies the water supply needs and project options to sustain Region II water resources and related natural systems over the planning period. Implementation of water resource development and water supply development projects, noted below, by the District, utilities, local governments, and other project partners represents a substantial investment of human and financial resources to support the region. Both traditional and alternative water supply sources will be needed to meet growing demands and water conservation efforts will be a key component to the timing and costs associated with development of these sources.

The water resource development component includes regional-scale groundwater evaluations and further evaluating the capacity of the Floridan and sand-and-gravel aquifers; completing MFL technical assessments of the coastal Upper Floridan Aquifer and the Shoal River System by 2020 and 2023, respectively; and continuing technical support for the development of reclaimed water, conservation, and aquifer storage and recovery; hydrologic data collection; and regional water supply planning.

A total of 53 potential water supply development projects have been proposed by Region II utilities at a total estimated cost of \$150.7 million with the potential to develop 24 mgd of water. About three-fourths or 18 mgd are alternative water supply, e.g.: surface water development, reuse of reclaimed water, new capacity created through storage and distribution, and alternative sand-and-gravel aquifer groundwater.

Additional WSD projects that may be supported during plan implementation include water conservation and traditional Floridan and sand-and-gravel aquifer sources. Utilities predict the ability to fund about 15 percent of total project costs with local resources alone.

Any future potential projects should address Region II priority needs and strategies:

1. Continue reducing reliance on coastal Upper Floridan aquifer resources;
2. Enhance appropriate and efficient use of all water resources;
3. Continue implementing and investigating additional alternative water supplies, including reclaimed water and water conservation; and,
4. Add system interconnections and water storage capacity.

Continued coordination with partners, developing relevant multijurisdictional approaches, and securing funding sources are needed to continue advancing water resource protection and water supply development in Region II.

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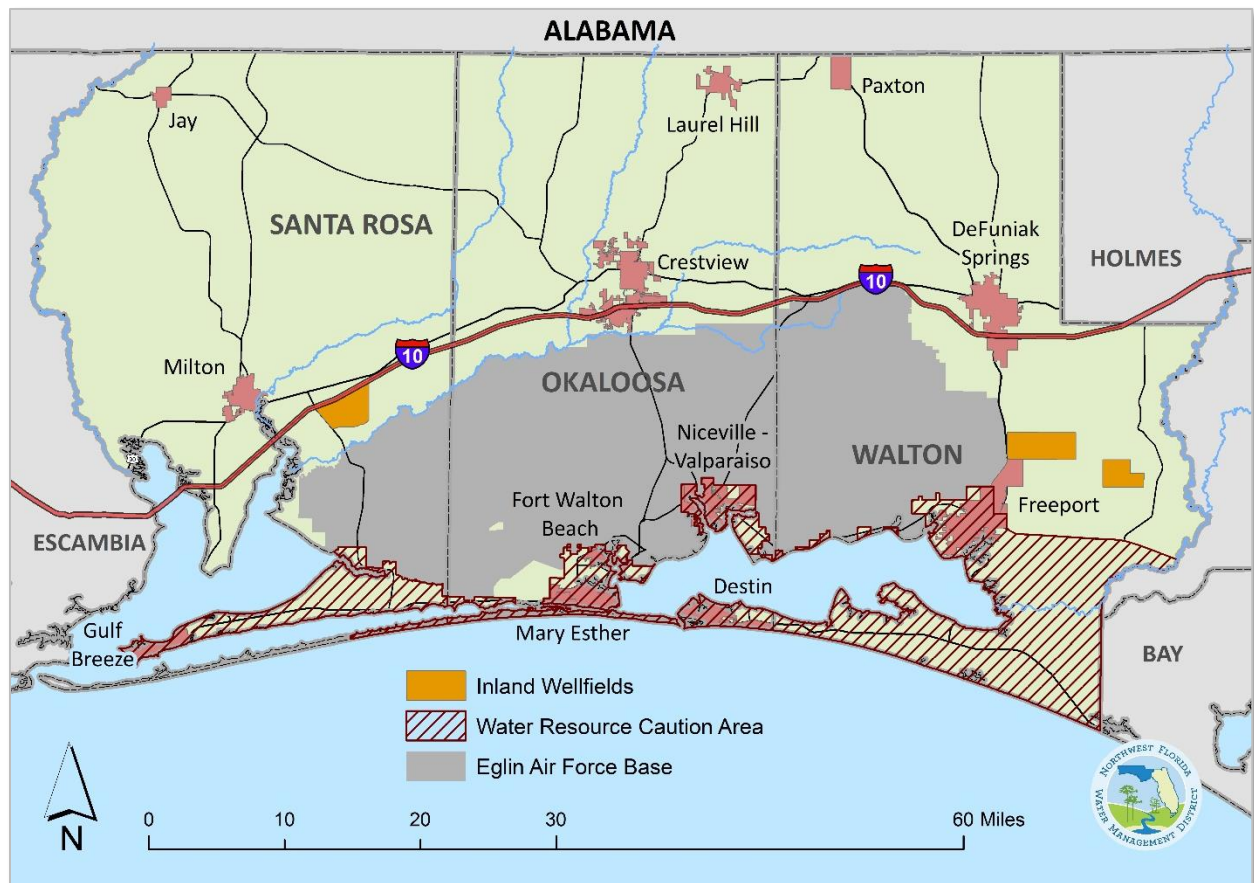
## **ACRONYMS AND ABBREVIATIONS**

AR	Aquifer Recovery
ASR	Aquifer Storage and Recovery
AWS	Alternative Water Supply
BEBR	Bureau of Economic and Business Research (University of Florida)
BMP	Best Management Practices
DACS	Florida Department of Agriculture and Consumer Services
DEP	Florida Department of Environmental Protection
F.A.C.	Florida Administrative Code
FCSC	Florida Community Services Corporation of Walton County, dba Regional Utilities
FRUS	Fairpoint Regional Utility System
F.S.	Florida Statutes
gpd	Gallons per Day
GWUP	General Water Use Permit
IWUP	Individual Water Use Permit
MFL(s)	Minimum Flow and Minimum Aquifer Level(s)
mgd	Million Gallons per Day
OCWS	Okaloosa County Water and Sewer
RUA	Regional Utility Authority
RPS	Recovery or Prevention Strategies
RWSP	Regional Water Supply Plan
SWUC	South Walton Utility Company
USACE	U.S. Army Corp of Engineers
USGS	U.S. Geological Survey
WPSPTF	Water Protection and Sustainability Program Trust Fund
WRCA	Water Resource Caution Area
WRD	Water Resource Development
WSA	Water Supply Assessment
WSD	Water Supply Development
WWTP/WWTF	Wastewater Treatment Plant/Wastewater Treatment Facility

# 1. INTRODUCTION

Section 373.036, Florida Statutes, requires water management districts to conduct a water supply assessment every five years to determine the need for regional water supply planning. The assessments must examine all water use categories for a 20-year planning horizon. The Northwest Florida Water Management District (NFWFMD or District) completed the 2018 Water Supply Assessment (WSA) Update of water supply needs and resources based on meeting those needs for a 1-in-10-year drought event to the 2040 planning horizon. The District's Governing Board determined that regional water supply planning for Region II (Okaloosa, Santa Rosa, and Walton counties) should continue.

This Regional Water Supply Plan (RWSP) for Region II (Figure 1) will help guide current and future water supply decisions by the District, utilities, and self-suppliers. Although groundwater sources remain available across the region, alternative water supplies will be needed to meet increasing demands, particularly in coastal areas. This plan provides a brief review of the Region II RWSP background and accomplishments, a summary of the 2018 WSA including its resource evaluation, proposed and potential water resource development (WRD) and water supply development (WSD) projects, funding strategies, and coordination efforts. The expected outcome of plan implementation is that sufficient water will be available for all existing and future uses and natural systems over the 20-year planning period through 2040, and that any adverse effects stemming from competition for water supplies are avoided.



**Figure 1. Region II - Santa Rosa, Okaloosa, and Walton Counties**



## 1.1 Background

Drawdown of water levels in the Upper Floridan aquifer and related water supply and water quality concerns in coastal areas of Region II began as early as 1940. Resource evaluations, water management plans, and consumptive use regulation advanced over subsequent decades to address these issues. The 1998 WSA (Ryan, et al., 1998) identified the need for the first Region II RWSP.

The first Region II RWSP (Bartel, et al., 2000) was based on 1995 water use estimates and water demand projections to the 2020 planning horizon. Plan recommendations included Floridan groundwater sustainability modeling, sand-and-gravel aquifer analysis, surface water feasibility studies, and water conservation and reuse analysis, and further evaluation and feasibility analysis of aquifer storage and recovery (ASR). Desalination of sea and brackish waters was evaluated. The 2006 RWSP Update (NFWFMD, 2006) continued plan implementation with 2005 estimates and water demand projections to the 2025 planning horizon. This plan focused on continuing implementation of projects previously identified, increasing the amount of reclaimed water, and identifying long-range solutions. The 2012 RWSP Update (Busen and Bartel, 2012) continued plan implementation with 2010 base year estimates and water demand projections to the 2030 planning horizon.

## 1.2 Regulatory Framework

Coastal areas of Region II (Figure 1) are a designated Water Resource Caution Area (WRCA), which provides for special water use permitting criteria such as additional restrictions on general water use permits (GWUPs); prohibiting new and expanded use of the Upper Floridan aquifer for irrigation and other non-potable uses; encouraging and promoting the use of reclaimed water; and conditioning public supply utilities to submit water conservation plans, programs, and measures. In addition, the standard individual water use permit (IWUP) duration of 20 years may be lessened by special factors such as location within the WRCA or localized water resource concerns.

## 1.3 Accomplishments

Regional water supply planning has been conducted in Region II for nearly 20 years. Major accomplishments to date include alternative water supply development and advancements in water resource technical evaluations. Three regional inland wellfields, and additional inland well facilities, have been established to bring inland groundwater to coastal communities and reduce Floridan withdrawals in coastal areas. This source change has enabled Upper Floridan aquifer water levels to partially recover and slowed saltwater intrusion. Alternative water supplies developed further during 2006-2009 with financial support from the Water Protection and Sustainability Program Trust Fund (WPSPTF). The District's water supply development grant and cooperative funding program was funded from FY 2013-14 through FY 2016-17 and supported reuse system expansion and feasibility studies, water conserving infrastructure upgrades, and new storage capacities.

Water resource technical evaluations include the District's minimum flows and minimum water levels (MFLs) program and comprehensive groundwater modeling initiatives. Enhanced data collection to support the Coastal Region II Floridan aquifer MFL assessment began in 2015 as part of larger groundwater modeling, sustainability analyses, and water supply assessment efforts. Data collection to support the Shoal River MFL technical assessment began in 2018 to support ongoing evaluations of the Shoal River as a potential future alternative water supply source.

## 2. WATER SUPPLY AND WATER RESOURCE EVALUATION

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The technical data, modeling tools, and methods used to support and develop this Region II RWSP are in the District’s 2018 WSA Update, incorporated by reference and summarized below. Updates to the data and analyses since the 2015 base year are also provided.

### 2.1 Estimates and Projections

With an area of close to 3,500 square miles, Region II is the District’s largest and fastest growing water supply planning region. Eglin Air Force Base encompasses significant land across southern portions and the Blackwater River State Forest covers over 210,000 acres in northern parts of Santa Rosa and Okaloosa counties. Nearly 13,300 acres of the Bay-Walton Sector Plan, an area of planned regional development, are located in southeastern Walton County.

The 2018 WSA Update estimated water supply needs for all existing 2015 and future reasonable-beneficial uses through 2040. Projections for normal and 1-in-10-year drought conditions address the level-of-certainty planning goal. Population estimates include seasonal resident adjustments and Florida Statewide Agricultural Irrigation Demand (FSAID) data was the basis for agriculture (DACS, 2017).

#### **Population**

The 2015 population estimate for Region II was 415,510 (BEBR, 2016). The 2015 seasonally-adjusted population estimate was 469,615 and this is expected to climb 33 percent to about 623,300 by 2040. Walton County has the highest projected population growth rate and the highest estimated impacts from seasonal residents Districtwide. Most seasonal residents are in coastal areas.

#### **2015 Water Use Estimates and Demand Projections**

In 2015, public supply was just over two-thirds of Region II estimated water use and recreational water use was 15 percent of the 69.7 mgd total (Table 1). Agricultural irrigation is relatively minor but projected to increase through 2040. The only power generating facility in Region II serves industrial uses and is therefore in the ICI category. The overall projected future increase in demand is about 25 mgd in an average year. About 86 percent of this future demand is expected to continue being in the public supply and recreational water use categories.

**Table 1. 2015 Estimated Water Use and 2020-2040 Demand Projections (mgd) - Average**

Use Category	Estimates	Future Demand Projections - Average Conditions					2015-2040 Change	
	2015	2020	2025	2030	2035	2040	mgd	%
Public Supply	47.480	51.645	55.275	58.777	62.004	64.999	17.519	36.9%
DSS	3.956	4.328	4.672	4.627	4.580	4.444	0.488	12.3%
Agriculture	2.798	3.004	3.241	3.523	3.769	3.967	1.169	41.8%
Recreational	10.793	11.827	12.749	13.552	14.288	14.923	4.130	38.3%
ICI	4.708	6.073	6.315	6.546	6.546	6.546	1.838	39.0%
Power	-	-	-	-	-	-	n/a	n/a
<b>TOTALS</b>	<b>69.734</b>	<b>76.879</b>	<b>82.251</b>	<b>87.025</b>	<b>91.185</b>	<b>94.879</b>	<b>25.144</b>	<b>36.1%</b>

The total drought year projection may reach 106 mgd by 2040 (Table 2). Agriculture and recreational irrigation water uses are expected to increase by about a third in drought year conditions. Public supply and recreation remain the largest water use categories and about 85 percent of total drought year demand.

**Table 2. 2015 Estimated Water Use and 2020-2040 Demand Projections (mgd) - Drought**

Use Category	Estimates	Future Demand Projections - Drought Year Events					2015-2040 Change	
	2015	2020	2025	2030	2035	2040	mgd	%
Public Supply	47.480	55.259	59.144	62.891	66.344	69.548	22.068	46.5%
DSS	3.956	4.631	4.999	4.952	4.901	4.754	0.798	20.2%
Agriculture	2.798	3.612	3.975	4.389	4.751	5.047	2.249	80.4%
Recreational	10.793	15.848	17.083	18.160	19.146	19.997	9.204	85.3%
ICI	4.708	6.073	6.315	6.546	6.546	6.546	1.838	39.0%
Power	-	-	-	-	-	-	n/a	n/a
<b>TOTALS</b>	<b>69.734</b>	<b>85.423</b>	<b>91.516</b>	<b>96.938</b>	<b>101.688</b>	<b>105.892</b>	<b>36.158</b>	<b>51.85%</b>

**Demand Projections Updates**

This section provides supplemental analysis of projected increases in water demands by water use category and by water source.

**Agriculture**

Irrigated agricultural lands are located across northern areas of all three counties. Projected growth is focused in Santa Rosa County northwest of Milton where the sand-and-gravel aquifer is the primary water source. Agricultural water use is projected to increase between 1.2 and 2.3 mgd for an average and drought year, respectively. Because of the sand-and-gravel’s productive and high recharge characteristics, and due to the relatively small quantities needed, agriculture water supply demands are expected to be met with current sources.

**Domestic Self-Supply (DSS)**

Outside of Eglin AFB, DSS wells are fairly evenly distributed and are generally assumed to withdraw from the same aquifer as nearby public supply utilities. As public supply utilities expand their service areas, decreases in this category are also recognized. For these reasons, and for the purpose of this RWSP, projected increases in demand are therefore accounted for in the public supply category.

**Industrial-Commercial-Institutional (ICI)**

Projected increase in ICI demand is less than two mgd by 2040 and no significant demand variations are anticipated during drought events. For these reasons, projected increases in ICI demand are assumed to be met by existing permitted allocations. Where appropriate, ICI permittees work with others in cooperative WRD or WSD projects to meet the overall goals of the plan.

**Public Supply**

Projected increase in public supply water demand by 2040 is 17.5 mgd and 22 mgd in drought conditions. Together with DSS, projected increases in 2040 water demand total 18 and 23 mgd in drought conditions. About 30 percent of Region II public supply and DSS needs are provided by the sand-and-gravel aquifer and 70 percent by the Floridan aquifer. Assuming the same conditions in the future, the projected water use in average and drought conditions are approximately 5 -7 mgd from the sand-and-gravel aquifer and 13 mgd and 16 from the Floridan aquifer.

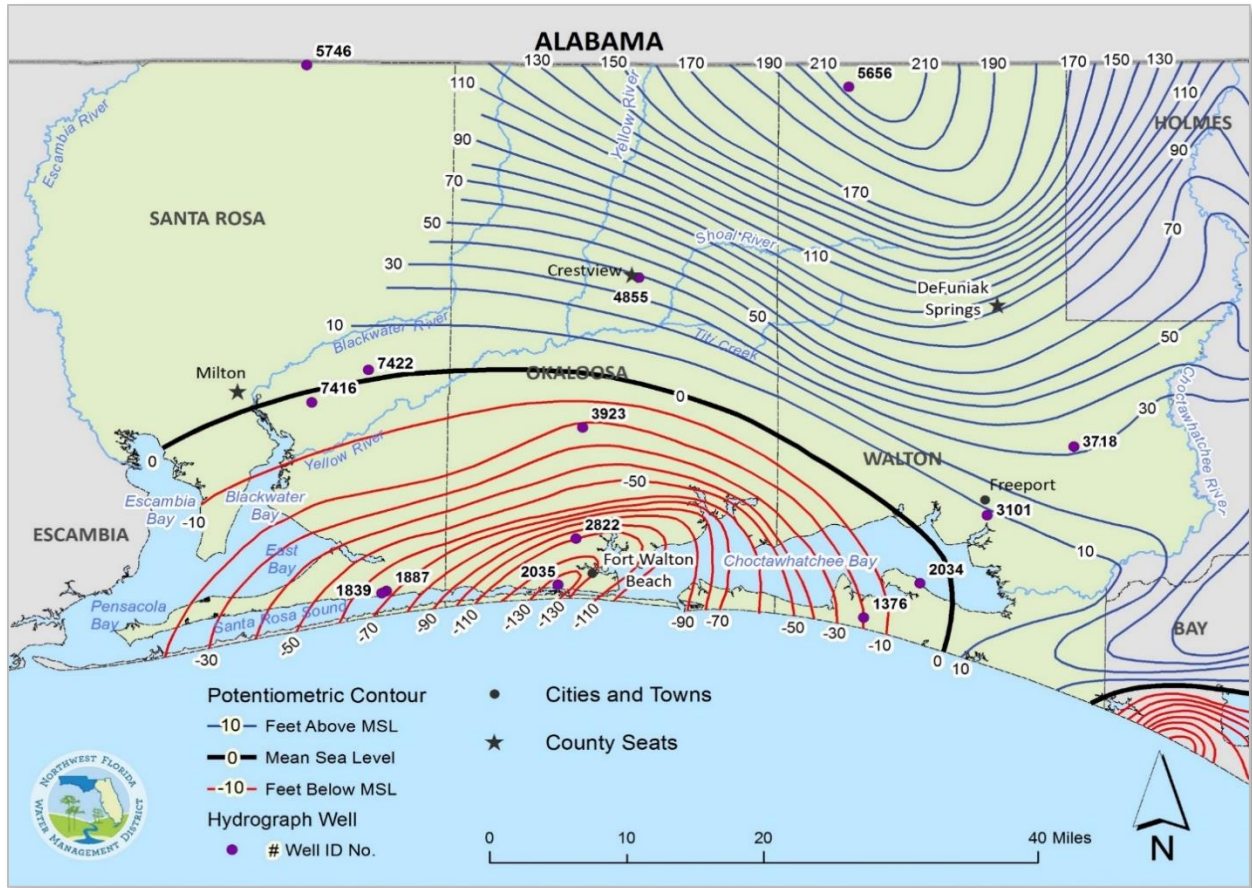
Since the development of inland wellfields, the permitted groundwater allocation of most Region II utilities and regional suppliers appear to provide adequate amounts of water to meet public water supply needs through 2040. However, with a substantial cone of depression continuing in coastal areas of the Floridan aquifer, further work is needed to estimate water supply needs while sustaining water resources and related natural systems before allocations can be considered sufficient.

### Recreational

Recreational water demand is projected to increase by 4.1 mgd (9.2 mgd in drought conditions) over the planning period. Recreational estimates include both IWUP and GWUP water users. Most Region II recreational permittees with an IWUP already have stringent permit conditions, limited allocations, restrictions on use of the Floridan aquifer, and encouragement to develop reuse or other alternative sources. For recreational uses with IWUPs, about half of water use is from groundwater sources and half from surface or other waters. Of groundwater sources, over 80 percent is from the sand-and-gravel aquifer. Surface water sources, such as ponds for golf courses, may include complex water flow systems and co-mingling with reclaimed water. The source of GWUP recreational water supplies is generally assumed to be surficial or sand-and-gravel aquifer resources. However, further analysis is needed to more completely understand water sources and estimate the recreational water supply needs, particularly in coastal Region II.

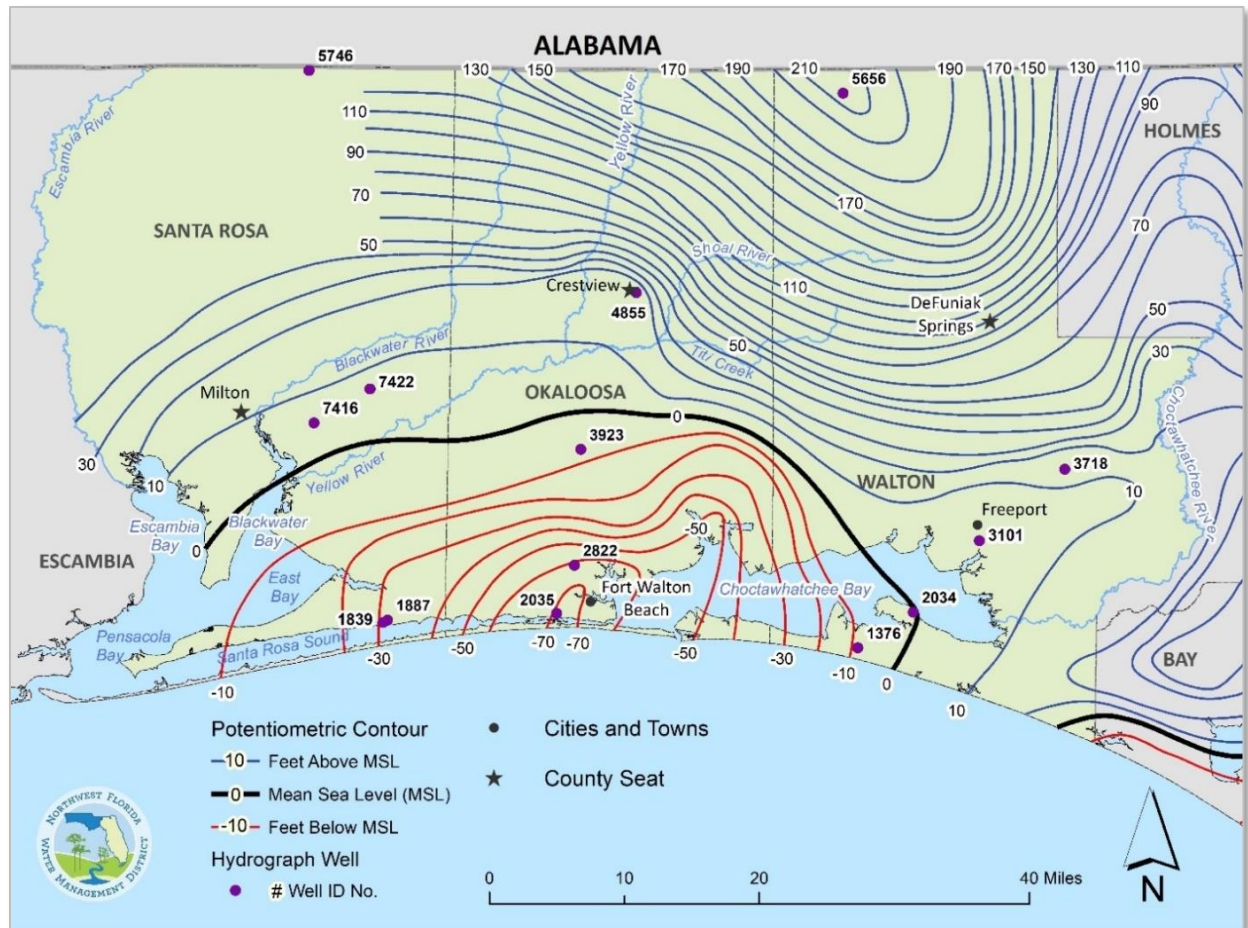
## 2.2 Resource Assessment

Principle Region II groundwater resources are the sand-and-gravel aquifer in Santa Rosa County and the Upper Floridan aquifer in Okaloosa and Walton counties. The sand-and-gravel aquifer is productive with a high rate of recharge and capable of providing regionally-significant quantities of water. At the same time, high recharge rates also make the sand-and-gravel aquifer susceptible to anthropogenic contamination. A steady decline in Upper Floridan aquifer water levels between 1940 and 2000 resulted in a loss of as much as 185 feet of head pressure along the coast (Figure 2).



**Figure 2. Potentiometric Surface of the Upper Floridan Aquifer in June 2000**

Substantial investments in alternative water supply and reductions in coastal pumping in the Upper Floridan aquifer have enabled water levels to recover by nearly 60 feet over much of the area since 2000 (Figure 3). However, a significant cone of depression in the Upper Floridan aquifer potentiometric surface is still present and long-term concerns related to saltwater intrusion remain.



**Figure 3. Potentiometric Surface of the Upper Floridan Aquifer in September 2015**

These successes have also slowed, but not eliminated, the rate of saltwater intrusion. Poor quality water naturally exists within the Upper Floridan aquifer and water becomes increasingly more mineralized just west of the Midway area near Navarre Beach. Coastal areas of Walton County near the eastern extent of Choctawhatchee Bay also have naturally-occurring poor quality water. Pumping from the Upper Floridan aquifer has reduced water levels and resulted in the movement of poor water quality towards potable water wells. Saline water within the Upper Floridan aquifer below the Gulf of Mexico may be moving laterally landward.

Marked recovery in Mary Esther water levels since 2000 is evident in Figure 4 and the shift from coastal to inland withdrawals contributing to recovery of Upper Floridan water levels is illustrated in Figure 5. Recovery trends are positive through 2017, but water levels have declined since and are currently about 75 feet below mean sea level (MSL) near the center of the cone of depression and the rate of movement of the saltwater interface in coastal areas of all three counties is uncertain.

Efforts to stabilize or reduce coastal Floridan withdrawals and develop alternative water sources have been partially successful in Region II.

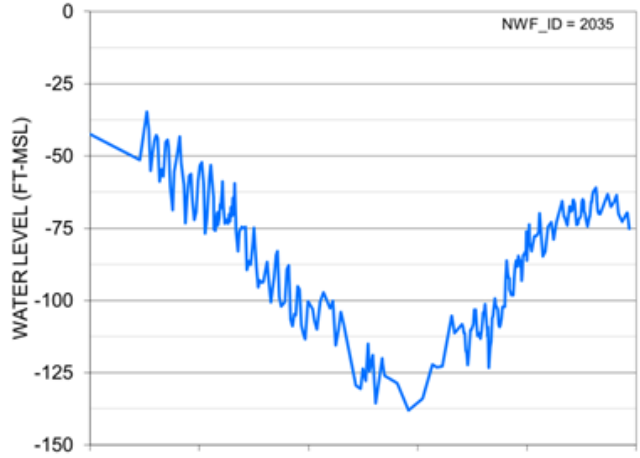
### 2.3 Supplemental Data and Analyses

This section provides additional data and analyses subsequent to the 2018 WSA Update to support this RWSP Update. Data is updated through 2017, the most recent year for which water use data is available.

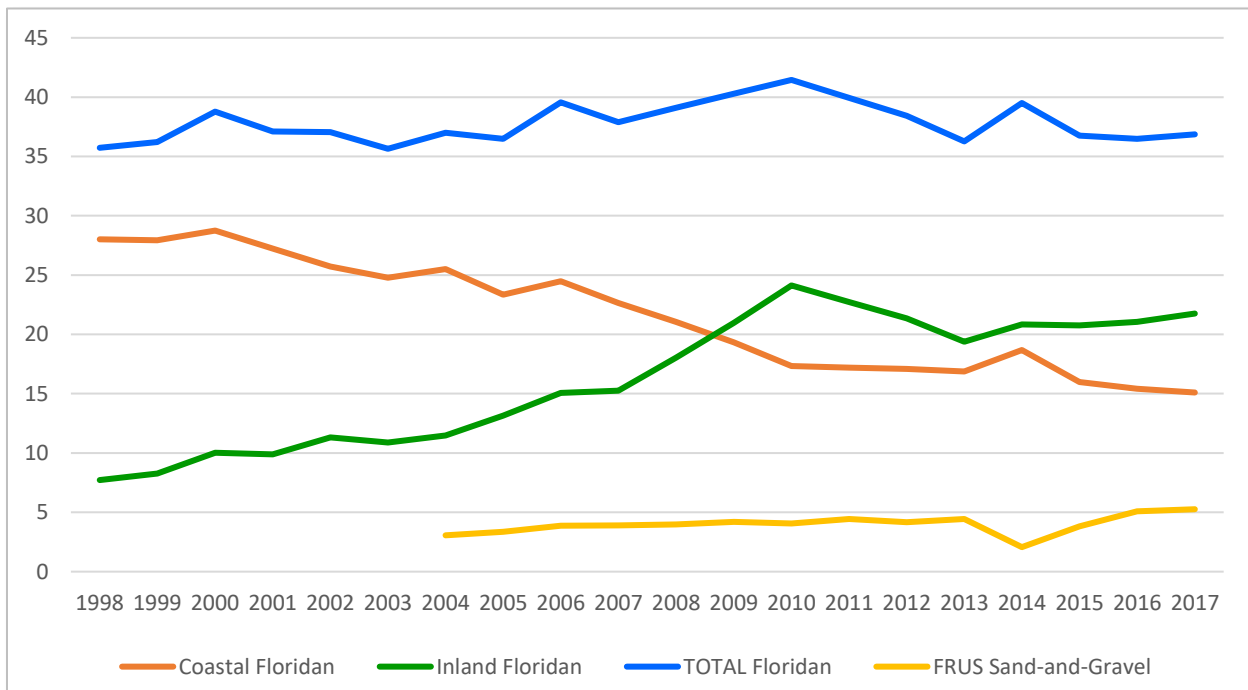
#### Floridan Aquifer and FRUS Updates

The shift from coastal to inland withdrawals and progress toward recovery of Upper Floridan aquifer water levels is associated with inland wellfield development primarily during the 2000-2010 decade. Coastal Floridan pumping was reduced from 29 mgd in 2000 to 17 mgd in 2010, while inland Floridan water use more than doubled.

- Fairpoint Regional Utility System (FRUS) in Santa Rosa County (sand-and-gravel withdrawals);
- Walton County (inland Floridan aquifer withdrawals):
  - *South Walton Utility Company (SWUC), and*
  - *Florida Community Services Corporation (FCSC) dba Regional Utilities.*



**Figure 4. Hydrograph of Mary Esther #2**



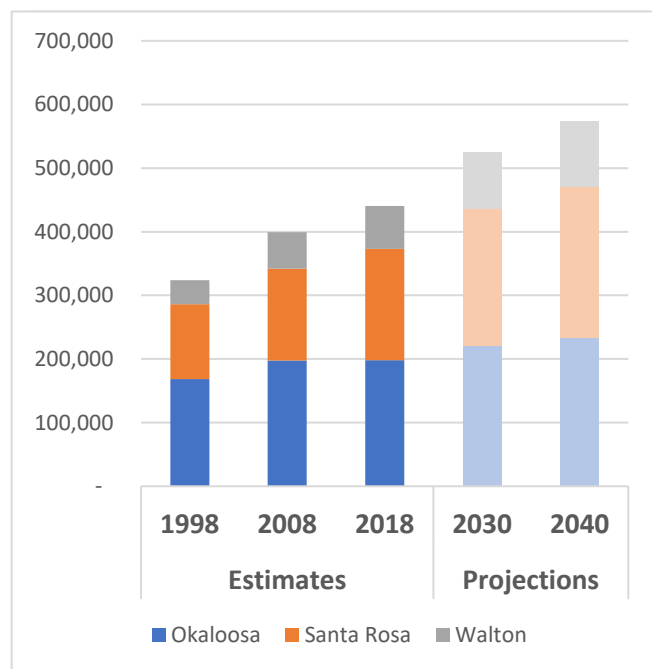
**Figure 5. Region II Floridan Aquifer and FRUS Sand-and-Gravel Water Use**

Coastal areas of Santa Rosa County are now primarily served by the FRUS sand-and-gravel aquifer inland wellfield. An IWUP was issued to FRUS in 2001 and the first record of pumping was about 3.0 mgd in 2004, which grew to 4.0 mgd in 2010 and close to 5.3 mgd by 2017 (Figure 5).

Infrastructure line breaks in 2014 contributed to higher Floridan aquifer and lower sand-and-gravel aquifer water uses. Total Floridan aquifer withdrawals have remained relatively static over the 20-year period from 1998 to 2017 (Figure 5). Total Floridan use was 36 mgd in 1998, 36 mgd in 2016, and averaged less than 38 mgd throughout the 1998 -2017 period. From 2010-2017, the overall trend in all Floridan aquifer withdrawals indicate slight declines while FRUS withdrawals on the sand-and-gravel aquifer increased by approximately 30 percent over the same timeframe.

**Population Updates**

The Region II population increased six percent, or 25,185 persons, from 2015 to 2018. Walton County continues to be the fastest and Santa Rosa the second-fastest growing county Districtwide. In 2018, Walton County was the fourth-fastest growing county in the State of Florida. Population updates are consistent with historical population data and these trends are expected to continue (BEBR, 2019).



**Figure 6. BEBR Population Estimates 1998-2018 and Future Projections**

Updated population estimates and projections (Figure 6) illustrate the ongoing growth in Okaloosa County and increasing shares of Santa Rosa and Walton counties populations. The Santa Rosa County population is expected to meet and supersede Okaloosa County around the year 2035.

**Population and Floridan Water Use**

As of 2017, 96 percent of Region II Floridan aquifer water use was in Okaloosa and Walton counties. Preliminary analysis indicates that if Floridan aquifer withdrawals had increased concurrent with population growth, the total Floridan water use in 2017 could have been as high as 47 mgd, or 10 mgd higher than the 2017 estimate of 37 mgd. Therefore, shifting water sources and conservation programs may have contributed to steady total Floridan aquifer water use as illustrated in Figure 5.

**MFL Recovery and Prevention Strategies**

The District’s minimum flows and minimum water level (MFL) program includes two waterbodies on the District’s MFL priority list within Region II (Table 3).

**Table 3. Waterbodies in Region II on NFWMD 2018 MFL Priority List and Schedule**

Waterbody Name	Waterbody Type	Counties	Assessment <sup>(1)</sup>	Rule <sup>(2)</sup>
Coastal Floridan aquifer	Aquifer	Okaloosa, Santa Rosa, Walton	2020	2021
Shoal River	River	Okaloosa, Walton	2023	2024

*Estimated completion of (1) Technical Assessment and (2) Rule Adoption.*

Hydrologic data collection to support MFL development is ongoing for the Shoal River, and calibration of hydrologic models is ongoing for the coastal Floridan aquifer MFL evaluation. Morrison Spring, a second-



magnitude spring in Walton County, is on the NFWFMD waterbody list for MFL development in future years.

To date there are no adopted MFLs and therefore no recovery or prevention strategies (RPS) in Region II. Further, there are no water bodies subject to regulatory reservations and no Outstanding Florida Springs in Region II. If or when developed, future RWSPs will assess how the plan and identified projects support any applicable recovery or prevention strategies. The District's MFL priority list and schedule are updated annually and posted on the District website: [www.nfwfwater.com](http://www.nfwfwater.com).

### **Sea Level Rise and Saline Water Intrusion**

Florida is vulnerable to the effects of future changes in climate and sea level rise. Dense, low-lying coastal populations are particularly at risk. In NFWFMD Region II, this has the potential to impact potentiometric surface drawdown and threat of saltwater intrusion to coastal fresh water supplies.

Districts and the DEP continue working with federal, state, and local agencies to help ensure Florida's coastal communities are more resilient and prepared for these vulnerabilities. If the District determines that constraints to fresh water supplies, due to sea level rise or saline water intrusion caused by water withdrawals, or both, may occur within the planning horizon, water resource development components would be identified to enhance water sustainability. The District continues data collection, modeling, and evaluations to better understand the uncertainty regarding movement of the saltwater interface in coastal areas of Region II.

### 3. WATER RESOURCE AND WATER SUPPLY DEVELOPMENT

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The overall goal of this RWSP is to ensure adequate water for water users and water resources for the planning period through 2040. Water resource development is primarily the role of water management districts, and defined<sup>1</sup> as:

*“... the formulation and implementation of regional water resource management strategies, including the collection and evaluation of surface water and groundwater data; structural and nonstructural programs to protect and manage water resources; the development of regional water resource implementation programs; the construction, operation, and maintenance of major public works facilities to provide for flood control, surface and underground water storage, and groundwater recharge augmentation; and related technical assistance to local governments, government-owned and privately owned water utilities, and self-suppliers to the extent assistance to self-suppliers promotes the policies as set forth in s. 373.016.”*

Water supply development is primarily the role of local governments and utilities, and defined<sup>2</sup> as:

*“... the planning, design, construction, operation, and maintenance of public or private facilities for water collection, production, treatment, transmission, or distribution for sale, resale, or end use.”*

Water resource development projects must support water supply development and the needs of water resources and related natural systems. The total capacity of water supply development project options must exceed the future needs through 2040 and consider:

- The potential for water conservation and other demand management measures
- Water resource constraints
- Any adopted minimum flows and minimum water levels and water reservations.

Water resource and water supply development strategies and projects to address sub-regional and localized challenges at times require targeted approaches to respond to unique issues in specific areas. Both WSD and WRD projects should include:

- Estimates of the amount of water to become available
- Implementation timeframe and estimated planning level costs for
  - Capital investments
  - Operation and maintenance
- Analysis of funding needs and possible funding sources
- Identification of implementation entity or entities and current status of project implementation.

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<sup>1</sup> Section 373.019(24), F.S.

<sup>2</sup> Section 373.019(26), F.S.

### 3.1 Water Resource Development Component

This section describes sources of water and water resource development projects currently anticipated to be needed for the planning period. Although these activities are primarily led by the District, project development, funding, and technical support may also come from utilities and other project partners.

#### WRD Projects

Water resource development strategies for aquifer systems are becoming increasingly integrated into more comprehensive groundwater modeling and resource evaluations. At the same time, MFL technical assessments are also being conducted for specific waterbodies. Region II WRD projects include surface water development, reuse of reclaimed water, water conservation, aquifer storage and recovery (ASR), groundwater evaluations, and supporting data collection, technical analyses, and planning (Table 4).

**Table 4. Summary of WRD Projects**

Activity	Description	Water (mgd) <sup>1</sup>
Surface Water Development	<u>Shoal River MFL Technical Assessment</u> . Resource evaluations to determine minimum flows needed to protect riverine habitats and associated resources.	TBD
Reuse	Coordination of reuse of reclaimed water projects and programs.	10
Conservation	Coordination of water conservation projects and programs.	6
Aquifer Storage and Recovery (ASR)	Technical support for aquifer storage and recovery (ASR) or aquifer recharge (AR) as a component of IWUPs.	2
Groundwater Evaluations	Sand-and-gravel aquifer resource evaluations to update alternative water supply assessments.	TBD
	Floridan aquifer resource evaluations and <u>Coastal Floridan MFL Technical Assessment</u> to develop and apply groundwater flow and saltwater intrusion models with recovery/prevention strategies as required.	TBD
Data Collection and Analysis	Hydrologic data collection, monitoring, and analyses.	NA
	Water use data, analyses, planning, and WSD support.	NA

<sup>1</sup> Estimates of water available or potential to be made available.

#### **Surface Water Development**

Surface water resources are a potential water supply source within Region II. Previous surface water investigations and analyses have focused on the Shoal River as a potential alternative water supply for Okaloosa County and the region (PBS&J 2006). The District and Okaloosa County, along with Eglin AFB, the U.S. Army Corps of Engineers, a several consulting engineers, have partnered to evaluate alternatives, funding options, and site plans. From 2011-2015, Okaloosa County successfully acquired more than 1,600 acres of land along the Shoal River around Interstate 10 for future development of an offline reservoir. The District and Okaloosa County will continue coordinating on this project through the planning period.

The Shoal River MFL work plan was finalized in FY 2017-2018 and hydrologic data collection is underway. The MFL technical assessment is scheduled to be complete in 2023. Completion of this MFL is expected

to protect key water resource values such as fish and wildlife habitats, recreation, and freshwater storage and supply. The MFL analyses will also support future IWUP permitting decisions regarding withdrawal allocations. Additional information on Shoal River development is in the **Error! Reference source not found.****Error! Reference source not found.****Error! Reference source not found.****Error! Reference source not found.**WSD section.

**Reuse and Conservation**

Developing reuse water sources and quantifiable conservation is an important component of meeting future demands in Region II. The District continues reuse and conservation data collection, analyses, inter-district coordination, and program development. District reuse information is updated annually by DEP. The District uses this information to evaluate trends and potential uses in the context of water supply planning. Further efforts are needed to quantify water conservation savings and prioritize reclaimed water availability. Reuse feasibility studies and conservation measures are required of permittees within the WRCA and are encouraged in other areas. These planning and regulatory activities are expected to be ongoing and continue through the planning horizon 2020-2040.

**Reuse of Reclaimed Water**

The 2018 WSA reuse estimates and projections are based on potable offset reuse flows, which include public access irrigation and irrigation of edible crops, toilet flushing, fire protection, and industrial uses. The 2015 county average estimated reuse flows, future estimated availability, wastewater treatment facility (WWTF) data, and reuse utilization rates are in Table 5.

**Table 5. Reuse and WWTF Flow 2015 and Future Potential Reuse Availability (mgd) 2020-2040**

County	Reuse Flow 2015	Future Reuse Potential Availability					Total 2015 WWTF Active Systems		
		2020	2025	2030	2035	2040	No. of	Flow	%*
Okaloosa	3.977	11.95	12.55	12.99	13.38	13.72	12	15.192	26%
Santa Rosa	3.083	3.75	4.30	4.76	5.20	5.51	9	6.230	50%
Walton	2.509	5.72	6.66	7.51	8.36	9.02	10	7.201	35%
<b>TOTALS</b>	<b>9.569</b>	<b>21.43</b>	<b>23.50</b>	<b>25.27</b>	<b>26.94</b>	<b>28.24</b>	<b>31</b>	<b>28.623</b>	<b>33%</b>

*\*Percent of Potable Offset Reuse to Total WWTF Flow*

Submitted WSD projects (see Section 3.2) and completed utility feasibility studies indicate a potential of up to 10 mgd of reuse water may be made available. The District continues to work with utilities and local governments to identify opportunities for reuse expansion and for more integrated reuse management strategies. Implementation of projects are subject to funding availability and will continue through the planning period.

**Water Conservation**

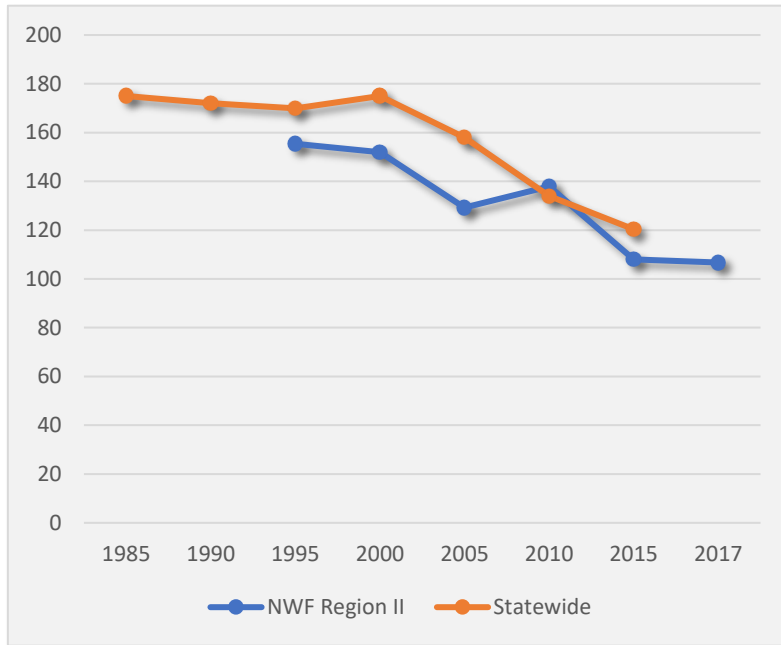
The amount of water available from water conservation is estimated to be 6.0 mgd. This estimate is from the 2018 WSA conservation analysis and is based on a ten percent reduction goal applied to the 60 mgd future public supply demand (Table 6).

**Table 6. Conservation Potential (mgd) and Number of BMPs to Achieve 10% Goal**

County	10% Reduction Goal			No. of BMPs to Achieve 10% Goal		
	Within WRCA	Outside WRCA	10% Reduction Goal Conservation Potential	Within WRCA	Outside WRCA	All Areas
Okaloosa	1.9	0.7	2.6	108,060	40,500	148,560
Santa Rosa	0.8	1.4	2.2	53,780	81,020	134,800
Walton	1.0	0.2	1.3	56,090	12,550	68,640

<b>TOTALS</b>	<b>3.7</b>	<b>2.3</b>	<b>6.0</b>	<b>217,930</b>	<b>134,070</b>	<b>352,000</b>
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Conservation would be realized primarily through best management practices (BMP) retrofits in homes and other buildings with more efficient plumbing fixtures and irrigation efficiency improvements. Implementation was estimated to require over 350,000 individual BMP retrofits (Table 6).



**Figure 7. Gross Per Capita Rates (gpcd)**

Water conservation efforts by public supply utilities and residents have successfully reduced per capita water use rates in Region II as illustrated in Figure 7, and additional opportunities for water conservation remain.

While differences remain at an individual utility level, the region-wide average gross per capita rate dropped 31 percent between 1995 and 2017, comparable with statewide reductions (DEP, 2018).<sup>3</sup>

If utilities had maintained higher per capita rates, the 2015 water use could have been six to ten (6-10) mgd higher.

Conservation strategies can be implemented through regulation, passive savings,<sup>4</sup> incentive programs, and/or voluntary initiatives. Plumbing and irrigation BMPs are one option in an overall water conservation strategy. Future potential water conservation projects may include:

- Conservation guidelines, public awareness campaigns, and education;
- Furthering the adoption and acceptance of water conserving local ordinances;
- Assistance in calculating or refining population estimates and per capita rates;
- Leak detection surveys, audits, and meter replacement programs;
- Assistance to improve or refine water conserving tap fees and rate structures;
- Strategies to enhance or expand targeted reductions or restrictions on use of impaired water resources (e.g., Floridan aquifer) for irrigation, aesthetic, or other non-potable uses;
- Support for implementing water conserving BMPs across all water use categories:
  - *Plumbing fixture retrofits or replacement to high-efficiency fixtures,*
  - *Irrigation system upgrades and automatic shut-off controls,*
  - *Lowering irrigation needs with Florida-Friendly landscaping, planting appropriate crops, and crop rotation BMP practices.*

The District continues to encourage water conservation through public information and outreach. Water conservation resources for homeowners, business, agriculture, and industry are provided on the District's

<sup>3</sup> Statewide 2015 rate from preliminary USGS data.

<sup>4</sup> Passive conservation occurs when markets (at times due to regulation) improve water efficiencies of products.

website. More targeted outreach may be in the form of responding to individual requests or providing information at public events. Public information and outreach activities are expected to be ongoing and continue through the planning horizon 2020-2040.

### **Aquifer Storage and Recovery (ASR)**

Depending on hydrogeologic characteristics, aquifer storage and recovery (ASR) has the potential to store large quantities of water for subsequent use. One ASR system in coastal Okaloosa County has an IWUP to withdraw 1.12 mgd for landscape irrigation. A few aquifer recharge (AR) projects in NFWMD are for groundwater remediation and restoration due to poor quality contaminated waters. These AR projects are not estimated to create any new water.

The total WRD estimate of 2.0 mgd includes the existing ASR-IWUP and an additional 0.88 mgd that may be generated by future ASRs, ARs, or other non-traditional water projects.

### **Groundwater Evaluations**

The District has groundwater evaluation programs that include groundwater modeling, MFL technical assessments, and WSA resource assessments. Comprehensive groundwater modeling efforts are ongoing or planned that incorporate the Floridan, Intermediate, sand-and-gravel, and surficial aquifer systems from Escambia County, throughout Region II, and including counties east to the Apalachicola River. Groundwater models will be updated and refined as needed to support WSAs and MFL assessments through the planning horizon 2020-2040.

#### **Sand-and-Gravel Aquifer**

The District plans to incorporate sand-and-gravel aquifer resources into larger groundwater models and further evaluating the capacity of the sand-and-gravel as an alternative water source.

#### **Floridan Aquifer**

The Floridan aquifer functions as one regional system across inland and coastal areas. The Floridan aquifer has effective confining units such as the Intermediate aquifer system and the Bucatunna Clay that separate the productive unit from the overlying surficial aquifer and underlying lower Floridan aquifer, respectively. Designation of Floridan aquifer withdrawals as “coastal” or “inland” facilitated prior water use and planning evaluations, however, Floridan aquifer withdrawals in inland areas can affect Floridan aquifer levels near the coast.

Data collection for the Region II coastal Floridan MFL began in 2015. In the 2019-2020 timeframe the work plan includes recalibration of groundwater flow and transport models, completion of technical assessments, evaluating the need for recovery or prevention strategies, and facilitating peer review and public involvement. Pending any required recovery or prevention strategies and extent or progress of RWSP implementation, MFLs will be developed and updated as required and in conjunction with WSA resource assessments.

### **Data Collection and Analysis**

This section addresses initiatives supporting other WRD components that are not expected to result in quantifiable estimates of water available or to be created.

#### **Hydrologic Data**

Hydrologic data collection, monitoring, and hydrologic analyses are essential to multiple District functions and programs. In Region II, the District continues building the network of rainfall gauges, streamflow gauges, and monitoring wells. Water quality and water quantity monitoring capabilities are enhanced by continuing cooperation with USGS and data provided by water use permittees. Current hydrologic and

long-term trends data provide critical inputs to all resource evaluation activities, including groundwater modeling, MFL technical assessments, and WSA water resource assessments. Hydrologic data activities are ongoing year-round and anticipated to continue through the planning horizon 2020-2040.

### Water Use Data and Planning

Water use data are vital inputs to multiple District and state programs and reporting requirements. Water use data is analyzed to prepare estimates and metrics annually, and future demand projections are generated every five years in conjunction with WSAs. The next Districtwide WSA is scheduled to begin in 2021. If a WSA determines the need for or continuation of regional water supply planning, RWSPs will be developed or updated. The overall timeframe for water use data, WSAs, and RWSPs is ongoing through the planning horizon 2020-2040.

## 3.2 Water Supply Development Component

Alternative water supply includes salt water, brackish waters, surface water (captured predominately during wet weather flows), sources made available through the addition of new storage capacity, reuse of reclaimed water, the downstream augmentation of water bodies with reclaimed water, stormwater, and any other water supply source designated as nontraditional in this RWSP. This section describes water supply development project options, including traditional and alternative water supply project options.

### WSD Project Options

Outreach to public supply utilities and other self-suppliers occurred between January and August 2019. From outreach responses, proposed WSD project options and estimates of water were used to create a list of WSD Project Options (Table 7). A detailed list of specific projects is provided in **Appendix A**.

**Table 7. Water Supply Development (WSD) Project Options**

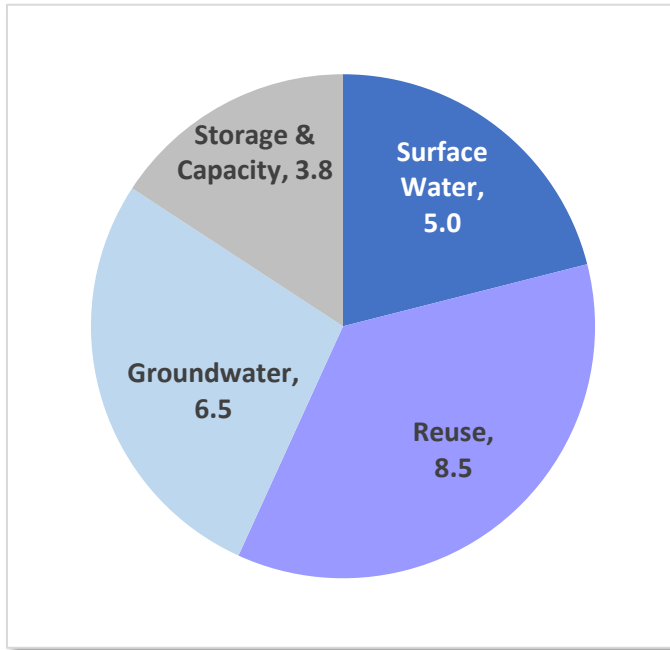
Project Type	Description	Water (mgd) <sup>1</sup>	Water (mgd) <sup>2</sup>	Time-frame	Estimated Costs
<b>Shoal River Surface Water Development</b>	Shoal River water supply source development, storage, and conveyance infrastructure.	5.00		2030 - 2040	\$50,000,000
<b>Reuse of Reclaimed Water</b>	Development or expansion of reclaimed water facilities and infrastructure.	8.50		2019 - 2035	\$29,600,000
<b>Water Conservation</b>	Water conserving infrastructure improvements and system upgrades.	Note (A)	Note (A)	2019 - 2040	\$42,739,098
<b>Sand-and-Gravel Aquifer</b>	Additional water supply for FRUS in Santa Rosa County.	1.15		2019 - 2020	\$1,695,000
	Other sand-and-gravel aquifer water supply in Santa Rosa and Okaloosa counties.		1.90	2020 - 2040	\$7,900,000
<b>Floridan Aquifer</b>	Proposed new Floridan wells, potential system interconnections, and replacement wells.		3.46	2022 - 2040	\$8,250,000
<b>Storage and Distribution</b>	New capacity created through storage tank facilities or distribution infrastructure.	3.75		2020 - 2035	\$10,525,000
	<b>TOTALS</b>	<b>18.40</b>	<b>5.36</b>		<b>\$150,709,098</b>

<sup>1</sup> Estimates of potential alternative water to be made available.

<sup>2</sup> Estimates of water from traditional sources - potential to be made available.

Note (A): Quantification of estimated water to be saved is not available at this time.

Cooperating partners have undertaken an initial technical and financial feasibility review of the projects submitted. All WSD project options have been reviewed and determined to meet the goals of this Region II RWSP. Local governments, utilities, regional and multi-jurisdictional water suppliers, and other self-suppliers may choose from WSD project options.



**Figure 8. WSD Projects and Water Potential (mgd)**

Altogether, a total of about 24 mgd of new water supply may be generated by utilities over the planning horizon at a total cost of about \$150.7 million. Project types include alternative reuse and surface water development, new storage tanks or other capacity created, new and replacement wells, and water conservation. Reuse and groundwater would generate about 63 percent of potential new water (Figure 8). Traditional sources would likely be reserved for public supply uses only.

The estimated cost without conservation projects is \$108 million or an average of \$4.5 million per mgd of water created. If each of the 22 projects categorized as conservation saved an average of 0.09 mgd they would collectively add 1.98 mgd for a new total of about 25.7 mgd.

### **Surface Water Development**

As discussed in Section 3.1, Okaloosa County Water & Sewer (OCWS) is working to develop the Shoal River as an alternative water supply. The project would construct 3,400 linear feet of raw water line, a 155-acre reservoir and pump station, 5 mgd treatment plant expandable up to 20 mgd, and about 3.3 miles of water transmission mains. The anticipated time frame is 2030-2040 and preliminary estimated cost is \$50 million to develop the plant and the initial 5 mgd. Specific funding sources have yet to be determined.

### **Reuse of Reclaimed Water**

A total of five planned reuse projects in Okaloosa, Santa Rosa, and Walton counties would create up to 8.5 mgd of reclaimed water at an average cost of \$7.4 million per project or close to \$4 million per mgd of reuse water created. The total estimated cost of \$29.6 million is for four projects (one project does not yet have a cost estimate). Projects may begin as early as 2019-2020 and be implemented through 2035. Funding sources include local impact and capacity fees, capital improvement project (CIP) funds, state appropriations or grants, USDA, and other available grants and loans.

### **Water Conservation**

To promote water conservation, a total of 22 infrastructure improvement and system upgrade projects are categorized as conservation. Estimates of the quantity of water that may be conserved have not been provided and the cost of conservation projects varies considerably. The OCWS Advanced Metering



Infrastructure (AMI) system upgrade project has an estimated cost of \$13.9 million and is expected to be complete in 2020. A water conservation public information campaign was also proposed by OCWS.

Most of the other water conserving projects are infrastructure replacements, water system loops, interconnections, and maintenance and are estimated to be an average of \$1 million per project. Schedule of implementation includes ongoing projects and others through 2040. Potential funding sources include USDA Rural Development, TRIUMPH, and state appropriations.

### **Groundwater**

The development of sand-and-gravel and Floridan aquifer inland wellfields has been a successful strategy to withdraw water from alternative source locations far from coastal areas to allow Floridan potentiometric water levels to recover. FRUS is planning on one additional well to supply 1.2 mgd of alternative water supply at a total cost of \$1.7 million or about \$1.5 million per mgd. The planned source of funding is the state revolving fund (SRF).

Other potential projects in Santa Rosa and Okaloosa counties will replace or construct new groundwater wells or create interconnections between service areas at a total estimated cost of \$16.2 million. For projects expected to generate new water the total estimated cost is \$12.3 million: \$1.1 million per project or \$2.3 million per mgd of water created. Some projects are underway while others are future planned projects through 2040. Funding sources include local fees and funds, SRF funds, USDA, and grants and loans. Sources of funding for several projects have yet to be determined.

### **Storage and Distribution**

This category of WSD projects includes multiple ground and elevated water storage tanks and infrastructure improvement projects that increase water supply capacity at a total estimated cost of \$10.5 million. For projects expected to generate new water the total estimated cost is \$7.7 million, which is \$1.1 million per project or \$2.0 million per mgd of water created. Potential timeframe for storage and distribution projects is 2020-2035. Funding sources include local impact and capacity fees, state appropriations or grants, USDA, and other available grants and loans.

### **Other Project Opportunities**

Projects described above and in Appendix A represent potential options from Region II public supply utilities as of August 2019. Additional water supply development projects may arise during the implementation of this RWSP. Strategies and options for potential additional projects are in Table 8.

### **Variance Provisions for Mine Reclamation**

When a mined property reaches its useful life, there may be opportunities to coordinate closure requirements and water supply development planning efforts in an area. Should such opportunities exist, variance provisions identified in section 378.212(1)(g) or 378.404(9) may be used to create WSD or WRD projects, in coordination with DEP and consistent with section 373.709(2)(j). There are no known mines in Region II with conceptual land reclamation plans that would create WSD or WRD projects. The District will coordinate with DEP on any future opportunities for such projects, as applicable.

Region II may also benefit from multi-jurisdictional approaches and joint project collaboration among public utilities and regional water supply authorities and other recreational, agricultural, industrial, commercial, and institutional self-suppliers. This RWSP recognizes that AWS options for agricultural self-suppliers are limited; however, expanded use of agricultural ponds, reuse of reclaimed water, and crop and irrigation conservation practices (BMPs) have successfully reduced demands in many parts of Florida.



**Table 8. Region II Strategies and Additional WSD Project Options**

<b>Strategies</b>	<b>Additional WSD Project Options</b>
1. Continue reducing reliance on coastal Floridan aquifer resources.	Additional projects in the WRCA or that reduce water use in WRCA communities, and other areas with sub-regional or localized aquifer water level drawdown.
2. Enhance appropriate and efficient use of all water resources.	Promote and encourage water conservation plans, programs, measures, and projects. Provide resources and technical support to quantify water conservation savings.
3. Continue implementing and investigating additional alternative water supplies and conservation.	Quantifiable conservation projects and more reuse projects to offset potable supplies and provide other beneficial uses. Additional feasible ASR/AR to provide alternative water supplies, recharge aquifer resources, and/or salinity barriers. Further investigate salt or brackish reverse osmosis or desalination, surface water development, surface water capture during wet-weather flows, stormwater, or mixed-water blending, also known as a “one water” concept.
4. Add interconnections and water storage capacity.	Particularly in the WRCA or that benefit WRCA and coastal communities with potentiometric water level drawdown and/or vulnerable to storm impacts.

## 4. FUNDING AND COORDINATION

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This chapter provides an analysis of funding needs and sources of possible funding options for both WRD and WSD projects, a funding strategy for WRD projects, and additional coordination elements.

### 4.1 Funding Needs

The primary Region II funding needs are, and will continue to be, assisting local entities in the implementation of WSD projects and continuing WRD projects.

The cost for WRD projects is estimated annually in the District's Five- Year Water Resource Development Work Program (WRDWP). A recent estimate for the FY 2019-2023 timeframe was about \$4 million or an average of about \$811,000 per year. If held constant, with no inflation and no substantive programmatic changes, a 20-year estimate would be \$16 million. At this time there are no current or planned District water supply infrastructure or facility projects, therefore, no capital investment is needed, and no financial resources required to operate and maintain any physical projects.

Of the \$150.7 million in WSD projects, about one-third (\$54.4 million) have no identified source of funding, including the \$50 million Shoal River surface water development project. Just 13 of the 53 proposed projects totaling \$22.8 million or 15 percent of the total costs would be implemented with in-house or local funds, the remainder relying on multiple sources (Table 9). Potential funding sources include DEP SRF, USDA Rural Development, the District, legislative appropriations, and TRIUMPH.

**Table 9. Potential WSD Projects, Costs, and Sources of Funding**

County	In-House/Local	Multiple Sources	TOTAL
Okaloosa	\$20,700,000	\$78,589,098	\$99,289,098
Santa Rosa	\$1,000,000	\$20,770,000	\$21,770,000
Walton	\$1,050,000	\$28,600,000	\$29,650,000
<b>Totals</b>	<b>\$22,750,000</b>	<b>\$127,959,098</b>	<b>\$150,709,098</b>

### 4.2 Funding Options for WRD and WSD

Financial resources are needed for both water resource and water supply development. Funding for the development of alternative water supplies is a shared responsibility pursuant to s. 373.707 and 373.709, F.S., with the State of Florida and water management districts responsible for funding assistance. Sources of possible funding options are summarized below.

#### Public-Private Partnerships

The basic principle of public-private partnerships is cost sharing but may also include sharing of technical expertise, assets, and the burden of risk. Partnerships may be formed between funding organizations and local implementation entities; between different water uses and processes, for example industrial or commercial reuse of reclaimed water from a water utility's WWTP; and between private business interests and those providing a public service such as clean water supply. Cost sharing partnerships may be at any level and potentially together with any of the funding options and resources listed below.

#### Local Resources

The cost of water supply and wastewater treatment provide basic revenue to operate and maintain water supply systems. A utility may have additional resources to fund infrastructure expansion in response to growth and development but are typically limited in their ability to finance alternative water supplies. Utilities may levy connection or tap fees, impact fees, minimum charges, and inclined block rate or volume

charges; and issue and secure bonds and incur debt to develop water supplies. Regional water supply authorities, community development district's (CDDs), and special water supply or sewer districts have additional authority to apply special assessments and levy local taxes.

#### NWFWMD

The state constitution limits the NWFWMD to 1/20th (0.05 mills) of one mill, significantly less than the ad valorem taxing authority afforded the other four water management districts. This substantially limits the amount of revenue available to support implementation of major WRD and WSD projects and initiatives, including alternative water supply projects. In order to support both programmatic activities and WSD capital projects, the District relies on outside funding sources such as state appropriations and grant funding; and may apply any available reserve funds for priority projects.

A funding strategy for WRD projects (s. 373.709(2)(d), F.S.) shall be reasonable and sufficient to pay the cost of constructing or implementing all listed projects. For the WRD component of this RWSP, the District relies on funding sources identified annually in the District's budget and further highlighted in the Five-Year Water Resource Development Work Program (s. 373.536, F.S.).

#### State Level

Funding assistance from the State of Florida includes dedicated trust funds, revolving fund programs, and small community grants. The Water Protection and Sustainability Program Trust Fund (WPSPTF) was created by the Florida Legislature in 2005<sup>5</sup> to fund alternative water supply and water storage facilities (ss. 373.707 and 373.475, F.S.). The WPSPTF is primarily for water supply projects implemented by local governments or water supply entities. Applicability to WRD is in the cooperative efforts in the development of water supplies and AWS.<sup>6</sup>

The State of Florida has two State Revolving Fund (SRF) programs:

1. The Drinking Water State Revolving Fund program provides funding assistance to eligible cities, counties, authorities, special districts, and other privately owned, investor-owned, or cooperatively held public water systems. Low interest loan funding is based on a priority system of public health considerations, compliance, and affordability. Affordability includes the evaluation of median household income, population affected, and consolidation of very small public water systems, which serve a population of 500 people or fewer. Funds are made available for pre-construction loans to rate-based public water systems, constructions loans of a minimum of \$75,000, and pre-construction grants and construction grants to small, financially disadvantaged communities.
2. The Clean Water State Revolving Fund program provides low-interest loans for planning, designing and constructing water pollution control facilities under Chapter 62-503, F.A.C. for wastewater, stormwater, and certain energy and other types of projects. Loan funds are made available for planning, design and construction. Small, disadvantaged communities may also be eligible for grants, which, once qualified, can significantly reduce the amount owed on a CWSRF loan. The loan terms include a 20-year amortization and low-interest rates. Financing rates vary based on the median household income, the poverty index, and the unemployment index, but average less than 50 percent of the market rate.

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<sup>5</sup> Sections 403.890 and 403.891, F.S.

<sup>6</sup> Sections 373.707 and 373.475, F.S.

The Small Community Wastewater Construction Grants grant program assists small communities and wastewater authorities pursuant to Chapter 62-505, F.A.C. An eligible small community must have a total population of 10,000 or less and have a per capita income less than the state of Florida average. The highest priority is given to projects that address a public health risk and projects that are included in a Basin Management Action Plan (BMAP). All projects must receive a Clean Water SRF loan to receive these grant funds.

The 1999 Florida Forever Act created the Florida Forever Trust Fund (s. 259.1051, F.S.) to acquire and preserve land and watershed resources, and up to half of the program funding may be used for certain capital improvement projects including water resource development projects on public lands, including groundwater recharge, and stormwater management. Typically, WRD or WSD projects are allowed if MFLs have been established for applicable waters (s. 259.105, F.S.). When Florida Forever funding is appropriated by the Legislature, 30 percent was customarily allocated to Florida's water management districts and the remaining 70 percent to nine other state agencies, divisions, offices, and programs.<sup>7</sup>

#### 2010 Deepwater Horizon

Following the 2010 Deepwater Horizon oil spill and the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies (RESTORE) of the Gulf Coast Act of 2012, special restoration programs and funding opportunities became available. These include the Gulf Coast Restoration Trust Fund, Natural Resources Damages Act (NRDA) Restoration Program, National Fish and Wildlife Foundation and Gulf Environmental Benefit Fund, Triumph Gulf Coast, Inc. (TRIUMPH), and other individual settlement funds. WRD and WSD projects that meet the specific goals of these funding sources may be eligible for funding.

#### Federal

The United States Environmental Protection Agency (USEPA) administers the following programs:

- The Water Infrastructure Finance and Innovation (WIFIA) Act established a financing mechanism to accelerate investment in regionally or nationally significant WRD projects. The WIFIA program is closely correlated with states SRF programs.
- State and Tribal Assistance Grants provide funding assistance through cooperative agreements with 45 percent in matching funds from local government cooperators.

Following appropriation of WIFIA funds by congress, a Notice of Funding Availability (NOFA) is issued to provide credit assistance for up to 49 percent of eligible project costs. The national or regional significance criteria is evaluated with respect to economic and public benefits. Minimum project size is \$20 million for large communities and \$5 million for small communities (population of 25,000 or less).

The United States Department of Agriculture's Natural Resources Conservation Service provides technical and financial assistance to agricultural producers through the Environmental Quality Incentive Program (EQIP) for the installation or implementation of structural and management practices to improve environmental quality on agricultural lands. Water supply and nutrient management through detention/retention or tailwater recovery ponds can also be implemented through this program.

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<sup>7</sup> DEP Florida Forever website: <https://floridadep.gov/lands/environmental-services/content/florida-forever>.

### 4.3 RWSP Coordination

This section addresses coordination elements not covered in other parts of this RWSP.

#### Public Interest and Cost Savings

Water supply development projects are intended to serve the public interest or save costs overall (s. 373.709(2)(e), F.S.) by preventing the loss of natural resources or by avoiding greater future expenditures. Pursuant to s. 373.016(4)(a), F.S., the use of water from sources nearest the area of use or application is encouraged, whenever practical. In coastal areas of Region II this has not been possible or practical for many decades where over-consumption created water quality and water resource issues, including a significant cone of depression in the potentiometric surface and increased saltwater intrusion. These issues prompted the need for significant investments in alternative water supplies and development of alternative water supply source locations at inland wellfields.

The RWSP with a 20-year outlook, five-year updates, and participatory planning process provides opportunities to plan, prepare for, and implement, WSD projects well before natural resources are diminished and before urgent water supply needs result in more costly expenditures. The implementation of this Region II RWSP since 2000 has seen marked recovery in coastal Floridan water resources but efforts need to continue to ensure that the public interest is served in the most cost-effective manner possible.

#### RWSP Partnerships

The Walton-Okaloosa-Santa Rosa Regional Utility Authority (RUA) was established in 1986 to address water supply needs and protection of water resources on a regional level. The RUA is comprised of the three Region II counties and municipalities of Destin, Fort Walton Beach, Gulf Breeze, Mary Esther, and Niceville. The RUA and its representative utilities and local governments have been instrumental to the successes of alternative water supply projects developed to date in Region II.

This Region II RWSP and projects were developed jointly (s. 373.709(3), F.S.) with regional water supply authorities, utilities, self-suppliers, and local governments. Region II counties and RUA representative municipalities participated in WSA and RWSP outreach and public forums, and in developing WSD projects. During development of the District's 2018 WSA, surveys were distributed to invite review and feedback on population and water use estimates and future demand projections. Both in-person and online public forums presented draft 2018 WSA findings with opportunities for public comment. Technical data and modeling tools were presented at a public workshop in July 2018. Further information on the 2018 WSA Update and public involvement is on the District website: <https://nwfwmd.com/Water-Resources/Water-Supply-Planning/Water-Supply-Assessments>.

An informational RWSP public meeting was held in January 2019 followed by outreach to individual public supply and regional utilities through August 2019. Information regarding this Draft RWSP 2019 Update was sent to permittees, advertised, and posted on the District website. A technical and community-focused set of workshops are planned for October 2019.

#### Local Coordination

Water supply development project options (s. 373.709(7-8), F.S.) are not required to be selected by local entities but RWSP data and information may be referenced in reviewing permit applications. Where the WSD component shows the need for one or more alternative water supply projects, the District notifies affected local governments. Potential follow-up actions may include educating and involving local public officials toward solutions, and presentations of findings and recommendations. Affected local governments notify the District of projects or options developed or to be developed and provide annual

updates by November 15 of each year. Programs and projects may need to be incorporated into local comprehensive plans, pursuant to s. 163.3177(6)(c), F.S.

*Wastewater Permitting Coordination*

For statewide consistency and for the purposes of Section 403.064, F.S., all of Region II is considered a WRCA for planning purposes only. This statute is within the jurisdiction of DEP and refers to permitting for wastewater treatment and the need for feasibility studies.



## 5. CONCLUSIONS

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The Region II future water demand is expected to climb 36 percent to about 95 mgd by 2040. Together, public supply and recreation account for 86 percent of Region II water use, and many of the largest public supply and recreational water users - with fast growing communities and with seasonal impacts - are in coastal areas with water resource constraints.

The total projected increase in Region II demand from 2015-2040 is 25 mgd. Public supply and recreation are the water use categories that most need WSD and WRD strategies and projects to meet future water supply needs. Current permitted allocations can provide some of the water needed for future public supply demands. Recreational uses already have regulatory restrictions on use of the Floridan aquifer and limited allocations. Reuse or other alternative water sources are encouraged with both public supply and recreational permittees in the WRCA. However, evaluations are still underway to determine water supply needs to sustain regional water resources and related natural systems, MFL technical assessments are ongoing and need for recovery or prevention strategies to be determined, the Floridan aquifer remains vulnerable to saltwater intrusion, there are still sub-regional and localized water quality and quantity issues, demand remains high in coastal areas, and rapid population growth is expected to continue.

This plan provides water resource and water supply development projects to meet increases in demand while sustaining water resources and related natural systems through 2040.

### Water Resource Development Projects

- MFL technical assessments and groundwater evaluations
- Coordination of reuse and water conservation projects
- Technical support during IWUP applications for ASRs and ARs
- Hydrologic data and monitoring
- Water use data, analyses, and WSA/RWSP assessments and planning.

### Water Supply Development Projects

- Alternative water supply development including the Shoal River, reuse of reclaimed water, and the inland sand-and-gravel aquifer
- Water conservation
- Storage capacity and distribution improvements
- Traditional Floridan and sand-and-gravel aquifer resources, where appropriate.

Continued coordination with partners, developing relevant multijurisdictional approaches, and securing funding sources are needed to continue advancing water resource protection and water supply development in Region II.

## REFERENCES / WORKS CITED

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Appendix A. List of Water Supply Development Projects

Project Title	Project Source	Project Type	Estimated Quantity to be Supplied (mgd)	Expected Start Date	Expected End Date	Planning Level Capital Costs	Planning Level Annual O&M Costs	Implementing Entity(s)	County	Proposed Source(s) of Funding
Advanced Metering Infrastructure (AMI) System Upgrades	Conservation	Conservation	N/A	2016	2020	\$13,900,000	N/A	OCWS	Okaloosa	OCWS CIP budget
Public Information on Water Conservation	Conservation	Conservation	N/A	Ongoing	Ongoing	N/A	\$6,000	OCWS	Okaloosa	OCWS O&M budget
Old Ebenezer Road WM Replacement	Infrastructure Upgrades	Conservation	0.00	2020	2020	\$648,458	N/A	City of Laurel Hill	Okaloosa	TRIUMPH
Steel Mill Creek WM Replacement	Infrastructure Upgrades	Conservation	0.00	2022	2022	\$360,437	N/A	City of Laurel Hill	Okaloosa	TRIUMPH
Azalea Drive Neighborhood Distribution Upgrade	Infrastructure Upgrades	Conservation	0.00	2023	2024	\$748,000	\$15,700	City of Mary Esther	Okaloosa	State Revolving Fund; utility revenues
Lorraine Drive Neighborhood Distribution Upgrade	Infrastructure Upgrades	Conservation	0.00	2021	2022	\$1,025,000	\$21,600	City of Mary Esther	Okaloosa	State Revolving Fund; utility revenues
Mary Esther Drive Neighborhood Distribution Upgrade	Infrastructure Upgrades	Conservation	0.00	2020	2021	\$1,285,000	\$27,100	City of Mary Esther	Okaloosa	State Revolving Fund; utility revenues
Shrewsbury Road Neighborhood Distribution Upgrade	Infrastructure Upgrades	Conservation	0.00	2022	2023	\$2,330,000	\$49,100	City of Mary Esther	Okaloosa	State Revolving Fund; utility revenues
South of US 98 Mains Replacement	Infrastructure Upgrades	Conservation	0.00	2024	2025	\$3,349,000	\$70,300	City of Mary Esther	Okaloosa	State Revolving Fund; utility revenues
Camp Henderson Road Water Line Replacement	Infrastructure Upgrades	Conservation	0.00	Upon Funding	ASAP	Not Estimated - TBD	N/A	Berrydale Water System	Santa Rosa	Grant; Legislative appropriation
Replace Existing Aged System Upgrade	Infrastructure Upgrades	Conservation	0.00	2022	2024	\$10,000,000	N/A	NAS Whiting	Santa Rosa	Appropriations
Water Line Replacement #1	Infrastructure Upgrades	Conservation	0.00	2030	2035	\$1,500,000	\$5,000	City of Paxton	Walton	City of Paxton & Grants if available
Water Line Replacement #2	Infrastructure Upgrades	Conservation	0.00	2030	2035	\$1,500,000	\$5,000	City of Paxton	Walton	City of Paxton & Grants if available
Water Line Replacement #3	Infrastructure Upgrades	Conservation	0.00	2035	2040	\$1,500,000	\$5,000	City of Paxton	Walton	City of Paxton & Grants if available
Water Line Replacement #4	Infrastructure Upgrades	Conservation	0.00	2035	2040	\$1,500,000	\$5,000	City of Paxton	Walton	City of Paxton & Grants if available
Water Line Replacement #5	Infrastructure Upgrades	Conservation	0.00	2035	2040	\$1,500,000	\$5,000	City of Paxton	Walton	City of Paxton & Grants if available
Booster Station and Associated Improvements	Infrastructure Upgrades	Conservation	0.00	2020	2022	\$250,000	\$150,000	Inlet Beach Water System	Walton	Operating Revenues
Highway 2 Waterline Relocation	Loop/Relocation	Conservation	0.00	2021	2021	\$542,190	N/A	City of Laurel Hill	Okaloosa	TRIUMPH
Ludlum Road Waterline Loop	Loop/Relocation	Conservation	0.00	2019	2019	\$150,000	N/A	City of Laurel Hill	Okaloosa	NWFWM
Millside Road Waterline Loop	Loop/Relocation	Conservation	0.00	2024	2024	\$150,000	N/A	City of Laurel Hill	Okaloosa	NWFWM
Thomas Road Waterline Loop	Loop/Relocation	Conservation	0.00	2023	2023	\$351,013	N/A	City of Laurel Hill	Okaloosa	TRIUMPH
Well Maintenance	Maintenance	Conservation	0.00	2020	2020	\$150,000	N/A	City of Laurel Hill	Okaloosa	Appropriations
New Well #9	Floridan	Groundwater	0.15	2030	2031	\$700,000	\$40,000	Auburn Water System, Inc.	Okaloosa	In-House
Well #2 Replacement	Floridan	Groundwater	0.00	2022	2023	\$600,000	\$40,000	Auburn Water System, Inc.	Okaloosa	In-House
Well #3 Replacement	Floridan	Groundwater	0.00	2028	2029	\$700,000	\$40,000	Auburn Water System, Inc.	Okaloosa	In-House
Well #4 Replacement	Floridan	Groundwater	0.00	2034	2035	\$800,000	\$40,000	Auburn Water System, Inc.	Okaloosa	In-House
Arena Road Water Well	Floridan	Groundwater	1.15	2030	2035	\$950,000	N/A	City of Crestview	Okaloosa	Water Construction Fund
Additional Well for Mid-County and Garniers System	Floridan	Groundwater	0.72	2030	2040	\$1,500,000	\$50,000	OCWS	Okaloosa	TBD
Shoal River Ranch Public Water Supply Well	Floridan	Groundwater	0.72	2025	2030	\$1,500,000	\$50,000	OCWS	Okaloosa	TBD
Bluewater System Additional Water Supply	Floridan or Interconnection	Groundwater	0.72	2030	2040	\$1,500,000	\$50,000	OCWS	Okaloosa	TBD
Roevill Area New Well	Sand & Gravel	Groundwater	0.50	2020	2025	\$1,600,000	\$70,000	City of Milton	Santa Rosa	City of Milton & Grants if available
Ferris Hill Area New Well	Sand & Gravel	Groundwater	0.50	2025	2030	\$1,700,000	\$77,000	City of Milton	Santa Rosa	City of Milton & Grants if available
Glover Lane / Hamilton Bridge New Well	Sand & Gravel	Groundwater	0.50	2030	2040	\$1,800,000	\$84,500	City of Milton	Santa Rosa	City of Milton & Grants if available
Well No. 4 on North Simmon Road in Jay - Replacement	Sand & Gravel	Groundwater	0.00	2021	2022	\$1,000,000	\$75,000	Moore Creek Mount Carmel Utilities, Inc.	Santa Rosa	SRF, NWFWM, USDA Rural Development
New Well - Galliver Cutoff (Backup and Increase Pressure)	Sand & Gravel or Floridan	Groundwater	0.00	2022	2025	\$800,000	\$10,000	Holt Water Works	Okaloosa	Grant/Loan 50/50
East Milton Well #7	Sand & Gravel or Floridan	Groundwater	0.40	2021	2025	\$1,000,000	\$30,000	East Milton Water System	Santa Rosa	In House
FRUS Well #7	Sand & Gravel (Alternative)	Groundwater	1.15	2019	2020	\$1,695,000	\$30,000	Fairpoint Regional Utility System (FRUS)	Santa Rosa	State Revolving Fund
WWTP Reuse Project	Reuse	Reuse	1.00	2030	2035	\$1,200,000	N/A	City of Crestview	Okaloosa	Grant funds
Jerry D. Mitchem WRF Reclaimed Water Supply	Reuse	Reuse	1.00	2025	2030	TBD	TBD	OCWS	Okaloosa	TBD
Okaloosa County/Niceville/Eglin AFB Reclaimed Water Project	Reuse	Reuse	2.50	2020	2021	\$10,500,000	\$90,000	OCWS / City of Niceville / Eglin Air Force Base	Okaloosa	OCWS CIP & State Appropriation (FDEP Grant)
City Milton Reuse	Reuse	Reuse	2.50	2019	2021	\$2,900,000	\$5,000	City of Milton	Santa Rosa	City of Milton, loans, and available grants
Freeport WWTF Reclaimed Water for Irrigation	Reuse	Reuse	1.50	2022	2024	\$15,000,000	\$100,000	City of Freeport	Walton	USDA; City Impact and Capacity Fees
Paxton-Laurel Hill WM Interconnection	Interconnection	Storage Distribution	0.00	2027	2027	\$500,000	N/A	City of Laurel Hill	Okaloosa	USDA Rural Development
Town of Jay Interconnection from Well #1 on SR 85	Interconnection	Storage Distribution	0.30	2021	2021	\$75,000	\$5,000	Moore Creek Mount Carmel Utilities, Inc.	Santa Rosa	SRF, NWFWM, USDA Rural Development
Antioch Water Tank	Storage Tank	Storage Distribution	0.50	2020	2025	\$1,300,000	N/A	City of Crestview	Okaloosa	Water Construction Fund
Brookmeade Drive Water Tank	Storage Tank	Storage Distribution	0.50	2030	2035	\$1,750,000	N/A	City of Crestview	Okaloosa	Water Construction Fund
Ground Storage Tank on US 331 North of Wagon Wheel	Storage Tank	Storage Distribution	0.20	2020	2021	\$250,000	\$10,000	City of Freeport	Walton	City Impact and Capacity Fees
New Elevated Storage Tank	Storage Tank	Storage Distribution	0.75	2030	2032	\$1,500,000	\$30,000	City of Freeport	Walton	USDA; SRF; City Impact and Capacity Fees
Inlet Beach Ground Storage Tank	Storage Tank	Storage Distribution	0.00	2020	2022	\$550,000	\$10,000	Inlet Beach Water System	Walton	Operating Revenues
Coy Burgess New 14" Loop Water Main	Water supply/distribution	Storage Distribution	0.50	2024	2026	\$1,200,000	\$27,000	City of DeFuniak Springs	Walton	SRF Drinking Water; Legislature; City Impact and Capacity Fees
US 331 Phase I Water Improvements	Water supply/distribution	Storage Distribution	1.00	2020	2021	\$1,600,000	\$30,000	City of Freeport	Walton	SRF Drinking Water; Legislature; City Impact and Capacity Fees
US 331 Phase II Water Improvements	Water supply/distribution	Storage Distribution	0.00	2021	2022	\$1,800,000	\$35,000	City of Freeport	Walton	SRF Drinking Water; Legislature; City Impact and Capacity Fees
Shoal River Off-Line Reservoir & Surface Water Treatment Plant	Surface	Surface Water	5.00	2030	2040	\$50,000,000	\$500,000	OCWS	Okaloosa	TBD

TOTALS

23.76

\$150,709,098

## Appendix B. Final Order of the NFWWMD Governing Board

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