

## 4.0 Infrastructure Element Supporting Documentation

The Infrastructure Element consists of policies related to sanitary sewer, solid waste, drainage, potable water, and natural groundwater aquifer recharge. The element addresses coordinating the extension of, or increase in the capacity of, facilities to meet future needs while maximizing the use of existing facilities and discouraging urban sprawl; conserving potable water resources; and protecting the functions of natural groundwater recharge areas and natural drainage features. This section of the Support Documentation contains the data and analyses required - including a description of problems and needs and the general facilities that will be required for solution of the problems and needs.

### *Planning Area Framework*

In order to provide an analysis of the County's Future Land Use and Existing Land Use Maps as well as the policies contained within the Comprehensive Plan, the County has been divided into six separate and distinct planning areas (Reference **Map 2-1** of the Future Land Use Element Supporting Documentation). These planning areas have been developed considering the availability of centralized water and sewer services, particularly the franchise areas for the existing water and sewer providers within the County. Along these lines, this planning area framework is depicted on all of the maps included in this section for analysis purposes.

## 4.1 Wastewater Infrastructure

Wastewater disposal is an important consideration in the planning process. As population increases, the need for additional central sewer capacities increases, particularly in areas not suitable for septic tanks, for non-residential projects or for residential projects desiring greater densities. Wastewater includes water from the kitchen and bathroom sinks, toilets, dishwashers, clothes washers, and bathtubs and showers. Each day, every person within Santa Rosa County produces an average of approximately 90 gallons of wastewater. The final destination may be either an on-site treatment disposal system (usually a septic tank) or a regional treatment plant, which may be located many miles from the structure where wastewater is generated.

### 4.1.1 Septic Tank Systems

Septic tank or onsite sewage disposal systems are generally small and designed to serve one or a limited number of land uses. Despite expansion of the wastewater collection network, many residents within the unincorporated portion of the County do not have access to wastewater treatment facilities or package treatment plants. For these land uses, wastewater treatment and disposal is provided by individual septic systems. Septic tank systems provide on-site wastewater treatment for both residential and small-scale commercial developments. Residential septic tanks usually range in capacity from 900 to 1,000 gallons. Generally, commercial septic tanks have a larger capacity.

Septic tanks are a potentially important source of fecal coliform pollution in urban watersheds. When properly installed, most of the coliform from septic tanks should be removed within 50 meters of the drainage field (Minnesota Pollution Control Agency 1999). However, the physical properties of an aquifer, such as thickness, sediment type (sand, silt, and clay), and location play a large part in determining whether contaminants from the land surface will reach the ground water (USGS 2010). The risk of contamination is greater for unconfined (water table) aquifers than for confined aquifers because they

usually are nearer to the land surface and lack an overlying confining layer to impede the movement of contaminants (USGS 2010).

Sediment type (sand, silt, and clay) also determines the risk of contamination in a particular watershed. According to the USGS (2010), “Porosity, which is the proportion of a volume of rock or soil that consists of open spaces, tells us how much water rock or soil can retain. Permeability is a measure of how easily water can travel through porous soil or bedrock. Soil and loose sediments, such as sand and gravel, are porous and permeable. They can hold a lot of water, and it flows easily through them. Although clay and shale are porous and can hold a lot of water, the pores in these fine-grained materials are so small that water flows very slowly through them. Clay has a low permeability.”

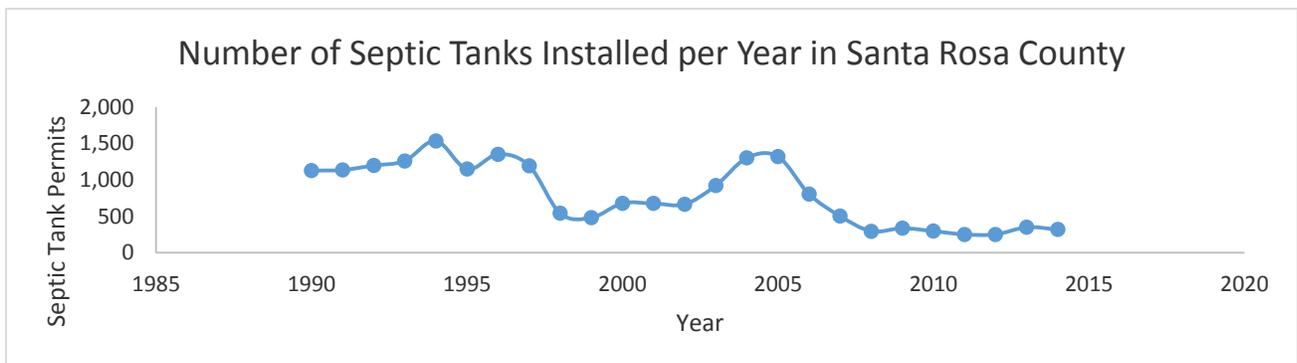
Also, the risk of contamination is increased for areas with a relatively high ground water table. The drain field can be flooded during the rainy season, resulting in ponding, and coliform bacteria can pollute the surface water through stormwater runoff. Additionally, in these circumstances, a high water table can result in coliform bacteria pollution reaching the receiving waters through baseflow.

Septic tanks may also cause coliform pollution when they are built too close to irrigation wells. Any well that is installed in the surficial aquifer system will cause a drawdown. If the septic tank system is built too close to the well (e.g., less than 75 feet), the septic tank discharge will be within the cone of influence of the well. As a result, septic tank effluent may enter the well, and once the polluted water is used to irrigate lawns, coliform bacteria may reach the land surface and wash into surface waters through stormwater runoff.

The following Map 4-1 indicates areas of the County where soil conditions are present that present potential environmental problems with the use of onsite septic tank systems. This map includes the Planning areas, centralizes sewer is available within the Pace, Milton, East Milton and South End (including Navarre Beach) Planning Areas. Centralized sewer is generally not available within the Rural North Planning Area or most of Garcon Point.

Beginning in 1985, Santa Rosa County’s Health Department began using a computer-aided database to track records for new septic tank systems, as well as repairs on existing systems. This database is used to track information such as permit number, location, soil type and system type (i.e. mound or standard). The number of systems that have been installed annually from 1990-2014 is graphed below (Figure 4-1).

**Figure 4-1: Number of New Septic Tanks Installed within Santa Rosa County by Year 1990-2014**

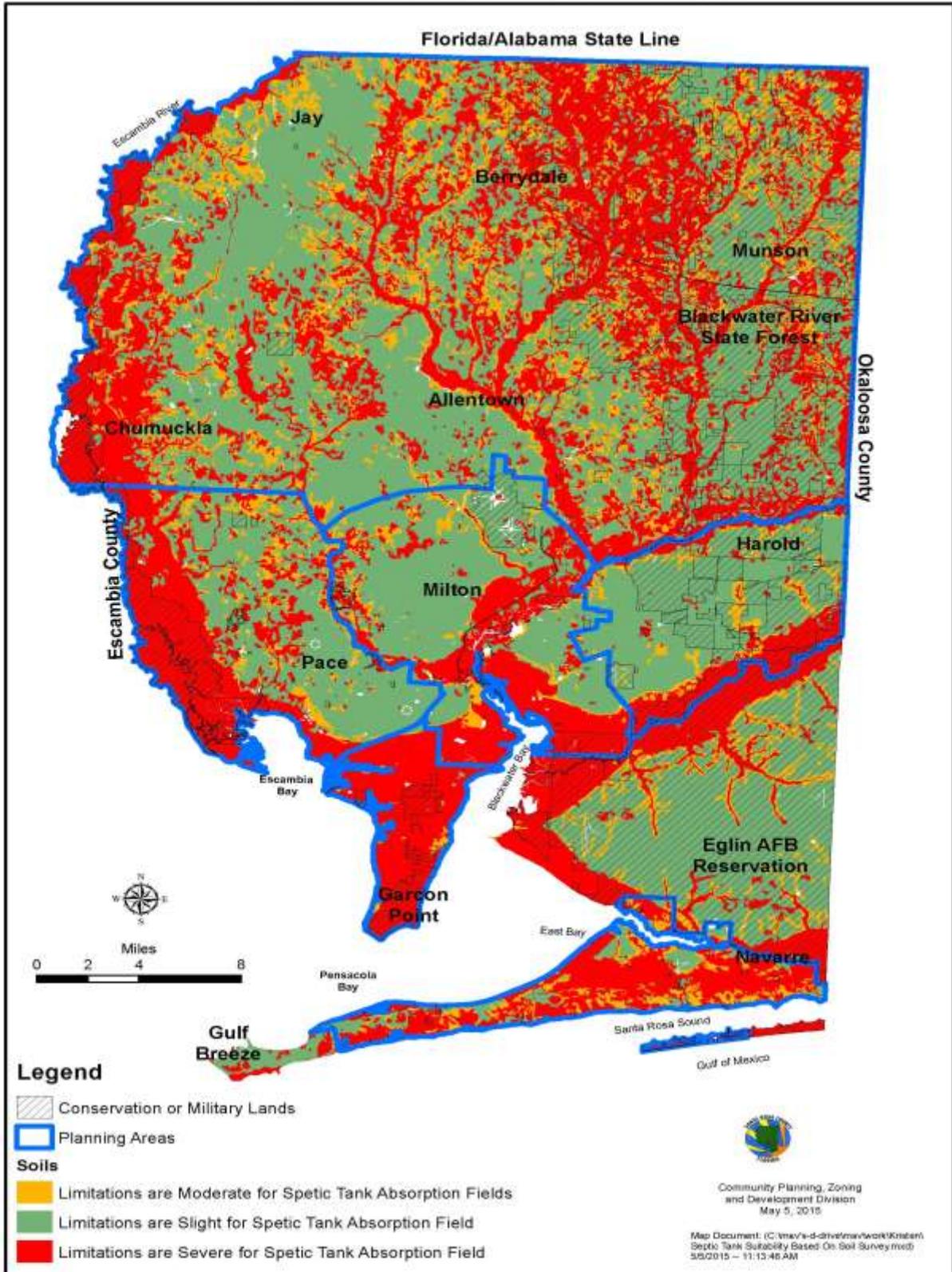


Source: Santa Rosa County Health Department, Division of Environmental Health

From 2008 until today, the installation of new septic tanks has leveled off around at around 300 new systems being installed in the County annually. In the State of Florida approximately one-third of the population uses on-site systems or septic tanks. In Santa Rosa County approximately 50% of existing single family homes use on-site systems. Permits for septic tank systems and other onsite sewage treatment and disposal systems are issued by the Environmental Health Section of the Florida Department of Health's County office. Standards for septic tank systems and other onsite sewage treatment and disposal systems are found in 381.0065, Florida Statutes (FS) and Chapter 64E-6, F.A.C.

The County does discourage the use of septic tanks in areas where it is feasible to connect to a central system by requiring new platted residential subdivisions to connect to central sewer when such service is available within ½ mile of the new development. Individual residential homes requiring building permits are also required to connect to a centralized system if such system is available (basically located in front of house).

Map 4-1 Suitability for Septic Tank Absorption Fields Based on Table 10 - Soil Survey of Santa Rosa County



## 4.1.2 Centralized Wastewater Treatment Facilities

Within Santa Rosa County (including the unincorporated areas and municipalities of the County) there are six public wastewater treatment facilities (WWTFs) serving generalized development. Santa Rosa County owns and operates one public WWTF at Navarre Beach, the City of Milton operates two WWTFs and plans are in the works for a third, the Town of Jay owns one WWTF, Holley Navarre Water System owns one WWTF, Pace Water System Inc., operates one WWTF, and the City of Gulf Breeze owns one WWTF. Completing the list of public facilities, the Department of Defense and the Department of Corrections each own one WWTF respectively. Map 4-2 depicts the sewer service areas for the domestic systems operating within the County.

### 4.1.2.1 Sanitary Sewer Capacity Analysis (2014)

The annual Utilities Operational Status Report is hereby incorporated by reference and includes an analysis of these centralized facilities. Summary excerpts from this report (2014 data) are included below.

Rule 17-600.405, F.A.C., ensures that wastewater permittees conduct timely planning, design, and construction of wastewater facilities necessary to provide the proper treatment and reuse or disposal of wastewater and residuals. This rule requires the wastewater utilities in Santa Rosa County to routinely compare flows being treated with the permitted capacities. When the three-month average daily flow exceeds 50% of the permitted capacity, the utility must submit an initial capacity analysis report to the DEP District Office. Depending on the results, the utility may be required to submit updated capacity analysis reports or begin planning, design and construction of additional capacity.

Existing residential development within the Santa Rosa County sewer franchise areas is currently utilizing centralized sewer ranging between 36 to 100%, depending on franchise area, and the remaining existing development is utilizing septic tanks or onsite systems (See **Table 4-1**). In the Pace Water Systems franchise and the Holley Navarre franchise areas only around 36% and 51% of the single family homes are connected respectively. Within Town of Jay franchise area close to 100% of the residential structures are connected. Similarly, there are no on-site septic systems on Navarre Beach with 100% of the residential units connected to the centralized County operated system. There are approximately 40,000 residential onsite systems (septic tanks) in the County, with about 50% of the single family homes in the County utilizing septic tanks.

**Table 4-2** indicates that there is no current capacity deficit, either design related or permit related, for the wastewater treatment facilities operating within the County. Connection to centralized sewer is required by the County for platted residential developments if service is available within ½ mile or as required by the individual utilities, expansion of the systems is driven by demand for higher density development patterns or may be required by environmental constraints. Metes and bounds subdivisions and individual homes are required to connect if service is directly available (in front of home). Current County policy allows for residential development with septic tanks at 4 units per acre when a centralized water connection is available and at 2 units per acre when utilizing a septic tank and private well for potable water.

**Table 4-1: Existing Structure Count by Wastewater Franchise Area and % Connected**

Wastewater Utility	Commercial	Community Facilities	Multi-Family Residential	Single-Family Residential	Commercial Connections	Residential Connections	% Res Connected
City of Milton	887	199	1,061	5,760	462	3,956	69%
Gulf Breeze / SSRU	1,172	169	2,009	11,348	513	7,335	65%
Holley-Navarre	561	114	1,383	14,205	346	7,275	51%
Navarre Beach	36	23	922	362	10	1,929	100%
Pace	768	89	1,438	16,271	352	5,825	36%
Town of Jay	113	41	30	245	62	253	103%

**Table 4-2: Wastewater Utility Capacity Analysis and Operational Data**

Wastewater Utility	Population Served	Commercial Connections	Residential Connections	Design Capacity gpd	Permitted Capacity gpd	Average Daily Flow gpd	Percent Design Capacity	Percent Permitted Capacity	Reuse Flow	Reuse Customers
Pace Water System, Inc.	15,087	352	5,825	5,000,000	1,900,000	1,330,000	27%	70%	1,276,000	448
Navarre Beach	4,996	10	1,929	900,000	900,000	187,000	21%	21%	NA	NA
City of Gulf Breeze/SSRU	18,998	513	7,335	2,000,000	1,920,000	1,660,000	83%	86%	1,230,000	863
City of Milton	10,246	462	3,956	2,500,000	2,500,000	1,657,000	66%	66%	NA	NA
Holley Navarre Water System, Inc.	18,842	346	7,275	3,240,000	3,240,000	1,820,000	56%	56%	1,566,000	2
Town of Jay	655	62	253	120,000	120,000	59,000	49%	49%	NA	NA

4.1.2.2 Level of Service Standard and Concurrency for Wastewater in Santa Rosa County

In 1991, Santa Rosa County established the Concurrency Management System through Ordinance 91-24. The Concurrency Management System is based on the adopted Level of Service (LOS) established in the Infrastructure Element and the Capital Improvements Element. The reservation of capacity is based on the capacity being provided at the LOS standard of a minimum of 90 gallons per capita per day (gpcd).

It is important to understand that level of service criteria central sewer really indicate the ability of the treatment facilities to accommodate demand. This demand is primarily population driven. The LOS standard means, for instance, that a wastewater treatment facility such as the Navarre Beach WWTF would need to be able to treat 90 gallons of influent per person served per day. If a new development were to come on line that needed capacity, planning staff would look at the ability of the WWTF to serve existing customers at that LOS plus the new customers added by the new development. Linear infrastructure such as the necessary lines that make up the water and sewer systems transmission infrastructure face additional challenges. This is where coordination of land use and development approvals becomes very important. Two types of development patterns can be problematic to future development desiring sewer infrastructure, retrofit for environmental reasons or fire protection, and extension of services in general. These types of development patterns can make future extension cost prohibitive and can “lock in” future development by making extensions difficult.

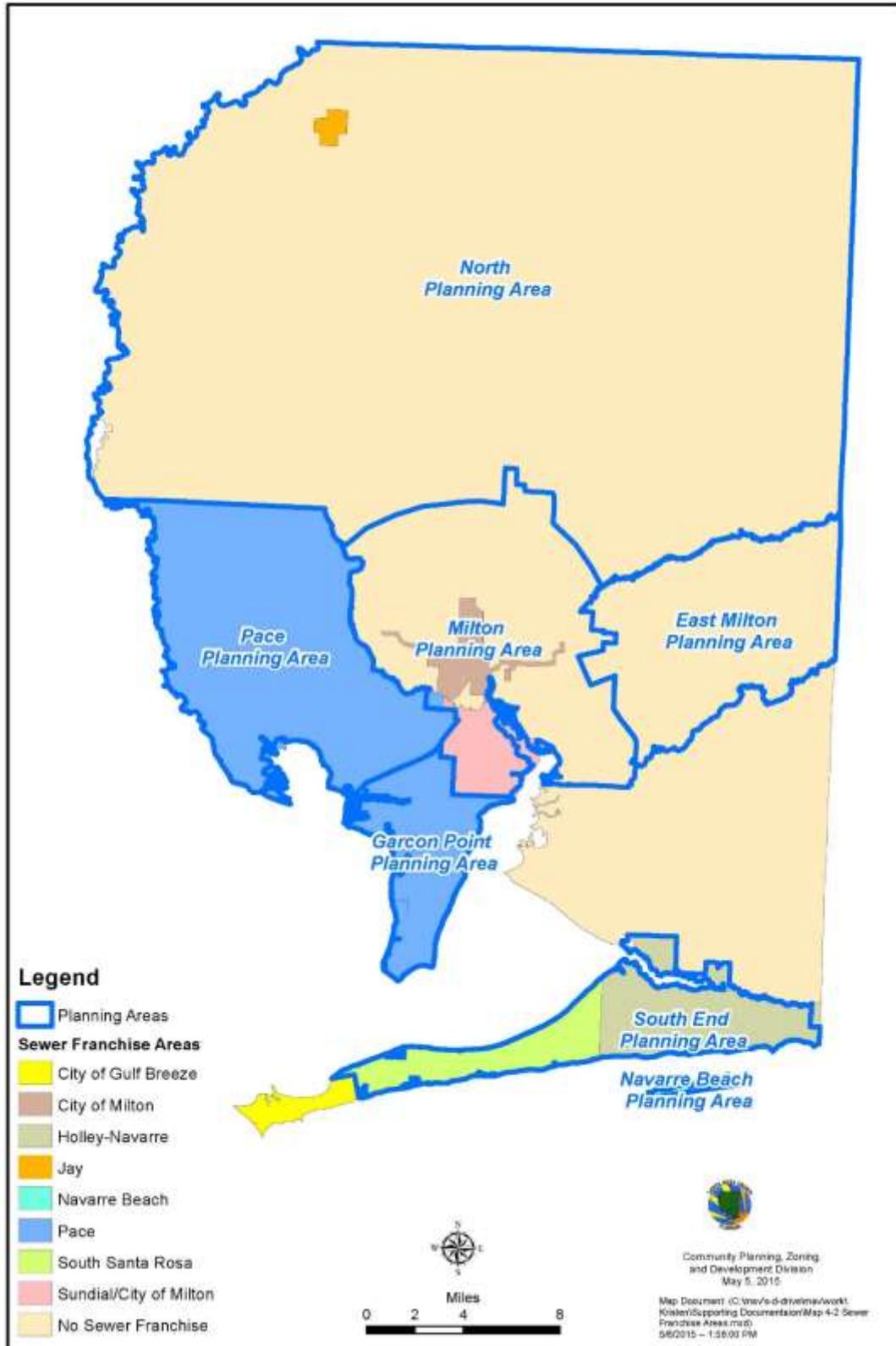
- 1) Leap frog development - development that leaps over large vacant areas; and
- 2) Barrier development – development that occurs within relatively close proximity

In Santa Rosa County, connection to a public sewer system if available (basically in front of home) is required for all single family residential projects requiring a building permit. The County has additional requirements for developers platting new subdivisions that may require the extension of lines to the new development and within the new development. The following table (Table 4-3) summarizes current Land Development Code and Comprehensive Plan policies for central water and sewer.

**Table 4-3: Current Central Sewer Policy for Residential Developments Requiring Extension**

	<b>LOS (Utility) Requirement</b>	<b>Developer Requirement</b>
<b>Central Sewer</b>	90 gallons per capita per day	For Platted subdivisions only (excluding metes and bounds subdivisions requiring extension) – required to connect if sewer is located within ½ mile of the proposed project. Metes and bounds subdivisions are only required to connect if service is available in front of house. Certain engineering standards also apply and the utility is required to refund the developer one half of the cost to install.

Map 4-2 Sewer Franchise Areas of Santa Rosa County



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## **4.2 Solid Waste**

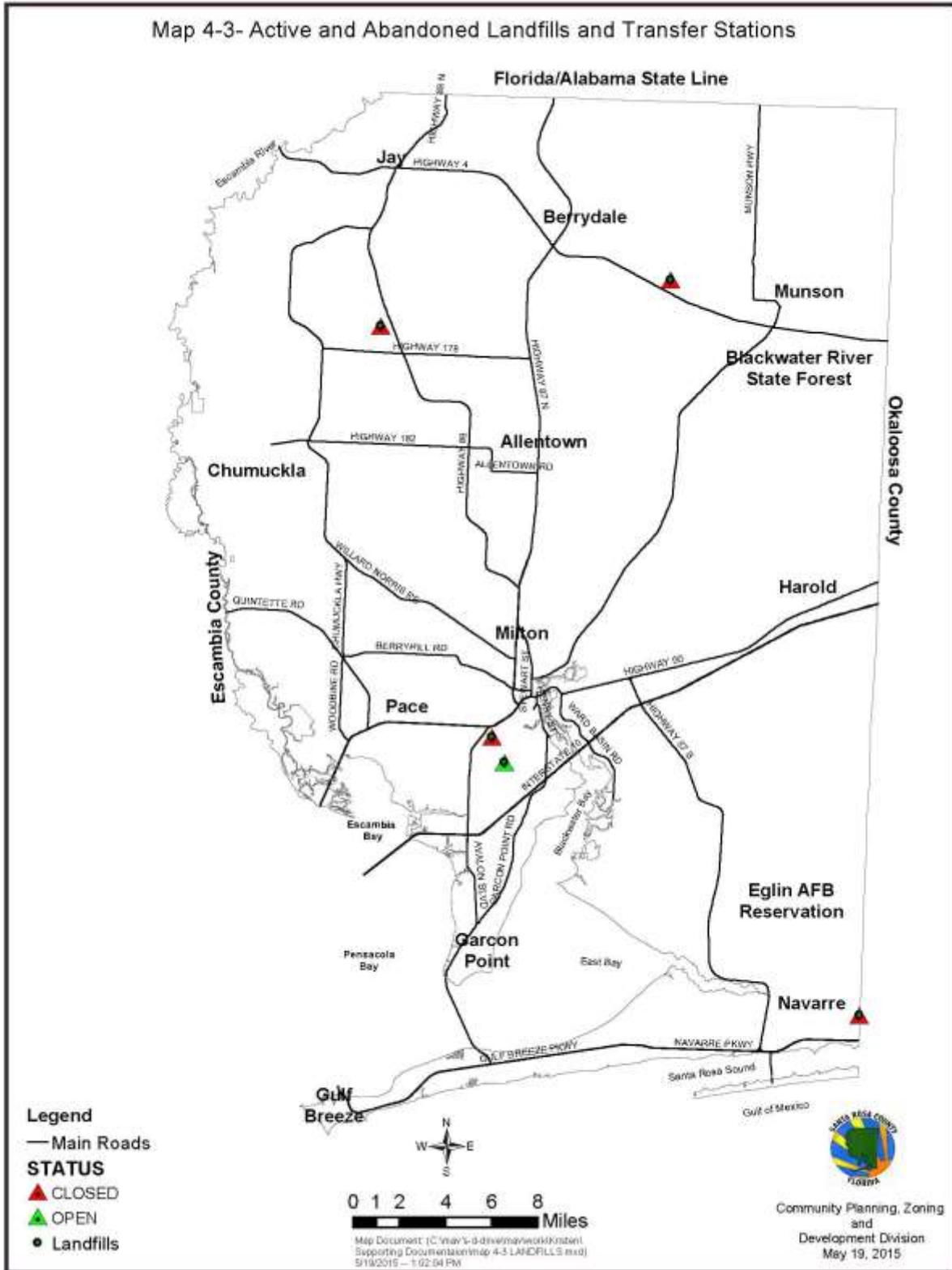
The Solid Waste portion of the Infrastructure Element provides an understanding of both solid waste and hazardous wastes in the County. On average, each person within Santa Rosa County produces 8.14 pounds of solid waste per day. Although hazardous waste disposal is not a large component of the total waste generated, several large and small hazardous waste generators are located within the County.

The purpose of this sub-element is to determine the current and projected needs of Santa Rosa County in order to provide adequate solid waste facilities to meet those needs. Analysis and projected levels of service are based on an inventory of existing facilities and capacities.

### **4.2.1 Existing Conditions**

The Central Landfill, which was originally permitted in 1977, is owned and operated by the County under the authority of the Santa Rosa County Environmental Department. The landfill consists of 593 total acres. The most recent permit renewal was in April 5, 2013 for 39.03 acres of Class I and 44.27 acres of Class III over top of the old Class I facility. The Central Landfill received an Air Construction Permit on June 20, 2013 for the installation of a landfill gas (LFG) Collection and Control System (LFGCCS) and blower / flare. Installation of the LFGCCS was completed in early 2014 and the LFG collection system and blower / flare is currently undergoing operational evaluation. Santa Rosa County has submitted and received a draft Title V Air Operations Permit that authorizes unconditional use of the LFG Blower/Flare, Air Curtain Incinerator and Class One Landfill. Since that time the County, has received a final Title V Air Operations Permit.

There have been four (4) other landfills that have closed in the County that included the Class III on Carroll Road that closed in August 2001, the North Landfill (Munson) closed in August 1988, the Holley / Navarre Landfill closed in August 1992 and the Northwest Landfill (Jay) closed in August 1989. The Jay site continues to be used as a transfer station for the northern part of the County. All these landfill closures were in compliance with existing rules and regulations. An illustration of all of the active and abandoned landfills and transfer stations is shown in Map 4-3 below.



**4.2.2 Solid Waste Collection**

In early 2011 the Santa Rosa County Board of County Commissioners (BOCC) published a Request for Proposals for Solid Waste Services for the south end of Santa Rosa County. The goal of the RFP was to provide an increased level of service to include garbage collection, curb side single stream recycling, yard waste and bulk waste collections at a lower cost to residents. The BOCC eventually created two exclusive franchises in the south end and awarded the franchise to Waste Pro and Waste Management. During mid-2014, the BOCC issued a second RFP for Solid Waste Services for the remainder of Santa Rosa County and selected the Emerald Coast Utilities Authority to provide solid waste services for the north end of Santa Rosa County to include garbage, curb side recyclable, yard waste and bulk waste collections and disposal.

**4.2.3 Solid Waste Disposal**

As previously discussed, the Santa Rosa County Central Landfill is the only Municipal Solid Waste disposal facility within Santa Rosa County. Introduction of county wide curb side single stream recycling, expansion of the Central Landfill Household Waste (HHW) and increased diversion at the Central Landfill’s Residential Drop-off area have diverted significant quantities of materials from the Class I and Class III disposal areas at Central Landfill. Class I landfills receive an average of 20 tons or more of solid waste per day, specifically household waste. Class III receive only yard trash, construction and demolition debris, waste tires, asbestos, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the Department which are not expected to produce leachate which poses a threat to public health or the environment. Class III landfills do not accept putrescible household waste. The total per capita breakdown of the waste stream within Santa Rosa County (2012) is as follows:

Total Solid Waste -	8.14 pounds per capita per day (ppcd)
Landfilled Materials -	175,344 tons
Recycled Materials -	55,359 tons
Total -	230,703 tons

As illustrated, the removal of recoverable / recyclable materials tonnages from the waste stream entering the Central Landfill can substantially increase its life span.

**4.2.4 Hazardous Waste**

Within Santa Rosa County, hazardous waste has not been a major problem because of the small number of large quantity generators (LQGs). However, in the future the County may be affected because of the increasing number of small quantity generators (SQGs). FDEP regulations, along with those developed by the EPA, require all counties to identify all small and large quantity generators in an attempt to monitor the growth and production of hazardous wastes.

A study was performed for Santa Rosa County by the West Florida Regional Planning Council (WFRPC) and was completed in 2008. The total waste produced by conditionally exempt and small quantity generators in Santa Rosa County was approximately 130,177 tons from 2002 through 2007. Used oil and filters generated the largest quantity of waste. Service stations and repair shops produced approximately 82 tons of these materials and lead acid storage batteries were the second most frequently generated

waste. Battery shops, service stations and repair shops generated about 23 tons of lead acid batteries. The third largest type of waste produced was Non-halogenated solvents, which amounted to approximately 13.4 tons.

The County's Household Hazardous Waste (HHW) Facility accepts household hazardous waste (i.e., paint, pesticides, fertilizers, gas, florescent bulbs and batteries) at the Central Landfill. Collected materials are bulked and disposed to outside contract sources or selected for reuse in the landfill Swap Shop, a facility at the Central Landfill where residents can pick up paints and household cleans at no charge. The County accepts other Household Hazardous Waste one time per year on amnesty day and that waste is collected at remote sites from the landfill. This waste is also disposed of through outside contract sources. This is administered through a cooperative grant program with Okaloosa County. As a result, commercial entities must contract with hazardous waste carriers for the disposal of their wastes. To deal with these SQGs, the State of Florida requires all counties, through the Small Quantity Generator (SQG) Program, to randomly inspect and ensure that commercial generators of hazardous wastes are complying with state requirements.

Residents can dispose of their household hazardous waste for free at the county's Household Hazardous Waste Center, open Monday through Saturday from 7 a.m. to 5 p.m. Hazardous household waste includes household cleaners, motor oils, gasoline, car batteries, inks and toners, propane tanks, pool chemicals, and pesticides.

#### **4.2.5 Solid Waste Needs and Assessments**

The Existing Conditions section identified the current demand, as well as available capacity, for solid waste disposal within Santa Rosa County. This section closely examines facility capacity analysis based on recent population projections, level of service standards, funding alternatives, and the problems and opportunities that have faced the County since the last planning timeframe. At the current time, the County expects the landfill to reach maximum capacity in 2065.

##### **4.2.5.1 Level of Service**

A level of service standard (LOS) was established in order to estimate solid waste generation and to determine landfill life expectancy and projecting capacity of the landfill. The LOS was calculated by multiplying the amount of solid waste generated daily in the County by the population and projected population. This rate is currently 8.18 pounds per person per day.

As part of the Concurrency Management System, the County uses LOS standards to determine whether the capacity of solid waste facilities is adequate to support the impacts of each proposed residential development. If the projected solid waste generation by the development will result in the standard being exceeded, provisions for solid waste facilities and services necessary to maintain the standard must be provided as required by the Concurrency Management regulations.

##### **4.2.5.2 Ensuring Adequate Landfill Capacity**

The total capacity of the Central Landfill solid waste facility is allocated to serve the entire County. The Central Landfill facility has been sized and permitted to accept municipal waste based on county-wide (including municipalities) population estimates. The Central Landfill has sufficient capacity to meet demand

through the Year 2065 under the current and projected operating conditions. The current active section consists of 39.03 acres of Class I and 44.27 acres of Class III.

In addressing adequate landfill capacity, Santa Rosa County has focused on both increasing the supply of, and decreasing the demand for, landfill space in the County. To decrease demand for landfill space, Santa Rosa County has taken several steps, the most significant of which is the development of a county-wide recycling program. The County traditional recycling rate in 2012 was 24%. One of the challenges facing the County in the future will be increasing that percentage. The County intends to use two measures to increase the percentage of waste recycled, the initiation of additional recycling efforts at the landfill and the enhancement of commercial and governmental recycling initiatives.

Another recycling issue facing Santa Rosa County (and all public or private organizations that collect recyclable materials) is finding additional markets for recyclable materials collected. As recycling technology increases, so do products made from recycled materials. Counteracting that trend, however, is the increasing supply of recyclable materials. The increase in the quantities of recyclable material is largely due to more and better recycling efforts by communities throughout the nation.

An additional step that has helped Santa Rosa County decrease demand for landfill space is the addition of the air curtain incinerator at the Class III section of the landfill. This facility, along with the recycling program, will greatly increase the life span of the landfill.

Other methods of solid waste disposal include various methods of resource recovery. These methods do not eliminate the need for landfills, but they decrease the amount of waste entering into the landfill, thereby increasing the life span of the landfill.

#### **4.2.5.3 Flow Control**

In 2007, the Santa Rosa County Board of County Commissioners enacted Ordinance 2007-16 that established Flow Control in Santa Rosa County. To the extent allowed by federal law, all solid waste generated in Santa Rosa County except for hazardous waste, construction and demolition debris, land clearing debris, or bio-hazardous waste shall be disposed in a Santa Rosa County managed disposal facility. Upon the request of Santa Rosa County, all collectors of solid waste, including commercial solid waste collectors, shall provide Santa Rosa County information regarding the quantity of solid waste collected in Santa Rosa County.

In the exclusive franchise areas within Santa Rosa County, franchisees are required, by contract, to delivery all solid waste, curb side recyclables, yard waste and bulky waste to the Santa Rosa County Central Landfill.

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### **4.3 Stormwater**

The purpose of this section is to describe the existing stormwater systems and drainage problems and to set forth the basic policies to ensure that the County will be able to meet the existing and anticipated stormwater management needs. The analysis of the existing conditions and future needs serves as a basis for formulating suitable recommendations concerning the Stormwater Management needs in addition to formulating the Goals, Objectives, and Policies (GOP's).

#### **4.3.1 Existing Systems and Watersheds**

##### **4.3.1.1. The Pensacola Bay System**

The Pensacola Bay system (also, PBS or “system”) includes five interconnected estuarine embayments, including Escambia Bay, Pensacola Bay, Blackwater Bay, East Bay, and Santa Rosa Sound, and three major river systems: the Escambia, Blackwater, and Yellow rivers. The system also includes smaller tributaries of these embayments and rivers, as well as its entire watershed. The watershed covers nearly 7,000 square miles, about one-third of which is in Florida. This includes the majority of Escambia, Santa Rosa and Okaloosa counties, the northwest quadrant of Walton County, and a substantial portion of southern Alabama. The entire system discharges into the Gulf of Mexico, primarily through a narrow pass at the mouth of Pensacola Bay.

##### **4.3.1.2. The Blackwater River Watershed**

The Blackwater River watershed is one of the last remaining shifting white sand bottom river systems in its natural state in the world. With sections of the river designated as an Outstanding Florida Water (O.F.W.) and as a Florida Canoe Trail, the Blackwater River watershed provides an opportunity to protect a valuable natural resource for the benefit of society and ecology alike. The Blackwater River watershed is located in the southeastern United States, with its geographic boundaries crossing two states and four counties. The watershed encompasses parts of Alabama's south central region and Florida's northwestern panhandle and is encompassed by the larger Pensacola Bay watershed. The headwaters of the watershed are located in Alabama's Escambia and Covington counties, however the majority of its approximate 719 square mile area occupies Florida's Santa Rosa and Okaloosa counties (F.G.D.L. 2009).

#### **4.3.2 Stormwater Management in General**

Climate, soils, geology, topography, vegetative cover and land use all have an effect on stormwater runoff and drainage. Land use impacts the natural hydrology in four interrelated, but separable ways as stated further below:

1. changes in peak flow,
2. changes in total runoff,
3. changes in water quality, and
4. changes in hydrologic amenities or the appearance of a river, stream or bay.

Land use urbanization has the most significant impact affecting the hydrology of an area. The majority of pollution problems arise from the associated land uses such as residential, commercial, industrial and agricultural.

In undeveloped areas, stormwater runoff is managed by nature through the hydrologic cycle. As rainfall accommodates on the ground or in standing water bodies, the water either returns to the atmosphere through evaporation or it can percolate into the ground to be assimilated by trees and vegetation, eventually to be returned to the atmosphere by transpiration. Percolation water that is not used by vegetation is percolated deep into soils increasing groundwater supply. In the presence of saturated ground conditions the remainder of rainfall collects into rivulets, increasing the speed and quantity as it flows to the receiving body of water. Then the cycle begins again through evaporation.

Nature's inability to accommodate severe rainfalls without damage is apparent even in undeveloped areas. Nature's stormwater management designs are constantly changing. Streams change course and meander, banks erode, and lakes lose volume as they are filled with sediment.

Historically, urbanization has resulted in new or highly modified drainage systems which dealt with only the quantitative effects of runoff. Today, stormwater management is more comprehensive. An effective program involves the development of methods to control water while providing surface drainage, flood control, a reduction in erosion and sedimentation and a reduction in pollutants. Stormwater management applies to both rural and urban areas.

To accomplish an effective stormwater management system, it is necessary to ensure that volume, rate, timing and pollutant load runoff is similar to what occurred before development. The approach used in this comprehensive plan is to minimize the adverse impacts through a coordinated system of source controls. Source controls emphasize the prevention and reduction of non-point source pollution and excess stormwater flow before it reaches a collection system or receiving water.

#### **4.3.3 Stormwater Management Problems in Santa Rosa County**

Stormwater management practices within Santa Rosa County must deal with two problems. The first problem is drainage and flooding. The second problem is the water quality of the stormwater runoff. Recent studies conducted nationwide have indicated that environmental impacts are caused by pollutants carried in stormwater. These pollutants include bacteria, fertilizers, heavy metals, and pesticides as indicated in previous sections of this sub-element. Stormwater management must provide provisions to settle or filter out these pollutants in order to preserve the quality of the groundwater and surface water into which the stormwater is to be discharged. Chapter 62-25, F.A.C., provides the guidelines that are relevant to stormwater management facilities and the practices that are to be employed to help ensure adequate treatment and protection to protect the citizens within the County.

##### **4.3.3.1 Flooding Problems**

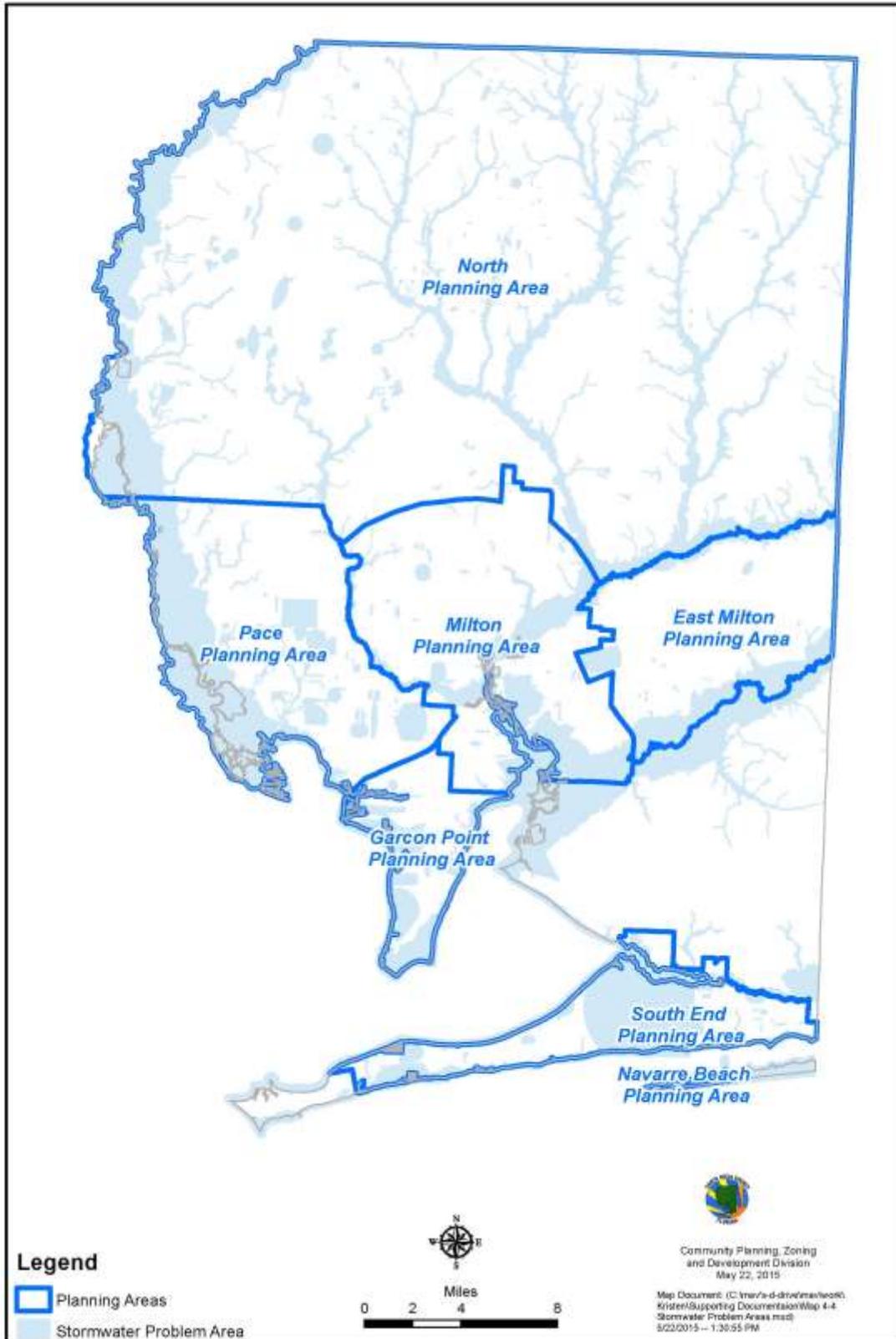
The major sources of flooding within Santa Rosa County are storm surge generated by a tropical storm or hurricane and riverine flooding. Storm surge can be expected along the Gulf of Mexico, Santa Rosa Sound, Escambia Bay, East Bay and Blackwater Bay. The wave action associated with the storm surge can be more damaging than the actual high water. The second major source of flooding is riverine flooding where heavy rainfall occurs on many water courses including the Escambia River, Blackwater River, Yellow

River, East River, Pond Creek, Big Juniper Creek, Sweetwater Creek, Big Coldwater Creek and East Fork. Not all storms passing close to the County produce high storm surge or flooding conditions. Similarly, storms that produce flooding in one area of the County may not necessarily flood another part of the County. Presently, the County's drainage problems fall into six categories:

1. Traffic hazards from standing water,
2. Damaging sheet flow on and off of rural roads,
3. Potential flooding associated with hurricanes and other above average storms damaging structures,
4. Long term water quality problems due to runoff;
5. Failure of on-site sewage disposal systems and damage to other infrastructure caused by flooding.

The current Santa Rosa County Land Development Code contains provisions related to currently identified Stormwater Problem Areas (**Map 4-4**). These areas include the Special Flood Hazard Areas of the County as well as additional areas that have been identified by the County as areas experiencing frequent flooding. Special considerations are required when developing within one of these designated areas. In addition, the County has developed a Local Mitigation Strategy (LMS) that is incorporated herein by reference. Additional information on this document is found within the Coastal Management Element Supporting Documentation.

Map 4-4 Stormwater Problem Areas of Santa Rosa County



#### 4.3.3.2 Water Quality

Different types of land use affect the water quality in an area. For example, in an undeveloped area, many biological, physical and chemical processes interact to recycle most of the materials that are found in stormwater runoff. As land use in these areas intensifies, this process is disrupted. Increased activities add materials to the land surface such as fertilizers, pesticides, oils, grease, heavy metals and animal wastes, which are then washed off by the rainfall and runoff. In turn, this runoff then increases the pollutant loading which is carried to a nearby surface water body.

##### *Water Body Classifications and Water Quality Monitoring*

Surface water bodies are classified by the Florida Department of Environmental Protection (DEP) based upon the intended uses of these bodies. All waters of the state fall into one of five surface water classifications (62-302.400 F.A.C.) with specific criteria applicable to each class of water. In addition to its surface water classification, a water may be designated as an Outstanding Florida Water, (62-302.700 F.A.C.). An Outstanding Florida Water, (OFW), is a water designated worthy of special protection because of its natural attributes. This special designation is applied to certain waters, and is intended to protect existing good water quality. Most OFWs are areas managed by the state or federal government as parks, including wildlife refuges, preserves, marine sanctuaries, estuarine research reserves, certain waters within state or national forests, scenic and wild rivers, or aquatic preserves. Generally, the waters within these managed areas are OFWs because the managing agency has requested this special protection. In Santa Rosa County portions of the Blackwater River are designated as an OFW.

The DEP undertakes water quality assessments of water bodies in response to Section 305 (b) of the Federal Clean Water Act. There are nine DEP water quality monitoring sites within Santa Rosa County monitored on a weekly basis along with some nearby Santa Rosa Island water quality stations monitored by the Escambia County Health Department under the auspices of the Florida Healthy Beaches Program that was established in August 2000.

##### *Total Maximum Daily Loads (TMDLs) in Santa Rosa County*

The Pensacola Bay Watershed and the Blackwater Watershed have both been designated as Priority Watersheds by the U.S. Environmental Protection Agency (EPA). Priority watersheds are those where the US EPA Region 4 and State of Florida agency partners have agreed to focus mutual resources to protect and restore waters.

A TMDL is a scientific determination of the maximum amount of a given pollutant that a surface water can absorb and still meet the water quality standards that protect human health and aquatic life. Water bodies that do not meet water quality standards are identified as "impaired" for the particular pollutants of concern--nutrients, bacteria, mercury, etc.--and TMDLs must be developed, adopted and implemented for those pollutants to reduce pollutants and clean up the water body. The threshold limits on pollutants in surface waters--Florida's surface water quality standards on which TMDLs are based--are set forth primarily in rule 62-302, Florida Administrative Code, and the associated table of water quality criteria.

What are the basic steps in the TMDL program are as follows:

1. Assess the quality of surface waters--are they meeting water quality standards? (Surface Water Quality Standards - Chapter 62-302, F.A.C.)
2. Determine which waters are impaired--that is, which ones are not meeting water quality standards for a particular pollutant or pollutants. (Impaired Waters Rule (IWR) - Chapter 62-303, F.A.C.)
3. Establish and adopt, by rule, a TMDL for each impaired water for the pollutants of concern--the ones causing the water quality problems. (TMDLs - Chapter 62-304, F.A.C.)
4. Develop, with extensive local stakeholder input, Basin Management Action Plans (BMAPs) that...
5. Implement the strategies and actions in the BMAP.
6. Measure the effectiveness of the BMAP, both continuously at the local level and through a formal re-evaluation every five years.
7. Adapt--change the plan and change the actions if things aren't working.
8. Reassess the quality of surface waters continuously.

The following describes the status of the TMDL process in Santa Rosa County. To date, four final TMDLs have been adopted that affect the County: Blackwater River, East Bay River, Pace Mill Creek and Escambia River. These final TMDL documents are incorporated herein by reference. In addition, TMDLs are pending for all of the verified impaired water bodies shown on the following map (**Map 4-5**). No Basin Management Action Plans have currently been completed for Santa Rosa County.

*Blackwater River (FDEP Final TMDL)*

A Total Maximum Daily Load (TMDL) for fecal coliform bacteria for the Blackwater River (tidal) has been established. This waterbody was verified as impaired for fecal coliform, and therefore was included on the Verified List of impaired waters for the Pensacola Bay Basin that was adopted by FDEP Secretarial Order in November 2010. The TMDL establishes the allowable fecal coliform loading to the Blackwater River (tidal) that would restore the waterbody so that it meets its applicable water quality criterion for fecal coliform. The Blackwater River (tidal) is a Class III waterbody, with a designated use of recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife. The criterion applicable to this TMDL is the Class III criterion for fecal coliform. Potential sources listed in the Final TMDL report include agricultural land use run-off, septic tanks, and stormwater run-off from urban land uses.

*East Bay River (FDEP Final TMDL)*

A Total Maximum Daily Load (TMDL) for fecal coliform bacteria for the East Bay River (marine portion) has been established (2012). This waterbody was verified as impaired for fecal coliform, and therefore was included on the Verified List of impaired waters for the Pensacola Bay Basin that was adopted by FDEP Secretarial Order in November 2010. The TMDL establishes the allowable fecal coliform loading to the East Bay River (marine portion) that would restore the waterbody so that it meets its applicable water quality criterion for fecal coliform. The East Bay River (marine portion) is a Class II waterbody, with a designated use of shellfish propagation or harvesting; this designation includes all Class III uses of recreation, propagation, and the maintenance of a healthy, well-balanced population of fish and wildlife. The criterion applicable to this TMDL is the Class II criterion for fecal coliform. Potential sources listed in the Final TMDL report include septic tanks, pet feces, and sanitary sewer leakage in descending order of contributory magnitude.

*Escambia River (FDEP Final TMDL)*

Total Maximum Daily Loads (TMDLs) for fecal coliform bacteria for the Escambia River, Texar Bayou, and Carpenter Creek have been developed. These waterbodies were verified as impaired for fecal coliform, and therefore were included on the Verified List of impaired waters for the Pensacola Bay Basin that was adopted by FDEP Secretarial Order in May 2006. The TMDLs establish the allowable fecal coliform loading to these water segments that would restore the waterbodies so that they meet their applicable water quality criterion for fecal coliform.

*Pace Mill Creek (Finalized by EPA)*

Pace Mill Creek is located east of the Escambia River, in the Pace area. Pace Mill Creek discharges to Escambia Bay through Bass Hole Cove, and eventually drains into Pensacola Bay. The drainage area for the creek is approximately 6.2 square miles (FEMA 2006). The Escambia River is less than three miles to the west. Wetlands are confined mainly to the riparian corridor and at the mouth of the creek, with limited agriculture. There has been rapid urbanization of the region in the past several decades. TMDLs for total nitrogen, total phosphorus, and biochemical oxygen demand have been established.



#### 4.3.4 Stormwater Funding Sources

County-wide stormwater management, although imperative, is quite costly. Capital improvements, operating and maintenance, renewal and replacement of existing structures, water quality monitoring and administrative services are only a few examples of the many stormwater management issues that face Santa Rosa County every year.

In this section the funding sources that are available to financially support these activities will be discussed. Available funding sources include federal grants, state grants, state and local tax assessments, as well as additional federal bond and grant programs, that can be used as stand-alone monetary sources or can be used together to help provide the monetary support needed for some of the larger projects. Several of these options are presented below. Currently stormwater infrastructure in Santa Rosa County is funded primarily by developers with maintenance paid for using general funds. Some maintenance is funded by individual homeowner's associations in the County as well.

##### *General Funds*

Stormwater management funds in Santa Rosa County have traditionally provided from the General Fund. This source can best be considered as a bank retaining revenues which will fund county stormwater programs in the future. The source of funds for this alternative includes ad-valorem income, as well as other taxes. Other income which can be placed into the General Fund includes revenue sharing income and county-wide ad-valorem taxes (for activities completed for the citizens of the county). This revenue source can provide funding for administration, renewal/replacement, construction, maintenance, and water quality monitoring.

The principal advantage associated with utilizing the General Fund is that the accounting process is understood. The major disadvantage with using the General Fund is that many governmental services, except the utilities, are funded by the general fund. For this reason, competition for the funds is intense and historically, stormwater management programs have had a low priority. From a point of equitability, ad-valorem taxes are based on property values which are not always related to the property's impact on stormwater. For these reasons, many governmental entities are looking for another source of funding for stormwater.

##### *Gas Taxes*

These funds may be implemented for capital projects related to roads and can be used to fund road repair or construction. Santa Rosa County is responsible for a number of county-maintained roadways. As some stormwater management improvements can be integrated into road improvements or maintenance projects, the stormwater facilities can be indirectly funded or subsidized by the expenditure of gas tax funds. These funds, however, are generally intended to be limited to the capital improvement appropriations, project administration, design and construction. These funds should not be used to fund annual operation and maintenance activities (i.e. water quality monitoring programs).

*MSBUs for Stormwater Maintenance*

Individual Municipal Service Benefit Units (MSBUs) can be created for the purpose of providing maintenance of stormwater management facilities owned or operated by the County. This can be established for subdivisions or for areas contributing to regionalized facilities (Santa Rosa County currently does not have any regionalized facilities). In the case of regionalized facilities, the individual boundaries for each of the MSBUs are based upon the integrated drainage facility and may not always coincide with subdivision lines. Those properties served by the integrated stormwater management facility are considered part of the MSBU. Residential parcels within each MSBU are assessed the same rate for the services provided by the County. In MSBUs that contain non-residential parcels, an equivalent assessment is calculated based on the median size of the residential parcels within the same MSBU. The non-residential parcels are measured individually and then divided by the residential equivalent unit to determine the number of billing units for each non-residential parcel.

The Maintenance Assessment standardizes the services provided, the level of service received and the collection method for all stormwater facilities. Services covered under this type of assessment could include:

- mowing (26 or 52 times per year)
- aquatic weed control (12 times per year)
- minor maintenance (as needed)
- structure inspections
- contract management and routine inspections

In some Counties, the MSBU implementing ordinance allows for a separate assessment for capital facility repairs on an as-needed basis by establishing a provision to borrow funds from the County's General Fund. When a capital facility repair is identified, the General Fund will initially fund the repair and the individual MSBU will repay the General Fund for the cost of the repair with interest over an established period of time.

*Stormwater Utility – Special Assessment*

Utilizing revenues from a user charge system to fund stormwater management programs has been successful in Florida. The concept was developed in the western U.S. and has been used for a number of years. The first city in Florida to implement such a program was Tallahassee in October, 1986. Since this time, a number of other cities and counties have adopted ordinances to implement a stormwater utility.

A stormwater utility includes a fee structure whereby the customer pays a fee consistent with the contribution to the need for the stormwater service. The utility could be established County wide or for a sub area of the County. Currently the City of Milton has a stormwater utility. Most stormwater utilities in Florida use impervious area to measure each customers contribution: the greater the impervious area, the greater the fee. The merits of the stormwater utility are that there is a direct connection between the fee and the need for service, and the fee provides a long-term, dedicated funding source.

The stormwater utility can be used to fund administration, operation and maintenance, renewal/replacement, capital improvements, and water quality monitoring. The income can also be used to

pay the debt service for a stormwater capital improvement program, thereby leveraging the utility's annual revenue into a major program. Advantages of the program include:

- A stable funding source for all stormwater activities.
- Dedicated funding for the County's stormwater management program, (i.e., operation/maintenance, planning/design;
- The potential to associate the stormwater utility fee with the other utilities administered by the county; and
- A fee schedule based on contribution rather than property valuation (i.e., user fee);

After reviewing the benefits and deficiencies associated with each financial alternative, General Fund and a Stormwater Utility are the only two funding sources capable of addressing a comprehensive stormwater management program on a county-wide basis. The major distinction between the two alternatives is the method of allocating the costs for stormwater management. The General Fund is made up of revenues generated from ad-valorem taxes – income based on property value which does not correlate with the runoff contribution of the property nor to the benefits received from the stormwater management system. Competition for General Fund revenues from other governmental programs often results in less than adequate funding for the stormwater management program. Funds generated through the implementation of a stormwater utility are dedicated entirely to the stormwater management program similar to other enterprise funds. The costs are allocated to customers of the utility based on the quantity and quality of the stormwater, which is likely to be generated by each property using the correlation between the amount of impervious area and the stormwater runoff quality/quantity. Considering the high level of competition for limited General Fund revenues, and the ability to dedicate revenues from a stormwater utility, the County should consider the implementation of a stormwater utility as a dedicated source of revenues to fund the stormwater management program and capital improvements.

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## **4.4 Potable Water**

### **4.4.1 Introduction to Potable Water in General**

Potable water is the term applied to water that is considered fit for human consumption. This resource is not only used as drinking water, but for cooking, washing clothes and dishes, bathing, and other various commercial and industrial purposes. Within Santa Rosa County, the average daily usage of potable water is approximately 100 gallons per person per day (gpcd).

With the rapid growth rate of Santa Rosa County, an important part of the planning process is the evaluation of the potable water resources available. The availability of potable water has major implications regarding the type and density of development an area can accommodate. The availability of potable water is dependent on the type and capacity of facilities, the existing regulations, and the nature of the intended use. Generally, potable water is made available through a system consisting of three principal components: a water source, treatment facilities, and a storage and distribution system.

The purpose of the Santa Rosa County Potable Water Element is to identify existing and future sources of potable water supply, potable water needs; determine the adequacy of existing facilities to meet those needs and to define operational responsibilities, geographic service areas, and the level of service provided to the customer. The analysis of the existing conditions and future needs then serves as a basis for formulating suitable recommendations concerning the management of the potable water system, in addition to formulating the Goals, Objectives and Policies for effective management of the potable water resource in the future.

### **4.4.2 Potable Water Supply in Santa Rosa County – Community Systems and Individual On-Site Wells**

In general, potable water is either produced from surface water (lakes, rivers, man-made surface impoundments, etc.) or groundwater. Surface water, groundwater, or a combination of the two constitutes a supply source for potable water systems. In Santa Rosa County, as is the case for most of Florida, groundwater is the sole source of potable water.

The water withdrawn from the source is commonly referred to as raw water. This raw water typically requires treatment before being used for public consumption. Treatment removes impurities from the raw water in order to improve its quality for either public health or aesthetic reasons, or both. The treatment process adds to the cost of supplying water, but it also expands the range of raw water sources that can be used. In Santa Rosa County, water drawn from wells using the Sand and Gravel Aquifer as a source requires minimal treatment at present time.

After treatment, the water is supplied to individual users via a system of pipes and storage reservoirs. In the smallest systems, for individual households or businesses, the entire potable water system is normally contained on the development site (individual wells). In larger community systems the withdrawal and treatment may take place some distance away from the final users, and an extensive distribution network may be required. Large transmission lines, called distribution mains, carry water to major demand areas and interconnect with a network of smaller lines which eventually supply individual establishments. Both the distribution mains and distribution networks should be interconnected to allow water to circulate within the system to areas of highest momentary demand.

Water is delivered under pressure within the distribution system in order to ensure adequate flow to meet demands. Demand fluctuates during each day, usually exhibiting peaks during the morning and evening hours corresponding to periods of highest residential use. Localized demand peaks also occur when the system is designed and used for firefighting purposes. In order to provide adequate quantities and pressure to meet peak use and fire flow demands, storage tanks are linked with the distribution system at strategic locations. During low demand periods, these tanks are filled as water is pumped into the system. During the peak demand periods, water flows into the distribution system to augment flows and maintain pressure. Ground level and elevated storage tanks are both commonly used. Elevated storage tanks (water towers) are usually the most economical. Many systems also include auxiliary pumps, which operate during peak demand periods.

#### **4.4.3 Existing Conditions – Potable Water Provision in Santa Rosa County**

In Santa Rosa County, the source of groundwater is either the shallower surficial aquifer, known as the Sand-and-Gravel Aquifer, or the deeper Floridan Aquifer. According to the Northwest Florida Water Management District, the Sand-and-Gravel Aquifer is the principal source for potable water in Santa Rosa and Escambia Counties.

##### **4.4.3.1 Hydrogeology**

The hydrology of the West Florida Region consists of four major aquifers: the Surficial Aquifer System, which includes the Sand-and-Gravel Aquifer, the Floridan Aquifer, Sub-Floridan System, and the Intermediate System. The composition of the Floridan System and Surficial Aquifer System allows for the storing and transmitting of ground water to, from, and throughout the respective aquifer. Each of these Systems is different, however, in that each has different water yielding properties due to variations in composition and thickness.

The thickness of the Surficial Aquifer System is variable. Its thickness ranges from a few feet to as much as 300 feet in the western part of the Region. In most of Santa Rosa County and in all of Escambia County, the Surficial Aquifer System is the primary source of potable water and is commonly called the Sand-and-Gravel Aquifer. The primary components of this aquifer are sand, clays, and gravel, with sands being the primary component. East of the Choctawhatchee River the aquifer is thin and is a minor water-bearing layer.

##### **4.4.3.2 Environmental Constraints**

Water quality within source water aquifers is of concern in Santa Rosa County for two reasons: (1) susceptibility of saline-water intrusion from the Gulf of Mexico and Santa Rosa Sound and upconing from the Floridan Aquifer along the coast and (2) susceptibility of the surficial aquifer to contamination from human activities. Such activities include the dredging of canals, which may create an avenue for saltwater to enter the surficial aquifer system, the spilling or leaking of chemicals into the ground and septic tanks percolating to the water table.

Saline water intrusion impacts the water supply in three ways: (1) in areas where water in the Floridan Aquifer is potable, upconing of saline water can raise the chloride concentration above drinking water standards; (2) in areas of heavy irrigation, a higher salinity of Floridan water percolates into the surficial aquifer therefore raising the chloride and sulfate concentration in the surficial aquifer. As the salinity of the irrigation water increases, the rate of contamination of the surficial aquifer due to percolation increases; and (3) in severe cases, upconing of poorer quality water may cause the water to become too saline for irrigation. Lowering of the potentiometric surface and increased contamination of the surficial aquifer is

also contributed to by free-flowing or leaky wells. While the greatest need for potable water is along the coast where the population is more concentrated, excessive pumping of the Floridan Aquifer along the coast increases the possibility of more widespread saltwater intrusion. The development of well fields farther inland, specifically those associated with the Fairpoint Regional Utility System, has worked to alleviate this problem. Further analysis of this is provided below.

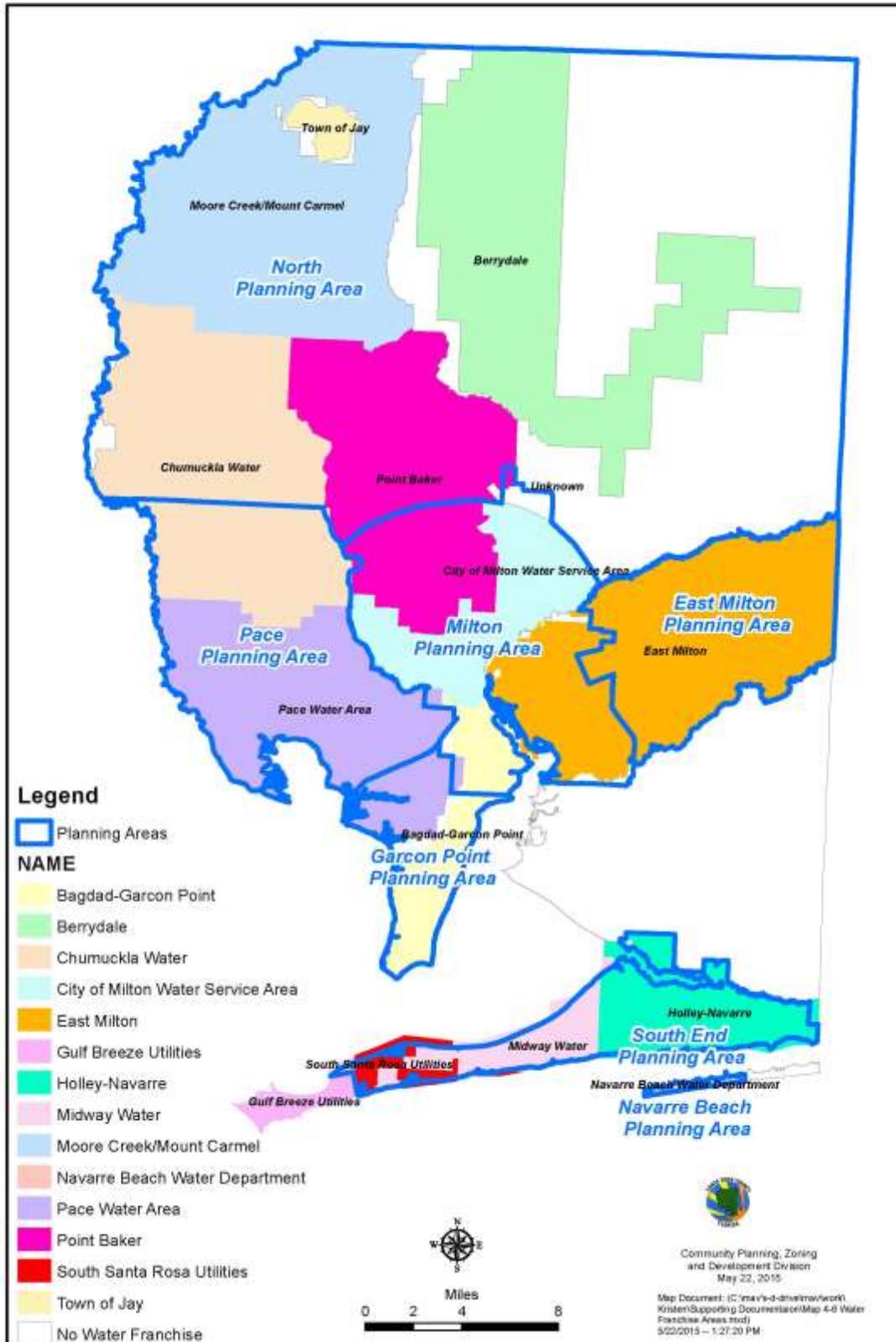
#### 4.4.3.3 Existing Community Water Systems

Within Santa Rosa County, water supply systems large enough to require consumptive use permits from the Department of Environmental Protection (DEP) fall into one of three categories: Community Water Systems, Non-Transient Non-Community Water Systems, and Non-Community Water Systems. These systems may be either public systems or privately owned. In Santa Rosa County, there are thirteen (13) Community Water Systems, four (4) Non-Transient, Non-Community Water Systems, and eight (8) Non-Community Water Systems permitted by DEP.

Of the thirteen community water systems in Santa Rosa County, one is County operated, there are three municipal systems and ten privately owned systems under franchise agreements with the County. Each of these systems are operated independently and are responsible for such items as financial stability, meeting state level requirements, and ensuring the availability of water to meet future demands.

In general, more than 70% of existing residential development in the County located within a water franchise area is served by a potable water utility, with higher connection percentages seen in urbanized areas of the County (See **Table 4-7**). For instance, the Town of Jay, Navarre Beach and the southern end of the County are nearly 100% connected to a centralized potable water provider. The remaining development in the County has a private well source for potable water. **Map 4-6** depicts the franchised Potable Water Service Areas in Santa Rosa County. **Table 4-4** provides basic information on the 13 community water systems operating within the County including number of wells, well source and amount of water pumped or purchased. One of the critical elements provided by these community water systems is fire protection.

Map 4-6 Water Franchise Areas of Santa Rosa County



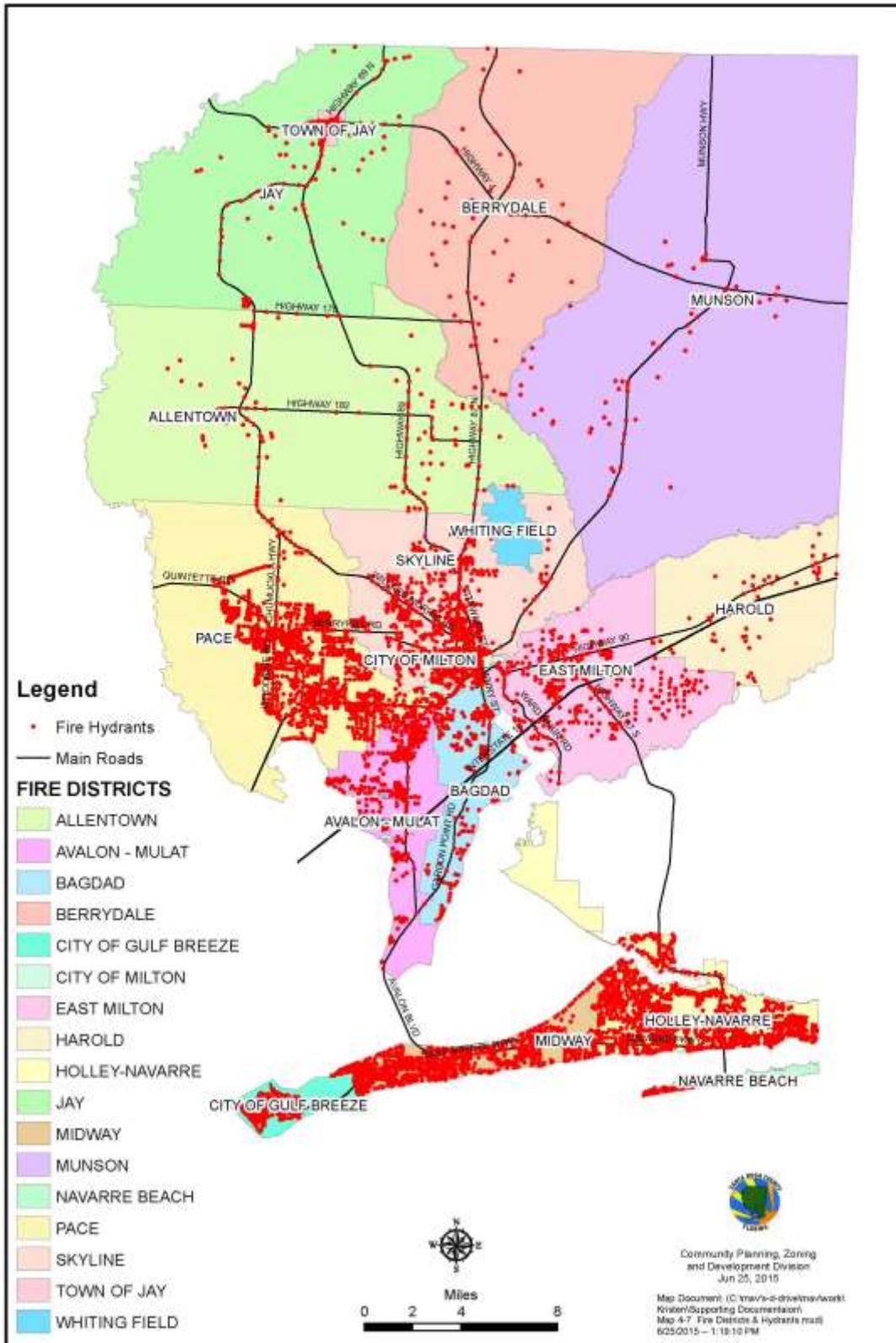
### *Fire Protection*

The responsibility for evaluating and classifying the adequacy of fire protection in an area lies within the Insurance Service Office (ISO). The ISO has established a classification scheme to evaluate areas within defined fire department service areas with ratings of one to ten, with one representing the highest level of fire protection and ten representing the lowest level of fire protection or no protection at all. The classification scheme is based upon the evaluation of many different aspects of an area, including the water supply system, the serving fire department, and the alarm notification system. The evaluation of the water supply system represents 40 percent of the total evaluation and covers the system storage capacity, pump capacity, emergency supply sources (defined as systems and facilities not ordinarily in use), supplemental suction supply sources for use by the fire department including surface water sources, wells, cisterns, water supply carried by the fire department in tanker trucks, transmission and distribution network capacity to deliver fire flow and the distribution, type frequency of inspection and the condition of the available fire hydrants. The fire protection within a department service area is used by insurance companies in setting homeowner's insurance rates.

Santa Rosa County currently has seventeen (17) defined fire department districts. These districts serve all portions of the County. The majority of the subdivisions within the County have been equipped with the necessary fire fighting equipment (i.e. fire hydrants, etc.). However, in a few isolated incidents, the fire department continues to use tanker trucks where this equipment is not present. These facilities have been given split classification under the ISO classification system. The primary rating, or the first number in the representative rating, indicates the rating for facilities that are located within five miles of an existing fire station and are within 1,000 feet of a fire hydrant. On the other hand, the second classification number is for facilities that are within 5 miles of an existing fire station, but are not within 1,000 feet of a fire hydrant. In this latter case, the highest obtainable rating is 9 (on the one through ten scale). The 11 districts with split ISO ratings have at least a 9 secondary rating. The 17 districts in Santa Rosa County have primary ratings in the range of 4 to 8.

**Map 4-7** depicts the County's individual fire districts as well as the location of existing fire hydrants within the County. As can be seen, the location of fire hydrants follows the location of centralized water.

Map 4-7 Fire Districts & Hydrants within Santa Rosa County



**Table 4-4: Water Utility Operational Data**

<b>Water Utility Operational Data</b>	<b>2014 Total Water Pumped Mg/Yr</b>	<b>2014 Total Water Sold Mg/Yr</b>	<b>2014 Water Purchased from FRUS Mg/Yr</b>	<b>2014 Water Loss %</b>	<b>Well Source and Number Floridan/Sand – and-Gravel</b>
Bagdad-Garcon Point Water System	215.0	139.2	0.0	9.5	(0/3)
Berrydale Water System	108.4	51.2	0.0	10.4	(0/3)
<i>Chumuckla Water System</i>	108.9	88.2	0.0	5.1	(0/3)
East Milton Water System	537.7	479.1	0.0	5.9	(1/5)
Fairpoint Regional Utility System	754.1	639.6	0.0	8.0	(0/6)
Gulf Breeze Utility Department	0.0	239.3	272.3	12.1	(0/0)
South Santa Rosa Utilities	0.0	286.4	164.5	13.0	(0/0)
Holley-Navarre Water System	601.6	853.1	182.5	9.0	(4/1)
Jay Utility Department	61.8	43.1	0.0	11.0	(0/2)
Midway Water System	325.1	350.3	37.4	2.5	(2/2)
Milton Utility Department	612.8	559.2	0.0	7.5	(0/6)
Moore Creek / Mount Carmel Water System	84.6	65.8	0.1	12.3	(1/2)
Navarre Beach Water and Sewer Department	113.2	88.5	0.0	25.0	(2/2)
Pace Water System	1349.0	1030.8	0.0	10.2	(0/11)
Point Baker Water System	283.6	223.3	0.0	7.4	(0/5)

Source: 2014 Santa Rosa County Utility Operational Status Report

#### 4.4.3.4 Level of Service Standard

The level of service (LOS) standard for potable water facilities providing service in Santa Rosa County is 100 gallons per capita per day (average demand).

##### *Potable Water Demand*

The demand for potable water, and consequently the capacity of potable water systems, is described in terms of gallons per day (gpd). The basic unit normally used in estimating demand is based on consumption per capita (per person), expressed in gallons per capita per day (gpcd). It is an accepted practice to convert per capita demand to equivalent residential unit (ERU) demand based on the average household size within an area. Demand for non-residential uses, such as commercial or industrial users, are also frequently converted to ERU figures based on statistical records of average daily demand for the various non-residential users.

This means of measuring demand, either in gallons per capita per day (gpcd) or ERU, provides the means for establishing the level of service standard for a facility. For example, if average daily water use is 100 gallons per person per day, the level of service (LOS) standard would be expressed as:

LOS = 100 gpcd, average daily demand

If the average household size within the area is 2.63 persons per household, an equivalent way of expressing the LOS standard is:

LOS = 263 gpd per ERU, average daily demand

Similarly, if a commercial business uses 1,000 gallons per day per 1,000 square feet of floor area, the demand created by an establishment of 1,000 square feet would equate to 3.8 ERU on an average daily basis. By this method, future demand can be estimated by projecting the total population or dwelling units, plus the total ERU of non-residential users to be served by a facility. The needed capacity for a facility can therefore be projected.

##### *Connection Requirements*

It is important to understand that level of service criteria centralized water really indicates the ability of the treatment facilities and production sources to accommodate demand. This demand is primarily population driven. The LOS standard means, for instance, that a potable water treatment facility such as the Navarre Beach WTF would need to be able to supply and treat 100 gallons of water per person served per day. If a new development were to come on line that needed capacity, we would look at the ability of the WTF to serve existing customers at that LOS plus the new customers added by the new development. Linear infrastructure such as the necessary lines that make up water systems transmission infrastructure face additional challenges. This is where coordination of land use and development approvals becomes very important. Two types of development patterns can be problematic to future development desiring water infrastructure, retrofit for environmental reasons or fire protection, and extension of services in general. These types of development patterns can make future extension cost prohibitive and can “lock in” future development by making extensions difficult.

- 1) Leap frog development - development that leaps over large vacant areas; and

- 2) Barrier development – development that occurs within relatively close proximity to existing linear infrastructure and does not connect to those systems.

Connection to a public water and/or sewer system if available (basically in front of home) is required for all single family residential projects requiring a building permit. The County has additional requirements for developers platting new subdivisions that may require the extension of lines to the new development and within the new development. The following table (**Table 4-5**) summarizes current Land Development Code and Comprehensive Plan connection policies for central water.

**Table 4-5: Current Water Connection Policy for Residential Developments Requiring Extension**

	<b>LOS (Utility) Requirement</b>	<b>Developer Requirement</b>
<b>Central Water</b>	100 gallons per capita per day	No linear extension requirement is in place but if central water is immediately available, platted subdivisions (excludes metes and bounds subdivisions requiring extension) are required to connect and install according to engineering specifications. Single family homes in metes in metes and bound subdivisions are only required to connect if service is directly available (in front of home).

**4.4.3.5 Community Water System Analysis**

*Projected Demand Analysis for Santa Rosa County Community Water Systems*

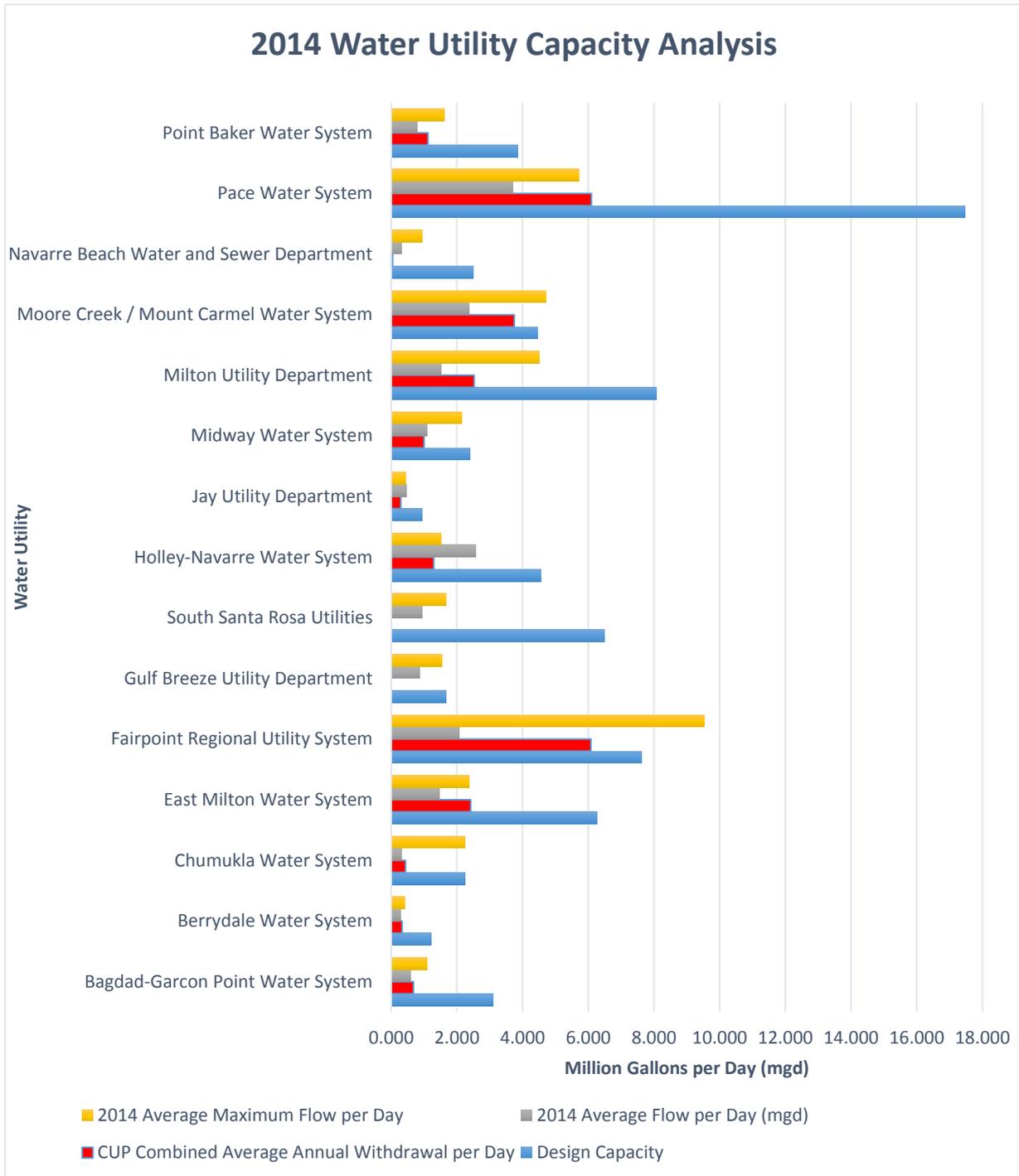
The 2014 Santa Rosa County Utility Operational Status Report is hereby incorporated by reference. The following sections represent critical sections of this document.

When looking at water facilities in terms of capacity, there are three basic capacity parameters. The first is well capacity or the capacity to produce water without the need to develop additional wells. The second is treatment plant capacity, which is sometimes referred to as design capacity. This represents the ability of the plant to treat water flowing through from the well or wholesaler (water system that sells water to another water system) to the end user. In this area, this is mainly chlorination as a means of disinfection and other additives for pH correction or transmission system protection. Since higher level treatment, for the most part, is not necessary due to high water quality and treatment is dose based according to flow, capacity is really related to well capacity. Most utilities in the County report well capacity as design capacity for this reason. The potential for additional future treatment demands have been lessened with the utilization of Sand-and-Gravel Aquifer wells rather than Floridan Aquifer wells for the urbanizing areas in the southern portion of the County as well as the middle County areas, and by the recent adoption of the County's well field protection ordinance. The third and final parameter is storage capacity which is basically the amount of water that can be stored in tanks for use at a later time. If 25% of the water systems maximum daily flow is greater than the combined storage capacity then, by rule, it will trigger a study by the Florida Department of Environmental Protection.

For purposes of this report, water facility design capacity and/or well capacity - or the maximum allowed average daily well flow from the Northwest Florida Water Management District Consumptive Use Permit (CUP) - were compared to an average of monthly flows figure. It should

be noted that this average of monthly flows figure most likely overestimates current system demand by 10-15%. However, the results of this comparison provided a relatively good look at available capacities for the water systems in the County and is presented in **Figure 4-2** below. **Table 4-6** below, provides the demand projections estimated by the Northwest Water Management District through 2025 (2013) and then compares these projections to design and well consumptive use permit capacities/allowances. The 2025 CUP deficits for Holley Navarre, Navarre Beach, and Midway are expected since these systems are purchasing water from FRUS. As can be seen in this table, there is sufficient water facility design capacity surplus to accommodate projected demand through 2025.

Figure 4-2: Current Capacity Analysis Summary Chart



Notes: The City of Gulf Breeze and South Santa Rosa Utilities do not have a Consumptive Use Permit since all water is purchased from FRUS.

<b>Table 4-6: Water Utility Capacity and Demand Comparison</b>	<b>Average Daily Consumptive Use Permit Allowance Mg/d</b>	<b>Design Capacity Mg/d</b>	<b>Storage Capacity Mg</b>	<b>2015 Demand Projection Mg/d</b>	<b>2020 Demand Projection Mg/d</b>	<b>2025 Demand Projection Mg/d</b>	<b>2030 Demand Projection Mg/d</b>	<b>% Design Capacity 2025</b>	<b>% Daily Consumptive Use Permit Allowance 2025</b>
Bagdad-Garcon Point Water System	0.680	3.096	0.750	0.533	0.585	0.635	0.678	20%	93%
Berrydale Water System	0.336	1.224	0.375	0.234	0.246	0.255	0.260	21%	76%
Chumuckla Water System	0.439	2.250	0.390	0.375	0.413	0.447	0.478	20%	102%
East Milton Water System	2.420	6.264	2.150	1.384	1.521	1.649	1.762	26%	68%
Fairpoint Regional Utility System	6.080	7.632	0.300	4.314	4.687	5.034	5.331	66%	83%
Gulf Breeze Utility Department	NA	1.656	1.100	0.962	0.962	0.962	0.962	58%	NA
South Santa Rosa Utilities	NA	6.480	1.650	0.848	0.893	0.925	0.942	14%	NA
Holley-Navarre Water	1.300	4.572	1.150	2.915	3.264	3.604	3.918	79%	277%
Jay Utility Department	0.290	0.936	0.175	0.189	0.189	0.189	0.189	20%	65%
Midway Water System	1.000	2.401	1.800	1.300	1.428	1.549	1.655	65%	155%
Milton Utility Department	2.530	8.064	1.600	1.949	2.142	2.323	2.482	29%	92%
Moore Creek / Mount Carmel Water Sys	0.375	0.446	0.500	0.284	0.299	0.310	0.316	69%	83%
Navarre Beach Water and Sewer Dept	0.400	2.500	0.550	0.280	0.295	0.306	0.312	12%	765%
Pace Water System	6.100	17.482	3.900	4.069	4.639	5.214	5.766	30%	85%
Point Baker Water System	1.120	3.859	1.125	0.854	0.938	1.017	1.087	26%	91%

<b>Table 4-7: Existing Structure Count by Water Franchise Area and % Connected</b>	<b>Population Served</b>	<b>Commercial</b>	<b>High Water Usage Community Facilities</b>	<b>Low Water Usage Community Facilities</b>	<b>Multi-Family Residential Units</b>	<b>Single Family Residential Units</b>	<b>Commercial Connections</b>	<b>Residential Connections</b>	<b>% Connected Commercial</b>	<b>% Connected Residential</b>
<b>Water Utility</b>										
Bagdad-Garcon Point Water System	5,672	34	11	23	43	2,356	79	2190	116%	91%
Berrydale Water System	2,194	48	18	38	7	1,207	15	847	14%	70%
Chumuckla Water System	3,779	47	14	29	7	2,024	25	1,459	28%	72%
East Milton Water System	9,596	273	24	88	18	4,483	141	3,705	37%	82%
Fairpoint Regional Utility System	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gulf Breeze Utility Department	6,457	406	48	35	568	2,050	272	2,493	56%	95%
South Santa Rosa Utilities	10,715	155	6	6	478	3,326	133	4,137	80%	109%
Holley-Navarre Water System	36,760	568	45	74	1388	13,563	444	14,193	65%	95%
Jay Utility Department	1,119	121	25	16	29	419	91	432	56%	96%
Midway Water System	14,149	613	14	62	989	6,624	266	5,463	39%	72%
Milton Utility Department	18,832	983	97	111	1165	6,775	636	7,271	53%	92%
Moore Creek / Mount Carmel Water System	2,940	36	13	18	7	1,372	19	1,135	28%	82%
Navarre Beach Water and Sewer Dept.	5,030	38	7	16	1,575	367	10	1,942	16%	100%
Pace Water System	34,235	905	88	97	739	14,279	599	13,218	55%	88%
Point Baker Water System	8,770	76	29	24	225	3,925	29	3,386	22%	82%

The following analysis (**Table 4-8**) provides information related to the amount of development potential within each utility franchise area on vacant lands as allocated on the current Santa Rosa County Future Land Use Map. This analysis provides information on the County’s long range planning program and how potable water facilities and services may or may not be in place to serve development potential at full build-out. This information may be used by the water utilities for master planning or for the programming of future capital projects. This analysis also points out that many franchise areas have limited potential for growth, for instance the Berrydale , Jay, Moore Creek and Navarre Beach franchise areas are at near build-out with a relatively small amount of remaining development potential. It should also be noted that the utilities purchasing water from FRUS are expected to have a CUP Permitted capacity deficit. These systems include Navarre Beach, Holley Navarre and Midway. Additional capacity required in million gallons per day is calculated as residential units allocated on vacant land x 2.64 x 100 / 1,000,000. Where 2.64 is the average household size (2013) and 100 gpd/capita is the adopted level of service standard, 2012 data was utilized for allowable residential units since 2012 Future Land Use Map amendments where not significant

<b>Table 4-8: Build Out Analysis  Water Utility</b>	<b>Total Residential Units Allowable In Franchise Area</b>	<b>Additional Capacity Required at Adopted LOS mgd</b>	<b>Plus Projected 2015 Demand mgd</b>	<b>CUP Combined Annual Withdrawal Permitted Capacity mgd</b>	<b>Existing Design Capacity mgd</b>	<b>Permitted Surplus/ (Deficit) mgd</b>	<b>Design Surplus/ (Deficit) mgd</b>
Berrydale	236	0.06	0.23	0.34	1.22	0.04	0.93
Chumuckla	1,470	0.38	0.38	0.44	2.25	-0.32	1.49
East Milton	11,194	2.90	1.38	2.42	6.26	-1.92	1.92
Holley-Navarre	38,844	10.06	1.36	1.30	4.57	-11.87	-8.60
Midway	21,840	5.66	0.60	1.00	2.40	-6.07	-4.66
Moore Creek/Mt Carmel	208	0.05	0.28	0.38	3.75	0.04	3.41
Pace	34,665	8.98	4.07	6.10	17.48	-7.12	4.26
Point Baker	9,384	2.43	0.85	1.12	1.12	-2.21	-2.21
Bagdad- Garcon Point	13,400	3.46	0.53	0.68	3.10	-3.39	-0.97
Navarre Beach	858	0.22	0.04	0.04	2.50	-0.47	1.99

Note: City of Gulf Breeze and South Santa Rosa Utilities purchase 100% of water from FRUS. Navarre Beach, Holley Navarre and Midway also purchase from FRUS, predicting inflation of deficiencies. This table only includes utilities operating completely outside of any incorporated city or town.

#### 4.4.4 Protection of Potable Water Quality and Quantity

##### 4.4.4.1 Well Field Areas of Influence and Well Head Protection in Santa Rosa County

Land use activities can reduce the quality and quantity of water infiltrating into the aquifer, which can directly affect the County's potable water supplies. In the case of the well field areas of influence, rain which infiltrates into the soil within the area of influence may be drawn down into the well field cone of depression and thus into the County's wells. Any activity on the land surface that reduces the quantity of water infiltrating into the aquifer can directly affect the water supply. For this reason, the area of influence is the most important of the areas having significant water resource potential. Activities within the area of influence which can directly influence the water supply are listed below:

- Paving or covering soils of excellent to good recharge potential;
- Overdrainage of water table by use of deep ditches;
- Over pumping of private wells for irrigation of lawns;
- Excavation and recontouring of soils of excellent to good recharge potential;
- Development of wetlands;
- Seepage of contaminants such as hazardous or toxic substances into the soil.

The majority of water that infiltrates into the local aquifer comes through soils having excellent to good recharge potential. These soils are essential to the continuous recharge of the County's water supply. Development in areas where such soils are located can result in paving and covering of these soils so that less recharge reaches the local aquifer. Limiting impervious cover of these soils and making provision for no reduction of recharge are ways to mitigate the effects of development in highly pervious soils.

Ditches that are excavated below the water table have the potential to lower the historic water table in the vicinity of the ditch. Ditches that are below the water table and which are perpendicular to the flow of groundwater have very high potential for lowering the water table. The lowering of the water table has a two-fold effect: a lower water table reduces the volume of water available for public supply and increases the potential for saltwater intrusion. Designing ditches or swales which are higher than the water table, diversion of discharge to retention facilities for subsequent percolation into the groundwater system, minimizing ditches which are perpendicular to groundwater flow and piping of surface runoff will help reduce the adverse impacts of drainage facilities on the water table. Lakes, retention ponds and detention ponds have the same effect as ditches if they are excavated below the water table. Where possible, such drainage facilities should be designed as dry facilities except during operation.

When owners of private wells in the vicinity of the well fields pump water from the local aquifer, they reduce the volume of water available for public supply as well as lower the water table. Over pumpage during droughts can lead to further reduction of water levels and increase the potential for saltwater intrusion. Except during emergency conditions, such as droughts, the County has little control of pumpage from private wells. However, the County may take steps to reduce outside irrigation by encouraging the use of drought resistant grasses and better irrigation practices. Education of the public on irrigation and fertilization practices could help homeowners develop lawns with deeper root systems and thus more capable of going several days between waterings.

Development of wetlands has significant impact within the area of influence of well fields. Because of the very nature of wetlands, to develop such areas requires drainage facilities. The high water table in the wetland can create problems during construction and during periods of high rainfall. Ditching and drainage facilities are designed to lower the water table of the wetland. The wetland area can serve as a means of maintaining the water table in the area around the wetland. Usually, the wetland area is at lower elevations than the surrounding land. Groundwater flow is often toward the wetland and the rate at which water is discharged to the wetland is balanced by the evapo-transpiration losses of the wetland. Draining the wetland and lowering the water table will also lower the water table

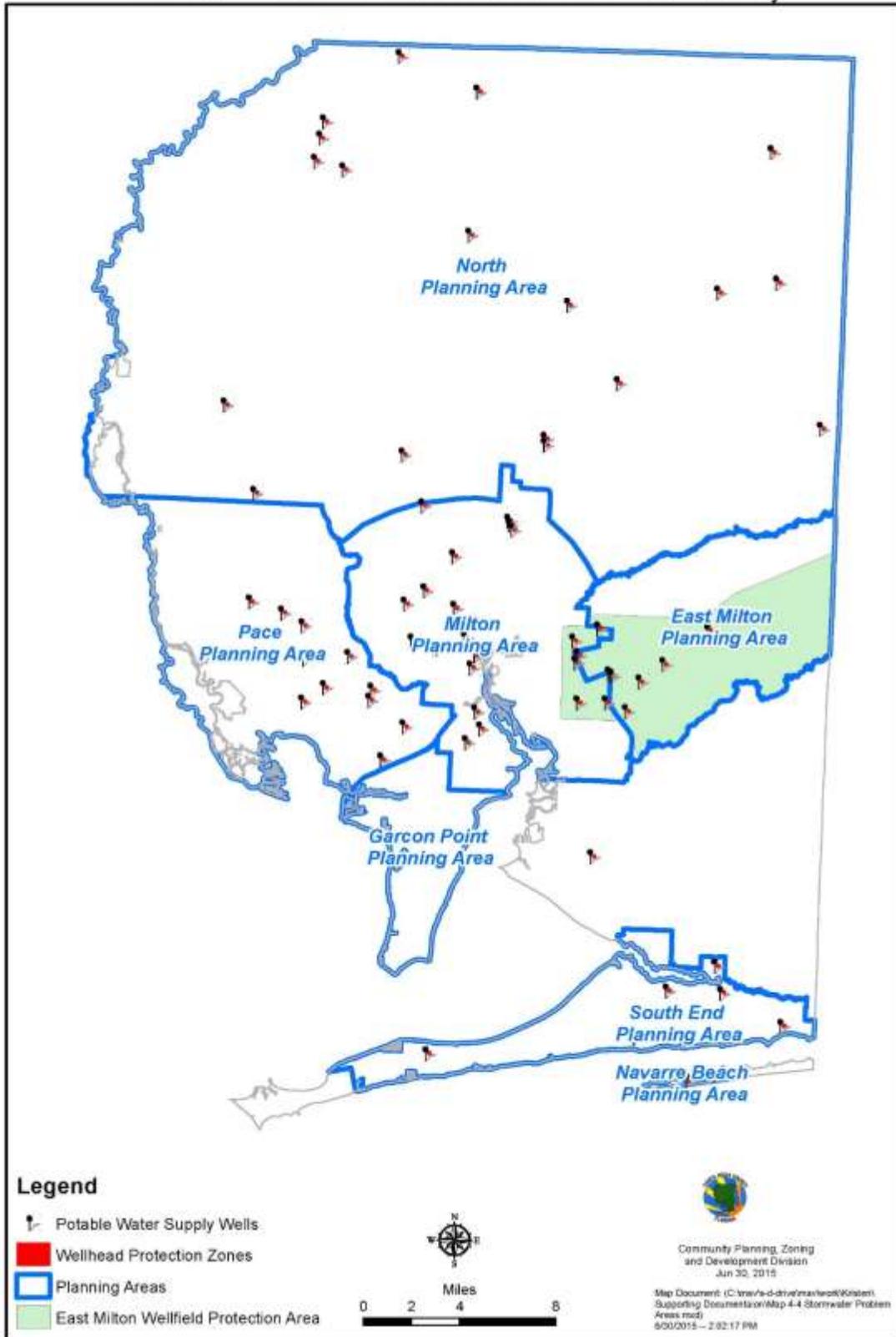
of the surrounding land, thus reducing water storage in the aquifer and the volume of water available for public supply. During periods of drought, the wetland may serve as a source of recharge for the aquifer and thus reduce the adverse impact of the drought. If development is allowed, it should be a type that requires no drainage construction or impact to the water table.

The vulnerability of the groundwater system to hazardous and toxic substances has recently become an important issue to purveyors of public supplies. Such contaminants include heavy metals and a wide variety of inorganic and organic compounds such as solvents, pesticides, fertilizers, herbicides, radionuclides and petroleum products. In addition to these compounds, other pollutants include viruses and microorganisms found in sewage and waste products from industrial processes. Potential sources of these contaminants are listed below:

- Landfills and dumps
- Underground storage tanks and pipelines
- Septic tanks
- Direct industrial and/or municipal discharges
- Leaks from sewer lines
- Stormwater runoff
- Land application of fertilizers, pesticides and chemicals
- Accidental, indiscriminate spills or-dumping

The Santa Rosa Board of County Commissioners recently adopted an East Milton Wellfield Protection Area zoning overlay district designed to protect groundwater from contamination (see **Map 4-8**). The Comprehensive Plan also contains well head protection policies. The protection area covers almost 51 square miles from Persimmon Hollow Road to the Okaloosa County line. Groundwater, contained in underground aquifers, is the source of drinking water in Santa Rosa County. The aquifer in this area supplies water to the East Milton Water System and the Fairpoint Regional Water System, which makes available water to all of the water systems in the south end of the county. Together these water systems provide water to approximately 50 percent of the county population. The new regulations will ensure that as the county continues to grow, and as commercial and industrial development expand in that area, the groundwater aquifer will remain a viable source of drinking water for county residents. This is accomplished through use limitations as well as applicable design standards.

Map 4-8 Wellhead Protection Zones (500') and East Milton Wellfield Protection Area - Santa Rosa County



#### 4.4.4.2 Areas of Groundwater Recharge and Aquifer Vulnerability

##### *Aquifer Recharge*

The NFWFMD publication “Hydrogeology of the Northwest Florida Water Management District” (1996) states the following regarding recharge in the western panhandle region: “Due to highly-permeable soils and the lack of effective confinement, the entire occurrence area for the aquifer is a recharge area.” ([http://nfwfwater.com/system/assets/1535/original/WRSR9604Hydrogeology\\_of\\_the\\_NFWFMD.compressed.pdf](http://nfwfwater.com/system/assets/1535/original/WRSR9604Hydrogeology_of_the_NFWFMD.compressed.pdf)) The Water Resources Atlas of Florida (Fernald & Purdum, 1998) also states on page 176 that “Groundwater in Northwest Florida is replenished by local recharge with minimal out-of-state contributions. Most of the area overlying the sand and gravel aquifer is a recharge area, and discharge areas are almost always near areas being recharged....High recharge areas generally produce abundant water, but the water is also more easily contaminated.”

In Santa Rosa County These areas are important to fresh water resources because they directly affect the volume of recharge entering the local aquifer. Activities that can reduce the beneficial use of these areas include:

- Paving or covering soils of excellent to good recharge potential.
- Over drainage of water table by use of deep ditches.

Both of the above activities were discussed above. The areas of groundwater recharge outside well field areas of influence are important to the County's overall water resources. Though water recharging the aquifer in these areas does not enter the public supply, it is available to homeowners through private wells. Water pumped for irrigation by individuals reduces demand on the public supply and thus enables the recharge within the area of influence to be used to supply more customers. Also, should the water table level drop in these areas, the potential for saltwater intrusion will increase with subsequent possible impact on the well fields. Thus, a reduction in recharge potential can have serious consequences throughout the County.

##### *Aquifer Vulnerability*

**Map 4-9** depicts the The Florida Aquifer Vulnerability Assessment project, or FAVA, for Santa Rosa County. This assessment provides maps that identify areas more vulnerable to contamination, which may require specialized levels of planning. They are developed using a defensible, scientific approach and rely on the combination of data about the natural aquifer system and water quality. Vulnerability maps developed for the FAVA project involved regional models for each major aquifer system: the Floridan, the intermediate and the surficial. Model extents are based on where the aquifers are major sources of fresh water. Some factors affecting aquifer vulnerability and which form FAVA model input include soil properties (permeability or drainage), how deeply buried aquifers are beneath land surface, the distribution of sinkholes or collapse features, and aquifer water levels. FAVA model output consists of vulnerability maps across the given study area exhibiting the probability that an aquifer could become contaminated resulting from activities at land surface.



#### 4.4.4.3 Wetlands, Lakes and Floodplains

Wetlands help maintain groundwater levels and remove some pollutants present in stormwater runoff. Wetlands also serve as storage areas for stormwater. Development is one activity which threatens the beneficial use of wetlands. Development invariably leads either to drainage of the wetland, filling or in some cases, both. As used in this sub-element, a wetland refers to areas which are naturally wet during much of the year or have a water table within 6 inches of the surface for at least 3 months of the year. A wetland area includes swamps, marshes and lakes. Frequently, wetlands can be determined by the types of natural vegetation or soils. The 100-year floodplain is the area that has probability of flooding in any one year out of a hundred. The 100-year floodplain frequently encompasses an area larger than the adjacent wetlands.

The filling of the 100-year floodplain may not reduce the water table, but it does have the adverse impact of reduction of storage volume within the 100-year floodplain. When the floodplain is filled, the storage-volume is displaced by an amount equal to the volume of fill. When floods occur, the water elevation will rise to higher levels because of the reduction of storage. The higher flood levels could affect residences or businesses to the extent that they are flooded (whereas before the floodplain was filled, these establishments did not flood). To prohibit the loss of floodplain, the County should limit development in the floodplain by requiring compensating storage whenever the 100-year floodplain is filled.

#### 4.4.4.4 Water Conservation Programs

Another key element to potable water supply planning involves protection of the water resources available through conservation. In order to offset the growing demands placed on the Floridan and Surficial Aquifer, conservation practices could be implemented include supply management and demand reduction.

Supply management practices include accurate metering, leak detection and pressure reduction. Meters are currently used to monitor water supply flow within the County. Conservation through reduction involves three primary components. These practices include conservation rate structures, reuse of wastewater effluent (which is discussed in more detail in the Wastewater Section), local water conservation ordinances, and consumer education. The characteristics of each utility and their respective customers determine the effectiveness of these practices.

##### *Reuse in Santa Rosa County*

Currently, in Santa Rosa County, the City of Gulf Breeze/South Santa Rosa Utilities and the Pace Water System, Inc. offer reclaimed water to residential lots for irrigation use. The use of reclaimed water for irrigation represents an alternative to either using potable Sand-and-Gravel water or individual surficial aquifer wells for lawn irrigation. Pace Water System, Inc. currently disposes of all effluent either to residential lots, commercial and golf course customers or to a wetland treatment system. Pace reported a total of 386 reuse customers with total flow of 0.363 Mg/d which represents about 31% of total system effluent. The City of Gulf Breeze operates an existing 3.0 Mg/d permitted capacity reuse system and has major customers include several spray irrigation areas exceeding 531 acres, including the Tiger Point Golf Course and the Gulf Breeze Zoo area. The Navarre Beach WWTP currently discharges into Santa Rosa Sound. However, plans are underway to discharge reclaimed water from the Navarre Beach facility into a regional reclaimed water system with reserve capacity designed to meet the future needs of south Santa Rosa County. Currently the Navarre Beach Water System is using 32,000 gallons per day of reclaimed water for irrigation at the Navarre Beach Sewage Treatment Plant. This is currently the only reuse application related to the Navarre Beach WWTP. Individual homeowners and multi-family uses on Navarre Beach either utilize potable water or individual surficial aquifer wells for irrigation. There have been relatively few irrigation wells permitted on Navarre Beach since 2000. This is most likely due to a combination of homeowners using potable water for irrigation and a general lack of landscaping requiring water on the beach due to the sandy nature of most beach yards.

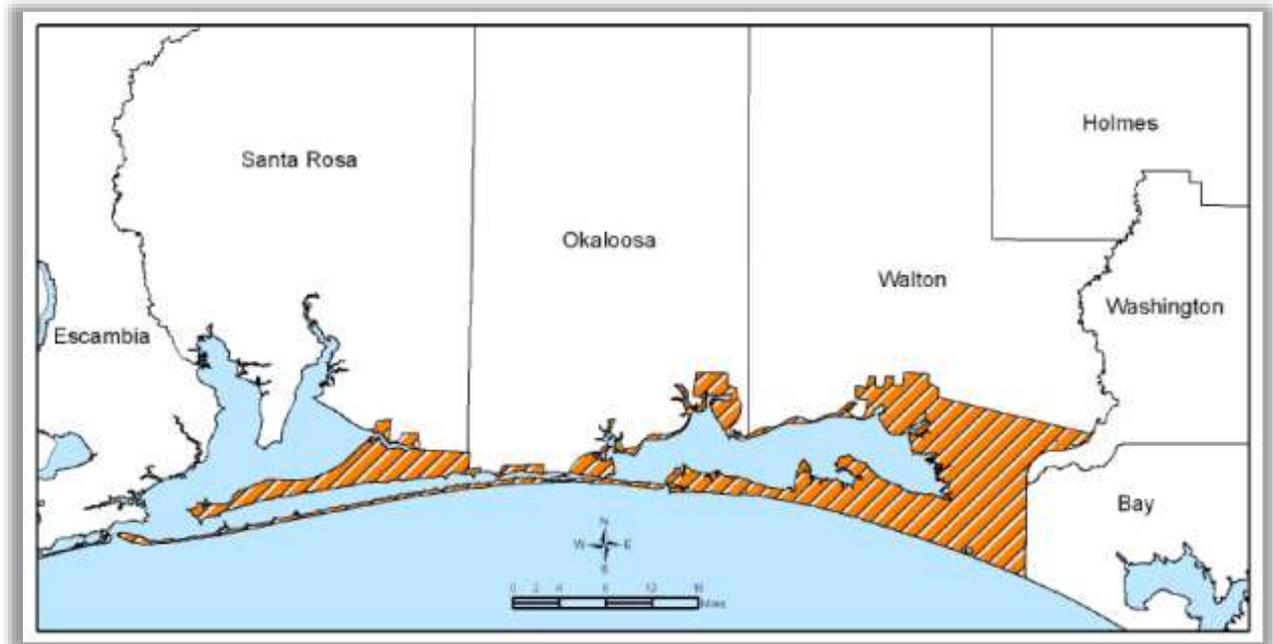
In general most residential development within the County utilizes either a shallow private well for irrigation or potable water for irrigation. There have been numerous irrigation wells permitted in the Pace area and in the southern portions of the County since 2000. These wells represent a better alternative to the utilization of high quality drinking water for irrigation and represent a significant barrier to the retrofit installation of reuse.

*Water Resources Caution Area (WRCA)*

In response to existing and anticipated water supply problems, the WMD has designated the coastal area of Santa Rosa, Okaloosa and Walton counties as a Water Resource Caution Area (WRCA). Refer to **Map 4-10 below**.

The WRCA designation subjects all non-exempt withdrawals to more rigorous scrutiny to ensure that the proposed withdrawal does not result in unacceptable impacts to the resource. Permittees within a WRCA also have increased water use reporting requirements, must implement water conservation measures, and must improve water use efficiencies. They are also required to perform an evaluation of the technical, environmental, and economic feasibility of providing reclaimed water for reuse. In Santa Rosa, Okaloosa, and Walton counties, the WRCA designation prohibits any new or expanded use of the Floridan Aquifer for nonpotable purposes.

**Map 4-10: Water Resource Caution Area**



*Regional Water Supply Plan*

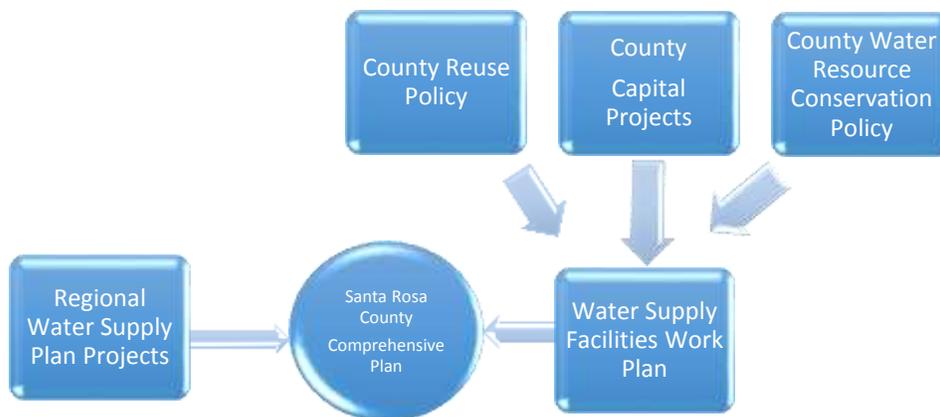
In order to aid in the development of alternative water supplies, a Regional Water Supply Plan (RWSP) that includes Santa Rosa County was developed initially in 2001 and was subsequently updated in 2006 and 2012. The RWSP was initially developed by the water management district to provide a strategy to meet the needs of the region and to protect the region’s water resources and related natural systems. This plan included a strategy for water resource conservation and water supply development. The update to the RWSP centered on 1) completing the 2000 Report tasks and ongoing work; 2) increasing the amount of

reclaimed water use (reuse water); and 3) identifying and initiating work on long range (2025 and beyond) solutions. The most recent update to the RWSP (2012) provides updated water usage forecast and includes the same basic strategies as previous versions.

Section 163,3164(c)3, F.S. requires that within 18 months of the approval of an updated RWSP, the County Comprehensive Plan must incorporate the alternative water supply project or projects selected by the local government from those identified within the RWSP. Importantly, the statute calls for the inclusion of alternative water supply projects, conservation and reuse necessary to meet the needs identified within the RWSP. The Comprehensive Plan is to also include a work plan that covers at least 10 years for building public, private, and regional water supply facilities, including the development of alternative water supplies.

The Florida Legislature has also established a coordinated planning process between the Regional Water Supply Plan developed by the District pursuant to Chapter 373, Florida Statutes (F.S.), and the Santa Rosa County Comprehensive Plan. Under this process, the County must address in its Comprehensive Plan, the water supply sources necessary to meet and achieve existing and projected water use demand for the established planning period considering the Regional Water Supply Plan (Section 163.3167(9), F.S.). This Work Plan is intended to accomplish coordinated water supply planning and to satisfy these statutory requirements. The most recent Water Supply Facilities Work Plan is incorporated herein by reference and the Comprehensive Plan was amended in 2013 to meet these requirements. **Figure 4-3**, found on the following page, describes the relationship between the Regional Water Supply Plan, this Water Supply Facilities Work Plan and the County Comprehensive Plan including County water policy development.

**Figure 4-3:** Relationship of Water Supply Facilities Work Plan to the County Comprehensive Plan



*Fairpoint Regional Utility*

The Fairpoint Regional Utility System was established in response to the Floridan Aquifer Resource Recovery Plan, and was designed to provide potable water to the portion of Santa Rosa County located within the Water Resource Caution Area utilizing the Sand-and Gravel Aquifer as an alternate water source. Production wells have been developed along with a pipeline in order to develop water production from the inland Sand and Gravel Aquifer for use in the coastal portions of the County. This development alleviates pumping pressures in the WRCA or from the coastal Floridan Aquifer. The Fairpoint Regional Utility System sells water to the City of Gulf Breeze as a sole source, to the Holley Navarre Water System,

the Midway Water System, and the Navarre Beach Water System as mentioned previously. All potable water supplied by the FRUS is harvested through six production wells.

## Infrastructure Appendix

### Existing Regulatory Framework for Wastewater

#### *Federal*

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972. The Florida Department of Environmental Protection (FDEP) is responsible for carrying out the Clean Water Act at the State level.

#### *State*

The centralized wastewater treatment facilities in the County are surface water dischargers or discharge into groundwater. Systems that discharge into surface waters such as the Navarre Beach WTF are subject to the National Pollutant Discharge Elimination System (NPDES) requirements. Other facilities in the County are authorized as groundwater dischargers through land-application or beneficial reuse of reclaimed water. The FDEP is responsible for the overall policy, including permitting, compliance and enforcement, on the Department's wastewater programs, both domestic and industrial wastewater, and coordination of the federally authorized NPDES program.

The Florida Department of Health or Santa Rosa County Health Department regulates septic tank and drain field installation in the State. Within each County, the DOH has an office to regulate septic systems. These regulations have been adopted by rule in Chapter 64E-6. While 64E-6 does not set the criteria for septic tank effluent quality, it does require that septic tanks are installed in such a manner that, with reasonable maintenance, they will not create a health hazard or endanger the safety of any domestic water supply (groundwater or surface water). In addition, 64E-6 also establishes criteria for mandatory connections to wastewater and potable water systems.

The Florida Public Service Commission has the responsibility for regulating the rates and service of privately-owned water and sewer utilities in counties where the Board of County Commissioners has officially transferred jurisdiction to the commission. This authority was set out by Chapter 367, F.S., in the "Water and Wastewater System Regulatory Law." The commission establishes service standards which regulated utilities must meet. Section 367.171 provides for the adoption of a resolution where counties may transfer authority to regulate services to the Public Service Commission. Santa Rosa County has not transferred jurisdiction to the Florida Public Service Commission and the wastewater utilities within the County are overseen by County ordinance (Chapter 22 of the County's Code of Ordinances).

#### *Regional*

The West Florida Regional Planning Council adopted the Strategic Regional Policy Plan (SRPP) in 1996. This document provides a long-range guide for the economic, physical, and social development of West Florida. The SRPP contains broad based goals related to sewer infrastructure. In addition, the Walton/Okaloosa/Santa Rosa Regional Utility Authority (RUA), which is staffed by the West Florida Regional Planning Council, was created in 1999 as a means to address water supply needs and protection

of water resources on a regional level. The RUA is comprised of the counties of Walton, Okaloosa and Santa Rosa and the municipalities of Destin, Fort Walton Beach, Gulf Breeze, Mary Esther and Niceville.

#### *Local*

Chapter 22 of the County's Code of Ordinances serves to regulate public utilities including wastewater and potable water facilities within the County. These regulations include the issuance and modification of franchise certificates, franchise operation, utility rate increase requests, operational procedures, abandonment of facilities, and reports.

Article 5 of the County's Land Development Code addresses Concurrency Management. In relation to sanitary sewer facilities, these regulations provide the County with guidelines for determining the availability of adequate facility capacity in the evaluation of development orders, provides criteria for concurrency review of these development orders, and provides level of service standards for these facilities.

The Santa Rosa Environmental Health Department is responsible for permitting, installation and operation of septic tanks and drain fields within the County. The Health Department follows guidelines established by DOH and DEP. The Health Department also oversees monitoring of septic tanks once in operation if there is any evidence of contamination to ground or surface water supply. This monitoring process is done in accordance with DEP and DOH standards.

Package treatment plants are also under the jurisdiction of the County Health Department in accordance with county and state regulations. Before any building permit is issued, septic tank sites and package treatment plant sites have to be inspected. Septic tanks and package treatment plants have to be operating properly before the permit is issued.

#### **Existing Regulatory Framework for Solid Waste**

The potential environmental impacts of solid waste facilities have led to the development of an extensive network of permitting requirements at the federal, state, regional and local level. An overall discussion of the regulatory framework that has been developed will help put in perspective the issues that must be addressed in waste management, and to describe what agencies are mandated to help manage waste.

#### *Federal*

The U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (DEP) review facilities with impacts on air and water quality. In contrast, in areas where dredging and filling may occur, the U.S. Army Corps of Engineers (USACE) must also review the facilities.

In relation to hazardous waste regulation on the federal level, the United States established the "Resource and Recovery Act" (RCRA)(US Public Law 94-580) in 1976. The Act established a means of monitoring hazardous waste by directing the EPA to develop a national program to regulate and manage the production and disposal of hazardous waste and provide incentives for states to adopt consistent programs. The RCRA further required the EPA to establish standards necessary to protect the human health and the environment from hazardous and toxic waste. The RCRA gives States with approved programs primary responsibility for hazardous waste management. Under this Act, the EPA is responsible for developing regulations in four major areas, which include:

- 1) the establishment of a manifest system to track the movement of hazardous waste from “cradle to grave;”
- 2) development of criteria to identify what constitutes a hazardous waste, and a listing of hazardous wastes;
- 3) promulgation of standards for generators, transporters, owners and operators of treatment, storage and disposal facilities for hazardous waste with permit requirements for all such facilities; and
- 4) the establishment of state-based waste management programs.

In addition, the RCRA sets guidelines for the development of solid waste management plans, prohibits open dumping (while requiring the closure or upgrading of existing dumps), and regulates underground storage tanks. The Act also encourages public participation in the regulatory process. Regulations are enforced through civil penalties, civil actions for injunctive relief and judicial penalties. RCRA specifies that generator standards include specific requirements for the record keeping, reporting, use of appropriate containers, container labeling, providing information on the chemical composition of the waste and compliance with the manifest system. Similarly, transporter standards also include record keeping requirements, labeling requirements, and requirements for compliance with the manifest system. These standards also restrict the transportation of hazardous waste to permitted facilities only. The Hazardous and Solid Waste Amendments of 1984 serve to expand and strengthen these provisions and broaden those subject to federal hazardous waste regulations to include small quantity generators (SQGs).

In 1998, the U.S. EPA established the National Comprehensive Emergency Response and Compensation Liability Act (CERCLA), also known as the EPA “Superfund Program.” This act gave the EPA the authority to respond to incidents requiring hazardous waste site clean-up and emergency mitigation and provided funding for site clean-up. The Act also defined the liability of a business engaged in hazardous waste generation, transport and disposal, provided for enforcement measures, and establishes priority of the sites and selects sites for clean-up and mitigation when needed.

## State

To parallel the legislative efforts of the EPA, Florida has taken sound steps in managing solid and hazardous waste generation and disposal within the state boundaries. Chapter 403.700, F.S., has delegated regulatory responsibility on the state level to the Department of Environmental Protection (FDEP). The applicable FDEP regulations governing solid and hazardous waste facilities are contained in Chapter 62-4, and 62-701 through 62-788, F.A.C. In addition, surface water facilities require permit review by the regional water management district (Northwest Florida), which are also responsible for state level review for water quality and quantity impacts.

In 1980, the Florida Legislature passed the Florida Resource Recovery and Management Act (FRRMA). This act adopted the federal guidelines and directed the Florida Department of Environmental Protection (FDEP) to develop and implement a hazardous waste management program. Amendments to the FRMMA in 1983 provided directions and funds to establish a cooperative hazardous waste management program between local, regional and state levels of government. Regulation of hazardous wastes by the Department of Environmental Protection is performed under Chapter 62-730, F.A.C. This section contains requirements for Treatment, Storage and Disposal (TSD) Facilities, Large Quantity Generator (LQG)

facilities, Small Quantity Generator (SQG) facilities, and Conditionally-Exempt Small Quantity Generator (CESQG) facilities.

In 1988, the legislature passed the Solid Waste Management Act titled “An Act Relating to Waste Management” (Chapter 88-130, F.S.) pertaining to a wide variety of solid waste issues. The Act was designed to reduce the amount of waste being generated by the public and encouraged recycling, composting and other methods of solid waste management and resource recovery. The basic goal was to reduce the amount of solid waste by 30% before it is incinerated or landfilled. It provided for grants to assist local governments in achieving this goal and stipulated that governments that fail to implement recycling programs will be ineligible for such grants.

In addition, impacts on air and water quality are reviewed by FDEP, along with the U.S. EPA. Similarly, actual construction and operation of solid waste facilities require further permits and review by the State Department of Environmental Protection (FDEP).

### Regional

The Northwest Florida Water Management District (NFWFMD) implements regional regulations relevant to the Solid Waste Sub-Element. These regulations include the issuance of consumptive use permits (CUPs) and state level review for water quality and quantity impacts, as discussed in the previous section (State level regulations).

### Local

Solid waste planning, regulation, and management on the local level occurs through the Santa Rosa County Environmental Department, which operates under state regulations. The Environmental Department is responsible for processing permit applications for new facilities and ensuring existing facilities are operating properly.

Chapter 18 of the County’s Code of Ordinances regulates the accumulation, collection, transportation and disposal of solid waste in the County. Chapter 10 of the Code of Ordinances regulates the accumulation, collection, transportation and disposal of hazardous waste in the County.

## **Existing Regulatory Framework for Stormwater**

### *Federal*

The three primary agencies responsible for regulation of stormwater management in the United States are the U.S. Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE). EPA regulatory framework includes the implementation of the Clean Water Act of 1987 and Section 208 of the Federal Water Pollution Control Act.

EPA controls storm water and sewer overflow discharges through the National Pollutant Discharge Elimination System (NPDES). NPDES provides guidance to municipalities and state and federal permitting authorities on how to meet stormwater pollution control goals as flexibly and cost-effectively as possible.

The U.S. Environmental Protection Agency (EPA) developed the federal National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in two phases. Phase I, promulgated in 1990, addresses the following sources:

- "Large" and "medium" municipal separate storm sewer systems (MS4s) located in incorporated places and counties with populations of 100,000 or more, and
- Eleven categories of industrial activity, one of which is large construction activity that disturbs 5 or more acres of land.

Phase II, promulgated in 1999, addresses additional sources, including MS4s not regulated under Phase I, and small construction activity disturbing between 1 and 5 acres. A municipal separate storm sewer system (MS4) is a publicly-owned conveyance or system of conveyances (i.e., ditches, curbs, catch basins, underground pipes, etc.) that is designed or used for collecting or conveying stormwater and that discharges to surface waters of the State. An MS4 can be operated by municipalities, counties, drainage districts, colleges, military bases, or prisons, to name a few examples.

EPA is authorized under the CWA to directly implement the NPDES Program. EPA, however, may authorize States, Territories, or Tribes to implement all or parts of the national program. In October 2000, EPA authorized the Florida Department of Environmental Protection (FDEP) to implement the NPDES stormwater permitting program in the State of Florida (in all areas except Indian Country lands). FDEP's authority to administer the NPDES program is set forth in Section 403.0885, Florida Statutes (F.S.). The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial and construction activities. As the NPDES stormwater permitting authority, FDEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities.

Important note: The NPDES stormwater permitting program is separate from the State's stormwater/environmental resource permitting programs authorized by Part IV, Chapter 373, F.S. (593 KB) and implemented by DEP and the water management districts using these rules, and from local stormwater/water quality programs, which have their own regulations and permitting requirements.

The sources of stormwater discharges regulated under the NPDES program fall into three categories: 1) Construction Activity (CGP); 2) Industrial Activity (MSGP and NEX); and 3) Municipal Separate Storm Sewer Systems (MS4)

The Federal Emergency Management Agency (FEMA) is indirectly responsible for the regulation of stormwater management and flood protection in Santa Rosa County. These practices are carried out through the Agency's establishment of regulations for the National Flood Insurance Program (NFIP). As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: 1) reduce flood damage to insurable property; 2) strengthen and support the insurance aspects of the NFIP, and 3) encourage a comprehensive approach to floodplain management.

FEMA completed the Flood Insurance Study (FIS) for the unincorporated areas of Santa Rosa County (Community Number 120274), on October 14, 1977 with an entire revision of the maps and study on November 1, 1985. Since that time, the FEMA maps for the southern portion of the County were revised several times 1992, 1998 and in January 2000 to take into account changes caused by Hurricanes Erin and Opal in 1995. The FEMA maps and the flood insurance study for the entire County were digitized in 2006 with revisions to the Pace Mill Creek and Pond Creek areas of the County. The study includes peak discharges, floodway, and base flood elevations for the applicable floodplain areas within the County. The

study also includes elevations for the 10 year, 100 year, and 500 year return frequency floods. These elevations are used to carry out the floodplain management objectives of the NFIP that will be used to determine the appropriate flood insurance premium rates for buildings and their contents. New preliminary revisions to the Maps and Study for the entire County are expected late 2015 or early 2016 with maps and study becoming effective sometime in 2016. FEMA also administers the National Flood Insurance Program's (NFIP) Community Rating System (CRS) which Santa Rosa County participates in. This program is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements.

The primary responsibilities of the Corps of Engineers is to regulate the wetlands and regulate major dredge and fill activities within the United States. Under Section 9 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, the USACE works in cooperation with the EPA in the regulation of activities within jurisdictional wetlands. Also, as previously discussed the Corps works in cooperation with the Environmental Protection Agency in the issuance of dredge and fill permits within Santa Rosa County.

### *State*

At the state level, there are two primary agencies responsible for Stormwater Management within Santa Rosa County. These agencies include the Florida Department of Environmental Protection (DEP) and the Florida Department of Transportation (FDOT).

The Florida Department of Environmental Protection (FDEP) administers the Stormwater Rule, as authorized in Chapter 403, F.S., was established as a technology-based program that relies on the implementation of BMPs that are designed to achieve a specific level of treatment (i.e., performance standards) as set forth in Rule 62-40, F.A.C. In 1994, the Department's stormwater treatment requirements were integrated with the stormwater flood control requirements of the water management districts, along with wetland protection requirements, into the Environmental Resource Permit (ERP) regulations.

Rule 62-40, F.A.C., also requires the state's water management districts to establish stormwater pollutant load reduction goals (PLRGs) and adopt them as part of a Surface Water Improvement and Management (SWIM) plan, other watershed plan, or rule. Stormwater PLRGs are a major component of the load allocation part of a TMDL. To date, they have been established for Tampa Bay, Lake Thonotosassa, the Winter Haven Chain of Lakes, the Everglades, Lake Okeechobee, and Lake Apopka.

In 1987, the U.S. Congress established Section 402(p) as part of the federal Clean Water Act Reauthorization. This section of the law amended the scope of the federal NPDES permitting program to designate certain stormwater discharges as "point sources" of pollution. The EPA promulgated regulations and began implementing the Phase I NPDES Stormwater Program in 1990. These stormwater discharges include certain discharges that are associated with industrial activities designated by specific standard industrial classification (SIC) codes, construction sites disturbing 5 or more acres of land, and the master drainage systems of local governments with a population above 100,000, which are better known as MS4s. The FDEP received authorization to implement the NPDES Stormwater Program in 2000.

An important difference between the federal NPDES and the state's Stormwater/ERP Programs is that the NPDES Program covers both new and existing discharges, while the state's program focus on new discharges only. Additionally, Phase II of the NPDES Program, implemented in 2003, expands the need for

these permits to construction sites between 1 and 5 acres, and to local governments with as few as 1,000 people. While these urban stormwater discharges are now technically referred to as “point sources” for the purpose of regulation, they are still diffuse sources of pollution that cannot be easily collected and treated by a central treatment facility, as are other point sources of pollution such as domestic and industrial wastewater discharges. It should be noted that all MS4 permits issued in Florida include a reopener clause that allows permit revisions to implement TMDLs when the implementation plan is formally adopted.

The Florida Department of Transportation (FDOT), under the authority of Chapter 353-02, F.S., owns and maintains several drainage facilities, which serve major arterial roads within Santa Rosa County. Many outfall ditches, canals and stormwater structures, for example, drain the I-10, U.S. Highway 90 and U.S. Highway 98 corridors. In addition, the FDOT permits connections to stormwater management facilities (SWMF) within FDOT right-of-ways.

### *Regional*

There are two agencies responsible for establishing the regional Stormwater Management policies within Santa Rosa County. However, only one of these regional agencies is responsible for regulating Stormwater Management criteria. These agencies include the Northwest Florida Water Management District (NFWMD) and the West Florida Regional Planning Council (WFRPC).

The Surface Water Improvement and Management (SWIM) Act was enacted in 1987 by the Florida Legislature to improve and manage the water quality and natural systems associated of Florida’s surface waters, which include lakes, rivers, streams, estuaries, and other waterbodies. The SWIM program is implemented by the Northwest Florida Water Management District, working cooperatively with the Florida Department of Environmental Protection (DEP), other state and federal agencies, local governments, and private initiatives to accomplish watershed protection and restoration objectives

SWIM plans are developed to address, on a watershed basis, 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 retrofitting stormwater management systems to improve water quality and flood protection; restoring wetland and aquatic habitats; evaluating resource conditions and freshwater needs; protecting and restoring springs; and providing 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.

The 1987 Surface Water Improvement Management (SWIM) Act directed the NFWMD to develop a SWIM Plan for the Pensacola Bay System (Escambia River, Blackwater River, Yellow River, Shoal River and East Bay rivers and their tributaries, Escambia Bay, East Bay, Blackwater Bay, Western and Central Santa Rosa Sound, Big Lagoon). The Pensacola Bay SWIM plan includes strategies and actions designed to help protect and restore watershed resources and functions. The plan was most recently updated in 1997. A number of assessments have been completed pursuant to the plan, including stormwater assessments, and evaluations of sediment, biological, and water quality data. The District continues to work with federal, state, and local government agencies to implement cooperative projects designed to reduce nonpoint source pollution and to restore aquatic and wetland habitats.

The Environmental Resource Permit (ERP) program is also jointly implemented by the District and the Florida Department of Environmental Protection (DEP). ERPs regulate the management and storage of surface waters and provide protection for the vital functions of wetlands and other surface waters.

Florida law requires environmental resource permits for many types of work within wetlands and surface waters, such as dredging or filling; construction of dams, impoundments, docks or other structures; the construction of stormwater management systems that discharge to those waters; and other kinds of land disturbance. The ERP program regulates stormwater runoff in most new development to protect water quality, prevent flooding and to avoid adverse impacts to off-site property. ERPs also regulate dredge and fill activities in tidal and freshwater wetlands, including contiguous and isolated wetlands. The ERP program operates independently of the federal dredge and fill permitting program, which is regulated by the US Army Corps of Engineers, although a joint application process has been developed between the state and Corps.

The ERP program also issues what are commonly known as “ten-two” general permits. In 2012, the Florida Legislature adopted a general permit that allows for the construction, alteration and maintenance of certain smaller projects without agency review or action. Under this law, Section 403.814 (12), F.S projects involving less than two acres impervious surface and less than 10 acres of total project area that are located within state lands or water with no wetland impacts, may proceed subject to the conditions of the general permit.

Stormwater management regulation on the regional level also falls under the responsibility of the West Florida Regional Planning Council (WFRPC). The WFRPC encompasses approximately 6,026 square miles, which include seven counties and thirty-five incorporated municipalities. In 1996, the Council adopted the West Florida Strategic Regional Policy Plan (SRPP). Several key components of this Plan are applicable to the Stormwater Management Sub-Element, including the Emergency Preparedness and Natural Resources of Regional Significance Elements.

#### *Local*

Article 4, General Provisions, of the County’s Land Development Code sets minimum design and construction standards for public and private roadways and drainage as a condition prior to obtaining a building permit for construction projects within the unincorporated areas of Santa Rosa County. Article 12, Coastal Management /Conservation, of the County’s Land Development Code specifies the requirements for compliance with the National Flood Insurance Act of 1968, as amended.

### **Existing Regulatory Framework for Potable Water**

#### **Federal**

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources. The SDWA does not regulate private wells which serve fewer than 25 individuals.

Under Section 1413 of the SDWA, “a state has primary enforcement responsibility for public water systems when such state has adopted drinking water regulations which are no less stringent than the national primary drinking water standards in effect.” As such, the State of Florida [through the Florida Department of Environmental Protection (FDEP)] is authorized with the responsibility of enacting and enforcing the 1986 Amendments to the SDWA.

In 2006, the EPA also issued the Ground Water Rule (GWR) to improve drinking water quality and provide additional protection from disease-causing microorganisms. Water systems that have ground water sources may be susceptible to fecal contamination. In many cases, fecal contamination can contain disease causing pathogens. The GWR provides for increased protection against microbial pathogens. The GWR applies to public water systems that serve ground water. The rule also applies to any system that mixes surface and ground water if the ground water is added directly to the distribution system and provided to consumers without treatment.

EPA does not regulate private wells because they are not under the jurisdiction of the Safe Drinking Water Act and are therefore not subject to EPA regulation. EPA does provide outreach material to states and homeowners to help them understand how to manage individual wells. EPA recommends that well owners periodically test their water for microbial and chemical contaminants and properly maintain their well.

#### State

In accordance with federal requirements, the Florida Legislature has adopted the Florida Safe Drinking Water Act, Section 403.850-403.8911, Florida Statutes (F.S.). The Florida Department of Environmental Protection (DEP) is the state agency responsible for implementing this act. In this regard, DEP has promulgated rules classifying and regulating public water systems under Chapter 62-550 of the Florida Administrative Code (F.A.C.). The primary and secondary standards of the Federal Safe Drinking Water Act are mandatory in Florida. Specific state drinking water regulations are under (1) Chapter 62-550 of the F.A.C., Drinking Water Standards, Monitoring and Reporting, (2) Chapter 62-555 of the F.A.C., Permitting and Construction of Public Water Systems and (3) Chapter 62-560 of the F.A.C., Public Water System Non-Compliance Requirements.

Section 381.0062, F.S., gives the Department of Health general supervision and control over all private water systems, multifamily water systems, and public water systems not covered or included in the Florida Safe Drinking Water Act.

Setback distances for newly constructed public drinking water wells are described in Chapter 62-555.312, F.A.C. Public water supply wells serving water systems having total sewage flows greater than 2,000 gallons per day shall be placed no closer than 200 feet from septic tanks. Public water supply wells shall be placed no closer than 100 feet from septic tanks for sewage flows less than or equal to 2,000 gallons per day. Public drinking water supply wells shall not be constructed within 300 feet of storage and treatment facilities of dairy farms or closer than 100 feet from other sanitary hazards. As much as practical, wells are to be located on ground least subject to localized flooding and upstream of sanitary hazards. In addition, Chapter 62-610, F.A.C., regulates reuse of reclaimed water and land application including setback distances between the wetted site area subject to land application and surface waters and potable water supply wells to ensure compliance with water quality and drinking water standards.

On a similar note, the Florida Water Resource Act, Section 373, F.S., established a program for regulating the consumptive use of water in Florida and divided the state into five water management districts charged with responsibility for implementing the consumptive use regulatory program. Santa Rosa County falls within the boundaries of the Northwest Florida Water Management District. Consumptive Use is regulated under Chapter 40A-2, F.A.C., Permitting of Consumptive Uses of Water.

The Public Service Commission has the responsibility for regulating the rates and service of privately-owned water and sewer utilities in counties where the Board of County Commissioners has officially transferred jurisdiction to the commission. This authority has been set out by Chapter 367, F.S., in the “Water and Wastewater System Regulatory Law.” The commission establishes service standards that regulated utilities must meet. Section 367.171, F.S., provides for the adoption of a resolution where counties may transfer authority to regulate services to the Public Service Commission. Santa Rosa County has not transferred jurisdiction to the Florida Public Service Commission and the wastewater utilities within the County are overseen by County ordinance (Chapter 22 of the County’s Code of Ordinances).

In addition, the State Comprehensive Plan, Chapter 187, F.S., contains the adopted goals and policies of the State of Florida. The State Comprehensive Plan establishes legislative framework, or direction, which all the State government agencies must be consistent with. Since the original plan adoption in 1985, various sections of the State Plan have been amended.

### Regional

Santa Rosa County falls within the Northwest Florida Water Management District (NFWWMD). The NFWWMD is responsible for managing water supplies to meet existing and future demand. The authority of the District includes regulation over water well permitting, water quality provisions, the permitting and construction of public water systems, underground storage tank requirements, and public water system non-compliance requirements. The District’s rules pertinent to Santa Rosa County include Chapter 40A-2, F.A.C., which governs consumptive use permitting, Chapter 40A-3, F.A.C., which governs well construction permitting, and Chapter 40A-5, F.A.C., which governs artificial recharge permitting. In addition, the Water Management Districts are a source of technical information on the geology and hydrology of areas within their respective jurisdiction.

The method of managing water supplies through consumptive use permitting requires that a permit be issued for all uses of ground or surface water which:

- Exceed 100,000 gallons per day (estimated on an average annual basis); or
- Is from a facility (wells, pumps, etc.) or facilities which are capable of withdrawing 1,000,000 gallons of water per day or more; or
- Is from a well in which the outside diameter of the largest permanent water bearing casing is six inches or greater.

Consumptive Use Permit (CUP) applications must show reasonable or beneficial use of the water being withdrawn and that there is no interference with existing legal uses of water.

Unless expressly exempted by Statute or District rule, a permit must be obtained from the NFWWMD prior to construction, repair, or abandonment of a well and the well must be constructed, repaired, or abandoned

by a licensed water well contractor (Chapter 40A-3, F.A.C.) Any potable water well proposed within an area of ground water contamination, as delineated by the FDEP, will be permitted pursuant to Chapter 62-524,

The Northwest Florida Water Management District (NFWFMD) has designated a portion of Santa Rosa County south of the Pensacola and East Bays and the East River as a Water Resource Caution Area (WRCA). In order to aid in the development of alternative water supplies, a Regional Water Supply Plan (RWSP) that includes Santa Rosa County was developed initially in 2001 and was subsequently updated in 2006 and 2012.

The West Florida Regional Planning Council (WFRPC) adopted the Strategic Regional Policy Plan (SRPP) in 1996. The SRPP sets standards, as well as goals, objectives and policies to ensure water quantity and quality to meet current and future demands. These issues are discussed in further detail in the Natural Resources of Regional Significance section of the Plan.

The Walton/Okaloosa/Santa Rosa Regional Utility Authority (RUA) was created in 1999 as a means to address water supply needs and protection of water resources on a regional level. The RUA is comprised of the counties of Walton, Okaloosa and Santa Rosa and the municipalities of Destin, Fort Walton Beach, Gulf Breeze, Mary Esther and Niceville. The most important function of the RUA is to ensure future water supply. The RUA is staffed by the West Florida Regional Planning Council.

#### Local

Chapter 22 of the County's Code of Ordinances serves to regulate public utilities including wastewater and potable water facilities within the County. These regulations include the issuance and modification of franchise certificates, franchise operation, utility rate increase requests, operational procedures, abandonment of facilities, and reports.

Article 5 of the County's Land Development Code addresses Concurrency Management. In relation to potable water facilities, these regulations provide the County with guidelines for determining the availability of adequate facility capacity in the evaluation of development orders, provides criteria for concurrency review of these development orders, and provides level of service standards for these facilities. These issues, along with others that are discussed in more detail within the regulations, help to shape development within Santa Rosa County, which will in turn ensure that adequate facilities are provided to support the rapid growth of the area. In addition Article 4 of the Land Development Code provides connection requirements for platted subdivisions and non-residential developments within the County.