Application No.
PA-14-10-14-LS
(Large Scale Plan Amendment)

Applicant
Charlotte County Board of County Commissioners / Water Supply Facilities Work Plan Update

Legislative

Countywide

MEMORANDUM

Date: April 24, 2015

To: Honorable Board of County Commissioners
The Planning and Zoning Board

From: Matthew T. Trepal, Principal Planner

RE: PA-14-10-14-LS, a large-scale text amendment to Charlotte 2050, updating the Water Supply Facilities Work Plan

Purpose of This Amendment:
PA-14-10-14-LS involves a large-scale text amendment to update the County's Water Supply Facilities Work Plan (WSFWP). This update includes amendments to the Potable Water and Sanitary Sewer (WSW) subelement of the Infrastructure Element, to the Intergovernmental Coordination (ICE) Element, and to the Capital Improvements (CIE) Element. The WSFWP is a required component of the County's comprehensive plan, established by Chapter 163.3167, Florida Statute, to address "the water supply sources necessary to meet and achieve the existing and projected water use demand for the established planning period...." This plan must be updated following the update to the local Water Management District's regional water supply plan or, if the County is located in more than one WMD, such as Charlotte County, following the later adoption of the WMDs' plans.

The WSFWP is not a separate element of the comprehensive plan, but is made up of four Goals, seven Objectives, and 20 Policies in the Potable Water and Sanitary Sewer subelement of the Infrastructure Element, the Intergovernmental Coordination Element, and the Capital Improvements Element. The specific Goals, Objectives, and Policies that constitute the WSFWP are listed in **WSW Policy 4.3.1: Adoption of Water Supply Facilities Work Plan**.

As described above, the purpose of the WSFWP is to ensure that all existing and future residents of the County have adequate supplies of potable water through the established planning period. Florida Statute requires this period to be at least ten years, but in Charlotte 2050 the County has adopted a planning horizon of 2030, or 20 years from its initial adoption, and a vision horizon of 2050, or 40 years from its initial adoption. Future potable water needs were analyzed through population projections based upon the 2010 U.S. Census and prepared by the Florida Bureau of Economic and Business Research (BEBR). Using the medium trend of BEBR's projections, the County is projected to have 192,601 permanent

residents in the planning horizon year of 2030 and 217,900 permanent residents in the vision horizon year of 2050.

In order to account for seasonal residents, who also consume potable water but do not have the same overall effect upon the supply as full-time residents, the Southwest Florida Water Management District (SWFWMD) has developed a methodology to estimate the impact of seasonal potable water consumption based upon "functional seasonal population," or the overall impact of seasonal residents on the potable water systems. This projected functional seasonal population is added to the projected permanent population to calculate a total functional population. This total functional population is what is used to calculate demand upon the potable water supplies. Using the BEBR projections and the SWFWMD functional population methodology, the County is projected to have a total functional population of 208,491 in the planning horizon year of 2030 and of 234,692 in the vision horizon year of 2050.

These population projections are distributed among the service areas of the County's 15 potable water utilities and seven community water systems, and then compared with the permitted water supplies of those providers as well as any proposed expansion to their potable water supplies. This analysis is contained and more fully described in the **WSW Data and Analysis** (included in Exhibit A), presented for context. The Data and Analysis is not being adopted as part of this petition. The completed analysis shows that the County has adequate potable water supplies for its projected population growth in all utility service areas through the vision horizon year of 2050, including areas outside of Charlotte County served by water sources within Charlotte County such as the Lee County portion of Gasparilla Island served by Gasparilla Island Water Association and portions of Burnt Store Marina and the City of Cape Coral in Lee County served by Charlotte County Utilities' Burnt Store water treatment plant.

This analysis was used to develop the appropriate Goals, Objectives, and Policies to implement the WSFWP. The adopted policies within the County's WSFWP are sound, and the proposed amendments contained within this petition primarily concern clarification or the removal of outdated references (such as references to deleted Chapter 9J-5, Florida Administrative Code or to the Florida Department of Community Affairs). Other proposed amendments were suggested by the Southwest Florida and South Florida Water Management Districts, including the proposed amendment to **WSW Policy 4.3.1** referencing the adoption date of the WSFWP and the planning period and to **ICE Policy 1.1.11: Coordination with Water Management Districts** referencing the specific WMD regional water supply plans.

Consistency with Charlotte 2050:

Existing **WSW Objective 1.2: Concurrency** states that the County will *"maintain, operate, and monitor capacity sufficient to satisfy adopted Levels of Service...."* Likewise **CIE Objective 1.1: Making Necessary Improvements** states that the County will *"ensure existing deficiencies are corrected, to accommodate desired future growth and to replace obsolete or worn-out facilities."* The WSFWP is an important tool for ensuring that adequate potable water supplies are available or planned in order to serve projected population growth. As noted above, existing **WSW Policy 4.3.1** lists all the policies within Charlotte 2050 that constitute the WSFWP. These include the potable water Level of Service standards established in **WSW Policy 1.1.2: LOS Standards**, concurrency reporting and management established in **WSW Policy 1.2.1: Reporting**, **WSW Policy 1.2.2: Development Approval**, **WSW Policy 4.3.4: Inclusion of Capital Improvements**, **CIE Policy 1.1.6: Concurrency Management System**, and **CIE Policy 1.1.7: Capital Improvements Program**, and inter-agency coordination and cooperation included in **WSW Policy 1.2.3: Consultation with Service Providers**, **WSW Policy 4.3.3: Plan Coordination**, **CIE Policy 1.1.9: Agency and Plan Coordination**, **ICE Policy 1.1.9: Utility**

Coordination, **ICE Policy 1.1.11: Coordination with Water Management Districts**, and **ICE Policy 1.2.3: Water Management**. Therefore, the proposed changes are supported by Charlotte 2050.

Recommendation:
Staff recommends that this large-scale text amendment be transmitted to the State for review and comment.

"Approve transmittal of petition No. PA-14-10-14-LS to the Department of Economic Opportunity for review and comments, based on the findings and analysis in the Planning Division staff report dated April 24, 2015 and the evidence presented at the public hearing on the application (if applicable)."

EXHIBIT A

INFRASTRUCTURE DATA & ANALYSIS – POTABLE WATER AND SANITARY SEWER

INFRASTRUCTURE DATA AND ANALYSIS

POTABLE WATER AND SANITARY SEWER

~~-~~WATER SUPPLY FACILITIES WORK PLAN

INTRODUCTION

The following is the Data and Analysis necessary to support the adopted ~~Smart~~ Charlotte 2050 Plan goals, objectives, and policies. It also constitutes the County's Water Supply Facilities Work Plan.

The purpose of the Potable Water and Sanitary Sewer section is to ensure that potable water supplies and sanitary sewer disposal service are available to support development through the planning horizons established within the Comprehensive Plan. The provision of potable water and sanitary sewer is mandated by Florida growth management legislation under Chapter ~~9J-5~~163 of ~~the *Florida Administrative Code* (FAC). Specific parameters for this particular element are based on criteria established pursuant to Rule 9J-5.011. This section of Chapter 9J-5~~Florida Statutes (F.S.), which requires that sewer and water services be provided in accordance with future land use projections and which also identifies a basic framework for developing a series of goals, objectives, and policies which are formulated to accomplish the desired purpose based on an analysis of available data.

Adequate potable water and sufficient sanitary sewage disposal is a necessity for any development. Without such facilities, whether provided through the public sector or through private means, people cannot adequately live and operate, regardless of the availability of open land to build upon. The availability of water supply and sewage disposal will influence the timing, location, and intensity of development. Planning for these facilities and the expansion of any public provision of them should therefore be considered an integral part of ~~Charlotte~~ the County's development strategy as identified in the Future Land Use element.

Potable water in ~~Charlotte~~ the County is supplied by ~~thirteen~~ 15 individual utilities. The three largest providers, Charlotte County Utilities (CCU), the City of Punta Gorda, and the Englewood Water District are publicly owned while the remaining providers are privately owned. These providers have certificated areas of operation which grant the authorized right to be the sole provider of a stipulated service within a described area in order to ensure that service areas do not overlap. Any area not included in another utility's certificated area falls under the service of CCU.

Sanitary sewer service in ~~Charlotte~~ the County is provided by ten individual utilities. Again, the largest providers are CCU, the City of Punta Gorda, and the Englewood Water District, and

again all ten utilities have certificated service areas, with any land not specifically included in another utility's area being included within CCU's area.

Several community systems, for both potable water and sanitary sewer, have been approved by the Florida Department of Environmental Protection (FDEP). These systems are usually established in ~~mobile~~ manufactured home parks, campgrounds, and similar small developments, where centralized public utility systems are not available. These systems generally do not serve more than a few hundred people each, and are abandoned when public utilities become available. According to FDEP, there are seven community water systems in ~~Charlotte~~ the County and ~~16~~ 15 community sewer systems.

Many residential units in ~~Charlotte~~ the County do not have access to either public potable water or sanitary sewer systems. These units are served by private wells, private on-site septic systems, or both. There are an estimated ~~9,700~~4,400 permitted private wells and an estimated ~~40,000~~27,000 permitted private on-site septic systems in ~~Charlotte~~ the County.

In order to ensure that there is adequate potable water supply and sanitary sewage disposal for all residents, ~~Charlotte~~ the County has adopted level of service (LOS) standards for these facilities: 225 gallons of potable water supply per day per Equivalent Residential Connection (ERC) and 190 gallons of sanitary sewage disposal per day per ERC. These standards apply to the unincorporated portions of the County, and the City of Punta Gorda has established its own LOS standards for its incorporated areas. Currently, all but one of the County's certificated potable water utilities ~~in Charlotte County~~ meet the adopted LOS standards and all but ~~one~~ two of the sanitary sewer utilities currently meet the adopted LOS standards. The potable water utility that does not currently meet the adopted LOS standards is also one of the two deficient sanitary sewer utilities, and these two utilities have certificated areas that are much larger than their actual service areas, and therefore likely meet the adopted standards for their current customers.

This ~~Comprehensive~~ comprehensive ~~Plan~~ plan incorporates certain ~~Smart Growth~~ principles ~~which~~ that identify the locations ~~where Charlotte~~towards which the County will seek to direct the majority of all capital improvement ~~dollars in~~funding for infrastructure and services. As a component of that infrastructure, potable water and sanitary sewerage services are already provided, or will need to be provided, to certain of those areas. The County is currently exploring ways to reduce the cost of the expansion ~~upon~~ to those affected property owners.

RELATIONSHIP TO 2050 PLAN

The provision of potable water supply and sanitary sewer disposal services is a major component of the comprehensive planning process. In order to ensure that public facilities are provided in an efficient and cost-effective manner, the County must utilize the availability of centralized infrastructure as one of the tools for determining when and where growth will occur.

The goals, objectives, and policies of this section must therefore be consistent with those established for other elements to promote a well-coordinated growth management strategy for ~~Charlotte~~ the County.

The Future Land Use element must overcome the problems created by the large number of lots that have already been platted. The ability to extend central sewer and water over a period of time is severely limited, and appropriate methods must be used when deciding which areas will receive infrastructure funding, and the timing of the installation of centralized facilities. CCU, a department of ~~Charlotte~~ County government and the largest provider of both centralized water and sewer services in the County, has developed these methods and methodologies for its service area. Other public and private utilities in the County must also address these issues.

Infrastructure expansion by all utilities ~~operating in Charlotte County~~ is identified in the Capital Improvements element (CIE). This ~~ten-year~~ schedule of capital projects establishes and prioritizes future expenditures of public funds on infrastructure projects including roads, parks, public facilities, and central water and sewer systems. In general, the CIE only includes projects on which Charlotte County is spending funds (i.e., roads projects completed by the City of Punta Gorda or the State of Florida are not included). Due to ~~State~~ requirements for concurrency and for potable water supply planning, however, all central water and sewer system projects are included, regardless of whether the County will complete them~~,~~ or whether the utility completing the project is publicly or privately owned.

Other key factors relating to ~~Charlotte~~ the County's ability to provide water and sewer are contingent upon interlocal agreements with various governmental entities. The majority of the County's potable water is currently supplied to CCU by the Peace River/Manasota Regional Water Supply Authority (PR/MRWSA). ~~The geographic territory of t~~This regional water supply authority includes De~~–~~Soto, Manatee, and Sarasota counties, and that portion of Charlotte County located within the boundaries of the Southwest Florida Water Management District (SWFWMD). Currently, ~~two~~ three utility providers in Charlotte County also serve portions of Lee County, one utility provider serves customers in both Charlotte and Sarasota counties, one utility provider in Lee County has a certificated area that extends into Charlotte County but has no~~t~~ customers at this time, one utility provider in DeSoto County serves customers in Charlotte County, and another utility provider in Charlotte County has a certificated area ~~(but no customers)~~ that extends into DeSoto County. Interlocal utility agreements between the County and neighboring jurisdictions are reflected in the Intergovernmental Coordination element.

The Intergovernmental Coordination element also identifies the various relationships between other agencies of the State of Florida that will affect potable water and sanitary sewer. These agencies include FDEP~~, the Department of Community Affairs (DCA),~~ and the Department of Health (DOH). Other regional agencies include the Southwest Florida Regional Planning Council (SWFRPC), SWFWMD, and the South Florida Water Management District (SFWMD).

The two Water Management Districts regulate water usage and also evaluate water resource management issues. These issues are also an important part of the Natural Resources and Coastal Planning elements.

LEGISLATION

FEDERAL

~~Charlotte County's~~All utility providers in the County must construct and operate potable water and sanitary sewer facilities in accordance with all applicable Federal, State, and local regulations. Most of the existing regulations pertaining to water quality and sewage treatment are based on Federal guidelines mandated by the United States Environmental Protection Agency (EPA). Minimum drinking water standards are defined under Public Law 104-182, the "Safe Drinking Water Act Amendments of 1996." This law establishes Federal water-quality standards for the protection of water for public uses, including operational standards and quality controls for public water systems. In order to comply with the Federal regulations for water quality, the State of Florida has adopted legislation pursuant to Chapter 403.850, F.S., the "Florida Safe Drinking Water Act." This law sets forth the same primary and secondary water quality standards required for public health and recommended for aesthetic quality as the Federal legislation. The State of Florida has also implemented specific laws for classifying and regulating public drinking water systems under Chapters 62-550, 62-555, 62-699, and 64E-8~~,~~ of the Florida Administrative Code (F.A.C.).

The Federal regulations governing wastewater treatment are set forth under Public Law 92-500, the "Water Pollution Control Act Amendments of 1972." This law requires that wastewater treatment programs be established to regulate water-quality limits for effluent disposal and to control "point source" pollution. These provisions have been implemented at the state level under Chapter 403.086, F.S., and Chapter 62-600, F.A.C. Separate standards for ~~on site~~on-site sewage treatment and disposal systems are established in Chapter 64E-6, F.A.C.

STATE

State requirements pertaining to the management of water resources and the regulation of consumptive water use have been adopted by regional Water Management Districts pursuant to Chapter 40D-2, F.A.C. The purpose of Chapter 40D-2 is to implement the provisions of Part II of Chapter 373, F.S., and the State of Florida Water Policy set forth in Chapter 62-40 F.A.C. Additional rules relating to water use are found in Chapter 40D-3, "Regulation of Wells~~;~~"; Chapter 40D-8, "Water Levels and Rates of Flow"; and, Chapter 40D-21, "Water Shortage~~.~~". The State Public Service Commission (PSC) is responsible for regulation of the private, for-profit utilities within the County.

LOCAL

In 2007, ~~Charlotte~~ the County assumed regulatory authority of for-profit utilities from the ~~Florida Public Service Commission~~PSC ~~(PSC) (*Ordinance 2007-092*)~~, but returned that authority in 2013. ~~Town and Country Utilities, North Fort Myers Utilities, Lake Suzy Utilities, and Sun River~~

Utilities, which cross the Charlotte County lines into Lee County, Lee County, DeSoto County, and DeSoto County, respectively, remain under the jurisdiction of the PSC. The regulation of all of the remaining utilities within the County is handled by either Charlotte County or the utility's governing bodyAccordingly, the only utility that the County has jurisdictional authority over is CCU. Other non-profit or municipal utilities are regulated by their own governing bodies. The County has established Level of Service standards for all utilities operating within the unincorporated area of the County.

EXISTING CONDITIONS

BASIS OF DEMAND – POTABLE WATER AND SANITARY SEWER

In order to properly plan for the expansion of central potable water supply and sanitary sewer collection systems, demand for these services must be projected. By projecting the timing and location of future population growth, utilities may better position themselves to provide service where and when it may be required and prevent the unnecessary expansion of such systems into areas where they will not be needed. The County has prepared population projections through the year 2050 for use in this comprehensive plan. An explanation of the methodology used in the projections and projected population totals through 2050 may be found in the section of FLU Data and Analysis titled Basis of Demands – Population Projections ~~and FLU Data and Analysis Appendix C~~.

For purposes of water and sewer demand projections, the total peak seasonal population was converted to a functional population using a methodology developed for that purpose by SWFWMD. This methodology reduces the peak seasonal population to a lower percentage, accounting for the fact that seasonal residents, by definition, do not place demands upon the potable water and sanitary sewer infrastructure ~~all year round~~throughout the entire year. The use of functional population in demand projection guards against overestimating future demand through the use of peak seasonal totals, and against over-expanding infrastructure systems based on demand that will not occur. Table WSW-1 shows the projected total functional population through the long-range planning horizon of 2030 and up to the vision horizon of 2050.

Table WSW-1: Functional Population Projections, ~~2008~~2010-2050

Year	Permanent Population	Seasonal Population	Functional Seasonal Population	Hotel/Motel Population	Total Functional Population
~~2008~~	~~159,889~~	~~15,793~~	~~11,166~~	~~3,356~~	~~174,411~~
2010	~~159,488~~158,90~~1~~0	~~15,595~~15,~~510~~615	~~11,026~~~~10,966~~11,040	~~3,523~~3,224	~~174,037~~173,~~091~~164
2015	~~173,594~~168,000	~~16,617~~16,081	~~11,748~~11,369	~~3,935~~3,338	~~189,277~~182,707
2020	~~191,088~~176,500	~~17,906~~16,538	~~12,660~~11,692	~~4,339~~3,444	~~208,087~~191,636
2025	~~212,273~~184,70~~1~~0	~~19,472~~16,943	~~13,767~~11,978	~~4,734~~3,558	~~230,774~~200,23~~7~~6
2030	~~236,422~~192,601	~~21,227~~17,292	~~15,007~~12,225	~~5,121~~3,665	~~256,550~~208,491
2040	~~285,489~~206,701	~~24,553~~17,776	~~17,359~~12,568	~~5,871~~3,885	~~308,719~~223,154
2050	~~323,244~~217,90~~1~~0	~~26,618~~17,944	~~18,819~~12,68~~7~~6	~~6,588~~4,106	~~348,651~~234,69~~4~~2

Source: Charlotte County ~~Growth Management~~Community Development Department, ~~2009~~2011~~4~~

The County's population projections also project the location of future permanent population growth. This has been accomplished by using the existing Future Land Use Map designations of the land, the available vacant land, and the Urban Service Area. The projections were then collected by U.S. Census block. These geographical projections are integral in estimating

population growth and demand in the certificated areas of the various utilities. The seasonal population projections were not able to be geographically distributed in the same manner as the permanent population projections. Accordingly, when the projected populations were allocated to the various utility service areas, seasonal populations were allocated to the various utility service areas based on the percentage of the County's permanent population located within that service area.

Population projections have also been completed for those areas served by community systems, small centralized systems that serve only a limited number of customers, usually located in a ~~mobile~~ manufactured home park or campground. These projections are based upon the total number of units within the development and the County's annual growth rate of ~~1.2~~0.65 percent, as established by the general projections. This growth rate was applied to the existing population of the development and assigned to the unoccupied units. When the maximum population is reached, population growth stops for that development. Table WSW-2 shows the projected population growth for all community systems.

Table WSW-2: Community System Population Projection, 2010-2050

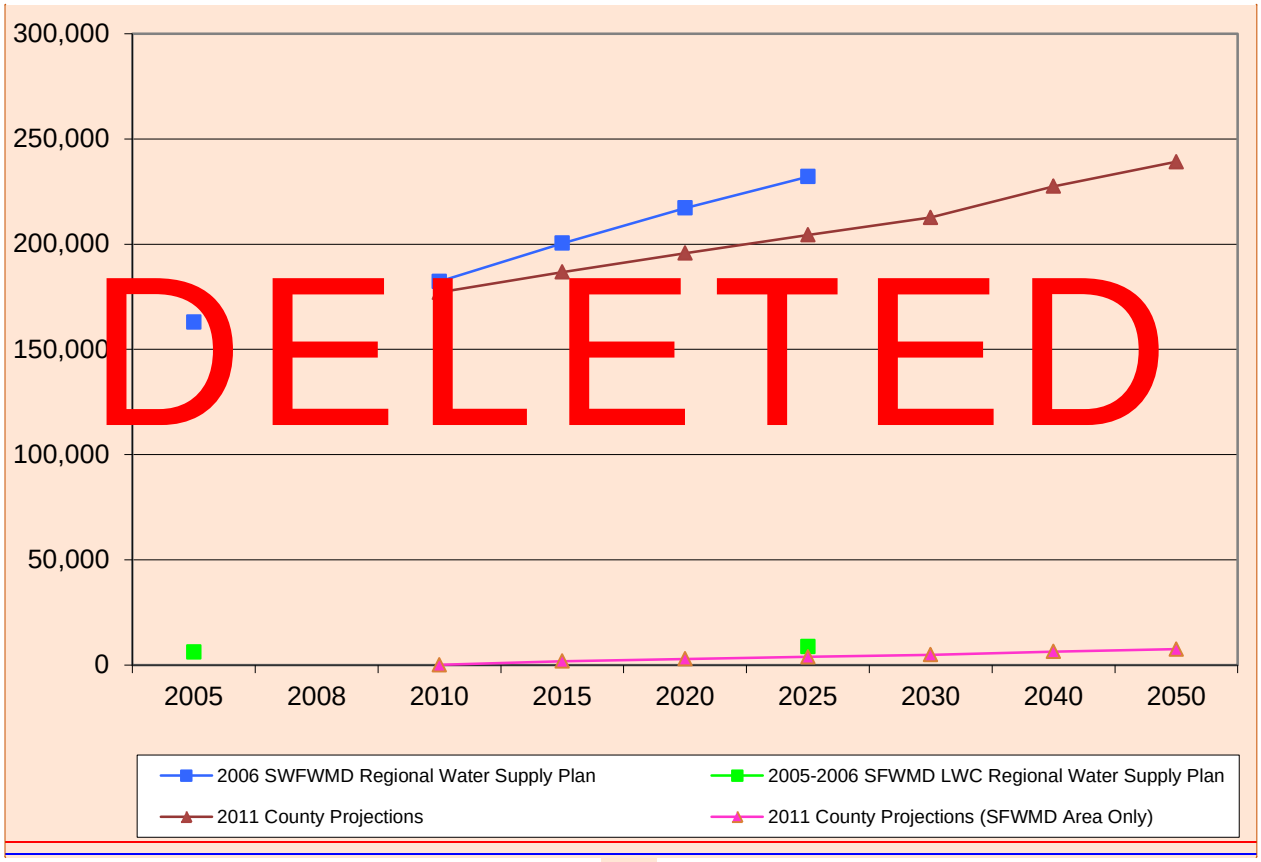
System	Total Units	Max Pop	2010	2015	2020	2025	2030	2035	2050
Alligator Park MHP	404	~~8808~~ 52	~~4094~~ 05	~~4334~~ 18	~~4584~~ 31	~~4854~~ 45	~~5144~~ 59	~~5444~~ 88	~~6415~~ 19 [DC1]
Bay Palms MHP	50	~~1091~~ 05	~~1041~~ 03	~~1091~~ 05	~~1051~~ 09	~~1051~~ 09	~~1051~~ 09	~~1051~~ 09	~~1051~~ 09
~~Burnt Store Colony MHP~~	~~240~~	~~5235~~ 06	~~5235~~ 06	~~5065~~ 23	~~5065~~ 23	~~5065~~ 23	~~5065~~ 23	~~5065~~ 23	~~5065~~ 23
Charlotte Correctional Institute			~~1,632~~ 1,614	~~1,729~~ 1,666	~~1,832~~ 1,720	~~1,941~~ 1,775	~~2,057~~ 1,832	~~2,180~~ 1,951	~~2,572~~ 2,077
Gasparilla Mobile Estates	177	~~385~~3 73	~~385~~3 73	~~373~~3 85	~~373~~3 85	~~373~~3 85	~~373~~3 85	~~373~~3 85	~~373~~3 85
Harbor View Trailer Park	148	~~322~~3 12	~~272~~2 69	~~288~~2 77	~~305~~2 86	~~322~~2 95	~~322~~3 04	~~322~~3 12	~~322~~3 12
Hideaway Bay Beach Club Condominium	102	~~222~~2 15	~~216~~2 13	~~222~~2 15	~~215~~2 22	~~215~~2 22	~~215~~2 22	~~215~~2 22	~~215~~2 22
Lazy Lagoon MHP	157	~~342~~3 31	~~323~~3 20	~~342~~3 30	~~342~~3 31	~~331~~3 42	~~331~~3 42	~~331~~3 42	~~331~~3 42
Palm & Pines	116	~~252~~2 44	~~246~~2 44	~~244~~2 52	~~244~~2 52	~~244~~2 52	~~244~~2 52	~~244~~2 52	~~244~~2 52
Paradise Park Condominium Association	314	~~684~~6 62	~~803~~5 86	~~851~~6 05	~~902~~6 24	~~956~~6 44	~~1,013~~ 662	~~1,073~~ 662	~~1,266~~ 662
Pelican Harbor MHP	159	~~346~~3 35	~~269~~2 66	~~285~~2 74	~~302~~2 82	~~320~~2 91	~~339~~3 00	~~346~~3 19	~~346~~3 35
Pelican Perch RV Park	25	~~54~~52	~~51~~50	~~54~~51	~~54~~52	52~~54~~	52~~54~~	52~~54~~	52~~54~~

Table WSW-2: Community System Population Projection, 2010-2050									
System	Total Units	Max Pop	2010	2015	2020	2025	2030	2035	2050
River Forest Village	204	~~4444~~ 30	~~4033~~ 99	~~4274~~ 11	~~4444~~ 24	~~4444~~ 30	~~4444~~ 30	~~4444~~ 30	~~4444~~ 30
Shell Creek Park MHP	214	~~4664~~ 51	~~4664~~ 45	~~4664~~ 51	~~4514~~ ~~66~~	~~4514~~ ~~66~~	~~4514~~ ~~66~~	~~4514~~ ~~66~~	~~4514~~ ~~66~~
Sun N Shade Campground	154	~~3353~~ 24	~~2042~~ 02	~~2162~~ 08	~~2282~~ 14	~~2412~~ 20	~~2552~~ 27	~~2702~~ 41	~~3182~~ 56
Tropical Palms MHP	293	~~6386~~ 18	~~3583~~ 54	~~3793~~ 65	~~4013~~ 76	~~4253~~ 88	~~4504~~ 00	~~4774~~ 26	~~5624~~ 53
Villas Del Sol	88	~~1911~~ 85	28	~~29~~28	~~30~~28	~~31~~28	~~32~~28	~~33~~29	~~38~~30

Source: Florida Department of Environmental Protection, 2009 & Charlotte County Community Development Department, 2011

The County's projections have also been compared to the Regional Water Supply Plans prepared by SWFWMD and SFWMD~~, and the Water Facilities Supply Plan prepared as part of the Charlotte County Comprehensive Plan in 2007~~. This comparison is shown in Table WSW-3, included in WSW Appendix A, and graphically in Chart WSW-1 and Chart WSW-2.

Chart WSW-1: Population Projection Comparison, ~~2005~~2010-~~2050~~2030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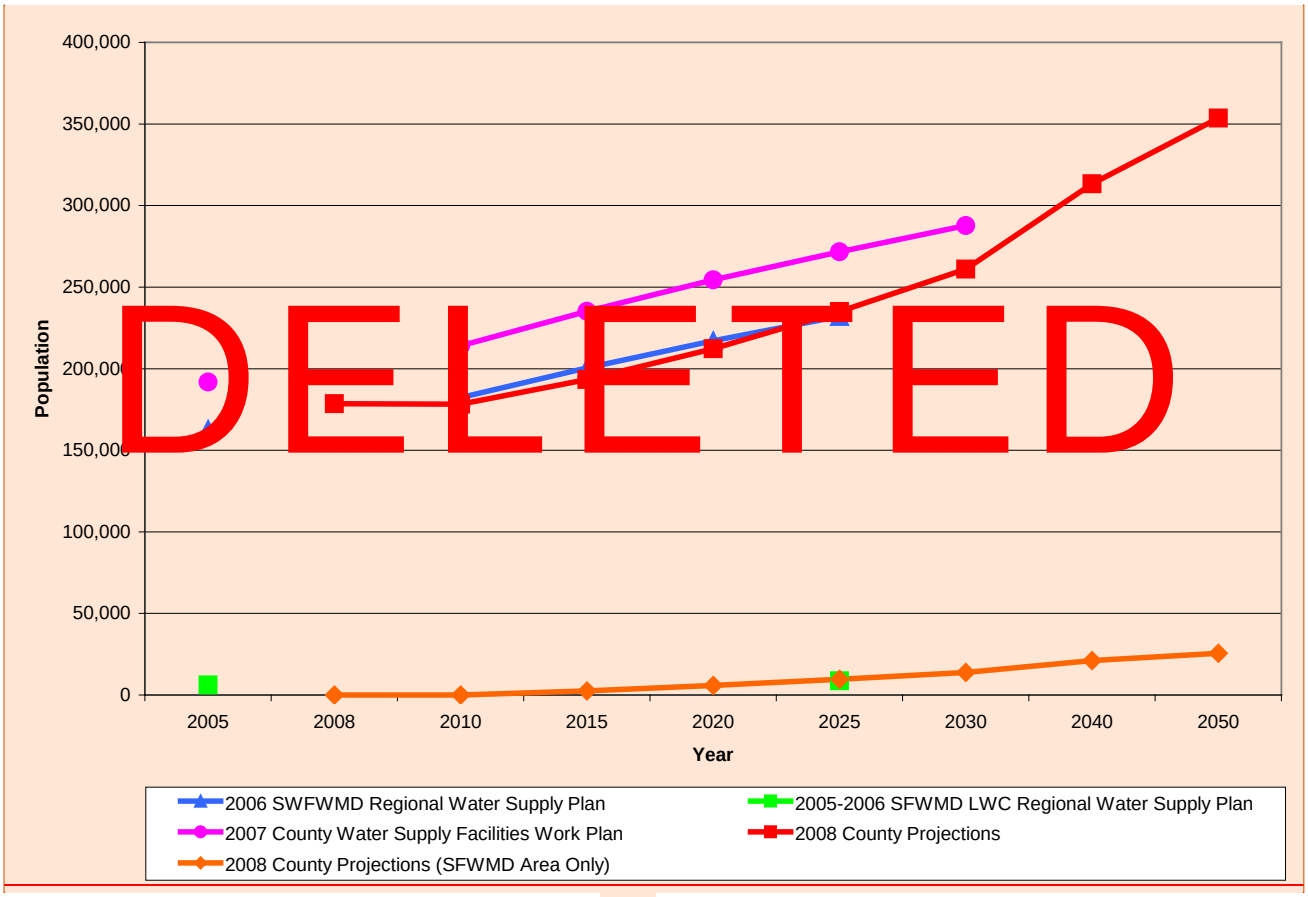
2006 SWFWMD Regional Water Supply Plan
2005-2006 SFWMD LWC Regional Water Supply Plan
2011 County Projections
2011 County Projections (SFWMD Area Only)

~~[DC2]~~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Year
2006 SWFWMD Regional Water Supply Plan
2005-2006 SFWMD LWC Regional Water Supply Plan
2007 County Water Supply Facilities Work Plan
2008 County Projections
2008 County Projections (SFWMD Area Only)
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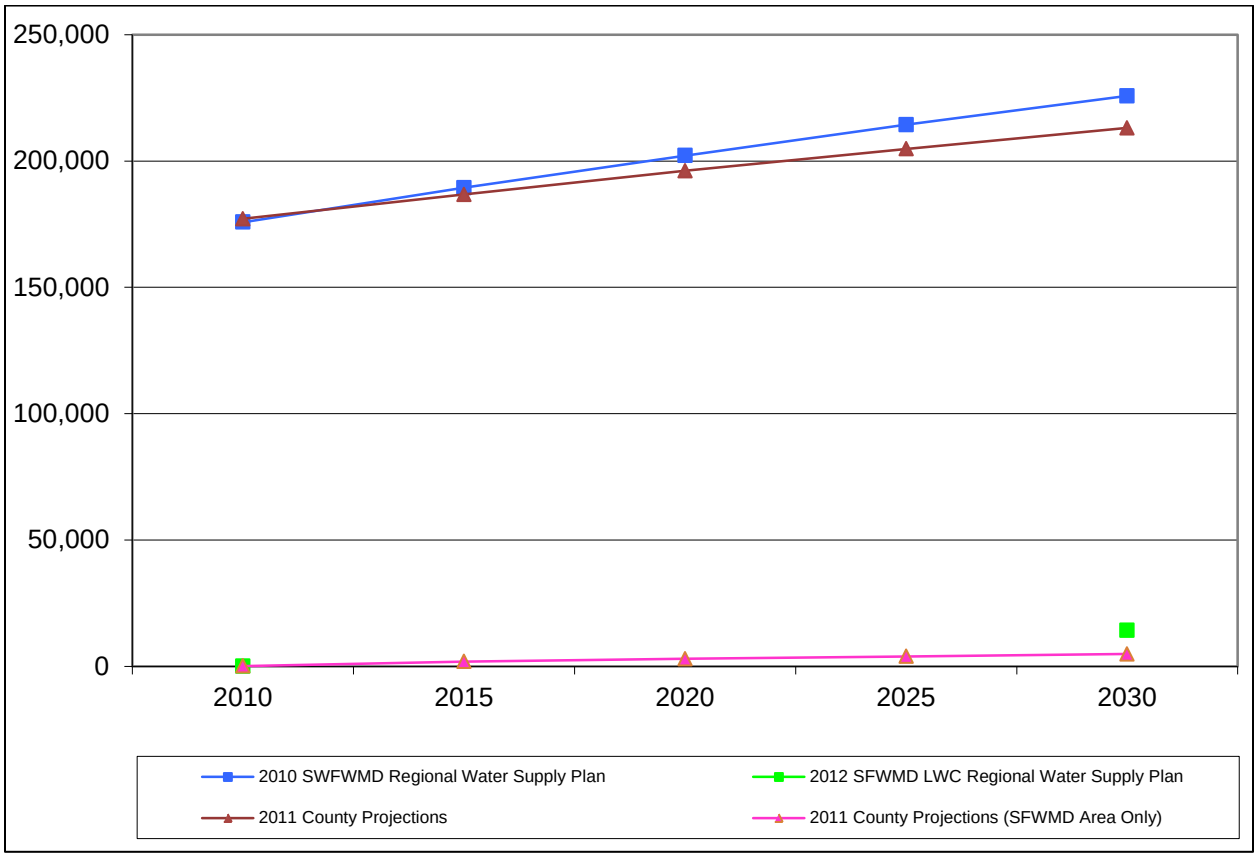
[DC3]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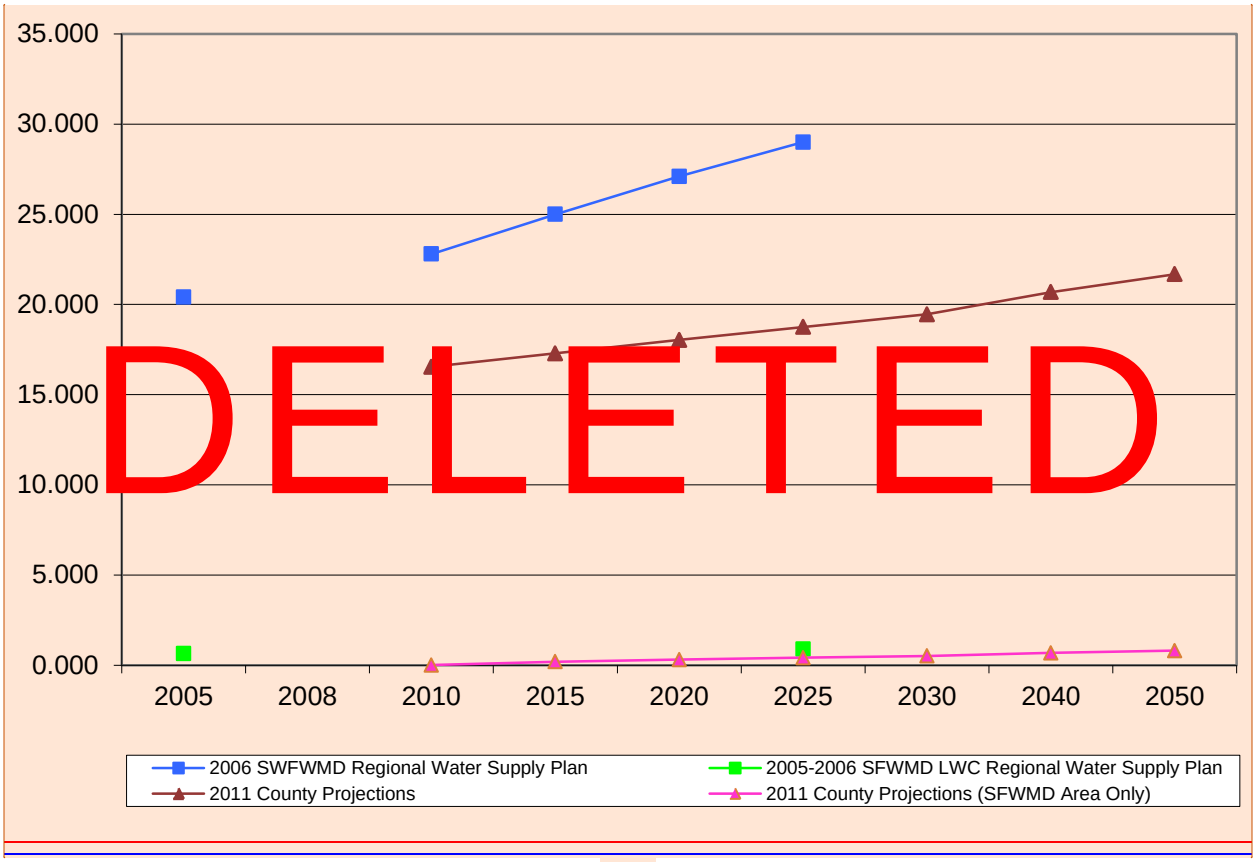
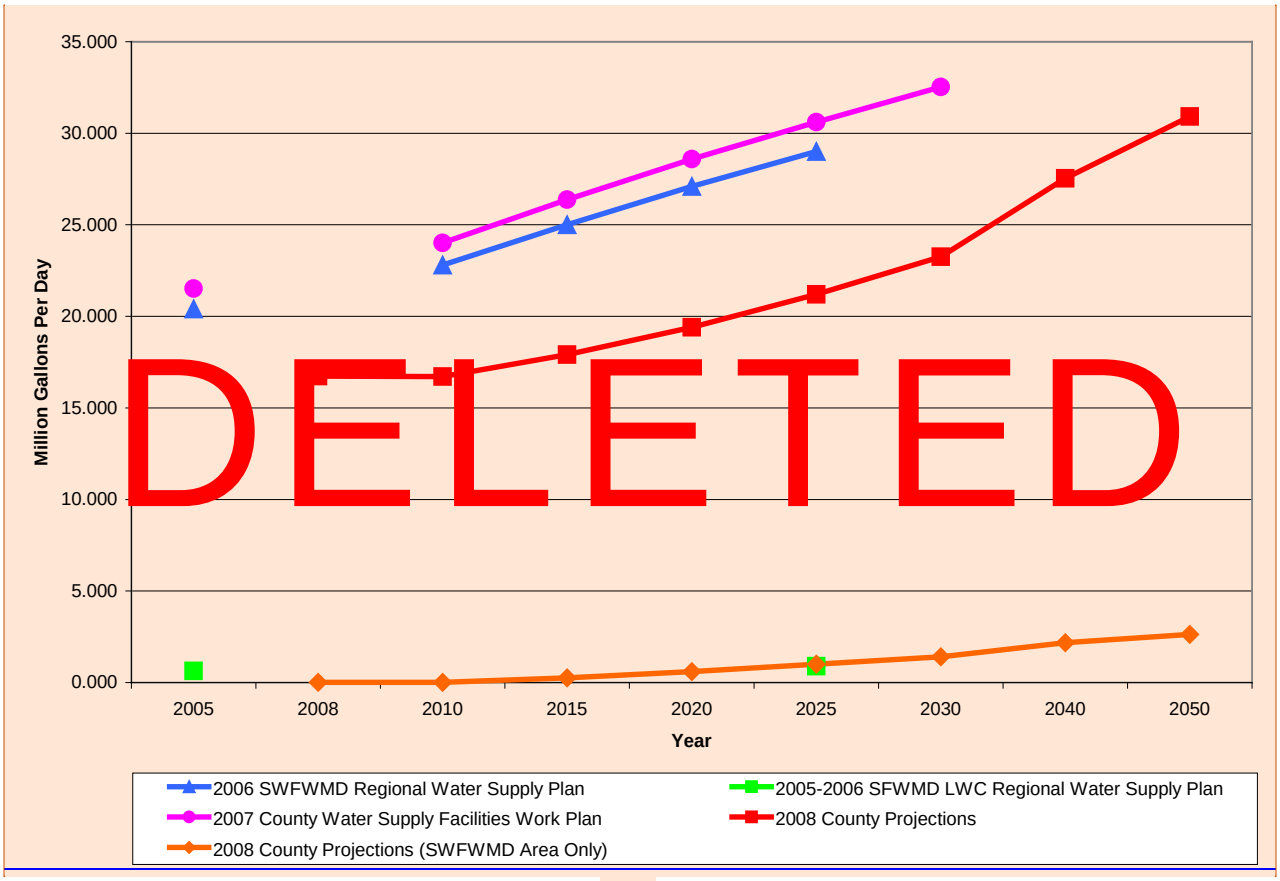
2010 SWFWMD Regional Water Supply Plan
2012 SFWMD LWC Regional Water Supply Plan
2011 County Projections
2011 County Projections (SFWMD Area Only)

Chart WSW-2: Demand Projection Comparison, ~~2005~~2010-~~2050~~2030



~~[DC4]~~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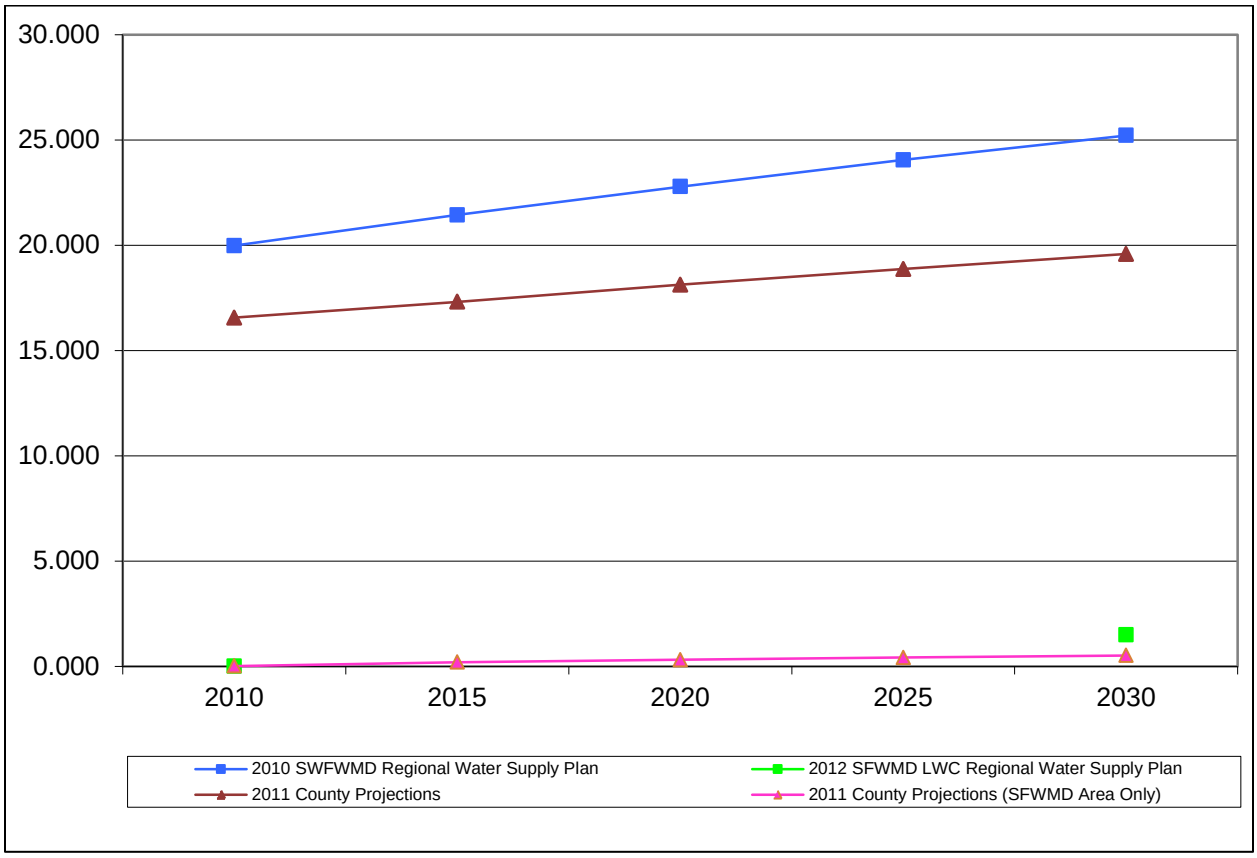
2050
Year
2006 SWFWMD Regional Water Supply Plan
2005-2006 SFWMD LWC Regional Water Supply Plan
2007 County Water Supply Facilities Work Plan
2008 County Projections
2008 County Projections (SWFWMD Area Only)
DELETED

[DC5]



This comparison shows that between 2010 and ~~2025~~ 2030 the County's ~~2008~~ 2011 population projections range between ~~2.2~~ ~~9~~0.7 percent more and ~~less and 1.3~~13.55.6 percent ~~more~~ less than SWFWMD's projections~~, and that between 2010 and 2030 the 2008 projections range between 17.8 and 9.3 percent less than the 2007 Water Supply Facilities Work Plan projections~~ between 2010 and 2030. This is not a significant variation, and should ensure that the ~~2008~~ 2011 projections may be compared to these other projections without fear of inappropriate comparisons.

The comparison between the County's projections for the area within SFWMD's jurisdiction and the projections prepared by the WMD are farther apart, however. The County's population projections range from 57.5 percent more and 65.7 percent less between 2010 and 2030. The difference between the 2010 projections, while a large percentage, represents a difference of only 38 persons: the County's estimated a population of 104 for the extremely rural region while SFWMD estimated a population of 66. The difference between the projections for 2030 is more significant and of greater concern. This difference in projections can be accounted for through comparing projections for the Babcock Ranch development.

The Babcock Ranch development is a planned mixed-use development in the eastern portion of the County along SR 31 and the Lee County line, within SFWMD's jurisdiction. As a

Development of Regional Impact, it is subject to a Master Development Order (DO) and incremental implementation of that DO. The most recent version of the Master DO for Babcock Ranch, adopted in January of 2014, establishes a maximum of 17,870 dwelling units for the development and a projected buildout date of 2042. Using the 2010 U.S. Census estimate of 2.14 persons per household, the population at buildout would be 38,241. However, the most recent version of Increment 1 of the DO, also adopted in January of 2014, establishes a maximum of 2,500 dwelling units with a projected buildout date of 2026. Using the U.S. Census estimate of 2.14 persons per household, the population of the area included in Increment 1 would be 5,350. This total is much more consistent with the County's projection of 4,493 persons within the Babcock Ranch development in 2030 than SFWMD's projection of 13,948.

The Babcock Master DO still projects full buildout of the DRI by 2042, with a maximum of 17,870 dwelling units, but this would involve building 960 dwelling units per year over 16 years, whereas in the first 16 years of the project they project building 156 dwelling units per year. The County does not consider a 600 percent increase in the rate of construction likely, and maintains that its projections for the vision horizon of 2050 are most appropriate.

When demand projections are compared, the County's ~~2008~~ 2011 projections result in potable water demand that is between ~~33.9~~36.5~~17~~.1 percent and ~~26.6~~53.7~~22~~.3 percent less than the SWFWMD projections~~ and between 37.3 and 26.8 percent less than the County's 2007 Water Supply Facilities Work Plan~~. These differences are discrepancies in the difference between the population and demand projections can be accounted for on one hand by more optimistic population projections used in the 2007 Water Supply Facilities Work Plan, and by the use of higher per capita water use rates used in SWFWMD's Regional Water Supply Plan. The SWFWMD projections calculated projected demand using 2001 per capita usage rates included in SWFWMD's 2001 Estimated Water Use Report. This rate was approximately 125 gallons, or 22 18 gallons per day per person more than the County's adopted Level of Service of 103.211105.146.635 gallons per day per capita for potable water~~. They are between 83 percent more and 65 percent less than the SFWMD projections, but the reasons for this wide discrepancy are the same for water demand as for population.

LEVEL OF SERVICE – POTABLE WATER

The establishment of appropriate LOS standards for potable water supplies is necessary to plan for and meet projected demand. A potable water system must have an adequate capacity to meet the average daily demand~~,~~ while also being able to accommodate periods of peak demand. A review of historical data indicates that a capacity of 225 gallons per day (gpd) per ERC is needed to meet peak demands and fire flows in the County's unincorporated areas ~~of Charlotte County. A~~, although actual average day demands may be significantly lower. As reported in its ~~2008~~ 20134~~0~~ SWFWMD Public Supply Annual Report, the CCU per capita usage was ~~75~~ 81~~76~~ gpd. Assuming 2.~~18~~ 14 persons per household, actual average daily demand was ~~163.6~~173.34~~62.64~~ gpd/ERC. Planning to meet LOS demands is necessary to ensure adequate infrastructure capacity is available to satisfy short-term and instantaneous water supply demands without negatively impacting system performance (e.g., reduction in system pressure). Effectively planning for LOS demands also results in more efficient operation of the ~~systems~~ systems~~in Charlotte County~~, and customers ~~utilize~~ use a more consistent amount of water because they understand potable water will be available to them when needed.

This LOS standard is established for the unincorporated areas of ~~Charlotte~~ the County, and all potable water providers are required to meet it. The City of Punta Gorda has established its own LOS standards for the incorporated area of the City, but for the unincorporated areas that receive service from the City, the County's LOS standards apply.

INVENTORY – POTABLE WATER SERVICE PROVIDERS

Potable water in Charlotte County is supplied by ~~13~~ 15 public or certificated utilities. The three largest suppliers are all publicly owned: CCU, the City of Punta Gorda, and the Englewood Water District. The remaining providers are privately owned. All of these potable water service providers have a customer base and a certificated area of operation throughout which they provide service. The certification grants the authorized right to be the sole provider of a stipulated service within a described area to ensure that service areas do not overlap. Further, any area not depicted as a certificated area falls under the service of CCU. The ~~13~~ 145 certificated potable water supply areas are depicted on SPAM Series Map #83. This map also shows the location of community water systems for small developments such as mobile home parks and campgrounds. SPAM Series Map #84 shows the location of all major water supply facilities such as water tanks, water treatment plants, wellfields, and reservoirs.

A detailed analysis of all public and private facilities was conducted pursuant to the criteria established ~~under Rule 9J-5.011 F.A.C~~by Statute. The potable water providers were inventoried by geographic location to identify plant design capacities, current demand, and existing levels of service for each certificated area. The existing and future water needs for Charlotte County were then identified based on the data obtained from the inventory. Future water demands were generated by applying population projections to the 225 ~~gallons per day per~~ gpd/ERC LOS

standard established in this element. Demands were equated to per capita water usage by dividing the 225 gpd~~/~~ ERC standard by 2.~~18~~ 14 persons per household, the ~~2000~~ 2010 U.S. Census estimate for Charlotte County. After the future water demands were identified, the performance of existing facilities and adequacy of present levels of service was evaluated over time and the need for facility replacement and expansion was determined.

Existing Potable Water Providers

Peace River/Manasota Regional Water Supply Authority: The Peace River/Manasota Water Supply Authority is an independent special district of the State of Florida that supplies potable water to the local governments with membership. These include Charlotte, DeSoto, Manatee, and Sarasota Counties and the City of North Port, and have a total population of over 750,000. PR/MWSA provides treated water to the local governments, who then actually distribute that water to their customers. PR/MRWSA also maintains agreements with Sarasota County, the City of Punta Gorda, and Englewood Water District for emergency situations, where the Authority ~~;~~may draw from these resources to supplement available water supplies in the event of a water shortage or water quality issue with its own supply.

The Peace River Water Treatment Facility (PRF) is a 48~~24~~ million gallon per day (MGD) surface water treatment plant (WTP) located in southwest DeSoto County, approximately 19 miles above the river's mouth ~~in~~ at Charlotte Harbor. The PRF includes a 120 M~~DG~~GD intake on the river, a diversion structure, a ~~625~~6.5 billion ~~million~~ gallon (~~M~~BG) off-stream raw water reservoir, and 21 aquifer storage and recovery (ASR) wells~~, and above-ground storage~~ with a 6.3 BG capacity. ~~The Authority is presently expanding the capacity of the PRF to 48 MGD and constructing a 6 billion gallon off-stream reservoir. Upon completion of the expansion in 2009,~~ ~~t~~The PRF currently supplies an average of 25 MGD to its ~~is~~ members and is ~~anticipated to be~~ able to provide an annual average of 32.855~~7~~ MGD to its members, approximately 16.1 MGD of which ~~will~~is ~~be~~ allocated to CCU. In 2008 CCU requested an additional 1.658 MGD from the Authority in order to address the potential potable water demand necessary to meet population growth~~. However~~, but since ~~that time~~then CCU has been working with the Authority to cancel ~~the 1.658 MGD demand~~that request as population projections indicate that the additional allocation is not required.

~~In addition, CCU has requested an additional 1.658 MGD from the Authority on an annual average day basis starting in 2014, increasing the total potential allocation from the Authority to 17.66 MGD.~~

Charlotte County Utilities: CCU is owned and operated by Charlotte County, and is the largest utility in the County. CCU's official service area includes all of Charlotte County not included in any other certificated service area, and totals approximately 617.79 square miles. Its actual service area is much smaller, being limited to portions of the Port Charlotte area in the Mid-County region, ~~and~~ portions of West County including Gulf Cove, Englewood East ~~Englewood~~, Rotonda West, and South Gulf Cove~~. CCU also services a~~ and portions of the Burnt Store area of South County. In total, CCU supplies potable water to approximately 57,049

service connections, equating to approximately 68,047~~56,0009~~ ~~service connections~~ERCs which in ~~2008~~ 2013~~41~~ created an average daily demand of ~~9.700~~ ~~400~~10.~~63~~850 ~~-~~MGD. Of this total, ~~9.070~~ ~~000~~10.~~125~~346 MGD was supplied by the PR/MRWSA~~,~~ and ~~0.420~~ ~~505~~0.504 MGD was supplied by the Burnt Store reverse osmosis plant~~, and 0.210 MGD was provided by the Englewood Water District~~. CCU has an annual daily average allocation from PR/MRWSA of ~~13.895~~16.102 MGD, which amounts to ~~County53~~49 percent of all the water produced by ~~PR/MRWSA's Peace River Water Treatment Plant~~the PRF. ~~In 2010, CCU's purchase from PR/MRWSA will increase to an annual daily average purchase of 15.031 MGD, and in 2011 in will increase to 16.102 MGD.~~

CCU currently operates one water treatment facility. The Burnt Store reverse osmosis (RO) facility has a current capacity of ~~3.611.127 MGD, with a water use permit of~~ 3.172 MGD~~,~~. ~~The Burnt Store facility~~ and currently provides service to approximately ~~2,292 service connections (3,628 ERCs)~~~~3,042~~3,100 ERCs within its service area, including ~~a small service area known as Burnt Store Marina~~two areas in Lee County~~ and an RV resort in the City of Cape Coral, also in Lee County. Design for the expansion of the facility to 3.6 MGD was completed in September 2007 and C~~construction was completed in 2010 to increase the plant capacity from 1.127 MGD to 3.61 MGD.~~~~of the upgraded WTP is scheduled for completion by the first quarter of Fiscal Year 2010.~~

CCU has a secondary public water supply permit that allows the annual withdrawal of 372 MG of raw water from the Upper Floridan aquifer, from wells located within the Babcock Ranch State preserve.

CCU is ~~also~~ a provider of bulk water to ~~three~~ four private utilities. The Riverwood Community Development District, El Jobean Water Association, ~~and~~ NHC Utilities (Encore Super Park), and Little Gasparilla Water Utility, Inc. all purchase bulk treated water from CCU and resell it to their customers. Since ~~all~~ three of these private utilities are located in the Mid-County region and the fourth is located in the West County region, the water they purchase from CCU was originally purchased by CCU from PR/MRWSA.

~~In 2014 CCU entered into a interconnect agreement with Little Gasparilla Water Utility, Inc. (LGWU), Inc. whereby CCU willlocated on provide bulk potable water services to this Utility upon the completion of potable water main to the mainland a bridgeless barrier island in the West County region, has entered into an intelocal agreement with CCU to become a bulk water customer, although the systems are not yet connected and water sales have not yet occurred. Completion of this potable water main is anticipated for 2015.~~

~~–~~CCU is also in discussions with the City of Cape Coral, in Lee County, ~~(the City)~~ in order to finalize an interconnect agreement ~~whereby~~for CCU ~~will~~to provide bulk potable water, wastewater, and reclaimed water services ~~within~~along the Burnt Store Corridor within the City's ~~limits~~incorporated area.

CCU maintains emergency interconnections with the Englewood Water District, the City of North Port, Gasparilla Island Water Association, and Charlotte Harbor Water Association. These interconnections are intended to be used only for the provision of additional water in the case of emergencies, not under the same terms as the bulk sale agreements that CCU maintains with its ~~three~~ bulk purchase customers. Use of the Englewood and North Port interconnections is conditioned upon prior approval by PR/MRWSA.

City of Punta Gorda: The City of Punta Gorda official service area covers approximately 37.32 square miles and is located south of the Peace River, including most of the incorporated area of the City itself and nearby areas of unincorporated Charlotte County including the communities of Cleveland and Solana, and the Charlotte County Airport. The service area includes approximately 17.28 square miles outside the City limits. The City operates a water treatment plant that ~~with~~draws surface water from Shell Creek, a tributary of the Peace River, located east of Interstate 75 near Washington Loop Road. The plant has a rated treatment capacity of 10 MGD and supplies water to ~~over 11,700 service connections~~nearly 21,000 ERCs. The City water use permit allows withdrawals of 8.01 MGD annual average day and peak monthly withdrawals of 11.73 MGD. The utility is also responsible for the operation and maintenance of the Burnt Store Isles Elevated Tank, and the Punta Gorda Isles Ground Storage Tank and Booster Pump Station. In March 2009 the City completed an update to its Water Supply Master Plan, which identified a Phase 1 groundwater project to ensure water quality and quantity standards could be met through 2019. Currently, the Shell Creek impoundment serves as the sole source of potable water for the City. The goal of the Phase 1 project is to develop a brackish groundwater supply to be treated by reverse osmosis and blended with the existing surface water to produce drinking water that meets all primary and secondary drinking water standards.

Englewood Water District: The Englewood Water District encompasses approximately 45 square miles in southern Sarasota County and western Charlotte County, with approximately 12.12 square miles of the District in Charlotte County. The certificated service area includes the Englewood area of Charlotte County as defined in the Englewood Water District's Enabling Act, generally that portion of Charlotte County west of Winchester Boulevard and north of Buck Creek, including Manasota Key, but not the bridgeless barrier island Knight Island.

The District uses three fresh water and two brackish water wellfields to provide source water. The three freshwater wellfields are capable of producing 3 MGD, but the Water Use Permit issued by the SWFWMD restricts withdrawals to a maximum of 1.35 MGD. The two brackish wellfields are capable of producing over 4.25 MGD to the RO plant. A sixth wellfield is currently being evaluated to determine its potential supply capacity. All three wellfields are located in Sarasota County.

Raw water from these sources is treated at the RO treatment plant which has a permitted capacity of 5.0 MGD. Finished waters from both plants are blended and sent into the distribution system. The District ~~maintains over 16,400 residential and commercial service connections~~serves approximately 21,000 ERCs in both Sarasota and Charlotte Counties, approximately 38 percent of which ~~approximately 45 percent~~ are located in Charlotte County.

The District is a bulk provider to Bocilla Utilities.

The District maintains an emergency interconnect with CCU, use of which is conditioned upon prior approval by PR/MRWSA~~, and with Bocilla Utilities~~.

Charlotte Harbor Water Association: The Charlotte Harbor Water Association certificated area covers approximately 6.20 square miles located along the north shore of the Peace River, from Charlotte Harbor to Harbour Heights. The Association operates a RO water treatment plant, located east of Interstate 75 that treats water drawn from four wells and provides service to ~~1,820 residential and commercial service connections~~nearly 1,700 ERCs. Most of the service connections represent residential users. The facility has a permitted capacity of 0.750 MGD.

~~This utility does not purchase water from CCU but does~~The Association maintains an emergency interconnect with CCU, use of which is conditioned upon prior approval by PR/MRWSA~~the County's utility~~.

Riverwood Community Development District: The Riverwood Community Development District certificated area covers approximately 2.19 square miles located east of the Myakka River and southwest of Port Charlotte, along S.R. 776. The CDD supplies potable water to ~~more than 850 single family and multi-family service connections~~approximately 1,400 ERCs in the Riverwood development. The CDD does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from CCU, instead.

Gasparilla Island Water Association: The Gasparilla Island Water Association certificated area covers approximately 3.05 square miles in Charlotte and Lee Counties, mostly on Gasparilla Island, a barrier island in southwestern Charlotte County. Approximately 1.22 square miles of the certificated area is located in Charlotte County. The Association operates a RO water treatment plant, wellfield, and color removal plant, located southeast of Rotonda in Charlotte County, with a combined permitted capacity of 1.846 MGD providing service to ~~1,673 residential and commercial service connections~~nearly 2,200 ERCs in both Lee and Charlotte Counties, approximately 33 percent of which are located in Charlotte County. The utility maintains an interconnect with CCU and purchased ~~0.225~~11.027 million gallons in ~~2008~~2013.

El Jobean Water Association: The El Jobean Water Association certificated area covers approximately 0.64 square miles located east of the Myakka River along S.R. 776, southwest of Port Charlotte. The Association supplies potable water to approximately ~~600~~ 775 ~~residential~~

~~and commercial service connections~~ERCs. The Association does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from CCU.

NHC Utilities: The NHC Utilities certificated area covers approximately 0.13 square miles located west of S.R. 776, southwest of Port Charlotte. NHC presently serves ~~200 service connections~~nearly 600 ERCs within the ~~Vizcaya Lakes mobile~~Encore Super Park manufactured home park with a permitted capacity of 0.09 MGD. The utility does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from CCU.

Sun River Utilities: The Sun River Utilities certificated area covers approximately 17.96 square miles located along US 17, consisting of the Rivers Edge mobile home development and adjoining properties in Charlotte and DeSoto Counties. Sun River serves approximately ~~58 residential service connections and two general service connections~~80 ERCs. Raw water is treated at an RO treatment facility with a plant capacity of 0.04 MGD.

The utility has entered into an interlocal agreement with DeSoto County Utilities to purchase bulk water following the construction of a connection with DCU.

Knight Island Utilities: The Knight Island Utilities certificated area covers approximately 0.92 square miles located on the bridgeless barrier islands of Knight Island and Thornton Key~~. The utility maintains a RO treatment plant,~~ serving over ~~200 residential and commercial service connections~~260 ERCs ~~with a design capacity of 0.09 MGD~~. The utility does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from Bocilla Utilities.

Little Gasparilla Island Utilities: The Little Gasparilla Island Utilities certificated area covers approximately 1.06 square miles located on Little Gasparilla Island, a bridgeless barrier island~~. The utility operates a RO treatment facility serving 220 residential service connections with a design capacity of 0.072 MGD~~.

The utility does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water ~~has entered into an interlocal agreement with CCU to become a bulk water customer following the construction of a connection between the CCU system and the island~~.

Bocilla Utilities: The Bocilla Utilities certificated area covers approximately 0.91 square miles located on Don Pedro Island, a bridgeless barrier island~~. The utility operates a RO water treatment plant,~~ serving over ~~200 residential service connections~~375 ERCs ~~with a permitted capacity of 0.12 MGD~~.

The utility ~~has an interconnect with the Englewood Water District~~does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from the Englewood

Water District. It subsequently sells some of that bulk treated water to Knight Island Utilities.

~~North Fort Myers Utilities~~Florida Governmental Utility Authority: The ~~North Fort Myers Utilities~~Florida Governmental Utility Authority certificated area covers approximately 2.42 square miles located immediately north of the Lee County line, between US 41 and I-75, an extension of its certificated area in Lee County to the south. ~~NFMU~~ FGUA does not currently have any residential or commercial service connections. ~~NFMU~~ FGUA does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from Lee County Utilities.

Town & Country Utilities: The Town & Country Utilities certificated area covers approximately 27.79 square miles located north of Lee County Road 78, east of S.R. 31, and south of Charlotte County Road 74 in Charlotte and Lee Counties, with approximately 21.30 square miles located in Charlotte County. This utility has been certificated to serve the new Babcock Ranch development but does not currently have any residential or commercial service connections. The utility has been received a WUP for an annual allocation of 158 MG and has been permitted to construct a RO plant ~~that will have~~with a capacity of ~~5~~6.00 MGD.

~~Lake Suzy~~DeSoto County Utilities: ~~Lake Suzy~~DeSoto County Utilities does not have a certificated area in Charlotte County, but serves an area of approximately 0.04 square miles located in north-central Charlotte County, west of Kings Highway, along the DeSoto County line. The bulk of this utility's service area is located in DeSoto County. The utility serves approximately 42 residential service connections in Charlotte County and does not own or operate either a water supply or treatment plant of its own, purchasing bulk treated water from ~~DeSoto County Utilities~~PR/MRWSA.

Community Systems: Several community systems serve areas of Charlotte County where centralized potable water systems do not exist but population densities do not allow potable water to be supplied by individual on-site wells. FDEP records indicate that there are seven such community systems in Charlotte County that serve residential or residential-type development. These include ~~mobile~~ manufactured home parks, campgrounds, and the Charlotte Correctional Institute. These facilities have capacities ranging from 0.004 MGD (4,000 gallons per day) to 0.3 MGD (300,000 gallons per day), and serve a total of approximately 3,~~800~~ 700 people. The locations of these community systems are shown on SPAM Series Map #83.

On-site Wells: For those structures not connected to a centralized utility or a community system, their potable water is most likely obtained through on-site wells. Technically, a site without connection to a centralized or community water system could provide potable water through bottled water or similar sources, but the number of these sites compared to the total number of on-site systems should be negligible. There are ~~an estimated~~a calculated ~~9,683~~4,390 sites in Charlotte County that rely on on-site wells to provide potable water, and these are shown on SPAM Series Map #85.

Potable Water Quality

The principal law governing drinking water safety in the United States is the Safe Drinking Water Act. Primary drinking water standards are health-related criteria enforced by FDEP, which require water utilities to meet specified water quality standards. Secondary drinking water standards include criteria intended to control aesthetic factors and are established as guidelines that are strongly recommended, but not enforceable.

As required by Federal and State regulation of all utilities, an annual water quality report is distributed to all water customers. The report tabulates the results of water quality testing to identify the level of pollutants that may be in drinking water. The results as reported in the latest reports indicate that the levels of water contaminants for all water utilities within Charlotte County are safely below the maximum contaminant levels allowed.

Significant Non-Potable Water Users

The local Water Management Districts authorize significant water use as Individual Water Use Permits (WUPs). Less significant withdrawals, those less than 100,000 gpd are authorized under General WUPs. All Individual WUPs within Charlotte County are inventoried and are summarized in Table WSW-4, included in WSW Appendix A, and allocate water for landscape irrigation, recreational or aesthetic use, industrial use, mining/dewatering, and agricultural irrigation. On an annual average daily basis, SWFWMD permits 28.04 MGD of withdrawals in Charlotte County, and SFWMD permits 20.55 MGD. These significant non-potable water uses comprise a total of approximately 364 MGD of withdrawals on a peak monthly basis.

Existing and Projected Water Facility Needs

The ~~21~~ 20 existing potable water suppliers in Charlotte County, including 15 certificated utilities and five private systems, are permitted to provide ~~33,462~~38,126,~~000~~37,688,000 gallons of water, ~~in 2009~~ as shown in Table WSW-5.

Table WSW-5: Existing Potable Water Service Providers

DEP ID	Supplier	Population	Permitted Capacity (GPD)	Service Connections	Population per Service Connection	WTPs	Water Sources
6080009	Alligator Park MHP	400	60,000	199	2.01	1	2
6084079	Bocilla Utilities	410	120,000	204	2.01	1	2
5084082	Charlotte Correctional Institute	1,594	300,000	30	53.13	1	1
5084100	Charlotte County Utilities	128,967	~~12,758,000~~16,102,000	57,833	2.23	5	N/A
6080318	Charlotte County Utilities – Burnt Store	6,300	~~1,127,000~~3,610,~~000~~3,172,000	2,~~286~~210	2.76	1	1
6080044	Charlotte Harbor Water Association	4,500	750,000	1,675	2.69	1	4
6080054	City of Punta Gorda	29,561	10,000,000	11,722	2.52	1	2
6080081	El Jobean Water Association	1,338	N/A	600	2.23	1	1
6580531	Englewood Water District	48,970	6,000,000	16,478	2.97	2	5
6080104	Gasparilla Island Water Association	4,735	1,846,000	1,673	2.83	2	2
6084075	Knight Island Utilities	570	90,000	201	2.84	1	1
6144856	Lake Suzy Utilities	1,500	N/A	569	2.64	1	N/A
5364048	Lee County Utilities	229,788	4,740,000	82,067	2.80	6	2
5084110	NHC Utilities	401	90,000	200	2.01	1	1
	~~North Fort Myers~~						

Table WSW-5: Existing Potable Water Service Providers							
DEP ID	Supplier	Population	Permitted Capacity (GPD)	Service Connections	Population per Service Connection	WTPs	Water Sources
	~~Utilities~~						
6084007	Paradise Park Condominium Association	785	60,000	314	2.50	1	1
5084111	Riverwood Community Development District	2,133	N/A	853	2.50	1	1
6080256	Shell Creek Park	465	50,000	290	1.60	1	1
6080272	Sun N Shade Campground	200	15,000	80	2.50	1	1
6084074	Sun River Utilities	90	40,000	40	2.25	1	1
	~~Town & Country Utilities~~						
6080324	Tropical Palms MHP	350	80,000	360	0.97	1	1

Source: Florida Department of Environmental Protection, ~~2009~~2011~~4~~

This plan incorporates the established potable water LOS standard of 225 gallons per day per Equivalent Residential Connection (ERC). The ERC data can be converted to gallons per capita per day (gpcd) by using the following formula:

1 ERC = 225 gpd/2.~~18~~ 14 persons per household = ~~103.2~~105.140 gpcd

This standard was used in conjunction with the County's population projections to determine the future water needs for Charlotte County. Estimates of future population were developed based on U.S. Census blocks, which were the basic unit of the geographical distribution of the projections. These blocks were then each assigned to one of the ~~13~~ 145 certificated service areas, and population estimates for each certificated service area were developed from ~~2008~~ 2010 to 2050.

Since the boundaries of the certificated service areas do not always follow the boundaries of the Census blocks, in some cases the area used for population projection may be larger or smaller than the actual boundaries of the certificated area, increasing or decreasing the estimated population. Every effort was made to minimize these effects, and usually involved large, sparsely-settled Census blocks. In general, these effects are expected to balance out County-wide in the long run. Due to the nature of the Census blocks on the bridgeless barrier islands, however, the service areas and populations of Bocilla Utilities, Knight Island Utilities, and Little Gasparilla Island Utilities were combined for statistical purposes in this analysis. Given the fact that these islands experience little development activity due to their difficult access, high costs, and significant build-out levels, this statistical combination is not expected to significantly affect

the analysis.

Table WSW-6 depicts the projected potable water demands from ~~2008~~ 2010 to 2050 based on estimated functional population. Projected demands are calculated by multiplying the projected population by the per capita equivalent minimum LOS standard of ~~103.2~~105.140 gallons per day, and are indicated in millions of gallons per day (MGD). The incorporated area of the City of Punta Gorda is calculated using the City's adopted LOS. The Lee County portion of the Gasparilla Island Water Association's service area is calculated using Lee County's adopted LOS. The functional population totals in this table are greater than those shown in Table WSW-1 because they include four additional users of potable water. Two are located in Lee County and serviced by the CCU Burnt Store facility. Because they are not physically located in Charlotte County, these two areas are not included in the general County totals shown in Table WSW-1. A third is also located in Lee County, the southern portion of Gasparilla Island, served by the Gasparilla Island Water Association. Just as with the two Lee County developments served by CCU, this area was not included in the general County population total. The fourth user is the Charlotte Correctional Facility, a prison operated by the Florida Department of Corrections and served by its own potable water facility. The inmate population of this facility was also not included in the general County totals shown in Table WSW-1.

Table WSW-6 also compares the supply capacity for each of the potable water suppliers within Charlotte County presented as permitted capacities based on any approved Water Use Permits and peak capacities of the treatment facilities ~~and the withdrawal capacity of the utility based on any approved Water Use Permits~~. Permitted capacities ~~are based upon the water treatment facility's permit from DEP and~~ are presented in terms of Annual Average Daily Flow, or the average flow per day when the entire year is considered. Peak capacities are based upon the design capacity of each facility. ~~Where a potable water supplier provides service to some population outside of Charlotte County, the reported demand does not include that service population and the permitted capacity has been adjusted accordingly~~Where a potable water supplier serves Charlotte County residents with a source located outside the boundaries of the County, only the Charlotte County population is shown. Peak capacities are included because the LOS standards are based on a peak usage, but permitted capacities are based on AADF. Since demand is presented as a peak, supply should also be presented as a peak in order to make an appropriate comparison.

~~Withdrawal c~~Capacities are based on Water Use Permits (WUPs) issued by the appropriate Water Management District, and reflect the amount of water the utility is permitted to withdraw from groundwater sources such as wells, or surface water sources such as rivers or lakes. Not every utility meets the minimum threshold requirements for a WUP, so Table WSW-6 does not include a WUP for every utility provider~~. Since a utility's WUP for withdrawals may be less than the permitted capacity of its treatment facility, both permits must be used to determine whether any particular utility will be able to meet expected demand based upon projected population~~.

Table WSW-6 also separates projected demand into areas within the Urban Service Area and within the Rural Service Area. Since it is the intent of ~~Smart~~ Charlotte 2050 to limit expansion of potable water and sanitary sewer utility service into the Rural Service Area, those areas are assumed to have no supply capacity and rely completely upon on-site wells and septic systems for potable water and sanitary sewer service. Exceptions to this rule are the certificated utilities located on the bridgeless barrier islands, which are wholly located within the Rural Service Area, and any community systems serving small developments within the Rural Service Area.

The analysis presented in Table WSW-6, included in WSW Appendix A, shows that, based on peak demand and supply, Sun River Utilities shows an immediate supply deficit. No other certificated utility shows a supply deficit through the ~~long-range planning horizon of 2030, but Charlotte Harbor Water Association and Charlotte County Utilities' Mid- and West County service area, including CCU's three bulk customers, shows a supply exceeding demand by the~~ vision horizon of 2050.

Usage data for Sun River Utilities show that the actual usage rate is much lower than the projected level. Table WSW-7 shows the reported flows through the Sun River Utilities water treatment plant for the 26 months between June 2007 and July 2009, which were submitted to the County. Although only 15 months were reported during that 26-month span, the table shows that the highest flow was 0.006 MGD and generally is recorded in the 0.003-0.004 MGD range. Sun River Utilities reported 58 single-family connections in July of 2009, which equates to ~~127~~ 124 people using the ~~2000~~ 2010 U.S. Census estimate of 2.~~18~~ 14 persons per household, compared to a functional population of 1,~~690~~ 911 as estimated by the County's projections. In 2009, Sun River Utilities received approval from the Florida Public Service Commission (PSC) to extend its potable water and wastewater service area in Charlotte County. The PSC concluded that Sun River Utilities had both the financial and technical ability to provide service to their expanded service area. Further, the PSC concluded that Sun River Utilities had sufficient capacity to serve the expanded service area or the ability to increase capacity when needed. This expansion increased the certificated service area of Sun River Utilities tremendously, but the supply facilities have not yet been increased to serve the entire area. This adds to the projected shortage in potable water supply. ~~At the time of this writing, Sun River Utilities and CCU are developing an agreement in which Sun River Utilities would purchase bulk water from CCU~~Sun River Utilities and ~~CCU~~DeSoto County Utilities have entered into an interlocal agreement in which Sun River would purchase bulk treated water from ~~CCU~~DCU. Although the final amounts of water to be purchased have not been established, this agreement would eliminate the projected water shortage within Sun River Utilities' service area.

Table WSW-7: Reported Monthly Potable Water Flow for Sun River Utilities, 2007-2009	
Month	**AADF**

Table WSW-7: Reported Monthly Potable Water Flow for Sun River Utilities, 2007-2009	
Month	**AADF**
Jun 2007	
Jul2007	0.006
Aug 2007	
Sep 2007	0.004
Oct 2007	0.003
Nov 2007	
Dec 2007	0.005
Jan 2008	
Feb 2008	
Mar 2008	
Apr 2008	0.004
May 2008	
Jun 2008	0.004
Jul 2008	0.003
Aug 2008	0.004
Sep 2008	0.002
Oct 2008	0.002
Nov 2008	0.003
Dec 2008	0.004
Jan 2009	
Feb 2009	0.005
Mar 2009	
Apr 2009	
May 2009	0.003
Jun 2009	0.003
Jul 2009	

Source: Charlotte County ~~Growth Management~~Community Development Department, 2009

~~Two~~ Three community systems also show immediate shortages ~~and a third shows a shortage in 2010~~. These community systems serve an RV park, a campground, and a condominium association in a very rural area of Charlotte County. ~~A fourth community system, serving a mobile home park south of the City of Punta Gorda, shows a supply deficit beginning in 2040, after the 2030 horizon but before the 2050 horizon.~~ Unlike certificated utility areas, Charlotte County does not require community systems to report their monthly usage, so a comparison cannot be made between ~~the system's~~these systems' projected demand and ~~its~~ their actual demand. Traditionally, however, these developments have a much higher percentage of

seasonal residents than standard residential development, and therefore have a lower demand than may be projected by equating a ~~mobile~~ manufactured home occupied only part of the year with a permanently-occupied site-built residence. An examination of DEP permit applications revealed some reported data, which showed that ~~Shell Creek Park Mobile Home Park reported usage of 0.034 MGD, or only 68 percent of the permitted capacity of 0.050 MGD and~~ Paradise Park Condominium Association reported usage of 0.043 MGD, or 72 percent of the permitted capacity of 0.060 MGD. An operational analysis of ~~these two~~this community system~~s~~ shows that, given current reported usage rates and projected growth rates, ~~both~~ it will remain within capacity through 2030. If all of the community systems have usage patterns similar to ~~Shell Creek Park MHP and~~ Paradise Park Condominiums then the deficits projected in Table WSW-6 do not exist.

~~Charlotte County is currently working with PR/MRWSA to increase supply capacity, and is also evaluating the potential to develop alternative water supplies, such as brackish groundwater, within the boundaries of Charlotte County. The City of Punta Gorda was recently granted an increase in their Water Use Permit allocation from Shell Creek and is intending to expand the treatment capacity of their Shell Creek Water Treatment Plant. Charlotte Harbor Water Association and Gasparilla Island Water Association are extending water distribution mains to serve projected future growth. The planned capital projects of CCU, Punta Gorda, Charlotte Harbor Water Association, and Gasparilla Island Water Association are discussed further in the Capital Improvements section of this element.~~

SUMMARY OF FUTURE WATER SUPPLIES

Charlotte County's approach to meeting future unmet water demands will follow guidance from SWFWMD and SFWMD and provide potable water supplies that are reasonable and beneficial, will not interfere with any existing legal uses of water, and are consistent with the public interest pursuant to Chapter 373.223 of Florida Statutes.

Demand projections provided for all utility providers are based on the County's population projections and established levels of service. Table WSW-6 provides the projected demand estimates and Water Use Permit allocations for each of the utility service areas with existing or pending permits.

Table WSW-8~~, included in WSW Appendix A,~~ presents a closer comparison of demand for the Water Use Permits issued by the Water Management Districts, and population and demand estimates used in the Water Use Permit applications to the Water Management Districts were

likely prepared using a methodology different from that used to prepare the County's population projections. As shown ~~in~~ through comparison with Table WSW-6, these alternative methods can result in demand projections that differ from the County's. It is important to note these differences may conflict with the County's desire to provide conservative estimates for potable water demands. However, the County has accepted the incorporation of alternative demand estimation methods in regional water supply planning documents. Demand projections based on alternative methodologies indicate the need for water supply expansion.

Table WSW-8: Demand Estimates and Water Use Permit Allocations

Potable Water Supplier	Permit ID	Year Expires	WUP Average Daily Use (MGD)	2025 Population Projections	2025 Demand Projection (MGD)
SWFWMD					
Charlotte County Utilities – PR/MRWSA	007104	2015	16.102[(1)]	133,931	10.152
Charlotte County Utilities – Burnt Store	003522	2033	3.172	8,606	0.565
City of Punta Gorda[(2)]	000871	2027	8.008	35,285	4.095
Englewood Water District[(3)]	004866	2019	5.360	37,266	2.221
Charlotte Harbor Water Association	001512	2031	0.712	5,396	0.420
Gasparilla Island Water Association[(4)]	000718	2021	1.537	6,652	1.205
Homeowners of Alligator Park	008626	2034	0.055	902	0.083
Island Harbor Beach Club /Knight Island Utilities[(5)]	007768	2022	0.103	771	0.089
El Jobean Water Association[(6)]	99913	N/A	N/A	1,450	0.133
Riverwood CDD[(7)]	99916	N/A	N/A	2,542	0.234
SFWMD					
Town and Country Utilities	08-00122-W	2017	0.433[(8)]	3,600	0.433
		2027	5.395	44,950	

Source: Southwest Florida Water Management District, South Florida Water Management District, 2015

(1) This is an allocation from the PR/MRWSA

(2) The City of Punta Gorda serves both County and municipal customers. Approximately 37% of the service population lies in unincorporated Charlotte County.

(3) Englewood Water District serves customers in both Charlotte and Sarasota Counties. Approximately 38% of the service population lies in unincorporated Charlotte County.

(4) Gasparilla Island Water Association serves customers in both Charlotte and Lee Counties. Approximately 33% of the service population lies in unincorporated Charlotte County.

(5) As of 2014, Knight Island Utilities is a bulk purchaser of potable water from Englewood Water District.

(6) El Jobean Water Association is a bulk purchaser of potable water from Charlotte County Utilities. No

active WMD permits exist for this utility, but the population and demand projections are calculated for the service area for future planning purposes. This may change as the 2015 Regional Water Supply Plan is finalized.

(7) Riverwood CDD is a bulk purchaser of potable water from Charlotte County Utilities. No active WMD permits exist for this utility, but the population and demand projections are calculated for the service area for future planning purposes. This may change as the 2015 Regional Water Supply Plan is finalized.

(8) This is an interim permit.

The potential future water supplies for Charlotte County are summarized below. Currently, 95 percent of CCU's water supply is provided by PR/MRWSA. CCU is the largest customer of PR/MRWSA and purchases more water than any other member government. ~~Increasing~~ Stabilized population~~s~~ growth in ~~Charlotte~~the County and the other member governments supplied by PR/MRWSA have resulted in water ~~supply deficits that will require the Authority to continuously pursue new water supply sources and expansion projects~~supplies sufficient to handle projected demands over the next 20 years. CCU currently accounts for ~~53~~ 49 percent of PR/MRWSA's total contractual water demand and is thus liable for ~~an equal proportion~~a large portion of its ~~revenue~~ budgeted operational and capital improvement expenditures. At this time, ~~Charlotte~~ the County is ~~considering two water supply options to meet future demands~~progressing toward a self-reliant two-pronged approach for meeting future water supply demands beyond the 20-year horizon.

~~Option~~ Approach 1: ~~Increase r~~Reliance on water supplied by PR/MRWSA

~~The~~ PR/MRWSA is ~~striving to facilitate~~working to improve the integration, diversification, and interconnection of water resources for optimal use within its four-county ~~region~~service area in order to meet current and future demands. Through cooperation and collaboration of the owners working collectively, they have a facility that can treat up to 48 MGD~~, two above-ground reservoirs, and a well field of Aquifer Storage and Recover (ASR) wells able to store approximately 7.3 billion gallons of water~~ and store nearly 13 BG of raw water. With average daily demands of 26.49~~5~~ MGD being supplied to members and customers in 2014~~1~~, there is considerable remaining capacity for the near future.

~~The~~ PR/MRWSA is preparing a preliminary investigation of brackish groundwater development opportunities in the event that an alternative water treatment process becomes necessary to adequately maintain secondary water standards for Total Dissolved Solids (TDS) due to the encroachment of salt water into the Peace River. This is a long-term investigation that may take years to complete and develop.

While CCU will participate in water supply development programs initiated by PR/MRWSA, the County and its utility feel that it is in the long-term interests of CCU to pursue the development of water supply sources separate from those of the Authority.

Four projects are under consideration in a Source Water Feasibility Study produced by PR/MRWSA to meet the future water demands of its member governments. This study identified surface water reservoir sites in the Upper Myakka, Shell and Prairie Creeks, and Dona Bay watersheds and evaluated them for suitability as future surface water sources. Additionally, ground water sources were examined as a means of supplementing surface water supplies and reducing associated costs. These identified projects and their associated costs are identified in Table WSW-9. All of these projects would involve the construction of surface reservoirs of up to 6.5 billion gallons in capacity.

Table WSW-9: Potential New Water Supply Sources for PR/MRWSA			
Project Name	Estimated Finished Water Supply (MGD)	Capital Costs ($M)	Annual Cost ($/1,000 gal)
Upper Myakka River	10	$298	$7.29
Shell Creek A	12	$287	$6.13
Shell Creek B	20	$340	$4.59
Dona Bay	5	$114	$5.95

Source: Peace River/Manasota Regional Water Supply Authority, 2009

Several of the potential water supply sources and associated treatment facilities are not owned or controlled by PR/MRWSA. For example, Sarasota County owns two reservoirs and the treatment plant proposed for use in the Dona Bay project and either Shell Creek project would involve diversions from Tippen Bay/Long Island Marsh and would be operated by the City of Punta Gorda with the water treated at their Shell Creek facility. Currently, Sarasota County and the City of North Port operate their own supplies and treatment facilities and purchase water from PR/MRWSA only when demands cannot be met without aid from the regional system. Water demands for Punta Gorda are currently met through use of the City's own supply, but the City also desires to sell water to PR/MRWSA for redistribution through the regional system.

Therefore, although the sources are connected to the regional system or, in the case of Punta Gorda, will be connected by 2012, the availability of the referenced source waters to PR/MRWSA for regional distribution is not established at this time. Storage for PR/MRWSA has been enhanced by the recent construction of a six billion gallon reservoir filled by diversions from the Peace River.

Option Approach 2: Develop County-owned and operated water supplies

Diversity of supply through the use of groundwater to provide improved reliability and sustainability of the potable water supplies within Charlotte the County is a priority and a key objective to meeting future demands. As provided in the schedule of Capital Improvements contained within the CIE Data and Analysis Appendix A, the County has devoted funds towards developing future water supply alternatives, including a Preliminary Engineering Report for siting a reverse osmosis treatment facility and potential brackish groundwater well field in the eastern portion of the County. This treatment plant would couldwill receive water either from a potentialan on-site well field or fromat Babcock Ranch.

Since CCU purchases more than 95 percent of its water supply from PR/MRWSA it is particularly vulnerable to fluctuations in the level of the Peace River, the source for the purchased water. To attempt to alleviate potential shortages due to low river levels, and to decrease the amount of total dissolved solids within the finished water sold to Charlotte County and others, PR/MRWSA has constructed a six billion gallon two reservoirs and ASR storage at their Peace River Facility. Preliminary analysis of historical Peace River flows and available diversion volumes has indicated, however, that there would still be periods where this new reservoirthese storage facilities would be completely emptydepleted, and there would be

periods prior to the depletion of the reservoir supply where the water quality would be significantly degraded.

~~The construction of this reservoir does not address diversity of water supply, however. CCU would still be reliant upon PR/MRWSA and the flows in the Peace River for nearly all of its supply. A separate source owned and operated by CCU, even if only as a secondary source, would add to the diversity of the overall water supply in Charlotte County. This CCU supply could be used to back up not only CCU's system, but also other suppliers within the County such as the City of Punta Gorda or the Charlotte Harbor Water Association. Furthermore, this secondary supply could reduce Charlotte County's future reliance upon the regional water supply system, thus increasing available supply for other members. Once water demands increase in Charlotte County, as a result of population growth, the County would look to convert the secondary source to an additional primary source.~~

~~Pursuant to the 2005 Interlocal Planning Agreement between MSKP III, Inc, the Florida Department of Community Affairs, Lee County, and Charlotte County, the Development Agreement Between Board of County Commissioners of Charlotte County, Florida and MSKP III, Inc, and Paragraph 33 entitled "Water Resources of the State Contract," Charlotte County is was authorized to apply for a Water Use Permit from the State Lands of Babcock Ranch provided that the withdrawal of water by Charlotte County is solely for public water supply purposes and not for wholesale or retail sale outside Charlotte County. Under these authorizations, Charlotte the County is currently seeking a water use permit from SFWMD for approximately 4 MGD of finished water by the year 2018applied for a. 20-year secondary public water supply permit, which was granted in 2011. This permit allows the annual withdrawal of 372 million gallons of raw water until 2031.~~

~~Because the water supply from Babcock Ranch is a groundwater supply, it provides the desired water supply diversity, consistent with State of Florida Conjunctive Use objectives. As a secondary supply for CCU this source would eliminate the need for the County to purchase water from other PR/MRWSA members at higher rates, and would relieve stress placed upon the natural systems of the area by reductions of the minimum flow levels in the Peace River. Additionally, there are no anticipated environmental impacts associated with this use as the water is proposed to be withdrawn from the highly-confined Floridan aquifer. Order-of-magnitude cost estimates for development of the Babcock supply are provided in Table WSW-10. Capital costs include construction of the Floridan wells, treatment and storage facilities, and concentrate disposal. Annual operations and maintenance (O&M) costs include labor, chemicals, power, membrane replacement, maintenance materials and spare parts, and sampling and monitoring.~~

Table WSW-10: Babcock Ranch Cost Estimate Summary					
Raw Yield (MGD)	Finished Yield (MGD)	Capital Cost	Cost/Finished 1,000 Gallons	Annual O&M in 2009 Dollars/1,000 Gallons	Capital & O&M Cost/1,000 Gallons(1)
12.5	10.0	$161M	$3.76	$1.09	$4.85
5.0	4.0	$71M	$4.16	$1.09	$5.25

Source: Charlotte County Utilities, 2009-2010

(1) Includes annualized capital costs at 5.7% interest and 20 years plus annual O&M divided by an assumed average daily flow of 10 MGD

Impact of Future Land Use

Planning for adequate potable water supplies should also take into account pending future land use map and rezoning amendments that might have a significant impact on the demand for potable water services. Such pending amendments represent a real short-term change to established demand, and may have a more immediate effect upon potable water supplies than general projected growth. Currently, there are no pending future land use map or rezoning amendments that would have such an effect upon existing potable water supplies. When such amendments are proposed, the County shall ensure that adequate potable water supplies are available to service them.Pending future land use and zoning amendments also need to be taken into account during the estimation of future demand. Such pending amendments represent a real short-term change to established demand, and may have a more immediate effect upon potable water supplies than general projected growth. Currently, three potential plan amendments would increase potable water demand. These potential developments are shown in Table WSW-11.

There are, however, a number of approved petitions that remain unbuilt, and which may have a significant effect upon demand. These petitions are all located within CCU's Burnt Store service area, and are shown in Table WSW-109. There are 19 petitions, with a total of 8,746 planned dwelling units.

Table WSW-109: Approved Petitions Within the CCU Burnt Store Service Area			
Petition	Total Planned Units	Confirmed Build-out	Final Build-out Year
Tern Bay – 8810 Development LLC	1,810	1,810	2033
Bryan Paul, Inc.	663	not given	not given
Bonita Bay Group, et. al.	2,052	2-,052	2033
Burnt Store Road LLC	999	999	2023
Charlotte Orange Grove LLC	498	498	2023
Coral Creek Burnt Store LLC	440	not given	not given
Eagle Gregory Trust – Pinnacle Oaks	296	not given	not given
Hawks Landing of Punta Gorda LLC	506	not given	not given

Mark L. Lindner, Trustee	180	not given	not given
NYHUS Peter Trust LLC	unknown	not given	not given
Newfoundland Six	600	600	2033
Prince Ranch LLC	175	not given	not given
Punta Gorda Reserve LLC	395	not given	not given
Realmark Tuckers Grade LLC	unknown	not given	not given
SLD Landfill, Inc.	unknown	not given	not given
Southwest Land Developers	unknown	not given	not given
Sun and Shade LLC	unknown	not given	not given
Tuckers Grade & US 41 LLC	unknown	not given	not given
TOTAL	8,746	6,091	

Source: Charlotte County ~~Utilities~~Community Development, 2014

~~Table WSW-11: Potential Plan Amendments~~

~~Name~~	~~Acres~~	~~Allowable Density~~	~~Potential Maximum Population~~	~~Potential Maximum Demand (MGD)~~
~~Rural Settlement Overlay District~~	~~No more than 2,450.00~~	~~6,000 units maximum~~	~~13,080~~	~~1.350~~
~~Rural Community Mixed Use #1~~	~~739.90~~	~~2 units/acre 1,479 units~~	~~3,225~~	~~0.333~~
~~Rural Community Mixed Use #2~~	~~1,554.51~~	~~2 units/acre 3,109 units~~	~~6,777~~	~~0.699~~
~~**TOTAL**~~	~~**4,744.41**~~	~~**10,588 units**~~	~~**23,082**~~	~~**2.382**~~

~~Source: Charlotte County Growth Management Department, 2010~~

Of the 8,746 planned dwelling units within the approved petitions, 6,091 are ~~slated~~projected to be constructed by 2033, or roughly within the 2030 planning horizon and, using the 2.14 persons per household estimated by the 2010 U.S. Census, would result in 13,034 additional residents within the CCU Burnt Store service area. If all of the planned dwellings were constructed within the planning horizon, that would result in 18,716 additional residents. When combined with the projected population for the Burnt Store service area included in Table WSW-6, which does not explicitly account for these approved petitions, the 2030 population of the Burnt Store service area could range between 23,339 and 29,021 residents, including the two developments served by the Burnt Store system in Lee County.

These larger population totals obviously place a greater demand upon the potable water supply. Using the adopted LOS of 1~~50~~05.140 gpcd, demand in the Burnt Store service area in 2030 could range between 2.454 MGD and 3.051 MGD. Both of these totals would fall below the current permitted capacity of the Burnt Store system.

~~All three developments are located within the Rural Service Area. The Rural Settlement Overlay District is located in the East County region, immediately east of US 17 and south of the DeSoto County line. While this development is located within the Rural Service Area it is within~~

~~the certificated area of Sun River Utilities. Specific development standards have not been prepared, but maximum development densities and intensities have been limited to 2,450 acres and 6,000 residential units. The Rural Community Mixed Use #1 is located in the East County region, north of C.R. 74 and west of S.R. 31. It encompasses 739.90 acres at a maximum density of two units per acre. The Rural Community Mixed Use #2 is located in the South County region, east of US 41 and immediately north of the Lee County line. It encompasses 1,544.51 acres at a maximum density of two units per acre.~~

~~As shown in Table WSW-11, these three potential plan amendments may result in a maximum of 10,588 residential units and a maximum population of 23,082, all within the Rural Service Area. This will create a maximum demand of 2.382 MGD. The Rural Settlement Overlay District is located within the certificated area of Sun River Utilities, and will only be permitted to develop when the utility demonstrates the actual physical capacity to serve the area. There is currently no timeline for the development of this capacity. The two Rural Community Mixed Use developments are located within the CCU service area, but not near any existing CCU potable water lines or facilities. These developments will be required to construct community systems in order to provide adequate potable water supplies.~~

Performance of Existing Facilities

The existing potable water facilities providing service ~~to Charlotte~~in the County are generally well maintained and in good condition. Treatment plants and storage systems are regularly inspected, and each utility system has established maintenance programs for pipe, meter replacement, valve inspection and operation, and flow testing of fire hydrants. Most of the older systems are continually being upgraded to improve reliability and increase the expected life of the facilities. These facilities are regulated by numerous agencies, including FDEP and the Water Management Districts.

The current permitted capacity of the combined water treatment plants is adequate to meet current demands, and all of the regulated potable water suppliers provide levels of service that are consistent with those adopted in this element. The analysis indicates~~, however,~~ that demand currently exceeds capacity in the Sun River Utilities certificated area ~~and that the CCU Mid- and West County region, the largest provider of potable water, will show a deficit by 2050. This CCU shortage includes CCU's three bulk customers, but the nature of the analysis does not allow a determination to be made as to whether the deficit will occur in any particular one of those four service areas. The Charlotte Harbor Water Association also shows a service deficit by 2040~~but, as shown by Table WSW-7, reported usage is well below projected usage and there is no reason to expect that an actual service deficit exists.

FUTURE CONDITIONS – POTABLE WATER

PROBLEMS AND OPPORTUNITIES FOR FACILITY REPLACEMENT, EXPANSION, AND NEW FACILITY SITING

The performance of existing potable water facilities must be constantly monitored to determine the adequacy of the committed treatment capacity and evaluate the ability of the distribution system to meet the future demands of a growing population. Each utility provider must, therefore, plan ahead to ensure that sufficient capacity will always remain available to accommodate anticipated growth within their respective service areas. Any new or expanded facilities that are needed must comply with applicable Federal, State, and local regulations. These regulations require that all potable water facilities be constructed, operated, and maintained in accordance with the guidelines established by the FDEP.

In addition to these requirements, all potable water providers must obtain water use permits from the appropriate Water Management District before any new treatment facilities can be constructed or existing treatment facilities can be expanded. The Southern Water Use Caution Area (SWUCA) rules in place within Charlotte County, established by SWFWMD, limit groundwater pumping in order to stop saltwater intrusion into subsurface aquifers and to prevent depletion of groundwater levels. The ~~caution~~ Caution ~~area~~ Area designation limits possibilities for expansion of potable water supply sources and requires potable water providers to consider alternatives to groundwater when making water supply planning decisions~~. In order to meet the growing water demand for this area, the County is currently investigating other sources of surface water and possible RO alternatives~~.

The opportunities for facility expansion are also limited by funding constraints. In order to alleviate this problem, potable water providers must work to maximize the use of existing infrastructure. This can be accomplished by directing growth to areas already served by existing facilities which will reduce the cost required for new facility construction.

When the construction of new potable water facilities is warranted, all necessary improvements will be built in an environmentally sound manner, while being economically feasible. New facilities will be located within previously developed or developing urban areas to discourage urban sprawl, and construction costs will, in general, be allocated to those members of the general public receiving the benefits. Funding sources for new facilities should be derived from a number of sources including, but not limited to, impact and user fees.

Utilities should evaluate and, where feasible, install interconnects for potable water lines. Interconnects would provide an emergency supply among utility providers and may result in more efficient usage of existing treatment facilities.

The Water Planning Alliance includes representatives of 13 local governments within the Peace

River Basin and surrounding area charged with working together toward meeting future water needs for the area. This organization has adopted a "Regional Integrated Loop System" to facilitate resource capacity, improved reliability, and the matching of area supply with demand.

FUTURE WATER SUPPLY PROJECTS

Demand projection for potable water use in the County indicates that the existing supplies will be adequate to meet the future population through the planning horizon of 2030. Accordingly, there are no future water supply projects that are necessary to meet future demand. Nevertheless, certain projects are being pursued to expand and diversify the County's potable water supplies. These projects expand existing primary water sources, establish new primary and secondary water sources, and establish emergency interconnections between existing systems. Taken together, they expand available sources, reduce demand on any individual water supply, and extend the length of service for all of them. Significant projects are briefly outlined below.

PEACE RIVER/MANASOTA REGIONAL WATER SUPPLY AUTHORITY

The PR/MRWSA has developed several projects to increase the potable water supplies in the County, including options for increased retention of surface water to increase overall supply and the interconnection of existing systems to allow the transfer of water in emergency situations. Three of these projects directly impact potable water supplies in Charlotte County.

Surface Water/Stormwater Option #3 – Shell/Prairie Creek Public Supply
This option, one of four prepared by the PR/MRWSA and included in SWFWMD's adopted 2010 Southern Planning Region Regional Water Supply Plan, involves the construction of a new intake structure, a new raw water pumping station, new water treatment facilities and associated piping, and a 6BG reservoir for the storage of raw water at the City of Punta Gorda's existing water treatment facility along Shell and Prairie Creeks. It also involves improvements to the existing reservoir in order to increase reliability.

Table WSW-10: Shell/Prairie Creek Cost Estimate Summary

Quantity Available (MGD)	Capital Cost	Cost per 1,000,000 Gallons	Cost per 1,000 Gallons	Annual O&M per 1,000 Gallons
12.0	$287M	$23.89M	$4.76	$1.37
20.0	$340M	$16.95M	$3.37	$1.22

Source: Southwest Florida Water Management District, 2014

The estimated yields for this option depend upon the intake location. The 20.0MGD intake would be located near the confluence of Shell and Prairie Creeks, while the 12.0MGD intake would be located further upstream on Prairie Creek.

Surface Water/Stormwater Option #4 – Conjunctive Use
This option, another of the four prepared by the PR/MRWSA and included in SWFWMD's adopted 2010 Southern Planning Region Regional Water Supply Plan, involves the conjunctive use of surface water and groundwater. This would reduce the size of the reservoir required at

the Shell/Prairie Creek site from 6BG to 2.6BG by the addition of a 1.36MGD groundwater supply.

Table WSW-11: Conjunctive Use Cost Estimate Summary				
Quantity Available (MGD)	Capital Cost	Cost per 1,000,000 Gallons	Cost per 1,000 Gallons	Annual O&M per 1,000 Gallons
12.0	$235M	$19.58M	$3.90	$1.40
20.0	$286M	$14.30M	$2.84	$1.24

Source: Southwest Florida Water Management District, 2014

The conjunctive use option would reduce most costs by as much as 20 percent.

System Interconnect/Improvement Options

System interconnections involve the construction of pipelines and booster pumping stations to increase the regionalization of potable water supply systems. These interconnections allow the transmission of water from areas of supply to areas of demand, increase rotational and reserve capacity, and provide redundancy of water supplies during emergency situations. Both the Water Planning Alliance and the PR/MRWSA have proposed options for improving system interconnections.

Table WSW-12: Regional Interconnections Cost Estimate Summary	
Project Description	Estimated Capital Cost
Interconnect between CCU and City of Punta Gorda potable water systems	
6-mile interconnect between City of Punta Gorda Shell Creek WTP and PR/MRWSA 20-inch RTS on U.S. 17 in DeSoto County	$11.5M

Source: Southwest Florida Water Management District, 2014

CHARLOTTE COUNTY UTILITIES

A separate source owned and operated by CCU, even if only as a secondary source, would add to the diversity of the County's overall water supply. This CCU supply could be used as a backup for not only CCU's system, but also other suppliers within the County such as the City of Punta Gorda or the Charlotte Harbor Water Association. Furthermore, this secondary supply could reduce Charlotte County's future reliance upon the regional water supply system, thus increasing available supply for other members and customers. Once water demands increase in Charlotte County, as a result of population growth, the County would look to convert the secondary source to an additional primary source.

Pursuant to the 2005 Interlocal Planning Agreement between MSKP III, Inc, the Florida Department of Community Affairs, Lee County, and Charlotte County, the Development Agreement Between Board of County Commissioners of Charlotte County, Florida and MSKP III, Inc., and Paragraph 33 entitled "Water Resources of the State Contract," Charlotte County

was authorized to apply for a Water Use Permit from the State Lands of Babcock Ranch provided that the withdrawal of water by Charlotte County is solely for public water supply purposes and not for wholesale or retail sale outside Charlotte County. Under these authorizations, the County applied for a 20-year secondary public water supply permit, which was granted in 2011. This permit allows the annual withdrawal of 372MG of raw water until 2031.

Because the water supply from Babcock Ranch is a groundwater supply, it provides the desired water supply diversity, consistent with State of Florida Conjunctive Use objectives. As a secondary supply for CCU this source would eliminate the need for the County to purchase water from other PR/MRWSA members at higher rates, and would relieve stress placed upon the natural systems during the minimum flow levels in the Peace River. Additionally, there are no anticipated environmental impacts associated with this use as the water is proposed to be withdrawn from the highly-confined Floridan aquifer. Order-of-magnitude cost estimates for development of the Babcock supply are provided in Table WSW-13. Capital costs include construction of the Floridan wells, treatment and storage facilities, delivery system, and concentrate disposal. Annual operations and maintenance (O&M) costs include labor, chemicals, power, membrane replacement, maintenance materials and spare parts, and sampling and monitoring.

Table WSW-13: Babcock Ranch Cost Estimate Summary

Raw Yield (MGD)	Finished Yield (MGD)	Capital Cost	Cost/Finished 1,000 Gallons	Annual O&M in 2009 Dollars/1,000 Gallons	Capital & O&M Cost/1,000 Gallons(1)
12.5	10.0	$161M	$3.76	$1.09	$4.85
5.0	4.0	$71M	$4.16	$1.09	$5.25
3.0	2.4	$57.5M	$5.59	$1.09	$6.68

Source: Charlotte County Utilities, 2011

(1) Includes annualized capital costs at 5.7% interest and 20 years plus annual O&M divided by an assumed average daily flow of 10 MGD, 4 MGD, or 2.4 MGD respectively.

TOWN AND COUNTRY UTILITIES

Town and Country Utilities, established to serve the Babcock Ranch development, is located in the rural eastern portion of the County. There is currently no potable water infrastructure in this area, and to serve the projected population of the development – projected to reach a maximum of more than 35,000 people – all infrastructure must be built from scratch. Town and Country has developed a five-phase plan for construction of the system, which is scheduled to be implemented between 2016 and 2031.

Table WSW-14: Town and Country Cost Estimate Summary

Phase	Anticipated Year	Capacity (MGD)	Capital Cost (2013 Estimate)
1	2016	0.200	$5.0M
2	2018	0.800	$9.9M
3	2022	1.000	$12.0M
4	2026	1.500	$15.0M
5	2031	2.000	$25.0M
TOTAL		6.000	$66.9M

Source: Town and Country Utilities, 2015

CAPITAL IMPROVEMENTS

Many of the certificated water providers in Charlotte County have plans to improve and expand existing facilities to ensure adequate levels of service will continue to be maintained in the future. These plans fall into three broad categories: supply increase, demand reduction, and system improvement.

The most obvious solution to ensuring adequate potable water supplies is to increase the amount of water available for distribution. Based on the water supply inventory and data analysis, CCU, the City of Punta Gorda, PR/MRWSA, and ~~others~~ other regional utilities have ~~currently~~ identified the need to ~~expand~~ explore potable water supply ~~capacity. Accordingly, capital projects involving the expansion of water treatment plants to increase the amounts they can supply, the construction and expansion of surface water reservoirs, and the development of alternative water supplies have been scheduled. These projects are intended to increase the volume of water available to the individual local utilities for distribution. Regional interconnect projects have also been scheduled, between local utilities and with PR/MRWSA~~development, regional pipeline interconnects, and best management practices for use of supplies. By connecting utility systems that previously were unconnected, or perhaps had only a single connection point, emergency water supplies may become available if and when needed, and regional supply may be better balanced with regional demand. Consistent with these intentions, ~~I~~in 2012 the PR/MRWSA extended a water transmission main across the Peace River and now is connected to the Punta Gorda Utilities Water Treatment Plant.

While increasing the overall volume of potable water will produce more water for distribution, reducing demand will relieve strain upon the existing potable water sources, ensuring that their life-spans are extended. Through the use of reclaimed~~cycled~~ water for non-potable uses such as irrigation and certain industrial uses, and the conservation of potable water through more efficient fixtures, overall demand for potable water may be reduced. This reduction in demand would have the effect of increasing the available supply. Capital projects involving the reduction of demand for potable water in Charlotte County include expanding reclaimed water systems and the replacement of outdated home fixtures with more modern, water-efficient ones.

General system upgrades may also have an effect on potable water supplies by replacing

transmission lines to create a more efficient distribution system or to prevent loss due to leakage from older lines, by replacing pumping stations with more efficient machinery and equipment, or by expanding existing service areas to reduce the direct impact on groundwater supplies which may decrease the number of subsurface potable water wells. Capital projects of this nature have been scheduled by many local utilities, involving projects such as water main replacement and relocation, water pumping station improvements, major transmission line extensions, and general service area extensions.

Capital projects scheduled by Charlotte County local utilities, including project costs allocated by fiscal year and sources of funding are detailed in Appendix B of the Capital Improvements element.

WATER CONSERVATION

In 201309, SWFWMD reinstated year-round water conservation measures supersceding the ~~declared a modified~~ Phase I~~I Extreme~~ Water Shortage Restrictions for the Charlotte County portion of the ~~District~~WMD ~~instated~~, originally implemented in 2010. Lawn and landscape irrigation is limited to ~~once~~twice per week. New lawns or plantings may be watered daily for the first 30 days with restrictions. ~~Other water uses may also be restricted. Customers are encouraged to conserve recycled water by using it during the specified irrigation hours.~~

Several utility providers in Charlotte County have implemented water conservation programs in order to reduce the dependence upon potable water supplies. CCU has prepared written water conservation plans for the Burnt Store Service Area and the area supplied by the PR/MRWSA based on the ~~Conserve Florida goal-based GUIDE program. The Conserve Florida goal-based GUIDE Program has been replaced with the~~ Conserve Florida EZ-GUIDE, managed by the University of Florida. EZ-GUIDE is ~~CCU was among the first utilities in Florida to implement this program,~~ a software tool that enables utilities to project the effects of water conservation policies based on historical water usage. ~~CCU already has an exceptional water conservation record, as shown by the low per capita consumption rate of 83 gpcd based on a five-day average.~~ CCU's per capita consumption rate was ~~75 78~~1~~67~~ gpcd as published in the ~~2008 2013~~0 SWFWMD Public Supply Annual Report, exceeding~~. This per capita rate exceeds~~ the goals outlined by SWFWMD to reduce per capita water consumption. In comparison, ~~the interim policy~~ the District has established ~~is a 130 gpcd standard and a~~ a standard of 110~~-~~ gpcd ~~standard has been set for 2010~~.

Conservation measures that were analyzed in the written plans include general conservation measures such as alternative source programs and public education, and indoor conservation measures such as showerhead retrofits and toilet rebates. These plans emphasize maintaining that low consumption rate by continuing to implement existing conservation practices, continued distribution of plumbing retrofit kits, and expanding the distribution of reclaimed~~use~~ water.

A Toilet Rebate Program was established by CCU in 2008, and cooperatively funded by the Peace River Basin Board of SWFWMD. The program was initially offered to commercial and multi-family customers and was later opened to all residential customers, and offers a rebate of up to $100 per toilet when a pre-1994 toilet using 3.5 gallons per flush or more is replaced with a new toilet using 1.6 gallons per flush or less. This program was discontinued in 2010.

Tentatively, CCU anticipates continuing to implement existing conservation elements and expanding the following programs in the next five years: non-potable irrigation source rebates, non-residential water-use evaluations/implementations, including reuseclaimed projects, toilet rebates, and a low-flow showerhead exchange. The toilet rebate program was discontinued in 2010. CCU was one of the first utilities within the 16-County county boundary of SWFWMD to implement year-round conservation rates in order to promote responsible water usage. In times of severe water shortages, CCU adopts even stricter emergency rate structures to emphasize to its customers the value of water, including the adoption of water consumption rate structures that are designed to discourage the consumption of more than 5,000 gallons.

Other water service providers within Charlotte County also participate in water conservation programs. The WUP issued to PR/MRWSA to supplement current water requires that a regional water conservation plan be approved and implemented with subsequent annual reports to demonstrate progress. As part of its Water Use Permit conditions the Charlotte Harbor Water Association must implement general water conservation practices and the governing board reserves the right to institute more specific conservation requirements during the duration of the permit.

Table WSW-12 10 is provided from the County-wide Water Conservation Plan and summarizes the estimated quantifiable water conservation savings from Best Management Practices (BMPs). The specific assumptions associated with this projection include:

- **Service Area** – The area analyzed includes all serviced customers within the existing certificated service area of CCU, including Burnt Store, but does not include Punta Gorda or other areas outside of the CCU service area.

- **Time Horizon** – Implementation of BMPs was assumed to occur over a ten-year time horizon, FY 2007-08 to FY 2017-18, with demand projections to FY 2027-28.

- **Specific Quantifiable BMPs** – The specific programs included in the savings calculation are the use of plumbing retrofit kits to replace inefficient faucet aerators and showerheads, and a toilet rebate program to upgrade older toilets to a performance level

of 1.6 gallons per flush or better. Furthermore, the table assumes that the life expectancy of a toilet is 30 years. Benefits from reclaimed wateruse programs are not included in this particular calculation. Conservation benefits from non-quantifiable programs, or water conservation measures such as education programs or the use of conservation rates, are not included in the analysis. The effects of water conservation measures are not easily quantifiable, and at this time the State has not proposed a methodology for accounting for the impact on demand related to the use of water conservation measures.

Table WSW-1210: Projected Planned Demand Reduction for the CCU Service Area (including the Burnt Store Service Area)

Year	Planned Water Savings Capacity (MGD)	Percent Reduction from Conservation	Forecasted Demand (MGD)	
			Without Conservation	With Conservation
2008	0.019	0.15 %	12.692	12.673
2012	0.176	1.06 %	16.635	16.460
2017	0.375	1.73 %	21.616	21.242
2022	0.375	1.39 %	26.975	26.600
2027	0.375	1.09 %	34.504	34.130

Source: Charlotte County Utilities, 2008

The data from Table WSW-12 10 can be used to update water demand projections for the Comprehensive Plan. Specifically, from 2017 onwards, a savings of 0.375 MGD can be attributed to water conservation as a direct offset of potable water demand.

EXISTING CONDITIONS – RECLAIMED WATER

The County makes reclaimed water available for irrigation purposes and other authorized non-potable uses in those areas of the County included within the CCU service area, and where the Board of County Commissioners determines that the construction of a reclaimed water distribution system is desired or requested by customers, and is practical and economical. The reclaimed water distribution system is being constructed in phases to provide service to designated areas as determined by the Board of County Commissioners. The County aims to maximize the reuse of treated wastewater and minimize new project impacts on potable water resources. Therefore, it is the responsibility of the project developer to provide for the use of reclaimed water as a condition precedent to wastewater treatment capacity availability if that service is available.

The Englewood Water District and CCU have implemented water reclamation programs. Many of these programs involve the delivery of treated wastewater effluent to surrounding golf course facilities for use in irrigation. The location of reclaimed water facilities in the County is shown on SPAM Series Map #90.

INVENTORY – RECLAIMED WATER PROVIDERS

Charlotte County Utilities: CCU is committed to reusing 100 percent of all wastewater effluent produced through the treatment of sanitary sewage. Capital improvement projects that have been completed as of 2014 to further this goal include transmission lines interconnecting CCU's East Port WRF with its West Port and Rotonda WRFs, a Water Reclamation Pump Station, Westport pond expansion and two 0.500 MG storage tanks. The tanks and ponds provide an additional supply of reclaimed water that allows the system to maintain a constant pressure for several hours during the day and improve reclaimed service to its customers. CCU currently produces 5.9 MGD of reclaimed water and delivers approximately 3.0 MGD to its 14 reclaimed water customers, all for irrigation purposes.

While CCU now has a fully integrated reclaimed water transmission and distribution system in the Mid- and West County regions, it compiles statistics on the reclaimed system at each water reclamation facility, including those related to reclaimed water use. Table WSW-15 presents a summary of the most recent collection of data.

Table WSW-15: Charlotte County Utilities Annual Reclaimed Water Data, 2014

Wastewater Facility	Permitted Capacity (MGD)	Total Water Available for Reuse or Disposal (MGD)	Reuse Sub-Types	Effluent Disposal Methods
East Port WRF	6.000	4.1	Golf course irrigation (3 accounts); Residential irrigation (4 Residential/Mobile Home	Deep well disposal On-site irrigation

Table WSW-15: Charlotte County Utilities Annual Reclaimed Water Data, 2014				
Wastewater Facility	**Permitted Capacity (MGD)**	**Total Water Available for Reuse or Disposal (MGD)**	**Reuse Sub-Types**	**Effluent Disposal Methods**
			Developments, approx. 1804 accounts); 1 Sports Complex	
Rotonda WRF	2.000	0.9	Golf course irrigation (2 accounts); Residential irrigation (1 Residential Development, 71 accounts)	Reject Pond
West Port WRF	1.200	0.6	Golf course irrigation (1 accounts)	Deep well disposal On-site irrigation
Burnt Store WRF	0.500	0.3	2 Residential Development common areas; Rapid infiltration basins (including some perc ponds)	Deep well disposal
Total	**8.325**	**5.9**		

Source: Charlotte County Utilities, 2014

Englewood Water District: The Englewood Water District is committed to reusing 100 percent of its wastewater effluent water. Previous capital improvements to the reclaimed system include a new water reclamation pump station and a new booster station, and a one-million gallon reclaimed water ground storage tank. This tank provides a constant supply of reclaimed water to the service pumps, which allows the system to maintain a constant pressure for several hours during the day and improve reclaimed water service to its customers. The Englewood Water District offers reclaimed water to residential customers and Wal-Mart. Additionally, Eagle Preserve, Myakka Pines Golf Club, Boca Royale Golf Club, Oyster Creek Golf Course, Lemon Bay High School athletic fields, Oyster Creek Regional Park, the Englewood Sports Complex, and Taylor Ranch either are or will be using recycled water for irrigation.

RECLAIMED WATER EXPANSION

CCU's current reclaimed water program consists of a regional system that provides reclaimed water to local golf courses and approximately 1,875 private residential customers. CCU encourages connections to this system to offset the use of potable water for activities that do not require it, and is actively pursuing new customers as the system expands.

As part of its phased reclaimed water expansion initiative, CCU has expanded the transmission and distribution capacity of its reclaimed water transmission and collection system. As of 2014, transmission mains were extended to provide reclaimed water from CCU's East Port, West Port, and Rotonda WRFs to the Mid- and West County regions and to interconnect all three facilities.

Future phases of CCU's expansion initiative include projects to extend reclaimed water transmission and distribution facilities further into the West County region in order to service additional golf courses and residential developments in the Rotonda and Placida areas. CCU is currently in the funding and planning/design stages of Phase III of this portion of the reclaimed water expansion program. Other reclaimed water expansion projects are currently under way along Burnt Store Road in the South County region.

CCU is developing a long-term comprehensive reclaimed water plan with the intent of eventually connecting all large-scale users of non-potable water within its service area to its system. This plan will include time frames, estimated costs, funding proposals, operational guidelines, reclaimed water use priorities, and rate analysis for expansion, and will not require the connection of individual single-family, duplex, or triplex buildings.

EXISTING CONDITIONS – SANITARY SEWER

LEVEL OF SERVICE – SANITARY SEWAGE DISPOSAL

The establishment of appropriate LOS standards for sanitary sewage disposal is necessary to plan for and meet projected demand. A sanitary sewer system must have an adequate capacity to meet the average daily demand, while being able to accommodate periods of peak demand. A review of historical data indicates that a capacity of 190 gallons per day per ERC is needed to meet peak demands in the unincorporated areas of Charlotte County. Actual average day demands may be significantly lower (approximately 1~~47.34~~~~39.06~~ gpd per ~~connection~~ERC, or 85% of the average daily water use). Planning to meet LOS demands is necessary to ensure that adequate infrastructure capacity is available to satisfy short-term and instantaneous sanitary sewage disposal demands without negatively impacting system performance (e.g., reduction in system pressure). Effectively planning for LOS demands also results in more efficient operation of the systems in Charlotte County.

INVENTORY – SANITARY SEWER PROVIDERS

Sanitary sewage disposal in ~~Charlotte~~ the County is provided by ~~nine~~ ten certificated utilities ~~maintaining operations within Charlotte County~~. The three largest suppliers are all publicly owned: Charlotte County Utilities, the City of Punta Gorda, and the Englewood Water District. The remaining providers are privately owned. All of these sanitary sewage disposal service providers have a customer base and a certificated area of operation throughout which they provide service. As with certificated areas for potable water distribution, the certification grants the authorized right to be the sole provider of a stipulated service within a described area to ensure that service areas do not overlap. Further, any area not depicted as a certificated area falls under the service of Charlotte County Utilities. The ~~nine~~ ten certificated sanitary sewage disposal supply areas are depicted on SPAM Series Map #86. This map also shows the location of community sewer systems for small developments such as mobile home parks and campgrounds. SPAM Series Map #87 shows the location of all wastewater treatment plants.

A detailed analysis of all public and private facilities was conducted pursuant to the criteria established ~~under Rule 9J-5.011 F.A.C~~by Statute. The sanitary sewer providers were inventoried by geographic location to identify plant design capacities, current demand, and existing levels of service for each certificated area. The existing and future sewer needs for Charlotte County were then identified based on the data obtained from the inventory. Future sewer demands were generated by applying seasonal population projections to the 190 gallons per day per ERC LOS standard established in this element. Demands were equated to per capita sewer usage by dividing the 190 gpd ERC standard by 2.~~18~~ 14 persons per household, the 2010 U.S. Census estimate for ~~Charlotte~~ the County. After the future sewer demands were

identified, the performance of existing facilities and adequacy of present levels of service was evaluated over time and the need for facility replacement and expansion was determined.

Existing Sanitary Sewer Providers

Charlotte County Utilities: CCU is owned and operated by Charlotte County, and is the largest utility in the County. CCU's official service area includes all areas of ~~Charlotte~~the County not included in any other certificated service area, and totals approximately 622.39 square miles. Its actual service area is much smaller, being limited to portions of the Port Charlotte area in the Mid-County region and portions of West County including Gulf Cove, Englewood East ~~Englewood~~, South Gulf Cove, and Rotonda. CCU also services a portion of the Burnt Store area of South County.

CCU currently operates four wastewater treatment facilities. The East Port Water Reclamation Facility (WRF) is located in eastern Port Charlotte and has a permitted capacity of 6.000 MGD, serving the Mid-County region. This facility uses spray irrigation, deep injection wells, and reclaimed water distribution for effluent disposal. Sale of recycled water to customers for irrigation purposes is the first choice of disposal. Expansion of this plant to 9.000 MGD is planned to be completed by ~~It is anticipated that this facility will be expanded to 9.000 MGD by~~ 2019~~3~~. However, the construction of this plant expansion will proceed on a schedule determined by actual flow increases to the plant in accordance with FDEP regulations.~~.~~

The West Port WRF is located just west of the Myakka River, and has a permitted capacity of 1.200 MGD, serving the West County region. This facility uses spray irrigation, deep well injection, and reclaimed water distribution for effluent disposal. ~~It is anticipated that this facility will be expanded to 2.5000 MGD by 2017.~~

The Rotonda WRF is located west of the Rotonda area, and has a permitted capacity of 2.000 MGD, serving the West County region. This facility uses recycled water distribution and on-site storage tanks for effluent disposal, transferring effluent to the West Port WRF for final disposal. ~~A deep well injection effluent disposal process is currently being implemented at this facility.~~ The Rotonda and West Port WRFs have a recycled water interconnect to better serve their recycled water customers.

The Burnt Store WRF is located in the Burnt Store area of southern Charlotte County, and has a permitted capacity of 0.500 MGD, serving the Burnt Store area in Charlotte and Lee Counties. This facility uses on-site percolation ponds and deep injection wells for effluent disposal. Expansion of this plant to 0.750 MGD is planned to be completed by 2018. However, the construction of this plant expansion will proceed on a schedule determined by actual flow increases to the plant in accordance with FDEP regulations.
~~This facility will be expanded to 2.500 MGD by 2013.~~

City of Punta Gorda: The City of Punta Gorda official service area covers approximately 37.32 square miles and is located south of the Peace River, including most of the incorporated area of the City itself as well as nearby areas of unincorporated Charlotte County including the communities of Cleveland and Solana, and the Charlotte County Airport. The service area includes approximately 17.28 square miles outside the City limits. The City operates a water reclamation facility with a permitted capacity of 4.000 MGD. This facility uses spray irrigation for effluent disposal.

Englewood Water District: The Englewood Water District encompasses approximately 45 square miles in southern Sarasota County and western Charlotte County, with approximately 12.12 square miles of the District in Charlotte County. The certificated service area includes the Englewood area of Charlotte County as defined in the Englewood Water District's Enabling Act. The District operates a wastewater treatment plant located in the Englewood area of Charlotte County, and has a permitted capacity of 4.200 MGD. This facility uses deep well injection and recycled water distribution for effluent disposal.

The district accepts all sanitary sewer flows from the Utilities of Sandalhaven certificated area.

Riverwood Community Development District: The Riverwood Community Development District certificated area covers approximately 2.19 square miles located east of the Myakka River and southwest of Port Charlotte, along S.R. 776. The CDD operates a wastewater treatment plant (WWTP) with a permitted capacity of 0.499 MGD. This facility uses spray irrigation for effluent disposal. The CDD supplies sanitary sewer disposal service to more than 850 single family and multi-family service connections in the Riverwood development.

Gasparilla Island Water Association: The Gasparilla Island Water Association certificated area covers approximately 3.05 square miles in Charlotte and Lee Counties, mostly on Gasparilla Island, a barrier island located in southwestern Charlotte County. Approximately 1.22 square miles of the certificated area is located in Charlotte County. The Association operates a WWTP on the island, with a permitted capacity of 0.055 MGD.

Sun River Utilities: The Sun River Utilities certificated area covers approximately 17.96 square miles located along US 17, near the DeSoto County line, consisting of the Rivers Edge mobile home development and adjoining properties in Charlotte and DeSoto Counties. The utility operates a WWTP with a permitted capacity of 0.015 MGD.

Knight Island Utilities: The Knight Island Utilities certificated area covers approximately 0.92 square miles located on the bridgeless barrier islands of Knight Island and Thornton Key. The utility maintains a WWTP on the island, with a permitted capacity of 0.055 MGD.

~~North Fort Myers Utilities~~Florida Governmental Utility Authority: The ~~North Fort Myers Utilities~~Florida Governmental Utility Authority certificated area covers approximately 2.42 square miles located immediately north of the Lee County line, between US 41 and I-75, an extension

of its certificated area in Lee County to the south. ~~NFMU~~ FGUA does not currently have any residential or commercial service connections. ~~NFMU~~ FGUA operates ~~a~~ two WWTPs in Lee County with a permitted capacity of ~~3.500~~4.550 MGD.

Town & Country Utilities: The Town & Country Utilities certificated area covers approximately 27.79 square miles located north of Lee County Road 78, east of S.R. 31, and south of Charlotte County Road 74 in Charlotte and Lee Counties, with approximately 20.96 square miles located in Charlotte County. This utility has been certificated to serve the new Babcock Ranch development.

Utilities, Inc. of Sandalhaven: The Sandalhaven certificated area covers approximately 2.12 square miles located in western Charlotte County, west of Rotonda and south of the Englewood area. The utility ~~maintains~~ has a WWTP with a permitted capacity of 0.150 MGD, but has entered into an agreement with Englewood Water District for the district to serve all of its sanitary sewer flows.

Community Systems: Several community systems serve areas of Charlotte County where centralized sanitary sewer systems do not exist but population densities do not allow sewage disposal to be provided by individual on-site septic systems. FDEP records indicate that there are ~~16~~ 15 such community systems in Charlotte County that serve residential or residential-type development. These include mobile home parks, campgrounds, and the Charlotte Correctional Institute. These facilities have capacities ranging from 0.010 MGD (10,000 gallons per day) to 0.180 MGD (180,000 gallons per day), and serve a total of approximately 5,~~251~~ 821 people. The locations of these community systems are shown on SPAM Series Map #86.

On-site Septic Systems: For those structures not connected to a centralized utility or a community system, their sanitary sewage disposal is most likely handled through on-site septic systems. There are ~~an estimated~~estimated calculated ~~17,443~~26,723 sites in Charlotte County that rely on on-site septic systems to provide sanitary sewage disposal, and these are shown on SPAM Series Map #89.

FUTURE CONDITIONS – SANITARY SEWER

EXISTING AND PROJECTED SANITARY SEWER FACILITY NEEDS

The 25 existing sanitary sewer service providers in Charlotte County were permitted to collect ~~23,997,000~~~~19,937,000~~24,487,000 gallons of sewage ~~in 2014~~~~09~~, as shown in Table WSW-~~13~~11~~11~~. This plan incorporates the established wastewater LOS standard of 190 gallons per day per ERC. The majority of potable water used by customers is disposed through a sewage system in the form of wastewater, but a portion of water used, up to 25 percent, may be lost to consumption. This plan acknowledges that approximately 15 percent of the water demand will not be returned to the wastewater system. For that reason, the minimum LOS standard is approximately 85 percent of that for potable water. The ERC can be converted to gallons per capita per day (gpcd) by using the following formula:

1 ERC = 190 gpd / 2.~~18~~ 14 persons per household = ~~87.2~~88.785 gpcd

Table WSW-~~13~~~~11~~16: Existing Permitted Sanitary Sewage Disposal Service Providers

DEP ID	Supplier	Population	Permitted Capacity (GPD)
FLA014121	Alligator Park MHP	400	60,000
FLA014067	Bay Palms MHP	50	10,000
~~FLA014086~~	~~Burnt Store Colony MHP~~	~~238~~	~~60,000~~
FLA014130	Charlotte Correctional Institute	1,594	180,000
FLA014291	Charlotte County Utilities – East Port	79,807	~~9~~6,000,000
FLA014048	Charlotte County Utilities – West Port		1,200,000
FLA014098	Charlotte County Utilities – Rotonda		~~1~~2,000,000
FLA014083	Charlotte County Utilities – Burnt Store	6,300	~~2,500,000~~500,000
FLA118371	City of Punta Gorda	29,561	4,000,000
FLA014126	Englewood Water District	48,970	4,200,000
FLA014641	Gasparilla Island Water Assn.	4,735	705,000
FLA014548	FGUA – Del Prado	42,000	4,250,000
FLA014463	FGUA – Lake Fairways		300,000
FLA014089	Gasparilla Mobile Estates	182	25,000
FLA014116	Harbor View Trailer Park	151	24,000
FLA014078	Hideaway Bay Condominiums	102	21,000
FLA014095	Knight Island Utilities	570	55,000
FLA014070	Lazy Lagoon MHP	157	70,000
	~~North Fort Myers Utilities~~		
FLA014088	Palm & Pines	126	15,000
FLA014072	Paradise Park Condominium Association	785	24,000
FLA014105	Pelican Harbor MHP	159	20,000

Table WSW-~~13~~11~~16~~: Existing Permitted Sanitary Sewage Disposal Service Providers			
DEP ID	**Supplier**	**Population**	**Permitted Capacity (GPD)**
FLA014060	Riverwood Community Development District	2,133	499,000
FLA014122	River Forest Village	204	35,000
FLA014113	Shell Creek Park	465	20,000
FLA014120	Sun N Shade Campground	200	20,000
FLA014062	Sun River Utilities	90	15,000
FLA665495	Town and Country Utilities	0	N/A
FLA014068	Tropical Palms MHP	350	60,000
FLA014053	Utilities, Inc. of Sandalhaven	1,966	150,000
FLA014092	Villas Del Sol	88	29,000

Source: Florida Department of Environmental Protection, ~~2009~~2011~~4~~

This standard was used in conjunction with the County's population projections, presented in Table WSW-1, to determine the future sanitary sewer needs for Charlotte County. Estimates of future population were developed based on U.S. Census blocks, as with the potable water projection demands. These blocks were assigned to one of the nine certificated areas, and seasonal population estimates for each certificated area were developed from ~~2008~~ 2010 to 2050. Since the boundaries of the certificated service areas do not always follow the boundaries of the Census blocks, in some cases the area used for population projection may be larger or smaller than the actual boundaries of the certificated area, increasing or decreasing the estimated population. Every effort was made to minimize these effects, and usually involved large, sparsely-settled Census blocks. In general, these effects are expected to balance out County-wide in the long run. Due to the nature of the Census blocks on the bridgeless barrier islands, all four were combined into a single statistical area in this analysis, even though only one of the four, Knight Island, has centralized sanitary sewer service. This has the effect of over-estimating the demand on the Knight Island Utilities system.

Table WSW-~~14~~1212~~12~~17, included in WSW Appendix A, depicts the projected sanitary sewer service demands ~~2008~~ 2010 to 2050 based on estimated functional population. Projected demands are calculated by multiplying the projected population by the per capita equivalent minimum LOS standard of ~~87.2~~88.785 gallons per day and are indicated in millions of gallons per day (MGD). The incorporated area of the City of Punta Gorda is calculated using the City's adopted LOS. The functional populations in this table are greater than those shown in Table WSW-1 because they include the Charlotte Correctional Facility, a prison run by the Florida Department of Corrections and serviced by its own sanitary sewer facility. The inmate population of this facility was not included in the general County totals contained in Table WSW-1.

Table WSW-~~14~~ ~~12~~12~~1~~7 also compares the treatment capacity for each of the sanitary sewer service providers in Charlotte County. This capacity is presented both as a permitted capacity, or the Average Annual Daily Flow through the wastewater treatment facility approved by DEP, and the peak capacity, or the maximum amount of flow the facility was designed to handle without failing. Since the LOS standard of 190 gpd/ERC represents a peak usage rate it can only be appropriately compared to the peak capacities of the facilities treating the wastewater. Unfortunately, an examination of the DEP permit applications showed that not every facility established its peak capacity using the same methodology. Some facilities used Peak Daily Flow (PDF), or the absolute maximum flow the facility could process on any single day. Some facilities used Maximum Monthly Average Daily Flow (MMADF), or the average daily flow for the month with the highest flow. Some facilities used Three Month Average Daily Flow (TMADF), or the average daily flow for the three-month period with the highest flow. Finally, some facilities used Average Annual Daily Flow (AADF), or the average daily flow for the entire year. In general, the smaller the permitted capacity of the facility the more likely the facility used AADF to determine peak capacity. In Table WSW-~~14~~18~~3~~, Peak Capacity is compared to the demand projection to determine any projected service deficits.

The analysis presented in that table indicates that one certificated utility, Town & Country Utilities, shows a projected service deficit before the long-range planning horizon of 2030~~ and two more certificated utilities, Englewood Water District and the Riverwood CDD show a projected service deficit within the vision planning horizon of 2050~~. ~~Two~~ One other certificated areas, Sun River Utilities~~ and Utilities, Inc. of Sandalhaven~~, ~~are~~ is ~~technically~~ experiencing a service deficit~~s~~ at this writing, according to the demand projections. Table WSW-~~15~~ ~~13~~13~~1~~8 shows planned facility expansions, but none that will address the projected and apparent deficits. Data for Town & Country Utilities is conflicting, reporting different permitted capacities for the utility's treatment facility, especially when Table WSW-~~14~~ ~~12~~12 is compared with Table WSW-~~15~~13~~1~~3~~1~~8. Regardless, concurrency management policies will not permit the projected residential units to be built in the Babcock Ranch development, served by Town & Country Utilities, until appropriate sanitary sewer facilities are in place.

Table WSW-~~15~~13~~1~~3~~1~~8: Planned Wastewater Treatment Facility Expansions

Year of Improvement	Facility to be Improved	Existing Capacity (MGD)	Final Capacity (MGD)
~~2009~~	~~CCU – Rotonda WRF~~	~~1.000~~	~~2.000~~
~~2012~~	~~CCU – Burnt Store WRF~~	~~0.500~~	~~2.500~~
~~2013~~	~~CCU – East Port WRF~~	~~6.000~~	~~9.000~~
2015	Town & Country WRF	0.200	1.500
2018	CCU – Burnt Store WRF	0.500	0.750
201~~9~~5	CCU – East Port WRF	~~9~~6.000	~~9~~12.000
~~2019~~	~~CCU – West Port WRF~~	~~1.200~~	~~2.500~~
2025	Town & Country WRF	1.500	3.600

Source: Charlotte County Utilities & Town & Country Utilities, ~~2009~~20142

Usage data for ~~the two certificated areas showing immediate service deficits~~Sun River Utilities indicates that the actual usage for these utilities is much lower than the projected level. Table WSW-~~16 14~~1419 shows the reported flows through the wastewater treatment facilities for Sun River Utilities ~~and Utilities, Inc. of Sandalhaven~~ for ~~the previous~~ 26 months between June 2007 and July 2009, which they submitted to Charlotte County. This table, showing reported monthly flows of no more than 0.005 MGD ~~for Sun River Utilities and 0.113 MGD for Utilities, Inc. of Sandalhaven~~ indicates usage patterns well below the peak capacities for ~~either~~the utility. ~~Both utilities~~Sun River Utilities reports lower populations for their service areas than the population estimates do, which is a likely contributor to the higher demand projection when compared to actual usage. Sun River Utilities reported 58 single-family connections in July of 2009, which equates to ~~127~~ 124 people using the ~~2000~~ 2010 U.S. Census estimate of 2.~~18~~ 14 persons per household for Charlotte County, compared to a functional population of 1,~~690~~ 911 as estimated by the County. ~~Similarly, in July of 2009 Utilities, Inc. of Sandalhaven reported 723 total connections, including 688 single-family connections and 129 multi-family connections. This~~which ~~equates to 1,782~~ 547 people within the utility's service area, compared to 2,1291,876 ~~as estimated by the County.~~ An operational analysis of ~~these two~~this certificated ~~utilities~~ utility shows that, given the most recent reported usage rates and projected growth rates, ~~both~~ Sun River Utilities will remain within capacity through the planning horizon of 2050.

Table WSW-~~14~~19: Reported Monthly Wastewater Flow for Sun River Utilities, 2007-2009

Month	Sun River AADF
Jun 2007	
Jul2007	0.006
Aug 2007	
Sep 2007	0.004
Oct 2007	0.003
Nov 2007	
Dec 2007	0.005
Jan 2008	
Feb 2008	
Mar 2008	
Apr 2008	0.004
May 2008	
Jun 2008	0.004
Jul 2008	0.003
Aug 2008	0.004
Sep 2008	0.002
Oct 2008	0.002
Nov 2008	0.003
Dec 2008	0.004

Jan 2009	
Feb 2009	0.005
Mar 2009	
Apr 2009	
May 2009	0.003
Jun 2009	0.003
Jul 2009	

Source: Charlotte County Community Development Department, 2009

In 2009, Sun River Utilities received approval from the Florida Public Service Commission to extend its potable water and wastewater service area in Charlotte County. The PSC concluded that Sun River Utilities had both the financial and technical ability to provide service to their expanded service area. Further, the PSC concluded that Sun River Utilities had sufficient plant capacity to serve the expanded service area or the ability to construct a new plant when needed. This expansion increased the certificated service area of Sun River Utilities tremendously, but the supply facilities have not yet been expanded to serve the entire area. This adds to the projected shortage in wastewater disposal capacity. While Sun River Utilities currently does not have plans to expand their system to address this projected shortfall, the approval of the certificated area by the PSC indicates that the utility has demonstrated the capability, both technically and financially, to expand their supply when the time comes.

Table WSW-~~14 12~~1217 also projects that ~~six~~ seven out of 16 community systems show an immediate service deficit, ~~a seventh~~and an ~~eighth~~eighth shows a deficit by 2015~~, and a seventh shows a deficit by 2025~~. One other facility, servicing the Charlotte Correctional Institute, shows a service deficit by ~~2040~~2050. Unlike certificated utility areas, Charlotte County does not require community systems to report their monthly usage, so a comparison cannot be made between the system's projected demand and its actual demand. Traditionally, however, these developments have a much higher percentage of seasonal residents than standard residential development, and therefore have a lower demand than may be projected by equating a mobile home occupied only part of the year with a permanently-occupied site-built residence.

An examination of FDEP permit applications revealed some reported data, which showed that Alligator Park Mobile Home Park reported a Three Month Average Daily Flow of 0.026 MGD, or only 43 percent of the permitted capacity of 0.060 MGD and Paradise Park Condominium Association reported an Annual Average Daily Flow of 0.009 MGD, or 38 percent of the permitted capacity of 0.024 MGD. An operational analysis of these two community systems shows that, given current reported usage rates and projected growth rates, both will remain within capacity through the plan horizon of 2050. If all of the community systems have usage patterns similar to Alligator Park MHP and Paradise Park Condominiums then the deficits projected in Table WSW-~~14~~ 173 do not exist.

It should also be noted that not all of a utility's certificated area may be served by that utility. For example, the CCU Mid-County region within the Urban Service Area, served by the East Port WRF, has a 2008 2010 estimated functional population of 85,,504 453 and an estimated 43,56046,122 dwelling units, but only 19,939 metered service connections20,067 ERCs, which include both residential and non-residential customers. This disparity between the number of potential and actual connections is not unique to CCU. Any structure not connected to a centralized sanitary sewer system must be connected either to a community system or to an on-site septic system for sewage disposal. Table WSW-17 151520 shows the number of septic systems permitted since 1971, and projects future permits through 2050.

Table WSW-171515520: Sewage Treated by On-Site Septic Systems, 2008-2050

Year	Existing Systems(1)	Systems Added(2)	Total Systems	Sewage Treated (MGD)
2008	31,704		31,704	6.023
20102013	26,723	332	26,72332,036	5.0776.087
2015		458830	27,18132,866	5.1646.245
2020		1,145830	28,32633,696	5.3826.402
2025		1,145830	29,47134,526	5.5996.560
2030		1,145830	30,61635,356	5.8176.718
2040		2,2901,660	32,90637,016	6.2527.033
2050		2,2901,660	35,19638,676	6.6877.348

Source: Charlotte County Health Department, Environmental Health Division, 20092014

(1) Assumes 70% of all septic systems permitted before 2008 are still in serviceCalculated number of permitted septic systems.

(2) Assumes 166 229 new systems are permitted annually based on 2008 permit numbersthe average of new systems installed annually, 2009-2013.

Table WSW-18 161621 shows the total projected demand and total permitted capacity for sanitary sewage disposal for Charlotte County from 2008 to 2050, including centralized sewer systems, community systems, and on-site septic systems.

Table WSW-181621621: Current Sewerage Capacity vs Projected Demand, 20082010-2050

Year	Functional Population	Projected Demand (MGD)	Projected Permitted Capacity (MGD)				Available Capacity (MGD)
			Centralized Sewer(1)	Community Systems	On-Site Systems	Total	
2008	174,411	15.353	16.674	0.618	6.023	23.315	7.962
2010	174,704174,037174,768	15.51115.335515.517	16.674	0.5580.618	5.0776.087	22.309 23.379	6.7927.8688.044
2015	184,372189,277184,445	16.36916.6 4716.376	17.97416.674	0.5580.618	5.1646.245	23.696 23.537	7.3207.168 6.890
2020	193,356208,087193,436	17.16718.296 17.174	21.22416.674	0.5580.618	5.3826.402	27.164 23.694	9.9906.527 5.398

Table WSW-~~18~~16~~16~~21: Current Sewerage Capacity vs Projected Demand, ~~2008~~2010-2050							
Year	Functional Population	Projected Demand (MGD)	Projected Permitted Capacity (MGD)				Available Capacity (MGD)
			Centralized Sewer(1)	Community Systems	On-Site Systems	Total	
2025	~~202,015~~230,~~774~~202,101	~~17.936~~20.2~~82~~17.944	23.32~~416.674~~	0.558~~0.618~~	5.599~~6.560~~	29.481~~23.852~~	11.537~~5.91~~ ~~63.570~~
2030	~~210,324~~256,~~550~~210,418	~~18.674~~22.5~~39~~18.682	23.32~~416.674~~	0.558~~0.618~~	5.817~~6.718~~	29.699~~24.010~~	11.017~~5.33~~ ~~61.471~~
2040	~~225,104~~308,~~719~~225,210	~~19.986~~27.1~~07~~19.995	23.32~~416.674~~	0.558~~0.618~~	6.252~~7.033~~	30.134~~24.325~~	10.139~~4.339~~2.782
2050	~~236,769~~348,~~651~~236,886	~~21.022~~30.6~~12~~21.032	23.32~~416.674~~	0.558~~0.618~~	6.687~~7.348~~	30.569~~24.640~~	9.537~~3.618~~5.972

Source: Charlotte County ~~Growth Management~~Community Development Department, ~~2009~~2011~~4~~4

(1) Includes facility expansions shown in Table WSW-14.

Table WSW-~~18~~ ~~16~~16~~21~~21 shows that, County-wide, there will be adequate sanitary sewage disposal capacity through the ~~long-range planning~~vision horizon of ~~2030~~2050, especially when on-site septic systems are included in the analysis, but as Table WSW-~~14~~ ~~12~~12~~17~~17 ~~also~~ shows, not all service areas within the County will maintain this excess capacity. ~~Table WSW-18 also shows, however, that there will be a service deficit of nearly three million gallons per day by 2040 and of nearly six million gallons per day by 2050. This table does not take~~This table takes into account the planned facility expansions shown in Table WSW-~~15~~13~~13~~18, but does not address any reduced demand based on water conservation methods, or any other facility expansions certain to occur within the horizons of this plan that are not yet planned or even considered at this time. ~~These planned expansions would add 13.700 MGD to the total~~[DC6] ~~sanitary sewage treatment capacity by 2025, addressing the projected shortfall.~~ Even so, there is a projected surplus in sanitary sewer service by over 10.5 MGD, and since it is true that large portions of existing certificated areas are actually served by on-site septic systems rather than by centralized systems, it is likely that this situation will continue in the future despite the expansion of centralized systems, and that projected service deficits will not actually result in areas that are underserved by any form of sewage disposal. Plans for the expansion of centralized sewer systems will be discussed in further detail below.

PERFORMANCE OF EXISTING FACILITIES

The existing sanitary sewer facilities providing service to Charlotte County are generally adequately maintained and in fair condition. Based upon FDEP permitting information, all of the major certificated areas had surplus capacity and exceed the established level of service standards. Table WSW-~~18~~ ~~16~~16~~21~~21 indicates that total existing capacity of septic systems, community systems, and sewage treatment plants should be adequate to meet the needs of the projected population through the medium-range planning horizon of 2030, and through the long-term vision horizon of 2050 although, as indicated earlier, this County-wide total hides regional imbalances between demand and permitted capacity.

PROBLEMS AND OPPORTUNITIES FOR WASTEWATER FACILITY AND INFRASTRUCTURE EXPANSION

Charlotte County is focused on the long-term expansion of centralized sanitary sewage collection and treatment systems and the reduced reliance on on-site septic and community sewer systems that may have a negative impact on the natural environment and groundwater, especially in the urbanized area. The ~~recent additions~~inclusion of Charlotte Harbor and Lemon Bay to the FDEP and EPA verified list of impaired waterways clearly indicate that a transition from on-site systems to centralized facilities should be prioritized in certain areas of the County.

Many of the smaller utilities fund the expansion of their collection and treatment systems through bonding, or even through bank loans. CCU, however, has established Municipal Service Benefit Units (MSBUs) as the current method to fund sewer expansion initiatives. MSBUs are created by County ordinance or resolution as a funding mechanism to provide specific services to defined areas. The associated project costs are equitably assessed on each property within the benefit unit as non-ad valorem assessments that appear on their standard property tax bills. Unlike other MSBUs that may handle continuing maintenance, the sewer benefit units ~~that~~ have been established ~~are~~ for the purpose of constructing system expansions, and are designed to be ~~repealed~~removed once the project costs have been paid off. CCU is in the process of exploring other methods of ~~generating~~ obtaining revenue to offset a portion of the cost to individual property owners to be used in conjunction with the MSBU method.

Currently there are 1~~1~~11 active utility expansion MSBUs, as shown on SPAM Series Map #88. In total, these MSBUs ~~will~~ provide sewer availability to approximately 1~~6~~[DC7],5,~~6~~000 properties. Future success in expanding CCU's centralized sanitary sewer service to areas that need it will require ~~more specific~~ direction from the Board of County Commissioners regarding the prioritization of future expansion areas.

CCU has finalized the conceptual ~~is in the conceptual stages of developing a~~ long-term initiative intended to bring centralized sanitary sewer service to a large portion of the Mid- and West County regions, which could make centralized sanitary sewer available to approximately 72,000 additional properties within the Urban Service Area. The classification of Charlotte Harbor and Lemon Bay as impaired waters, a newly developed sewer model, and the Future Land Use element's adopted Goals, Objectives, and Policies pertaining to the targeting of centralized utility services ~~will~~ provided the key criteria in establishing the~~a~~ conceptual long-term strategic plan for the expansion of CCU's sanitary sewer treatment, transmission and collection systems. Areas where capacity upgrades are needed to support future growth, as well as areas for future system expansion based on the age of existing on-site septic systems, proximity to surface

water bodies, and other factors were ~~will also be utilized~~ used for this conceptual long-term strategic plan.

Consistent with these long term objectives, as of 2014, CCU is in the ~~pre-~~construction stages for ~~two MSBUs. T~~the North Shore and ~~Harbor~~Harper Avenue Wastewater Expansion MSBU which will, upon completion, provide sanitary sewer to 42 residential properties ~~(35 occupied properties, 10 vacant properties)~~ located along the Peace River in the Charlotte Harbor area of the County. The East ~~&~~and West Spring Lake Wastewater MSBU is in the bid and contract award stages. This MSBU will, upon completion, provide sanitary to approximately 2,450 properties ~~(1875 occupied properties, 575 vacant properties)~~ located in the south central section of the Mid-County area.

~~Further~~Other opportunities exist to improve CCU's system efficiencies and performance. The current sewer infrastructure is a complex network of treatment facilities, transmission mains, force mains, l~~L~~ift ~~-~~stations~~, and force mains~~and collection systems. As the syste~~m~~em~~ expands, modifications and additions to the existing network will be required to accommodate the additional capacity, adding to capital expenditures. Any expansion to the existing system also ~~involves~~ increases ~~to~~ the long-term O&M costs due to additional electrical costs~~ity requirements~~, chemical costs, additional piping, replacement parts, ~~and~~ additional staffing and equipment costs.

An alternative to the current pressurized transmission system ~~low pressure and~~is a gravity interceptor~~–~~ system.~~systems is a gravity collection interceptor system.~~ This would involve constructing ~~a series of~~ large-diameter gravity ~~mains~~interceptors~~, or interceptors,~~ that would run through portions of the Mid~~-~~County region and transport sanitary sewage to the~~feed into the~~ East Port WRF. These gravity ~~mains~~interceptors ~~–~~would intercept flows from ~~lift stations and~~ localized transmission and collection systems throughout the Mid~~- and West -~~County region~~s~~, reducing reliance on a more extensive ~~complex~~ lift station/force main transmission strategy~~.~~. ~~While the capital costs associated with initiating this concept are high, early indicators suggest that the long-term savings in maintenance, power consumption, and lower future construction costs, are significant.~~ The increased capital costs for this system would be offset by the long-term O&M savings.

In addition, ~~I~~increasing costs ~~costs to connect on-site systems to~~for construction of ~~–~~low-pressure sewer (LPS) systems and the associated ~~and the l~~long-term LPS O&M costs make it advisable to implement the use of ~~review~~ gravity~~, and~~ modified gravity, and vacuum systems as alternatives to LPS systems.

~~CCU has constructed a Regional Recycled Water Transmission Main as part of its Phase I approach to a cross-County Recycled Water System, which supplies 0.250 MGD. Upon connection of all identified future users, the recycled water supplied by the Phase I transmission main will increase to an estimated 1.270 MGD. Future plans for a second phase will complete~~

~~the connection of the East Port WRF recycled water transmission system to an existing interconnected system between the West Port and Rotonda WRFs and will provide a cross-County recycled water transmission system capable of serving many users in the future.~~

Despite the fact that Charlotte County appears to have ample sewerage treatment capacity for the future, it is important that the public and certificated providers continue to upgrade and expand their ~~existing~~ treatment facilities and comply with FDEP regulations. As shown in Table ~~WSW-17~~15, ~~17.8~~WSW-~~16~~21, 28.8 percent of the County's existing sanitary sewage treatment capacity is handled by on-site septic systems and community systems. While this is down from nearly half of all capacity as recently as the mid- 1980s, Table WSW-~~17~~ 21~~6~~ also shows that given existing and projected treatment capacities and expansion this proportion ~~is actually projected to rise to 20.8~~will only fall to 26.3 percent by 2050. If the County wishes to significantly decrease the reliance upon non-centralized systems, then the provision of additional centralized sewer services is necessary concurrent with new residential, commercial, and industrial development. Alternatively, growth management policies may be adopted that direct future development into areas that are already served by centralized infrastructure, decreasing the costs of expansion and the per-unit O&M costs in a served area. Such regulation is in place at both the State and local level, discouraging the use of individual on-site septic systems on lots of less than one-half acre in area. There will likely always be areas in Charlotte County that are served by on-site septic systems; rural areas will not remain rural if public utility lines are extended to them, and there are areas within the County where urban densities are inappropriate or unwanted. The density of on-site systems shown on SPAM Series Map #89, however, is also inappropriate. Sewer expansion into these areas will benefit the customer, the environment, and the County as a whole.

Additionally, existing sewage treatment facilities are being monitored for capacity and efficiency to ensure that future demands and regulations are met. A study of the feasibility of interconnections between existing sanitary sewerage collection and treatment systems could provide information on the creation of regional sewage treatment plants. In addition, sanitary sewer providers should improve existing infrastructure to maintain the current level of service and to decrease infiltration and inflow of water into sewer systems.
~~CCU will also encourage connections to the new regional reclaimed water main to avoid the use of potable water for activities that do not require it.~~

SEPTIC SYSTEM MANAGEMENT PROGRAM

The Charlotte County Health Department, Environmental Health Division estimates that more than ~~45~~46,000 septic systems have been permitted over the years in the County (see Table WSW-~~19~~22~~7~~), although it is estimated that only 70 percent of these systems, or approximately 32,000, are still in operation. These septic systems require routine periodic maintenance to ensure proper function, and a large number of systems fail because this maintenance is not performed properly. Malfunctioning septic systems may introduce fecal bacteria and viruses into

the surface and groundwater supply. Enhanced programs by the Florida Department of Health (DOH) have increased the functionality of septic systems by requiring larger areas for installation, maintaining strict separation between drainfields and seasonal high water tables, and requiring inspections on alternative aerobic systems required on projects with more intensive wastewater handling needs.

While the County has a great number of vacant lots with central sewer service available, there are even greater numbers without. A goal of this Comprehensive Plan is to encourage the development of those vacant lots already served by centralized potable water and sanitary sewer systems, and reduce the reliance on on-site septic systems. Encouragement to develop within areas already served, or targeted to be served in the near future, will be accomplished through a combination of incentives and regulatory restrictions. This Plan also considers financial costs of providing infrastructure, and it recognizes that property owners using septic systems have made a financial investment in those systems. Laws have been adopted by Charlotte County requiring less intensive use of land for septic systems before requiring that alternative systems be employed. This has effectively required more connections to central sewer systems as a more cost-effective solution, and has upgraded the standards for the average on-site system.

Septic systems installed prior to 1983 are a concern in the County because they were built prior to the more strict septic system regulations that are in ~~existence~~ effect today. In general, on-site septic systems present challenges when compared to a centralized sewer system due to the land area required per lot to install them, the costs associated with installing and maintaining them, and the high seasonal water table through much of the County, which requires many drainfields to be mound systems.

According to DOH records, ~~2,592~~4,934 septic repair permits were granted between 1994 and ~~2008~~2013. This averages to ~~162~~ 234 repairs or documented deficiencies per year, although ~~1,011~~3,141 of those repair permits, or ~~39~~ 63.7 percent of the total, were issued ~~between 2006 and 2008~~since 2007, as part of the County's septic inspection and maintenance program which requires property owners to upgrade deficient systems to current standards where and when possible. Many, if not most of Mid-County's septic systems were installed prior to 1983. In portions of West County, the Englewood Water District has successfully eliminated many of the older septic tanks through the implementation of its regional central sewer program. Many older systems located in West County have been decommissioned and replaced with vacuum sewer systems. Several Municipal Service Benefit Units (MSBUs) and Municipal Service Taxing Units (MSTUs) have been created to finance future sewer expansion projects. The typical design life of a septic system has been estimated at 15 to 20 years (Proposed Surface and Groundwater Quality Monitoring Program for Charlotte County, Florida, Mote Marine Laboratory, Technical Report #433, July 28, 1995).

Table WSW-~~17~~22: Septic System

Year	New Permits	Repair Permits
Pre-1971	9,330	
1971	1,337	
1972	908	
1973	540	
1974	1,021	
1975	532	
1976	1,206	
1977	1,532	
1978	1,877	
1979	2,165	
1980	1,403	
1981	1,176	
1982	1,140	
1983	1,544	
1984	1,603	
1985	681	
1986	1,534	
1987	1,567	
1988	1,686	
1989	1,656	
1990	1,614	
1991	1,179	
1992	709	
1993	571	41
1994	497	185
1995	382	147
1996	402	212
1997	400	160
1998	336	160
1999	289	68
2000	325	75
2001	315	129
2002	365	135
2003	405	144
2004	406	70
2005	858	55
2006	1,171	212
2007	463	337
2008	166	462
2009	240	494
2010	279	414
2011	204	396

Table WSW-~~17~~22: Septic System		
Year	New Permits	Repair Permits
2012	179	466
2013	247	572
Total	**46,440**	**4,934**

Source: Charlotte County Health Department, Environmental Health Division, 2014

Table WSW-1917: Septic System Permits Issued		
Year	New Permits	Repair Permits
Pre-1971	9,330	
1971	1,337	
1972	908	
1973	540	
1974	1,021	
1975	532	
1976	1,206	
1977	1,532	
1978	1,877	
1979	2,165	
1980	1,403	
1981	1,176	
1982	1,140	
1983	1,544	
1984	1,603	
1985	681	
1986	1,534	
1987	1,567	
1988	1,686	
1989	1,656	
1990	1,614	
1991	1,179	
1992	709	
1993	571	41
1994	497	185
1995	382	147
1996	402	212
1997	400	160
1998	336	160
1999	289	68
2000	325	75
2001	315	129
2002	365	135
2003	405	144
2004	406	70
2005	858	55
2006	1,171	212
2007	463	337
2008	166	462
Total	**45,291**	**2,592**

Source: Charlotte County Health Department, Environmental Health Division, 2009

Septic systems constitute a major component of existing wastewater treatment. While most of the County's platted lots are not fully served by central utility service, there are a number of vacant lots that are ready for development and served by central potable water and sewer service. Since 1992, the number of septic system permits has generally declined, indicating that a greater percentage of new construction has occurred on property served by central sanitary sewer service.

The three urbanized areas of West County, Mid-County, and South County contain nearly 40,000 lots and parcels that have central sewer service available to them yet are vacant and ready to serve new development. Much of the County's new development should be channeled into those areas in order to maximize the infrastructure investment that has been made.

EXISTING CONDITIONS – RECLAIMED WATER

WATER REUSERECLAIMED WATER

Ordinance Number 2007-041, § 1 (Article VI Section 3-8 Reclaimed Water System) of the Charlotte County Municipal code was adopted May 22, 2007. It is the intent of this ordinance to makeT es recycled reclaimed water available for irrigation purposes and other authorized non-potable uses in those areas of the County included within the CCU service area, and where the Board of County Commissioners determines that the construction of a recycled reclaimed water distribution system is desired or requested by customers, and is practical and economical. The recycledreclaimed water distribution system shall be constructed in phases to provide service to designated areas as determined by the Board of County Commissioners, pursuant to the terms and conditions described in the ordinance. Charlotte County aims to maximize the reuse of treated wastewater and minimize new project impacts on potable water resources. Therefore, it is the responsibility of the project developer to provideprovide for the utilizationuse of effluent reusereclaimed water as a condition precedent to wastewater treatment capacity availability if that service is available.

The Englewood Water District and CCU have implemented water reclamation programs. Many of these programs involve the delivery of treated wastewater effluent to surrounding golf course facilities for use in irrigation. The location of reclaimedycled water facilities in the County is shown on SPAM Series Map #90.

INVENTORY – RECYCLEDLAIMED WATER PROVIDERS

Charlotte County Utilities: CCU is committed to reusing 100 percent of all wastewater effluent produced through the treatment of sanitary sewage. Capital improvement projects that have been completed as of 2014 to further this goal include funding for transmission lines interconnecting CCU's East Port WRF with its West Port and Rotonda WRFs, a Water Reclamation Pump Station, Westport pond expansion and two 0.500 MG storage tanks. When complete, theThe tanks and ponds will provide an additional supply of reuse reclaimed water which willthat allows the system to maintain a constant pressure for several hours during the day and improve reusereclaimed service to its customers. CCU currently produces 5.9 MGD of reclaimed water and delivers approximately 3.0 MGD servesto its thirteen14welve reclaimed water customers, all for irrigation purposes.

While CCU now has a fully integrated reclaimed water transmission and distribution system in the Mid &- and West County areasregions, CCU it compiles statistics on the reclaimeduse system at each water reclamation facility, including those related to reclaimed water use. Table WSW-20 8presents a summary of the most recent collection of data.

Table WSW-208: Charlotte County Utilities Annual Reclaimed Wateruse Data, 201408				
Wastewater Facility	**Permitted Capacity (MGD)**	**Total Water Available for Reuse or Disposal (MGD)**	**Reuse Sub-Types**	**Effluent Disposal Methods**
East Port WRF	6.000	3.9214.1	Golf course irrigation (3 accounts); Residential irrigation (4 Residential/Mobile Home Developments, approx. 301804 accounts); 1 Sports Complex	Deep well disposal On-site irrigation
Rotonda WRF(1)	0.62521.000	0.9478	Golf course irrigation (2 accounts); Residential irrigation (1 Residential Development, 71 accounts)	Reject Pond
West Port WRF	1.200	0.6539	Golf course irrigation (31 accounts)	Deep well disposal On-site irrigation
Burnt Store WRF	0.500	0.3267	2 Residential Development common areas; Rapid infiltration basins (including some perc ponds)	Deep well disposal
Total	**8.325**	**5.9205**		

Source: Charlotte County Utilities, 200820142

(1) Rotonda WRF received increased FDEP permitted capacity to 1.0 MGD after release of this data

Englewood Water District: The Englewood Water District is committed to reusing 100 percent of its wastewater effluent water. Previous capital improvements to the reusereclaimed system include a new Water Reclamation Pump Station and a new Booster Station. The Englewood Water District will spend $800,000 between September 2007 and June 2008 to construct a one-million gallon reclaimeduse water ground storage tank. When complete, the tank will provide a constant supply of recycledreclaimed water to the service pumps, which will allow the system to maintain a constant pressure for several hours during the day and improve reclaimed wateruse service to its customers. The Englewood Water District offers recycledlaimed water to residential customers and Wal-Mart. Additionally, Eagle Preserve, Myakka Pines Golf Club, Boca Royale Golf Club, Oyster Creek Golf Course, Lemon Bay High School athletic fields, Oyster Creek Regional Park, the Englewood Sports Complex, and Taylor Ranch either are or will be using recycled water for irrigation.

PROJECTIONS FOR RECLAIMED WATERREUSE EXPANSION

CCU's current reuse reclaimed water programprogram consists mainly of a regional system that providesing reclaimedycled water to local golf courses and approximately 138755 private residential customers. CCU encourages connections to this system to offset the use of potable water for activities that do not require it, and is actively pursuing new customers as the system expands. SWFWMD does not currently associate golf course usage of recycled water with an offset of potable water because golf courses typically use ground water to irrigate and not potable water. Therefore, no potable water offset is associated with golf courses in the summary table.

As part of its phased reclaimed water expansion initiative, CCU has is in the final stage of numerous a capital improvement projects to expanded the transmission and distribution capacity of itsthe existing reclaimed wateruse transmission and collection systems. As of 2014, from the transmission mains were extended in order to provide reclaimed water from CCU's East Port WRF to much of the Mid-County region and to interconnect its West pPort and Rotonda WRFs with its East pPort WRF.. Reclaimed water flows from the East pPort WRF can now be utilized to address the potential demands in the West- County areasregion. Furthermore, reclaimed water produced at the West pPort and Rotonda WRFs can be sent to the Mid-County region via this interconnected transmission system, When this project is completed in FY 2009 it will allow CCU to provide reuse reclaimed water service to a much larger customer base with greater consistency and delivery pressure., and t

A second phase of construction is currently in progress, that includesing the extension of a reclaimed water transmission main, additional storage capacity and a booster pumping station intended to augment the existing interconnect between the West pPort WRF and the Rotonda WRF and to improve efficiency of service delivery to the West- County areasregion. Construction is scheduled to be completed in 2014.

CCU has constructed a Regional Recycled Water Transmission Main as part of its Phase I approach to a cross-County Recycled Water System, which supplies 0.250 MGD. Upon connection of all identified future users, the recycled water supplied by the Phase I transmission main will increase to an estimated 1.270 MGD. Future plans for a second phase will complete the connection of the East Port WRF recycled water transmission system to an existing interconnected system between the West Port and Rotonda WRFs and will provide a cross-County recycled water transmission system capable of serving many users in the future.
Future phases of CCU's expansion initiative include projects to extend reclaimed water transmission and distribution facilities further into the West- County region in order to service additional golf courses and residential developments in the Rotonda and Placida areas of the County. CCU is currently in the funding and planning/design stages of Phase III of this portion of the reclaimed water expansion program. Other reclaimed water expansion projects are currently under way along Burnt Store Road in the South County region.

CCU currently produces 5.9 MGD of reclaimed water and delivers 3.0 MGD of reclaimed water. CCU will be able to produce 8.5 MGD of reclaimed water upon completion of its current sanitary sewer expansion program. It is anticipated that 6.8 MGD of reclaimed water will be delivered to golf courses, residential developments, public parks, schools and other commercial entities, leaving a surplus of 1.7 MGD for future developments. Of the additional 3.5 MGD future reclaimed water demand anticipated, approximately 1.800 MGD is considered he expected future offset of potable water has been estimated to be 1.270 MGD. SWFWMD does not currently associate golf course usage of recycled water with an offset of potable water because golf courses typically use ground water to irrigate, not potable water. Therefore, no potable water offset is associated with golf courses.

Charlotte County has made the policy decision to promote the use of recycled water for new developments. It is anticipated that the majority of the future growth of the reuse reclaimed water system will come through new developments, as opposed to infill service. For the purposes of estimating future potable offsets associated with reusereclaimed water, the following calculation can be used:

Future Potable Offset (FPO) = DP * %ND * %EFF * AHOR

Where,

DP = "Delta population" or the change in population over a given time period, divided by 2.18 persons per household (to normalize the units as households).

%ND = "Percent New Development", or the percent in population change attributed to new developments as opposed to infill growth. Past studies estimate that approximately 80 percent of all future growth may be attributed to new development.

%EFF = "Percent Efficiency", or the expected percentage of new households to utilize reuse service. This assumes that reuse service will not be available for all new developments. An estimate of 70 percent assumes that some new developments in the future will be built outside of the transmission and distribution network available for reuse service.

AHOR = "Average Household Offset of potable water due to Reuse", an estimate of the average use of potable water for residential irrigation. This approach assumes that the average household currently uses approximately 50 percent of their potable water for irrigation (based on past studies), and total potable water consumption is based on an estimated average daily consumption of 203173.34 gals/household/day assuming 81

gpd/c as reported to SWFWMD in 2013. Therefore, the estimated AHOR for this calculation is 86.67101.5 gals/household/day or 50% * 173.34203 gpd.

Table WSW-21 summarizes estimated future potable water offsets for new development by 2050.

2008 Population	2050 Population	Change in Population 2008-2050	% ND	% EFF	AHOR (gpd/ household)	FPO [DC8] (MGD)
174,411	348,651	174,240 [DC9]	0.80	0.70	101.5	4.543

The following approach for estimating the effects of reuse can be utilized. The future impact of reuse programs can be estimated by combining information regarding existing programs and future programs. Table WSW-22 summarizes the estimated expected potable water offset associated with reuse programs.

Table WSW-22: Summary of Future Potable Water Offset due to Reuse (2050 estimate)	
Reuse Customer Category	**Potable Offset (Gals. / day – Yr. 2050 [DC10])**
Golf Courses	No potable water offset
Existing residential customers (2008 - 375 accounts)	No potable water offset from future demand because demand from existing customers is already factored into projections.
Current Expansion Program	1,800,000270,000 gallons / day
Future Offset due to New Developments	4,590,057 gallons / day
TOTAL	**5,860,0576,390,000 gallons / day**

Source: Charlotte County Utilities, 2009

These two tables show that between 4.5 and 5.8 million gallons of potable water per day may be saved in 2050 through existing reusereclaimed water policies. Potable water that is not used for non-potable purposes acts, in effect, as an additional water supply and will reduce the need to develop new water sources in the future.

IMPLEMENTATION

POTABLE WATER SUPPLIES, SANITARY SEWAGE DISPOSAL, AND ~~SMART~~ GROWTH

The provision of water or sewer lines, whether by a public agency or a private company, can be one of the strongest indicators of development potential. The extension of such infrastructure into a rural area is one of the most effective ways to ensure that the area does not remain rural in the long run. The new utility lines allow for a much higher density of development than ~~the~~ before and the utility provider must encourage higher-density development to realize an acceptable return on the infrastructure investment. Given the opportunities provided by the construction of infrastructure lines, such extensions may be used to direct development into areas that are deemed appropriate, and away from areas that are deemed inappropriate.

This ~~Comprehensive~~ comprehensive ~~Plan~~ plan incorporates ~~Smart Growth~~growth principles ~~which~~ that identify the locations where ~~Charlotte~~ the County intends to direct development and capital investments in infrastructure. These areas are targeted due to their population densities, their existing land uses, and their proximity to existing public infrastructure. By directing development to these areas, the County can reduce infrastructure costs by increasing the use of existing systems, reducing urban sprawl, saving money by not requiring the construction of new transmission or collection mains into undeveloped areas, and reducing the per-unit costs of operations and maintenance on the existing infrastructure systems. Centralized potable water and sanitary sewer utilities may establish prioritization systems for expanding their service areas, but all such prioritization shall be consistent with these Smart Growth principles.

~~The Smart Growth~~These growth principles are more fully described in the Future Land Use element.

POTABLE WATER AND SANITARY SEWER SYSTEM EXTENSIONS

Besides roads, central potable water lines have had the greatest infrastructure influence on the development pattern of Charlotte County. Much of the urbanized area has been subdivided into small lots where the predominant land use is low-density residential. In addition, many of the commercial and industrial sites have also been subdivided into smaller lots. This development pattern enabled many developers to install only potable water lines and rely upon on-site septic systems for sanitary sewage disposal. On-site septic systems are more appropriate in rural areas, where large lots allow for wide separation distances between on-site systems and on-site potable water wells. These separation distances are necessary to prevent the septic systems from contaminating the groundwater that is drawn by the wells. If potable water lines are installed in an area without sanitary sewer service, however, this allows the land to be subdivided into small lots and on-site septic systems may be installed at a much higher density than would otherwise be permitted.

While in this situation on-site potable water wells are not in danger of being contaminated by malfunctioning septic systems, such a high concentration of on-site sewage disposal still has the potential to produce adverse environmental effects, particularly in an area such as Charlotte County, where the soils are poorly equipped to deal with the percolation of effluent. The impairment of Charlotte Harbor and Lemon Bay, as determined by FDEP and EPA, was caused in part by a high concentration of on-site septic systems that have begun to malfunction due to age and~~, possibly,~~ lack of adequate maintenance.

One of the County's objectives continues to be the reduction of dependence on septic systems by reducing the number of new construction projects ~~utilizing~~ using them. New development should be directed into areas where central sewer service is available. Additionally, new areas for infrastructure expansion are being identified.

The County currently requires simultaneous extension and certification of potable water and sanitary sewer utility lines. However, this condition may not be achievable when the water and sewer providers are not the same due to the overlap of certificated areas (an example would be the Charlotte Harbor Water Association and CCU certificated areas). In these cases, extension of lines simultaneously should be evaluated on a case-by-case basis. The County presently has mandatory connection requirements if water or sewer service is available.

Currently, there are two utility providers in South County. These providers are the City of Punta Gorda and CCU through the Burnt Store facilities. While most of the City of Punta Gorda is served by central water and sewer service, much of the unincorporated areas surrounding the City are not. In order to ensure service provision to unincorporated areas, Charlotte County and the City continue to work towards solutions for providing the necessary infrastructure, including interlocal agreements for service provision and the sharing of expansion plans for meeting growing demands.

As development of the County continues, infrastructure expansion should continue in a manner consistent with the Smart Growth principles outlined in the Future Land Use element. The cost of infrastructure installation should be borne by those benefiting from its provision. Concurrency requires that adequate capacity for public services, including potable water and sanitary sewer, shall be in place to meet the projected demand upon those services from proposed development. If such capacity is not available at the time of proposal, it is generally the responsibility of the developer to provide it.

CONCURRENCY MANAGEMENT

Concurrency, or the policy of ensuring that public facilities are in place to serve projected demand produced by proposed development, is required by State statute and local ordinance. This concurrency is monitored by the County's Concurrency Management System, and potable water and sanitary sewage disposal service are both included. Most of the public facilities in the

concurrency system are provided by Charlotte County only, including transportation facilities, public schools, and parks. Potable water and sanitary sewer, however, are provided by many utilities, both public and private. All of these utilities are responsible for ensuring that concurrency is met for development within their certificated area.

While the individual utilities are responsible for maintaining concurrency, Charlotte County, as the central agent for reviewing and approving development, makes any decision determining whether proposed development does or does not exceed the stated existing capacity of the utility. Every potable water and sanitary sewer utility in the County is required to report to the County the details of monthly usage, permitted capacity, and the number of customers. When development is proposed, County staff reviews these reports to compare the projected demand from the proposed development with the remaining permitted capacity of the utility serving the development, as reported. If the projected demand would exceed the available capacity, then the County will not issue an approval for the proposed project.

If a proposed development does not meet concurrency, there are several options to correct this situation. The developer may enter into an enforceable development agreement or development order with the utility to guarantee that the required facilities will be installed, or the developer may construct the facilities necessary to bring the utility into concurrency, or the developer may pay the utility to construct the necessary facilities. Other options may also be available. While the County may make the determination as to whether a proposed development meets concurrency for any utility within the County, it is the responsibility of that utility to ensure that concurrency is maintained or deficiencies are corrected.

FUTURE DIRECTION

As shown in Table WSW-1, Charlotte County's population will continue to grow, although it is projected to increase at a slower pace than in the past. Potable water and sanitary sewer service will need to be available to provide for the health, safety, and welfare of the future population. Table WSW-6 indicates that, overall, utility providers will be looking for additional sources of potable water to support the projected population increase through 2050. Several utilities will need additional permitted capacity before this time to meet projected demand. Table WSW-~~14~~ 172 also shows that, overall, utility providers will be looking to expand sanitary sewage treatment capacity to support the projected population increase by 2050.

WSW DATA AND ANALYSIS APPENDIX A

Table WSW-3, Table WSW-4, Table WSW-6, ~~Table WSW-8,~~ and Table WSW-~~14~~17

Table WSW-3: Functional Population and Demand Projection Comparison, 2010-2030								
	2010 SWFWMD Regional Water Supply Plan		2012 SFWMD Lower West Coast Regional Water Supply Plan[1]		2011 Total County Projections[2]		2011 County Projections (SFWMD Area Only)	
Year	Population	Demand	Population	Demand[3]	Population	Demand	Population	Demand
2010	175,816	19.975	66	0.006	177,139	16.555	104	0.011
2015	189,429	21.435			186,734	17.314	1,863	0.196
2020	202,145	22.779			196,117	18.124	2,928	0.308
2025	214,363	24.051			204,772	18.865	3,932	0.413
2030	225,749	25.218	14,166	1.489	213,084	19.580	4,863	0.511

Source: SWFWMD, SFWMD & Charlotte County Community Development Department, 2014

All demand is shown in Million Gallons per Day (MGD)

(1) Includes only that part of Charlotte County within SFWMD's jurisdiction

(2) Includes population of areas outside of Charlotte County

(3) Demand calculated by multiplying the projected population by the adoped potable water LOS of 105.140 gpd per person

Table WSW-4: Significant Non-Potable Water Users					
Water Management District	**Permit ID**	**Permittee**	**Water Use**	**Average Daily Usage (MGD)**	**Peak Monthly Usage (MGD)**
South Florida	08-00036-W	Charlotte Grove	IND	0.3212	0.6763
	08-00079-W	T J & Mary Chastain	IND	0.0000	0.9018
	08-00045-W	Earthsource, Inc.	IND	0.8500	1.2000
	08-00005-W	Regina Grove	IND	0.0000	1.3624
	08-00108-W	McNew Ranch	IND	0.0000	1.6534
	08-00008-W	Coral Rock (Three Lakes Mine)	IND	0.0000	3.2400
	08-00011-W	Jay Rock Mine	IND	0.0000	3.2832
	08-00015-W	Spanish Trail Land & Cattle	IND	2.0288	4.2059
	08-00006-W	Calusa I	IND	2.5605	5.3083
	08-00125-W	Payson Tract	IND	2.7864	5.5932
	08-00001-W	Packers Gulf Citrus, Inc. -- Chiquita Pride Groves	IND	0.0000	6.2751
	08-00122-W	Town and Country Utilities	IND	5.3900	6.8367
	08-00076-W	Edenbelle Grove	IND	0.0000	7.6865
	08-00001-W	Packers Gulf Citrus, Inc. -- Chiquita Pride Groves	IND	0.0000	7.9579
	08-00074-W	Berry Grove Charlotte Tract	IND	4.6848	8.9745
	08-00074-W	Berry Gorve Charlotte Tract	IND	0.0000	9.5936
	08-00117-W	Jay Rock Mine	IND	0.0000	9.6720
	08-00014-W	Earthsource Mine Dewatering	IND	0.0000	10.3333
	08-00078-W	Evans Properties, Inc. -- Payson Tract	IND	0.0000	16.6961
	08-00069-W	Emerals Isles	IND	6.4686	20.7006
	08-00132-W	Babcock Ranch Preserve	IND	0.0000	52.4764
	08-00002-W	Babcock Ranch	IND	0.0000	67.1070
Southwest Florida	11715	Coral Creek LLC	Agricultural	0.2520	1.1950
	03523	Twin Isles Country Club, Inc.	Recreation/Aesthetic	0.2564	0.5010
	10890	Coral Creek Burnt Store LLC	Recreation/Aesthetic	0.2700	0.8763
	04217	Wright Cattle Company	Agricultural	0.2738	1.7200
	09335	Rotonda Palms Golf & Country Club	Recreation/Aesthetic	0.2883	0.7631
	10932	Rotonda Golf Course	Recreation/Aesthetic	0.2902	0.7663
	07241	Wherli Groves	Agricultural	0.3228	1.5765
	12541	Battista Farms	Agricultural	0.3500	0.8000
	10169	Riverwood	Recreation/Aesthetic	0.3520	0.6250
	06641	Burdette Coward & Company	Agricultural	0.3620	0.7032
	03656	Maple Leaf Estates	Recreation/Aesthetic	0.3689	1.0746
	10726	JDI Farm	Agricultural	0.3871	0.7440
	01759	Diner Citrus & Cattle	Agricultural	0.3934	1.1888
	12586	Tern Bay	Recreation/Aesthetic	0.4446	1.7279
	10874	Seminole Trail Citrus Grove & Melon Farm	Agricultural	0.4592	1.8469
	03070	American Citrus Products Excavation	Agricultural	0.4696	2.7526
	13096	T J and Mary Chastain	Agricultural	0.4758	2.6459
	09727	Shell Creek Groves	Agricultural	0.4917	1.9310
	02593	Charlotte 650 LLC	Agricultural	0.5571	3.7100
	09476	Citrus Creek Grove	Agricultural	0.6794	4.4570
	09648	Lady Moon Farms	Agricultural	0.7806	1.6518
	09926	R & D Cattle Ranch	Agricultural	0.8877	2.6500
	03530	Bermont Grove	Agricultural	0.9107	5.0122
	03275	A R Chapman 31 Ranch	Agricultural	1.1018	7.2712
	01019	Ryals Citrus & Cattle LLC	Agricultural	1.1171	4.7847
	09398	Charlotte Grove	Agricultural	1.2579	6.8455
	09052	C & S Grove	Agricultural	1.4574	5.6487
	09687	Williams Farms Partnership	Agricultural	1.5709	2.9788
	04589	Hudson Land & Cattle LLC	Agricultural	2.0302	9.4833
	08224	Prairie Creek Ranch	Agricultural	2.5824	8.7658
	02689	East Charlotte Drainage District	Agricultural	2.9198	14.9887
	04606	Spanish Trail Land & Cattle	Agricultural	3.3982	15.2615

Source: South Florida Water Management District & Southwest Florida Water Management District, 2009

Table WSW-6: Functional Population and Water Demand Projections, 2010-2050

Water Utility Service Area	2010	2015	2020	2025	2030	2040	2050	PERMITTED CAPACITY (MGD)	PEAK CAPACITY (MGD)	2010	2015	2020	2025	2030	2040	2050
Inside Urban Service Area																
Charlotte County Utilities -- Burnt Store	4,644	5,388	6,132	6,851	7,544	8,782	9,767			0.488	0.566	0.645	0.720	0.793	0.923	1.027
Lee County -- Burnt Store Marina[1]	2,361	2,361	2,361	2,361	2,361	2,361	2,361			0.248	0.248	0.248	0.248	0.248	0.248	0.248
Lee County -- Resort at Tranquility Lake[1]	0	0	400	400	400	400	400			0.000	0.000	0.042	0.042	0.042	0.042	0.042
CCU Burnt Store Subotal	7,005	7,749	8,893	9,612	10,305	11,543	12,528	3.172	4.118	0.736	0.815	0.935	1.011	1.083	1.214	1.317
Charlotte County Utilities -- SWFWMD Mid/West County	111,821	116,205	120,588	124,822	128,901	136,189	141,959			11.757	12.218	12.679	13.124	13.553	14.319	14.926
El Jobean Water Association[2]	748	758	769	777	787	804	819			0.079	0.080	0.081	0.082	0.083	0.085	0.086
NHC Utilities, Inc.[2]	526	525	524	524	523	521	520			0.055	0.055	0.055	0.055	0.055	0.055	0.055
Riverwood Community Development District[2]	1,776	1,805	1,834	1,861	1,886	1,927	1,956			0.187	0.190	0.193	0.196	0.198	0.203	0.206
PR/MRWSA Subtotal	114,872	119,294	123,715	127,984	132,097	139,442	145,254	16.102	22.540	12.078	12.543	13.007	13.456	13.889	14.661	15.272
City of Punta Gorda -- Incorporated	18,174	18,386	18,601	18,813	19,019	19,395	19,700			1.911	1.933	1.956	1.978	2.000	2.039	2.071
City of Punta Gorda -- Unincorporated	8,550	9,190	9,834	10,453	11,051	12,121	12,965			0.899	0.966	1.034	1.099	1.162	1.274	1.363
City of Punta Gorda Subtotal	26,724	27,576	28,435	29,265	30,070	31,516	32,664	10.000	10.000	2.810	2.899	2.990	3.077	3.162	3.314	3.434
Gasparilla Island Water Association -- Charlotte County	887	895	903	912	920	935	947			0.093	0.094	0.095	0.096	0.097	0.098	0.100
Gasparilla Island Water Association -- Lee County	1,711	1,711	1,711	1,711	1,711	1,711	1,711			0.168	0.168	0.168	0.168	0.168	0.168	0.168
Gasparilla Island Water Association Total	2,598	2,606	2,614	2,623	2,631	2,646	2,658	1.846	1.950	0.262	0.263	0.263	0.264	0.265	0.267	0.268
Charlotte County Utilities -- SWFWMD South/East County	2	2	2	2	2	2	2	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Charlotte Harbor Water Association	3,695	3,912	4,125	4,329	4,522	4,857	5,114	0.712	0.750	0.388	0.411	0.434	0.455	0.475	0.511	0.538
Englewood Water District[3]	12,635	12,842	13,050	13,251	13,447	13,797	14,076	6.000		1.328	1.350	1.372	1.393	1.414	1.451	1.480
Sun River Utilities	1,911	2,151	2,396	2,634	2,868	3,293	3,638	0.040	0.040	**0.201**	**0.226**	**0.252**	**0.277**	**0.301**	**0.346**	**0.383**
Town & County Utilities	0	1,692	2,689	3,627	4,493	5,943	7,004	5.395		0.000	0.178	0.283	0.381	0.472	0.625	0.736
DeSoto County Utilities	91	91	91	91	91	91	91	0.000		0.010	0.010	0.010	0.010	0.010	0.010	0.010
Alligator Park MHP	405	418	431	445	459	488	519	0.055	0.060	0.043	0.044	0.045	0.047	0.048	0.051	0.055
Pelican Perch RV Park	50	51	52	52	52	52	52	0.004	0.004	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**	**0.005**
Other Providers inside Urban Service Area	18,789	21,159	22,836	24,432	25,934	28,523	30,497	12.206								
Inside Urban Service Area Subtotal	169,987	178,384	186,494	193,916	201,036	213,670	223,600	43.326	39.462	17.861	18.744	19.597	20.377	21.125	22.454	23.498
Rural Service Area																
Bocilla Utilities/Knight Island Utilities/Little Gasparilla Island Utilities[4]	1,927	1,976	2,026	2,076	2,124	2,211	2,282	0.282	0.378	0.203	0.208	0.213	0.218	0.223	0.232	0.240
Charlotte County -- SFWMD East County	103	171	239	305	370	488	584	0.000		0.011	0.018	0.025	0.032	0.039	0.051	0.061
Charlotte County Utilities -- SWFWMD Mid/West County	1,808	2,182	2,561	2,930	3,292	3,952	4,489	0.000		0.190	0.229	0.269	0.308	0.346	0.416	0.472
Charlotte County Utilities -- SWFWMD South/East County	821	1,392	1,955	2,488	2,994	3,901	4,589	0.000		0.086	0.146	0.206	0.262	0.315	0.410	0.482
Charlotte Harbor Water Association	352	440	531	619	705	863	990	0.000		0.037	0.046	0.056	0.065	0.074	0.091	0.104
City of Punta Gorda -- Unincorporated	10	15	21	26	30	40	47	0.000		0.001	0.002	0.002	0.003	0.003	0.004	0.005
Florida Governmental Utility Authority[5]	169	175	180	186	192	202	210	0.000		0.018	0.018	0.019	0.020	0.020	0.021	0.022
Sun River Utilities	392	414	436	459	481	519	551	0.000		0.041	0.044	0.046	0.048	0.051	0.055	0.058
Charlotte Correctional Institute	1,614	1,666	1,720	1,775	1,832	1,951	2,077	0.300	0.300	0.170	0.175	0.181	0.187	0.193	0.205	0.218
Paradise Park Condominium Association	586	605	624	644	662	662	662	0.060	0.060	**0.062**	**0.064**	**0.066**	**0.068**	**0.070**	**0.070**	**0.070**
Shell Creek Park MHP	451	451	451	451	451	451	451	0.050	0.050	0.047	0.047	0.047	0.047	0.047	0.047	0.047
Sun N Shade Family Campground	202	208	214	220	227	241	256	0.015	0.015	**0.021**	**0.022**	**0.023**	**0.023**	**0.024**	**0.025**	**0.027**
Tropical Palms MHP	354	365	376	388	400	426	453	0.080	0.080	0.037	0.038	0.040	0.041	0.042	0.045	0.048
Rural Service Area Subtotal	8,789	10,061	11,334	12,567	13,759	15,907	17,642	0.787	0.883	0.924	1.058	1.192	1.321	1.447	1.672	1.855
TOTAL	178,776	188,445	197,828	206,483	214,795	229,577	241,241	44.113	40.345	18.785	19.802	20.788	21.698	22.572	24.126	25.353

Source: Florida Department of Environmental Protection, Southwest Florida Water Management District, South Florida Water Management District, Charlotte County Community Development Department, 2014

Potable water LOS for unincorporated Charlotte County is 225 gallons per day per ERC and 2.14 persons per household, or 105.140 gpd per capita.
Potable water LOS for the City of Punta Gorda incorporated area is 287 gallons per day per ERC and 2.035 persons per household, or 141.032 gpd per capita.
Potable water LOS for the Lee County portion of the Gasparilla Island Water Authority is 250 gallons per day per ERC and 2.54 persons per household, or 98.425 gpd per capita.

(1) These developments in Lee County are served by the CCU Burnt Store WTP.
(2) This utility purchases bulk water from CCU.
(3) The Englewood Water District has a permitted treatment capacity of 6.000 MGD and a WUP for 5.360 MGD. Approximately 38% of the EWD service population lies within the boundaries of Charlotte County.
(4) These three certificated utilities have been combined for statistical purposes. Knight Island Utilities is the only utility with a Water Use Permit, approved for 0.143 MGD. Bocilla Utilities is a bulk purchaser of potable water from the Englewood Water District and a bulk supplier to Knight Island Utilities. Little Gasparilla Utilities is a bulk purchaser of potable water from CCU.
(5) The Florida Governmental Utility Authority is supplied by Lee County Utilities with a WUP of 4.74 MGD, but no service or distribution lines have been extended into Charlotte County and no potable water service is available at this time.

Table WSW-17: Functional Population and Sewer Demand Projections, 2010-2050

Sewer Utility Service Area	2010	2015	2020	2025	2030	2040	2050	PERMITTED CAPACITY (MGD)	PEAK CAPACITY (MGD)	2010	2015	2020	2025	2030	2040	2050
Inside Urban Service Area																
Charlotte County Utilities -- Burnt Store	4,694	5,439	6,184	6,903	7,596	8,834	9,819	0.500	4.600 PDF	0.417	0.483	0.549	0.613	0.674	0.784	0.872
Charlotte County Utilities -- Mid County[(1)]	85,453	88,594	91,703	94,688	97,535	102,556	106,465	6.000	16.800 PDF	7.587	7.866	8.142	8.407	8.660	9.105	9.452
Charlotte County Utilities -- South/East County	2	2	2	2	2	2	2	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Charlotte County Utilities -- West County[(2)]	28,911	30,294	31,702	33,078	34,427	36,899	38,918	3.200	7.300 PDF	2.567	2.690	2.815	2.937	3.057	3.276	3.455
City of Punta Gorda -- Incorporated	18,174	18,386	18,601	18,813	19,019	19,395	19,700			1.614	1.632	1.652	1.670	1.689	1.722	1.749
City of Punta Gorda -- Unincorporated	7,190	7,798	8,420	9,024	9,613	10,663	11,490			0.638	0.692	0.748	0.801	0.854	0.947	1.020
City of Punta Gorda Subtotal	25,364	26,184	27,021	27,836	28,632	30,058	31,189	4.000	4.000 AADF	2.252	2.325	2.399	2.471	2.542	2.669	2.769
Englewood Water District[(3)]	12,635	12,842	13,050	13,251	13,447	13,797	14,076	1.350		1.122	1.140	1.159	1.177	1.194	1.225	1.250
Utilities, Inc. of Sandalhaven	1,876	1,953	2,033	2,110	2,184	2,322	2,433			0.167	0.173	0.180	0.187	0.194	0.206	0.216
Englewood Water District										1.288	1.314	1.339	1.364	1.388	1.431	1.466
Gasparilla Island Water Association	887	895	903	912	920	935	947	0.705	0.812 PDF	0.079	0.079	0.080	0.081	0.082	0.083	0.084
Riverwood Community Development District	1,776	1,805	1,834	1,861	1,886	1,927	1,956	0.499	0.499 AADF	0.158	0.160	0.163	0.165	0.167	0.171	0.174
Sun River Utilities	1,911	2,151	2,396	2,634	2,868	3,293	3,638	0.015	0.015 AADF	**0.170**	**0.191**	**0.213**	**0.234**	**0.255**	**0.292**	**0.323**
Town & County Utilities	0	1,692	2,689	3,627	4,493	5,943	7,004	0.200	0.200 AADF	0.000	0.150	**0.239**	**0.322**	**0.399**	**0.528**	**0.622**
Alligator Park MHP	405	418	431	445	459	488	519	0.060	0.060 TMADF	0.036	0.037	0.038	0.040	0.041	0.043	0.046
Bay Palms MHP	103	105	105	105	105	105	105	0.010	0.010 AADF	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Gasparilla Mobile Estates	373	373	373	373	373	373	373	0.025	0.025 AADF	**0.033**	**0.033**	**0.033**	**0.033**	**0.033**	**0.033**	**0.033**
Harbor View MHP	269	277	286	295	304	312	312	0.024	0.024 TMADF	0.024	**0.025**	**0.025**	**0.026**	**0.027**	**0.028**	**0.028**
Lazy Lagoon MHP	320	330	331	331	331	331	331	0.015	0.015 MMADF	**0.028**	**0.029**	**0.029**	**0.029**	**0.029**	**0.029**	**0.029**
Palms & Pines MHP	244	244	244	244	244	244	244	0.015	0.015 MMADF	**0.022**	**0.022**	**0.022**	**0.022**	**0.022**	**0.022**	**0.022**
Pelican Harbor MHP	266	274	282	291	300	319	335	0.020	0.020 AADF	**0.024**	**0.024**	**0.025**	**0.026**	**0.027**	**0.028**	**0.030**
River Forest Village	399	411	424	430	430	430	430	0.035	0.035 TMADF	**0.035**	**0.036**	**0.038**	**0.038**	**0.038**	**0.038**	**0.038**
Villas Del Sol	28	28	28	28	28	29	30	0.029	0.029 AADF	0.002	0.002	0.002	0.002	0.002	0.003	0.003
Inside Urban Service Area Subtotal	165,915	174,311	182,022	189,445	196,564	209,198	219,127	16.702	34.669	16.019	16.790	17.500	18.184	18.840	20.005	20.921
Rural Service Area																
Bocilla Island Utilities/Knight Island Utilities/Little Gasparilla Island Utilities[(4)]	1,714	1,761	1,811	1,861	1,909	1,996	2,067	0.055	0.055 AADF	0.152	0.156	0.161	0.165	0.169	0.177	0.184
Charlotte County -- Mid County	1,309	1,616	1,927	2,230	2,527	3,066	3,506	0.000		0.116	0.143	0.171	0.198	0.224	0.272	0.311
Charlotte County Utilities -- South/East County	930	1,563	2,194	2,794	3,363	4,388	5,174	0.000		0.083	0.139	0.195	0.248	0.299	0.390	0.459
Charlotte County Utilities -- West County	850	1,006	1,165	1,320	1,471	1,748	1,973	0.000		0.075	0.089	0.103	0.117	0.131	0.155	0.175
City of Punta Gorda -- Unincorporated	10	15	21	26	30	40	47	0.000		0.001	0.001	0.002	0.002	0.003	0.004	0.004
Florida Governmental Utility Authority	169	175	180	186	192	202	210	0.000		0.015	0.016	0.016	0.017	0.017	0.018	0.019
Sun River Utilities	392	414	436	459	481	519	551	0.000		0.035	0.037	0.039	0.041	0.043	0.046	0.049
Charlotte Correctional Institute	1,614	1,666	1,720	1,775	1,832	1,951	2,077	0.180		0.143	0.148	0.153	0.158	0.163	0.173	**0.184**
Hideaway Bay Beach Club Condominium	213	215	215	215	215	215	215	0.021	0.021 AADF	0.019	0.019	0.019	0.019	0.019	0.019	0.019
Paradise Park Condominium Association	586	605	624	644	662	662	662	0.024	0.034 PDF	**0.052**	**0.054**	**0.055**	**0.057**	**0.059**	**0.059**	**0.059**
Shell Creek Park MHP	445	451	451	451	451	451	451	0.020	0.030 PDF	**0.040**	**0.040**	**0.040**	**0.040**	**0.040**	**0.040**	**0.040**
Sun N Shade Family Campground	202	208	214	220	227	241	256	0.020		0.018	0.018	0.019	0.020	0.020	0.021	0.023
Tropical Palms MHP	354	365	376	388	400	426	453	0.060	0.060 AADF	0.031	0.032	0.033	0.034	0.036	0.038	0.040
Rural Service Area Subtotal	8,788	10,061	11,334	12,570	13,759	15,905	17,643	0.380	0.169	0.780	0.893	1.006	1.116	1.222	1.412	1.566
TOTAL	174,703	184,372	193,356	202,015	210,323	225,103	236,769	17.082	34.838	16.799	17.683	18.506	19.300	20.061	21.417	22.487

Source: Florida Department of Environmental Protection, Southwest Florida Water Management District, South Florida Water Management District, Charlotte County Community Development Department, 2014

Sanitary sewer LOS for unincorporated Charlotte County is 190 gallons per day per ERC and 2.14 persons per household, or 88.785 gpd per capita.
Sanitary sewer LOS for the City of Punta Gorda incorporated area is 169 gallons per day per ERC and 2.035 persons per household, or 83.047 gpd per capita.

(1) The CCU Eastport WWTF serving the Mid County area is planned to be expanded to 9.000 MGD by 2013 and to 12.000 MGD by 2015.
(2) Total CCU West County capacity is a combination of the CCU Westport and CCU Rotonda WWTP capacities.
(3) The Englewood Water District has a permitted treatment capacity of 3.000 MGD . Approximately 45% of the EWD service population lies within the boundaries of Charlotte County, and the permitted capacity of EWD has been adjusted accordingly.
(4) The areas of Knight Island, Don Pedro Island, Thorton Key, and Little Gasparilla Island have been combined for statistical purposes. Only Knight Island has sanitary sewer service.

EXHIBIT B

SUPPORT PLANNING ANALYSIS MAPS #83, 84, 85, 86, 87, 88 & 89

Land Information Section

CHARLOTTE COUNTY

Supporting Policy and Analysis Map Series

Map #83: Certificated Potable Water Supply Areas

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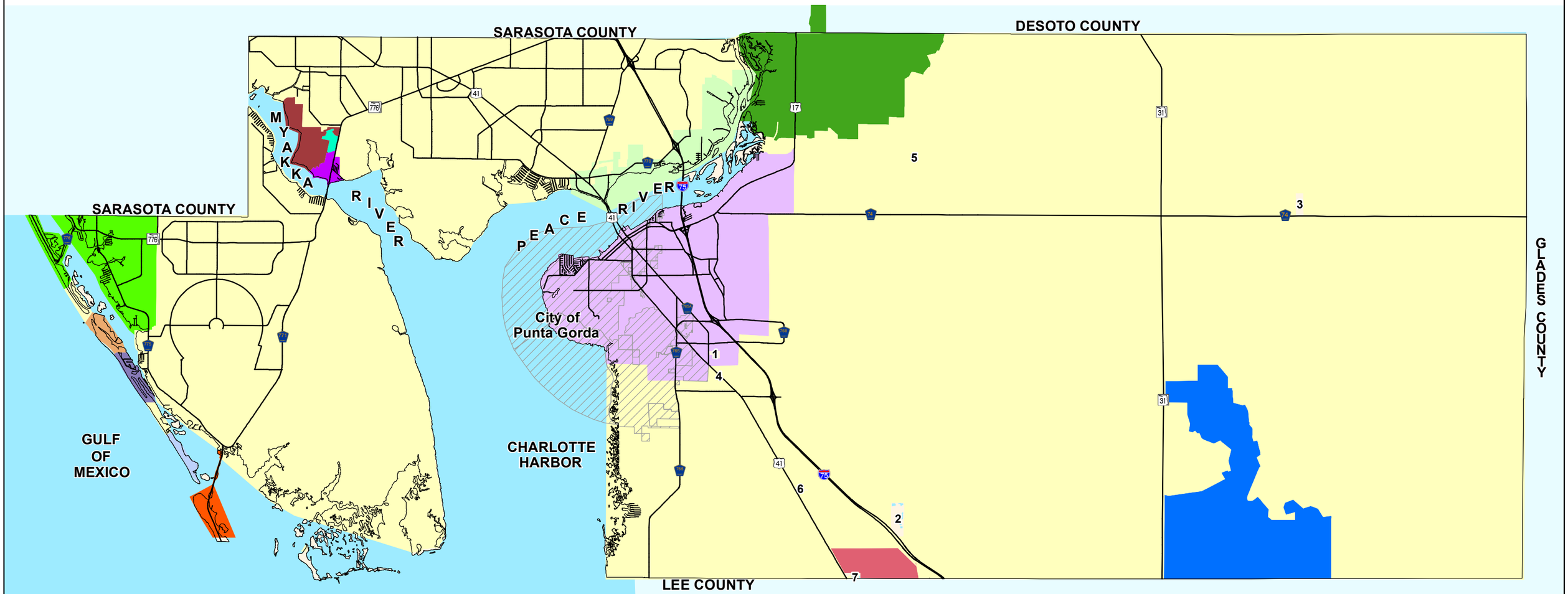

Stateplane Projection
Datum: NAD83
Units: Feet

Source: Florida Department of Health, Charlotte County Utilities
Independent Community Service Areas
Metadata available upon request

Public Water Suppliers

- Bocilla Utilities
- Charlotte County Utilities
- Charlotte Harbor Water Assoc.
- City of Punta Gorda
- El Jobean Water Association
- Englewood Water District
- Florida Governmental Utility Auth
- Gasparilla Island Water Assoc
- Knight Island Utilities
- Little Gasparilla Water
- NHC Utilities
- Riverwood Development
- Sun River Utilities
- Town and Country Utility Co.

Community Water Suppliers

1, Alligator Park MHP
2, Correctional Institution
3, Paradise Park Condos
4, Pelican Perch RV Park
5, Shell Creek Park MHP
6, Sun N Shade Family Campground
7, Tropical Palms MHP

N W E S

2 1 0 2 Miles

Updated: 4/24/2015 3:52:38 PM by: JMacDonald - 5803
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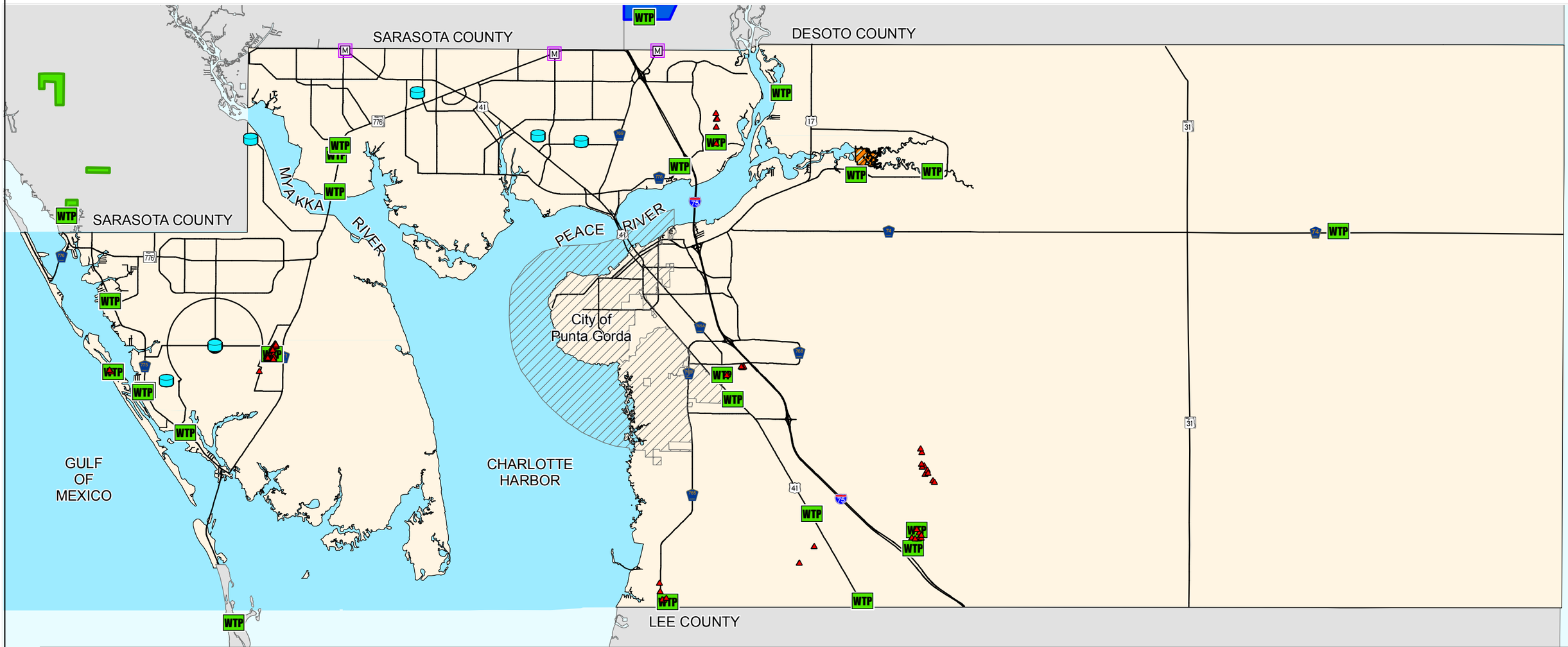
Land Information Section

CHARLOTTE COUNTY
Supporting Policy and Analysis Map Series
Map #84: Major Water Supply Facilities



Stateplane Projection
Datum: NAD83
Units: Meters

Source: CCGIS, DEP Growth Management

Metadata available upon request

LEGEND

- WTP — Water Treatment Plant
- Water Storage Tank
- Shell Creek Reservoir
- M — Master Meter
- Wellhead

Out-of-County Well Fields
- Englewood
- Peace River-Manasota

N W E S
2 1 0 2 Miles

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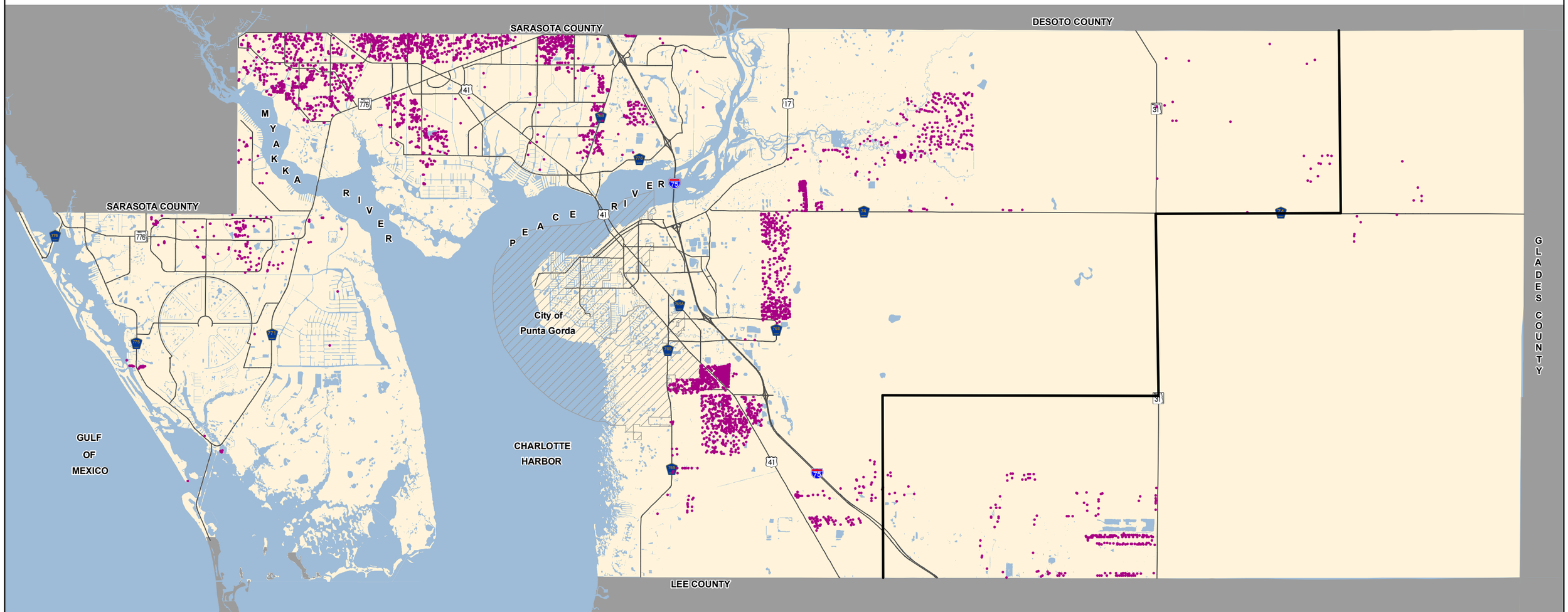
Land Information Section

CHARLOTTE COUNTY

Supporting Policy and Analysis Map Series

Map #85: Potable Water Well Sites



Stateplane Projection
Datum: NAD83
Units: Feet

Source: Community Development, CCU, SWFWMD

Metadata available upon request

Private Wells

Water Management Distict Boundary

N W E S

0 1 2 4 Miles

Updated: 11/14/2014 3:36:11 PM by: A. Steele - 5607
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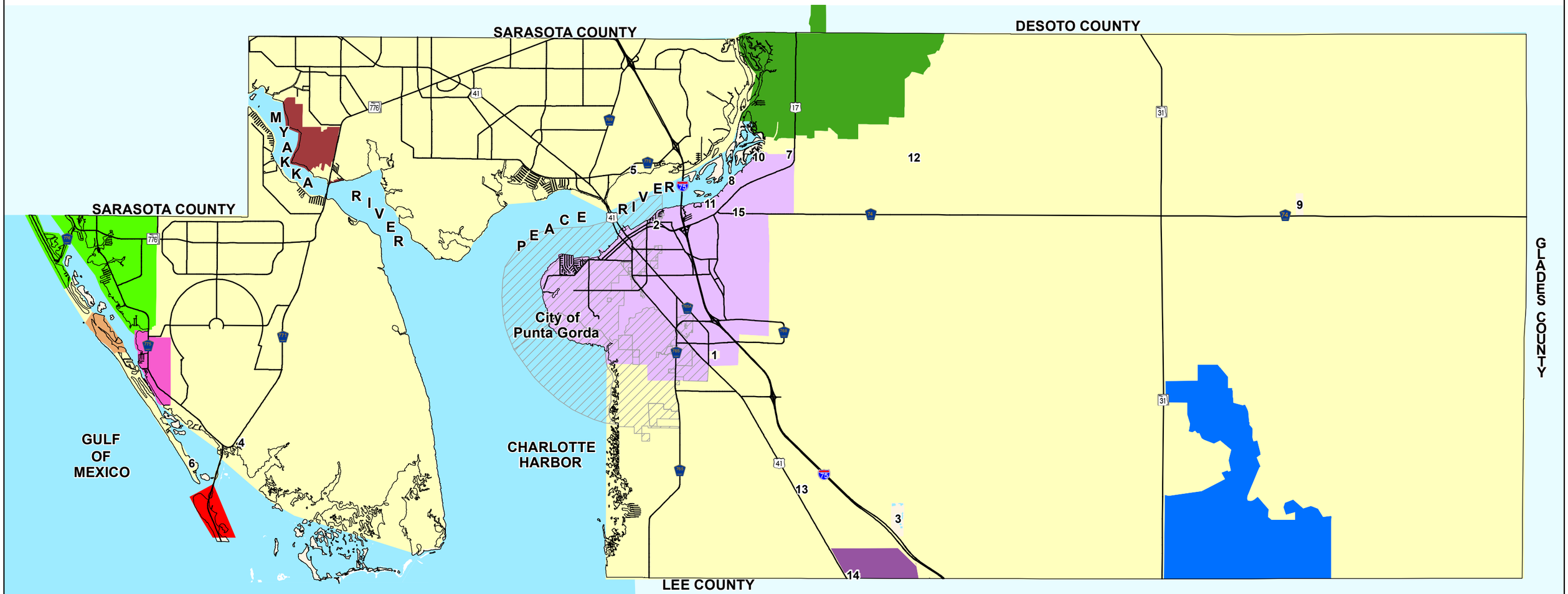
Land Information Section

CHARLOTTE COUNTY

Supporting Policy and Analysis Map Series

Map #86: Certificated Sanitary Sewer Utility Areas



Stateplane Projection
Datum: NAD83
Units: Feet

Source: Florida Department of Health, Charlotte County Utilities
Independent Community Service Areas
Metadata available upon request

Public Sewer Suppliers

- Charlotte County Utilities
- City of Punta Gorda
- Englewood Water District
- Florida Governmental Utility Auth
- Gasparilla Island Water Assoc.
- Knight Island Utilities
- Riverwood Development
- Sun River Utilities
- Town and Country Utility Co.
- Utilities Inc of Sandlehaven

Community Sewer Suppliers

1, Alligator Park MHP
2, Bay Palms MHP
3, Correctional Institution
4, Gasparilla Mobile Home Estates
5, Harborview MHP
6, Hideaway Bay Condos
7, Lazy Lagoon MHP
8, Palms and Pines MHP
9, Paradise Park Condos
10, Pelican Harbor MHP
11, River Forest Village
12, Shell Creek Park MHP
13, Sun N Shade Family Campground
14, Tropical Palms MHP
15, Villas Del Sol
16, Florida Governmental Utility Auth

N W E S

2 1 0 2 Miles

Updated: 4/24/2015 3:53:40 PM by: JMacDonald - 5803

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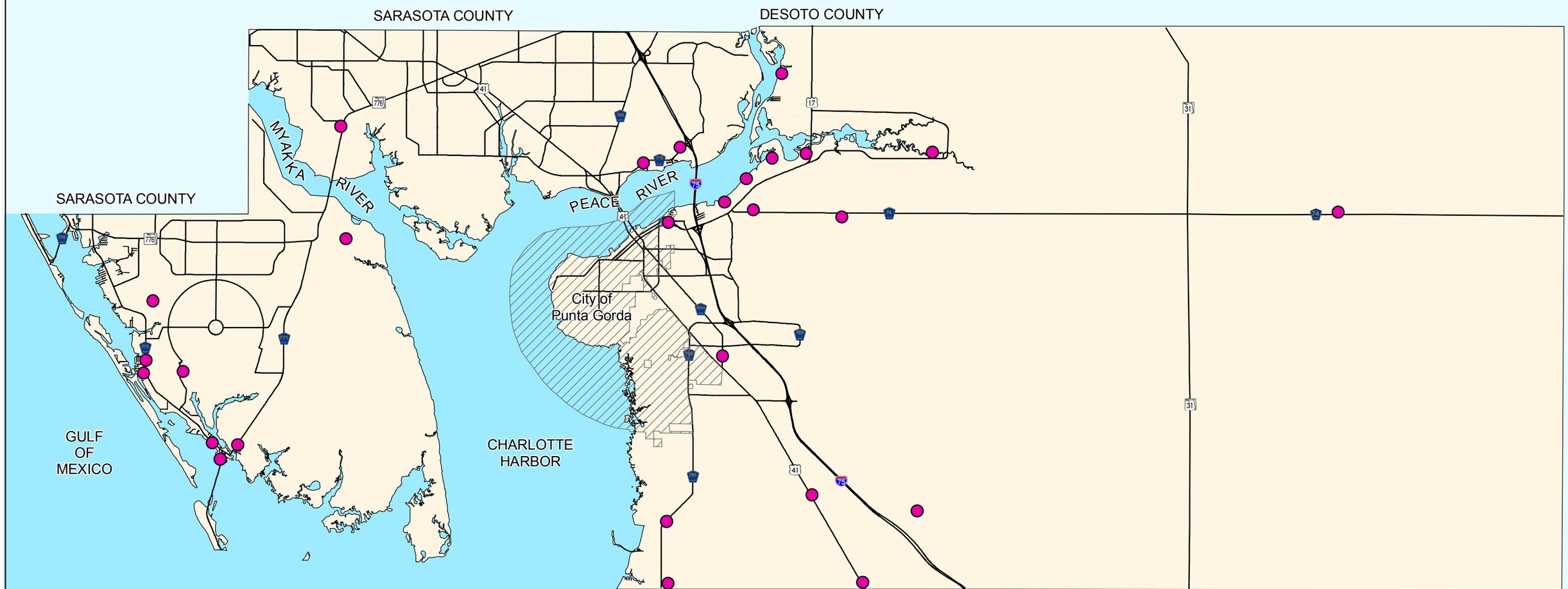
Land Information Section

CHARLOTTE COUNTY
Supporting Policy and Analysis Map Series
Map #87: Wastewater Treatment Facilities



Stateplane Projection
Datum: NAD83
Units: Meters

Source: CCGIS, DEP

Metadata available upon request

LEGEND

● Wastewater Treatment Facilities

N W E S

2 1 0 2 Miles

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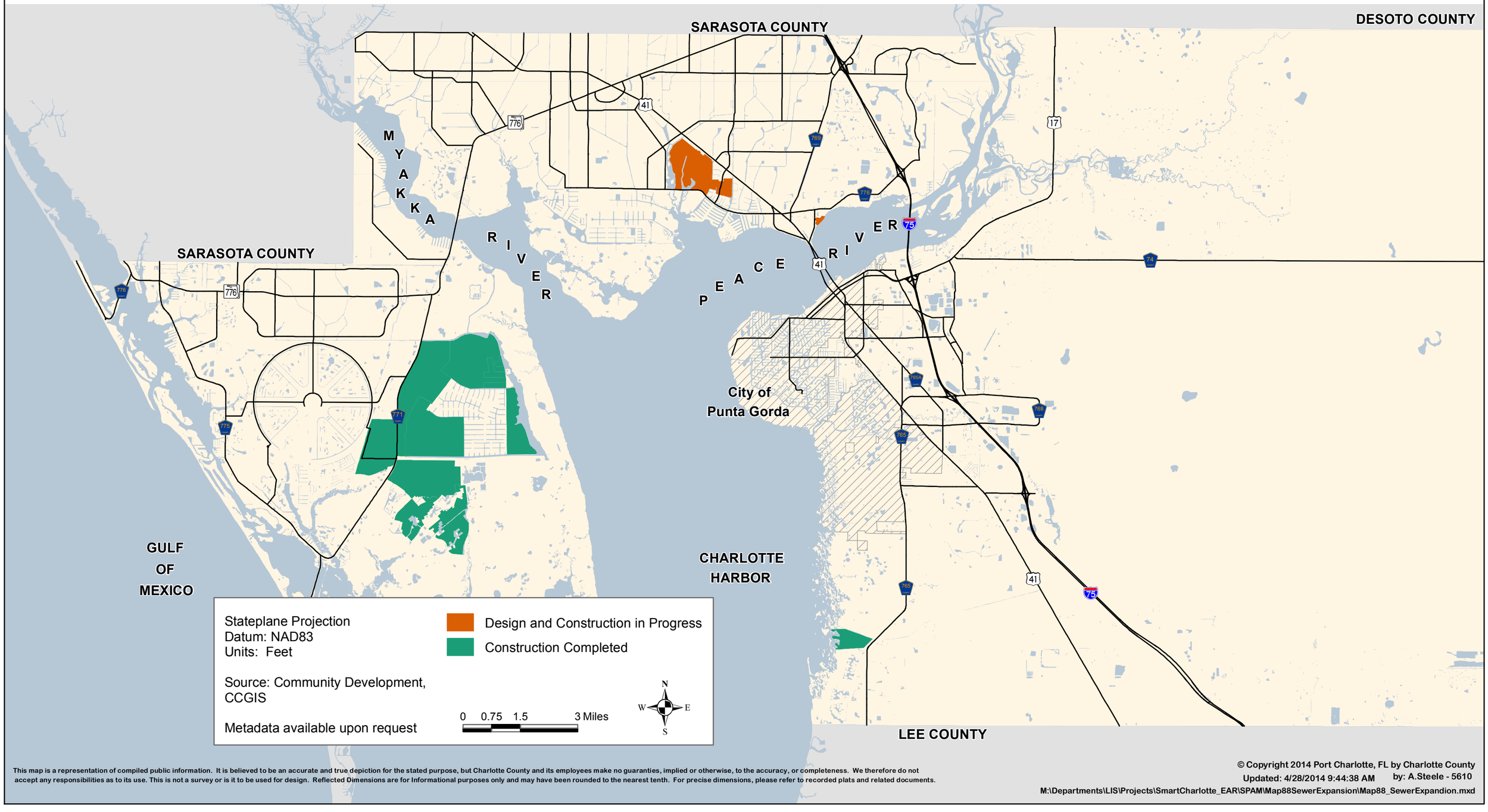
Land Information Section

CHARLOTTE COUNTY

Supporting Policies and Analysis Series

Map #88: CCU Sewer Expansion MSBUs



Updated: 4/28/2014 9:44:38 AM by: A.Steele - 5610
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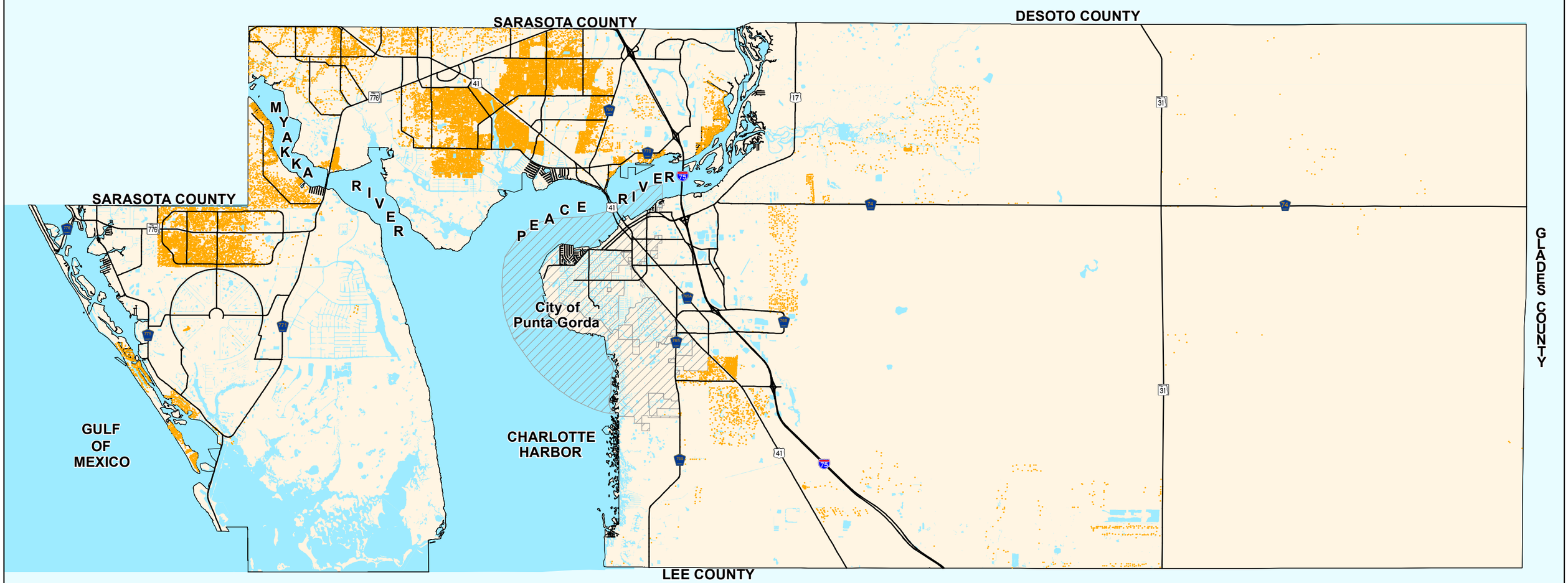
CHARLOTTE COUNTY

Supporting Policy and Analysis Map Series

Map #89: Onsite Septic Systems

Land Information Section



Stateplane Projection
Datum: NAD83
Units: Feet

Source: Florida Department of Health
CCU, Englewood Utilities
Various Independent providers
Metadata available upon request

● Septic Tank Locations (26,723)

N
W E
S

2 1 0 2 Miles

Updated: 5/5/2014 11:46:07 AM by: JMacDonald - 5608
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EXHIBIT C

INFRASTRUCTURE - POTABLE WATER AND SANITARY SEWER GOALS, OBJECTIVES AND POLICIES

PURPOSE

The purpose of the Potable Water and Sanitary Sewer section of the Infrastructure element is to ensure that potable water supplies and sanitary sewer disposal service are available to support development through the planning horizons established within the Comprehensive Plan. The provision of potable water and sanitary sewer ~~is mandated by Florida growth management legislation under Chapter 9J-5 of the *Florida Administrative Code*. S~~and the specific parameters for this particular element are based on ~~criteria established pursuant to Rule 9J-5.011. This section of Chapter 9J-5~~Florida Statute, which requires that sewer and water services be provided in accordance with future land use projections and also identifies a basic framework for developing a series of goals, objectives, and policies which are formulated to accomplish the desired purpose based on an analysis of available data.

The availability of sewer and water will influence the timing, location, and intensity of development. Planning for the extension of these services should therefore be considered an integral part of Charlotte County's development strategy. In order for the County to effectively utilize infrastructure expansion as a legitimate growth~~-~~ management tool, this section incorporates a prioritization for providing facilities to areas targeted for new growth based upon Smart Growth principles established in the Future Land Use element. This will ensure that centralized potable water and sanitary sewer facilities are provided concurrently with future development, that utility infrastructure is directed towards those areas of the County where it is most appropriate, and that adequate facility capacity will be available to maintain adopted level of service standards.

All references to any ordinances, statutes or regulations contained herein shall, unless otherwise noted, be deemed to be those in effect as of the date of adoption of this element and thereafter as amended, renumbered or otherwise revised.

WSW Policy 1.2.1: Reporting

The County shall require all utility providers to provide the Charlotte County ~~Growth Management~~Community Development Department, or its successor agency, with monthly Florida Department of Environmental Protection (FDEP) reports of total capacity and facility demand to ensure that the adopted LOS standards are maintained and the Concurrency Management System is up to date.

WSW Policy 2.1.3: Neighborhood Framework

The County shall encourage the extension of central potable water and sanitary sewer services in a manner consistent with **FLU Goal 4: Smart Growth Concept Plan Implementation – Neighborhood Protection and Enhancement**.

WSW Policy 2.1.4: Utility Extensions through the Rural Service Area
The County shall only allow transmission lines for potable water or sanitary sewer service to be extended through the Rural Service Area if it is to provide service to lands located within the Urban Service Area. The County shall not allow distribution or connection lines to expand from a transmission line extended through the Rural Service Area except to address situations where the public health, safety, and welfare are in danger.

WSW Policy 3.1.1: Concurrent Utility Line Extensions
The County shall require all utilities that provide both centralized potable water and sanitary sewer service to extend potable water and sanitary sewer lines concurrently. Lines may be extended separately only if the service area is primarily composed of one type of service line and it is determined by the utility ~~to be non-feasible to require~~that concurrent extensions is not feasible.

WSW Policy 3.1.2: Connection of Developed Property
Within the Urban Service Area, ~~the County shall require that~~ whenever centralized potable water or sanitary sewer service is made available to any developed property, the constructing utility may require the landowner ~~will~~to connect to the utility within one year of written notification by the utility provider. "Made available" means that the utility has adequate permitted capacity to serve the development and:

1. In the case of a potable water service, a utility line exists in a public easement or right-of-way that abuts a property and:
    a. Is 100 feet or less from a residential lot, single or multi-family residence, or an establishment with an estimated water usage rate of 1,000 gallons per day or less.
    b. Is 200 feet or less from an establishment with an estimated water usage rate of more than 1,000 gallons per day.
2. In the case of sanitary sewer service, as it is defined in Chapter 381.0065, F.S.

WSW Policy 3.1.7: ~~Regional~~Joint Sanitary Sewer Systems
The County shall encourage:

1. Sanitary sewer disposal agreements whereby package treatment plants may be interconnected and replaced by treatment facilities with better economies of scale in order to achieve greater operating efficiencies~~; or~~.

The installation of on-site treatment and disposal systems that treat effluent to advanced sanitary sewer treatment standards.

WSW Policy 3.2.4: Certificated Areas and the Urban Service Area
The County shall not permit Certificated Service Areas to be expanded outside of the Urban Service Area, in accordance with **FLU Policy 3.2.5: Support Economic Viability of Agricultural Lands** and Special Provision 1(b) of the Rural Settlement Overlay District contained in FLU Appendix I.

WSW Policy 3.3.1: New Platted Lots and On-Site Septic Systems
The County shall require that new lots platted and intended to be served by an on-site septic system shall have a minimum lot area consistent with the requirements of ~~the more stringent of~~ Chapter 64E-6, *Florida Administrative Code (F.A.C.)* or local ordinance, whichever standard is higher.

WSW Policy 3.3.2: Community Utility Systems
The County may permit pre-manufactured treatment facilities designed and used to treat potable water and sanitary sewage at flows of 0.002 million gallons per day to 0.500 million gallons per day in small communities (package treatment plants) provided they are built to the standards specified by FDEP or the County, whichever ~~is more stringent~~standard is higher.

WSW Policy 4.1.1: Wellhead and Wellfield Protection
The County shall protect wellheads and wellfields as established in **FLU Policy 2.3.5: Public Water System Wellhead Protection**.

WSW Policy 4.1.2: Hazardous Materials and Potable Water Supplies
The County shall not permit land uses in which hazardous materials ~~(such as~~including, but not limited to, petroleum products or chemical or biological wastes~~)~~ are produced or stored, or land uses which may have an adverse impact on central potable water supplies for public consumption, in areas where their presence would adversely impact groundwater resources, recharge areas, or watersheds that drain into surface water supplies.

WSW Policy 4.2.9: Recycled Water Systems
The County shall require all new large developments to connect to recycled water supply systems for non-potable uses, when such systems are made available. "Made available" means that the recycled water utility has adequate capacity to serve the development and a functioning recycled water distribution main is located within 500 feet of the property or that it is cost effective for the utility to extend a recycled water distribution main to within 500 feet of the property. Individual single-family, duplex, or triplex buildings shall not be required to connect.

WSW Policy 4.2.10: Appropriate Water Quality for Use
The County shall require that non-potable water uses shall be met by recycled water supplies whenever possible. If recycled water sources are not available, non-potable water uses shall be met by groundwater sources.

WSW Policy 4.3.1: Adoption of Water Supply Facilities Work Plan
The County hereby adopts the Water Supply Facilities Work Plan, comprised of the specific Goals, Objectives, and Policies listed below and dated May 26, 2015, for a period of not less than ten years. The data and analysis that constitutes the Water

Facilities Supply Work Plan is the Infrastructure Data and Analysis, Potable Water and Sanitary Sewer Water Supply Facilities Work Plan document. The Water Supply Facilities Work Plan addresses issues that pertain to water supply facilities and requirements needed to serve current and future development within the County's water service areas.

Infrastructure element

- WSW Goal 1: Levels of Service
  - WSW Objective 1.1: LOS Standards
    - WSW Policy 1.1.1: LOS Applicability
    - WSW Policy 1.1.2: Potable Water LOS
    - WSW Policy 1.1.4: Effect of System Improvements on LOS
  - WSW Objective 1.2: Concurrency
    - WSW Policy 1.2.1: Reporting
    - WSW Policy 1.2.2: Development Approval
    - WSW Policy 1.2.3: Consultation with Service Providers
- WSW Goal 4: Potable Water
  - WSW Objective 4.1: Potable Water Supplies
    - WSW Policy 4.1.1: Wellhead and Wellfield Protection
    - WSW Policy 4.1.2: Hazardous Materials and Potable Water Supplies
    - WSW Policy 4.1.3: Sewage Sludge Disposal
  - WSW Objective 4.3: Water Supply Facilities Work Plan
    - WSW Policy 4.3.1: Adoption of Water Supply Facilities Work Plan
    - WSW Policy 4.3.2: Plan Update Schedule
    - WSW Policy 4.3.3: Plan Coordination
    - WSW Policy 4.3.4: Inclusion of Capital Improvements

Capital Improvements element

- CIE Goal 1: Timely Development of Infrastructure
  - CIE Objective 1.1: Making Necessary Improvements
    - CIE Policy 1.1.6: Concurrency Management System
    - CIE Policy 1.1.7: Capital Improvements Program
    - CIE Policy 1.1.8: Financially Feasible CIE Schedule
    - CIE Policy 1.1.9: Agency and Plan Coordination

Intergovernmental Coordination element

- ICE Goal 1: Intergovernmental Coordination
  - ICE Objective 1.1: Implementation Coordination
    - ICE Policy 1.1.9: Utility Coordination
    - ICE Policy 1.1.11: Coordination with Water Management Districts
  - ICE Objective 1.2: Level of Service (LOS)
    - ICE Policy 1.2.3: Water Management

WSW Policy 4.3.3: Plan Coordination

The County shall coordinate revisions to the Water Supply Facilities Work Plan with the South Florida Water Management District, the Southwest Florida Water Management District, the Florida Department of ~~Community Affairs~~Economic Opportunity, and the potable water suppliers serving residents of the County.

EXHIBIT D

INTERGOVERNMENTAL COORDINATION – GOALS, OBJECTIVES AND POLICIES

ICE Policy 1.1.11: Coordination with Water Management Districts

The County shall coordinate with the ~~appropriate Water Management Districts through their Regional Water Supply Plans~~Southwest Florida Water Management District through its adopted 2010 Regional Water Supply Plan for the Southern Planning Region and the South Florida Water Management District through its adopted 2012 Lower West Coast Water Supply Plan Update in the development of the County's 10-year Water Supply Facilities Work Plan.

EXHIBIT E

CAPITAL IMPROVEMENTS – GOALS, OBJECTIVES AND POLICIES

CIE Policy 1.1.8: Financially Feasible CIE Schedule

The County shall develop a financial plan, pursuant to 163.3177(3), F.S., which is financially feasible per 163.3164(32), F.S. over a five year planning period. The Schedule shall provide that the necessary improvements are funded to ensure that: existing deficiencies are corrected, future growth is accommodated, and obsolete or worn-out facilities are replaced so that LOS standards are maintained pursuant to 163.3177(2), F.S. ~~and 9J-5.0055(1)(b), F.A.C.~~. This financial plan shall be called the Concurrency Related Capital Improvements Schedule or CIE Schedule. The CIE Schedule is hereby adopted and is found in CIE Appendix II.