WATER SUPPLY FACILITIES WORK PLAN

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1.0 INTRODUCTION

The purpose of the City of Cape Coral Water Supply Facilities Work Plan (Work Plan) is to identify a plan for the water supply sources and facilities to serve the existing needs and future growth within the City of Cape Coral's jurisdiction. The City of Cape Coral continues to be a leader in the use of alternative water supplies, dating back to 1988 when the City adopted the "Water Independence for Cape Coral" (W.I.C.C.) Plan. The City utilizes brackish water for its potable water supply, and utilizes 100 percent of their treated wastewater reclaimed effluent for irrigation. Chapter 163, Part II, Florida Statues (F.S.), requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district having jurisdiction approves a regional water supply plan or its update. The *2012 Lower West Coast Water Supply Plan Update* was approved by the South Florida Water Management District (SFWMD) on November 15, 2012. Therefore, the deadline for local governments within the Lower West Coast Region to amend their comprehensive plans to update the Work Plan is May 15, 2014.

Residents of the City of Cape Coral primarily obtain their water from the City's Utilities' Department, which is responsible for ensuring sufficient capacity is available for existing and future customers. Many City residents rely upon domestic self supply wells for their potable and irrigation water needs. The City's plan is to gradually extend potable water and reuse water (for irrigation) to these areas as development density increases. In addition, approximately a few hundred City residents currently are served by the Greater Pine Island Water Association.

The Work Plan will reference the initiatives already identified to ensure adequate water supply for the City of Cape Coral. According to state guidelines, the Work Plan and the comprehensive plan must address the development of traditional and alternative water supplies, service delivery, conservation and reuse programs necessary to serve existing and new development for at least a 10-year planning period. The Work Plan will have a planning time schedule consistent with the comprehensive plan and the *2012 Lower West Coast Water Supply Plan Update.* Refer to Figure 1: Location Map.

1.1 Statutory History

The Florida Legislature enacted bills in the 2002, 2004, 2005, and 2011 sessions to address the State's water supply needs. These bills, in particular Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapters 163 and 373, F.S. by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, these bills established the basis for improving coordination between local land use planning and both regional and local water supply planning.

1.2 Statutory Requirements

The City of Cape Coral has considered the following statutory provisions when updating the Water Supply Facilities Work Plan (Work Plan):

1. Coordinate appropriate aspects of its comprehensive plan with the *2012 Lower West Coast Water Supply Plan* [Chapter 163.3177(4) (a), F.S.].

2. Ensure that the future land use plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177 (6) (a), F.S.]. Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted for review.

3. Ensure that adequate water supplies and facilities are available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent and consult with the applicable water supplier to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy [s. 163.3180 (2) (a), F.S.].

4. For local governments subject to a regional water supply plan, revise the General Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element (the "Infrastructure Element"), within 18 months after the water management district approves an updated regional water supply plan to:

    a. Identify and incorporate the alternative water supply project(s) selected by the local government from projects identified in the *2012 Lower West Coast Regional Water Supply Plan,* or the alternative project(s) proposed by the local government under Section 373.709(8)(b), F.S. [s. 163.3177(6)(c), F.S.].

    b. Identify the traditional and alternative water supply projects and the conservation and reuse programs necessary to meet water needs identified in the *2012 Lower Regional Water Supply Plan* [s. 163.3177(6)(c)3, F.S.].

    c. Update the Work Plan for at least a 10-year planning period for constructing the public, private and regional water supply facilities identified in the element as necessary to serve existing and new development [Section 163.3177(6)(c)3, F.S.].

5. Revise the Five-Year Schedule of Capital Improvements to include water supply, reuse and conservation projects and programs to be implemented during the five-year period [s. 163.3177(3)(a)4, F.S.].

6. To the extent necessary to maintain internal consistency after making changes described in Paragraph 1 through 5 above, revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period, considering the *2012 Lower West Coast Water Supply Plan,* as well as applicable consumptive use permit(s) [s.163.3177 (6) (d), F.S.]. The plan must address the water supply sources necessary to meet and achieve the existing and projected water use demand for the established planning period, considering the applicable regional water supply plan [s.163.3167 (9), F.S.].

7. To the extent necessary to maintain internal consistency after making the changes described in Paragraphs 1 through 5 above, review the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with *2012 Lower West Coast Water Supply Plan* [s.163.3177 (6) (h)1., F.S.].

8. While an Evaluation and Appraisal Report is not required, local governments are encouraged to comprehensively evaluate, and as necessary, update comprehensive plans to reflect changes in local conditions. The evaluation could address the extent to which the local government has implemented the need to update their Work Plan, including the development of alternative water supplies, and determine whether the identified alternative water supply projects, traditional water supply projects, and conservation and reuse programs are meeting local water use demands [s. 163.3191 (3), F.S.].

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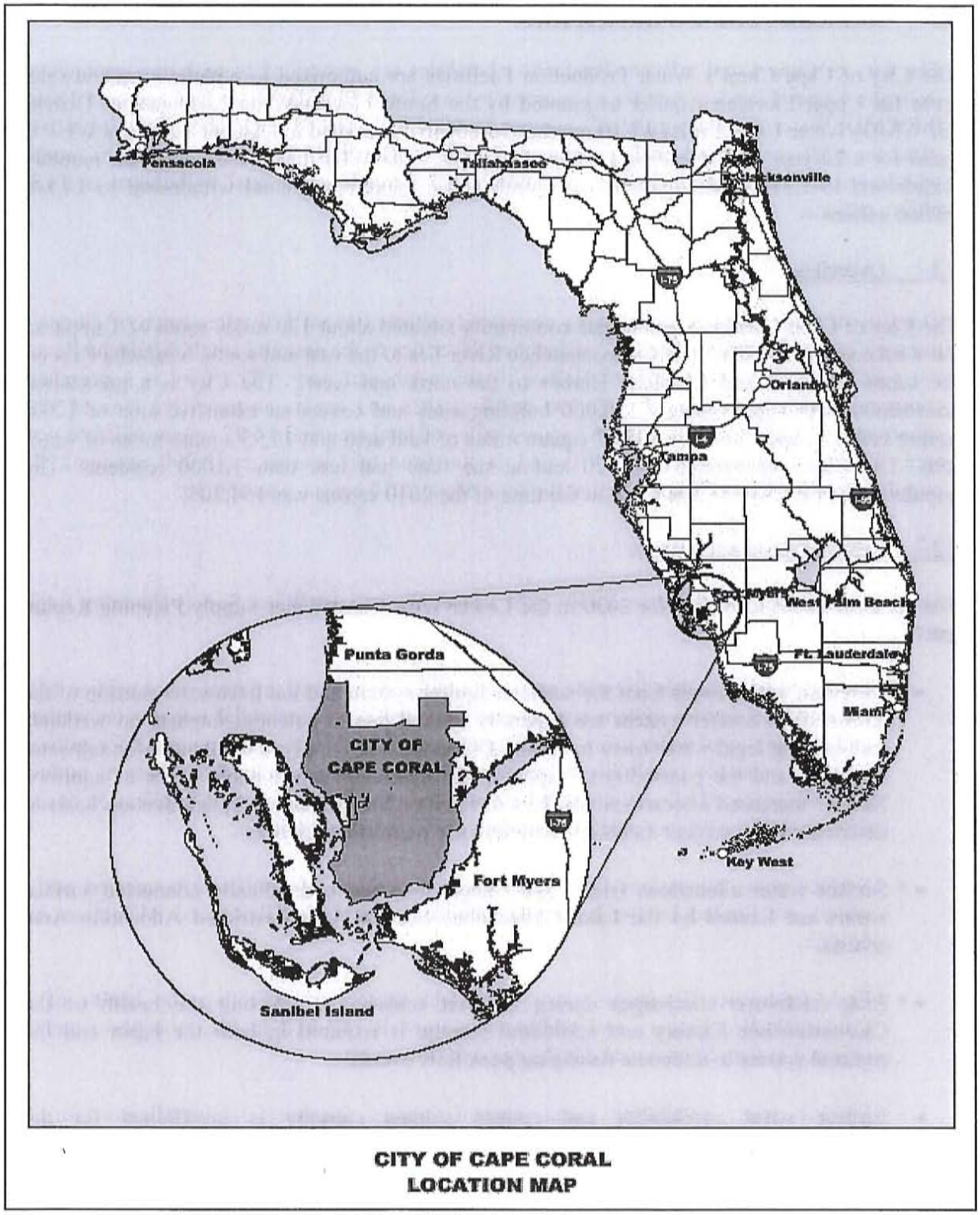

Figure 1: Location Map

2.0 BACKGROUND INFORMATION

The City of Cape Coral's Water Production Facilities are authorized to withdraw groundwater from the Upper Floridan Aquifer as granted by the South Florida Water Management District (SFWMD) Water Use Permit (WUP) number 36-00046-W. Issued in October 2009, the WUP is valid for a 20-year period ending October 22, 2029. The WUP limits the maximum monthly withdrawal to 1.312 billion gallons per month and a maximum annual withdrawal to 14.326 billion gallons.

2.1 Overview

The City of Cape Coral is a peninsular community situated about 120 miles south of Tampa on the west coast of Florida. The Caloosahatchee River lies to the east and south, Matlacha Pass on the south and west and Charlotte Harbor to the north and west. The City is a pre-platted community with approximately 150,000 building sites and covers an extensive area of 120.6 square miles. Cape Coral has 105.67 square miles of land area and 14.95 square miles of water area. The City incorporated in 1970 and at the time had less than 12,000 residents. The population of the City of Cape Coral at the time of the 2010 census was 154,305.

2.2 Relevant Regional Issues

The regional issues identified for 2030 in the Lower West Coast Water Supply Planning Region are:

- Increased withdrawals from the surficial aquifer system and the freshwater portion of the intermediate aquifer system are generally limited due to potential impacts on wetlands and existing legal water users including Domestic Self Supply, the potential for saltwater intrusion, and the possibility of reaching the maximum developable limits of aquifers. New or increased allocations will be evaluated on an application-by-application basis to determine if the project meets consumptive use permitting criteria.

- Surface water allocations from Lake Okeechobee and hydraulically connected surface waters are limited by the Lake Okeechobee Service Area Restricted Allocation Area criteria.

- Peak freshwater discharges during the wet season are affecting the health of the Caloosahatchee Estuary and additional storage is required in both the basin and the regional system to attenuate damaging peak flow events.

- Surface water availability and current storage capacity is insufficient for the Caloosahatchee River and Estuary during dry conditions. *(2012 LWC Water Supply Plan update)*

The City of Cape Coral's plan utilizes brackish well water treated using reverse osmosis, thereby already minimizing regional impacts indentified for 2030 in the Lower West Coast Water Supply planning Region.

3.0 DATA AND ANALYSIS

3.1 Population Information

Over the years, the City of Cape Coral has extended utility service into new areas as the population density has grown. Typically, the higher density areas within the City have potable water, sanitary sewer, and irrigation water utility service provided by the City whereas the areas with lower density remain on domestic self supply wells and septic tanks. At this time, as it relates to population, approximately 3 out of 4 residents are served by the City's utility system.

Upon the completion of the 201 Facilities Plan Update in 2012, the City made a substantial commitment to expanding its utilities system into portions of the City not previously served by public utilities. As of February 15, 2012 eight geographic areas of the City remain to be connected to the City's utility services. Each of these areas will be connected to the City of Cape Coral's Utility system after new portions of the utility system are completed. The proposed extension areas scheduled for construction are as follows:

Area	Begin Construction	Complete Construction
Southwest 6 & 7[1]	2014	2015
North Area 2[1]	2015	2017
North Area 1[1]	2017	2019
North Area 3[2]	2019	2021
North Area 4[2]	2021	2023
North Area 5[2]	2023	2025
North Area 6[2]	2025	2027
North Area 7[2]	2027	2029
North Area 8[2]	2029	2031

These eight phases of construction were introduced at the February 15, 2012 Cape Coral City Council meeting while discussing Utility Extension Project (UEP) Recommendations. The planned construction phases were subsequently adopted during the FDEP State Revolving Fund (SRF) loan program approval process. Refer to Appendix A for the January 31, 2013 letter from FDEP approving the City's Facility Plan. The City's request for SRF funding was approved. The expansion areas are identified in Figure 2.

[1] Approved by City Council
[2] Tentatively approved by City Council for planning purposes

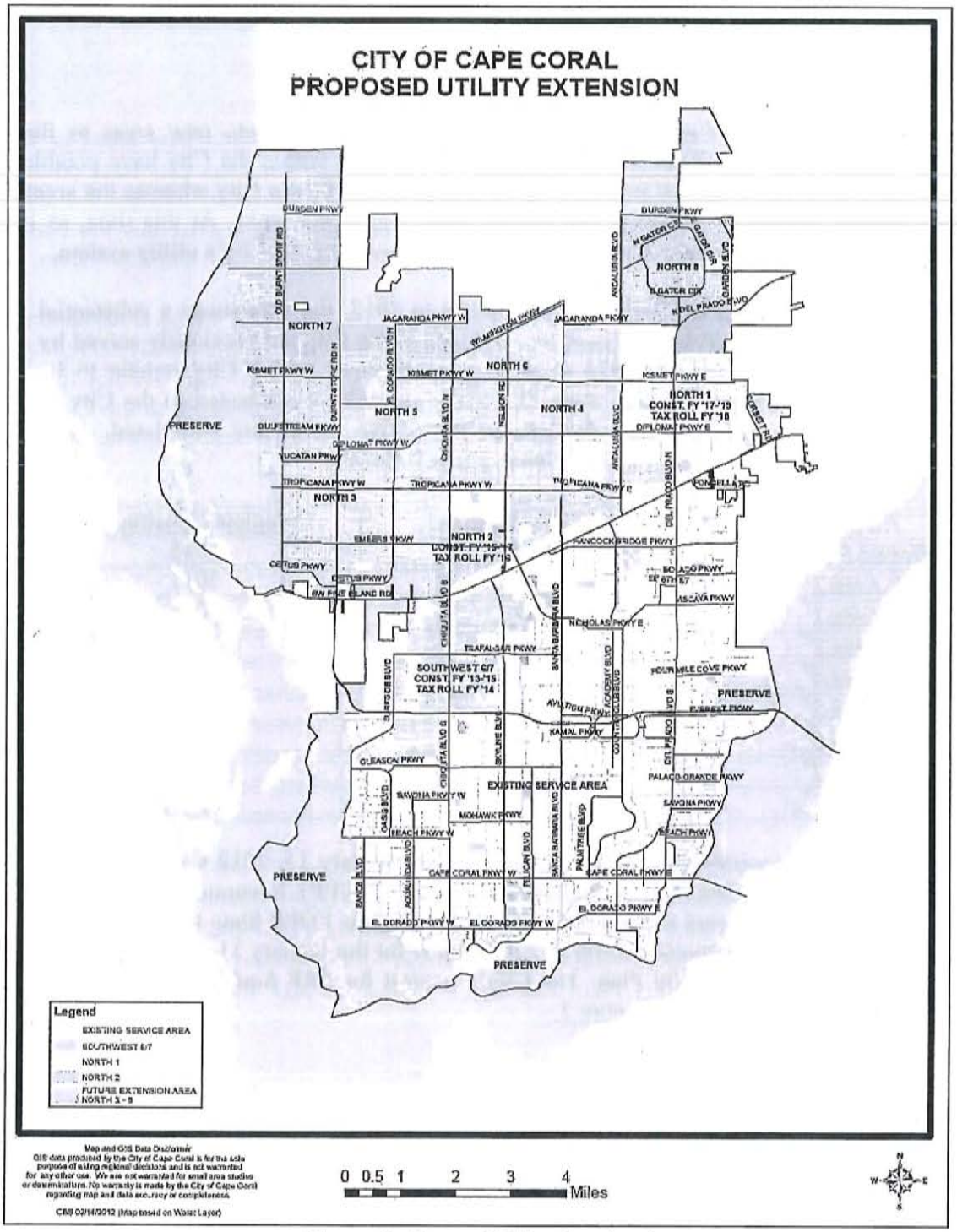

Figure 2: Future Utility Service Areas

Figure 3 provides a comparison between the projected City of Cape Coral population (April 1, 2013 BEBR) and the projection of Equivalent Residential Units (ERU) to be served. Note that the growth in ERU capacity is incrementally greater than the growth in population as utility service will be extended into new areas. The City of Cape Coral is a pre-platted community and each buildable lot has been identified as such by the City. Each such lot contains minimum size to support a single family house and has also been assigned one utility ERU or Equivalent Residential Unit. This is the same system which the City employs when allocating assessments for utility expansion and extension projects. In the event that a group of lots are consolidated to make a larger parcel, that larger parcel will initially contain the sum of the ERUs which were previously assigned to the individual lots. At the time of development of a parcel for anything other than a single family home, the actual number of utility ERUs needed is determined based on the planned/permitted development of the parcel.

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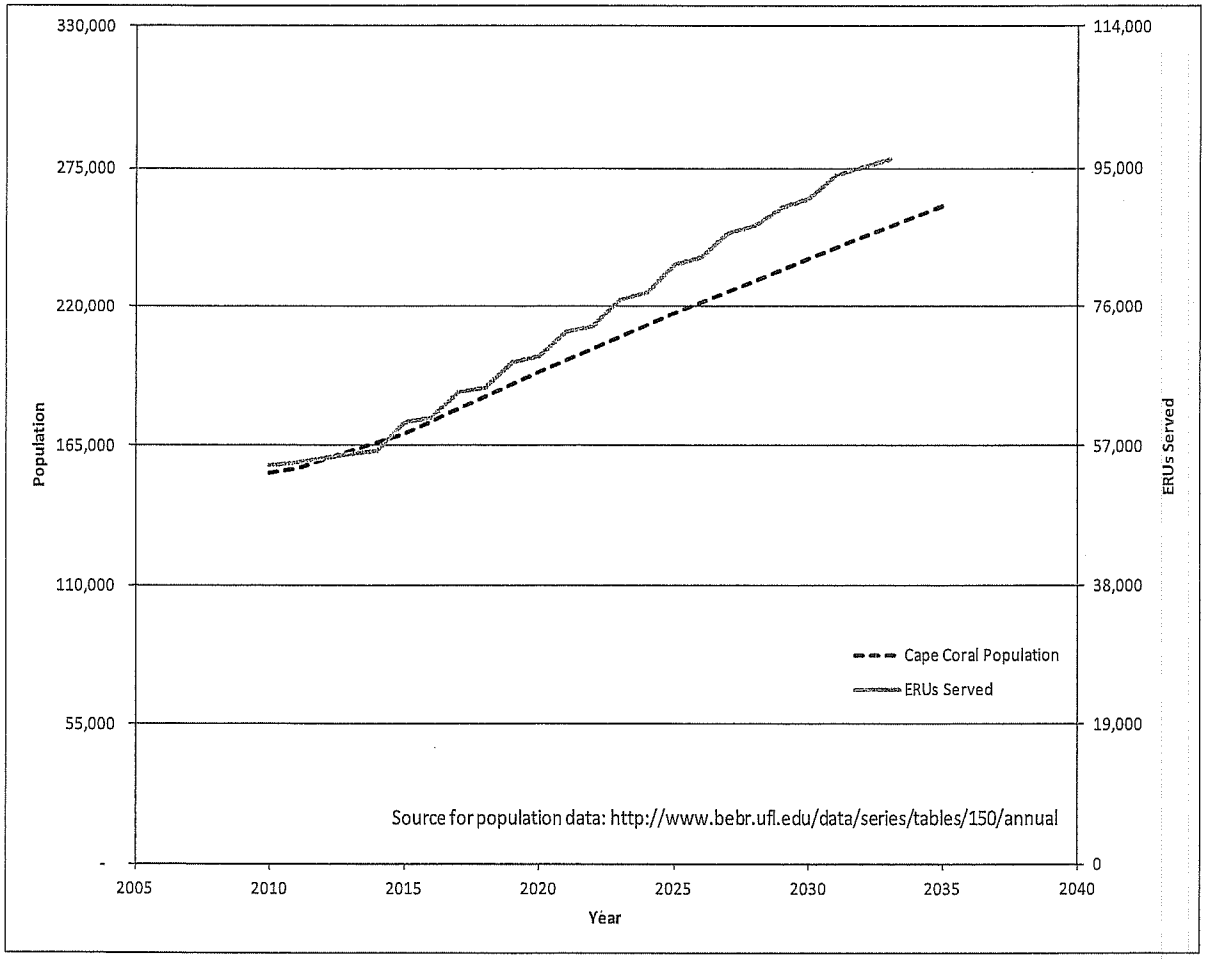

Figure 3 – Comparison of Population to ERUs

3.2 Description of Future Areas Served

The North 1 Utility expansion area is located in northeast Cape Coral. East of Del Prado Boulevard, the area's northern boundary is NE 28th Street. West of Del Prado, the northern boundary is Kismet Parkway. The southern boundary is generally Pine Island Road/State Road 78. The eastern boundary of North 1 is NE 24th Avenue. The western boundary is Andalusia Boulevard, except that the southern portion of this area extends to Santa Barbara Boulevard.

The North 2 Utility Expansion Area is located generally west of the North 1 Area. However, North 2 is actually a series of geographic areas, extending discontinuously from the west side of Andalusia Boulevard to the City's western boundary. From east to west, this Utility Expansion Area includes:

- An area bounded roughly on the east by Andalusia Boulevard, on the west by Santa Barbara Boulevard, on the north by Diplomat Parkway, and on the south by the Hermosa Canal.

- An area bounded on the north by the Hermosa Canal, on the east by Santa Barbara Boulevard, on the South by SW 1st Street, and on the west by Nicholas Parkway and Nelson Road.

- An area bounded by Nicholas Parkway and Nelson Road to the east, Tropicana Parkway to the north, Chiquita Boulevard to the west, and SW 6th Terrace/SW 4th Terrace to the south.

- An area bounded on the east by Chiquita Boulevard, on the south by Pine Island Road/SR 78 and SW 4th Street, and on the west by El Dorado Boulevard.

- And area bounded on the east by El Dorado Boulevard, on the south by Ceitus Parkway, on the west by Burnt Store Road, and on the north by the Shadroe Canal.

- An area bounded on the east by Burnt Store Road, on the south by Pine Island Road/SR 78, on the west by the west City Boundary, and on the north by Embers Parkway.

The North 3 Utility Expansion Area is located north of the three westernmost areas within the North 2 Utility Expansion Area. The North 3 Area's southern boundary runs along the Shadroe Canal and Embers Parkway. Its west boundary is the west City boundary, its north boundary is the Horseshoe Canal (east of Burnt Store Road) and the Gator Slough Canal (west of Burnt Store Road).

The North 4 Utility Expansion Area is located north of North 2 Utility Expansion area. The North 4 Area's southern boundary is Tropicana Pkwy E., Nelson Road to the west, Andalusia Boulevard to the east, and Jacaranda Parkway to the north.

The North 5 Utility Expansion Area is located east of North 3 Utilities Expansion area and extends south just past Embers Parkway, bounded by Chiquita Blvd to the east and to the west by El Dorado Boulevard N. and Burnt Store Rd. N.

The North 6 Utility Expansion Area is located east of the North 5 Utility Expansion Area and bounded by Tropicana Parkway to the south, Chiquita Boulevard to the west, Nelson Road to the east and Wilmington Parkway to the north.

The North 7 Utility Expansion Area is located north of Utility Expansion Area's 3 and 5. It is bounded by undeveloped preserve to the west, the city boarder to the north, Chiquita Boulevard the east, and just south of Kismet Parkway to the south.

The North 8 Utility Expansion Area is located north of the North 1 Utility Expansion Area. It is bounded by Jacaranda Parkway and N. Del Prado Boulevard to the south, Garden Boulevard to the east, Andalusia Boulevard to the west, and Durden Parkway to the North.

3.3 Potable Water Level of Service Standard

For the purpose of this analysis, each of the lots which have been identified as meeting the criteria as having the minimum size to support a single family home have been assigned the equivalent of one 5/8-inch water meter (or one equivalent residential unit or ERU). The City of Cape Coral has in the past established a level of service standard for their utility system that one ERU is equal to 200 gallons per day of potable water demand on an annual average daily flow basis (AADF) and 200 gallons per day of sanitary sewage generated on an average annual daily flow (AADF) basis. *(City of Cape Coral Comprehensive Plan, Infrastructure Element, Policy 1.1.1.)*

Historic potable water demands were 9.619 million gallons per day (AADF) in FY 2010 and 10.226 million gallons per day (AADF) in FY 2009. As of December 2013 the City provided service to 56,674 water meters. Using the most recent year's water demand divided by the number of water meters for the same period results in an average demand of 167 gallons per day per water meter (AADF).

[9,483,000 gallons per day-AADF]/[56,674 meters]
= 167 gallons per day/meter-AADF

There are a number of water meters which serve commercial establishments, as well as, a number of water meters which serve multi-family developments. The net result is that these two categories offset one another, especially since the vast majority of the City's meters serve single family residences. Thus, the total number of meters is considered to be approximately equivalent to the total number of utility ERUs served by the City's system. Therefore, the above calculation appears to confirm the City's level of service standard of 200 gallons per day per ERU (AADF), which has been used to project future demands.

The Florida Department of Environmental Protection (FDEP) permits water production facilities on a maximum daily flow (MDF) basis. The City has observed a historic ratio between maximum day demand and annual average daily demand equal to 1.20 which can be used to adjust the City's level of service standard on an annual average daily flow basis to a maximum day flow basis.

[200 gallons per day per ERU-AADF][1.20 MDF/AADF]
= 240 gallons per day per ERU (MDF)

3.4 Potable Water Demand Projections

Future potable water demand projections are being made using current potable water demands combined with projected demand for future ERUs (equivalent residential units) as they will be added to the City utility system.

The total number of future ERUs is the sum of existing customers, plus infill in the current service area, plus those for areas which have not yet been provided with utility service. The number of Infill ERUs and ERUs for currently unserved areas used here is consistent with the City's Comprehensive Plan and Utility Expansion Program assessment methodology.

The following table identifies the total number of ERUs which have been identified as future City utilities customers beyond those already served.

	Number of ERUs		
	Served	Unserved	Buildout
Areas currently served	56,000*	14,227	70,227
SW Areas 6 & 7	0	6,128	6,128
North Area 1	0	6,901	6,901
North Area 2	0	7,628	7,628
North Area 3	0	7,949	7,949
North Area 4	0	7,057	7,057
North Area 5	0	7,266	7,266
North Area 6	0	5,690	5,690
North Area 7	0	7,986	7,986
North Area 8	0	6,212	6,212
TOTAL	56,000	76,161	132,161

*56,000 ERUs at 200 = 11.2 MGD Annual Average Daily Flow; 56,000 ERUs at 240 gal/day/ERU = 13.5 MGD Maximum Daily Flow

The City of Cape Coral has two potable water production facilities with a combined permitted capacity of 30,100,000 gallons per day.[5]

[5] The Southwest RO Water Treatment Plant is presently permitted for 18,100,000 gallons per day (MDF) and the North RO Water Treatment Plant is presently permitted for 12,000,000 gallons per day (MDF).

These facilities are permitted for operation to meet the maximum day flow (MDF) demand. The current level of demand in recent years is approximately 12,000,000 gallons per day (MDF).

The current level of reserve capacity for water supply and treatment can be calculated as follows:

[30,100,000 – 12,000,000 gallons per day] / 240 gallons per day/ERU
= 75,400 ERUs

Note that the above number of ERUs which represent 100 percent of lots in the City not presently on City Utilities is approximately equal to the available water treatment capacities of the City's existing facilities. This is not the entire picture. It must be understood that all water treatment facilities require a factor of safety when assessing capacity. One reason is to accommodate changes in per capita consumption of water. It is not an accepted practice to operate water supply and production facilities at or near 100 percent of its permitted capacity. A primary reason not to do this is the standard practice of providing reserve capacity to handle the likelihood of some treatment units being offline for either scheduled maintenance or unexpected repairs. Also, the geographic distribution of customer needs compared to source of water supply and water treatment is an important consideration. FDEP rules and regulations require that a utility system continue to assess their system demands and project their future needs on a periodic basis once they reach 75 percent of permitted capacity in order to plan for making sure demands will be able to be met.[6]

In 2012, in the City of Cape Coral, 42 percent of lots are served by the City Utilities. It is projected that by 2033, that 73 percent of the pre-platted lots will be served by City Utilities. This is based on the combination of population growth of 2 percent per year combined with expansion of water service throughout the City. In the event of more rapid growth, the demand is expected to remain within the capacity of the City's water treatment facilities during the ten year planning period.

Figure 4 and Table 1 provides a projection of potable water demands from 2013 through 2033 based on the combination of population growth and increasing utility service area. The projected water demand for 2033 is 23.1 MGD or 77 percent of the combined capacity of the City's two water treatment facilities (30.1 MGD).

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[6] The total number of ERUs used are the number of parcels to be assessed based on current lot dimensions. The total number of dwelling units at build-out is greater than this number based on anticipated future land use changes throughout the City.

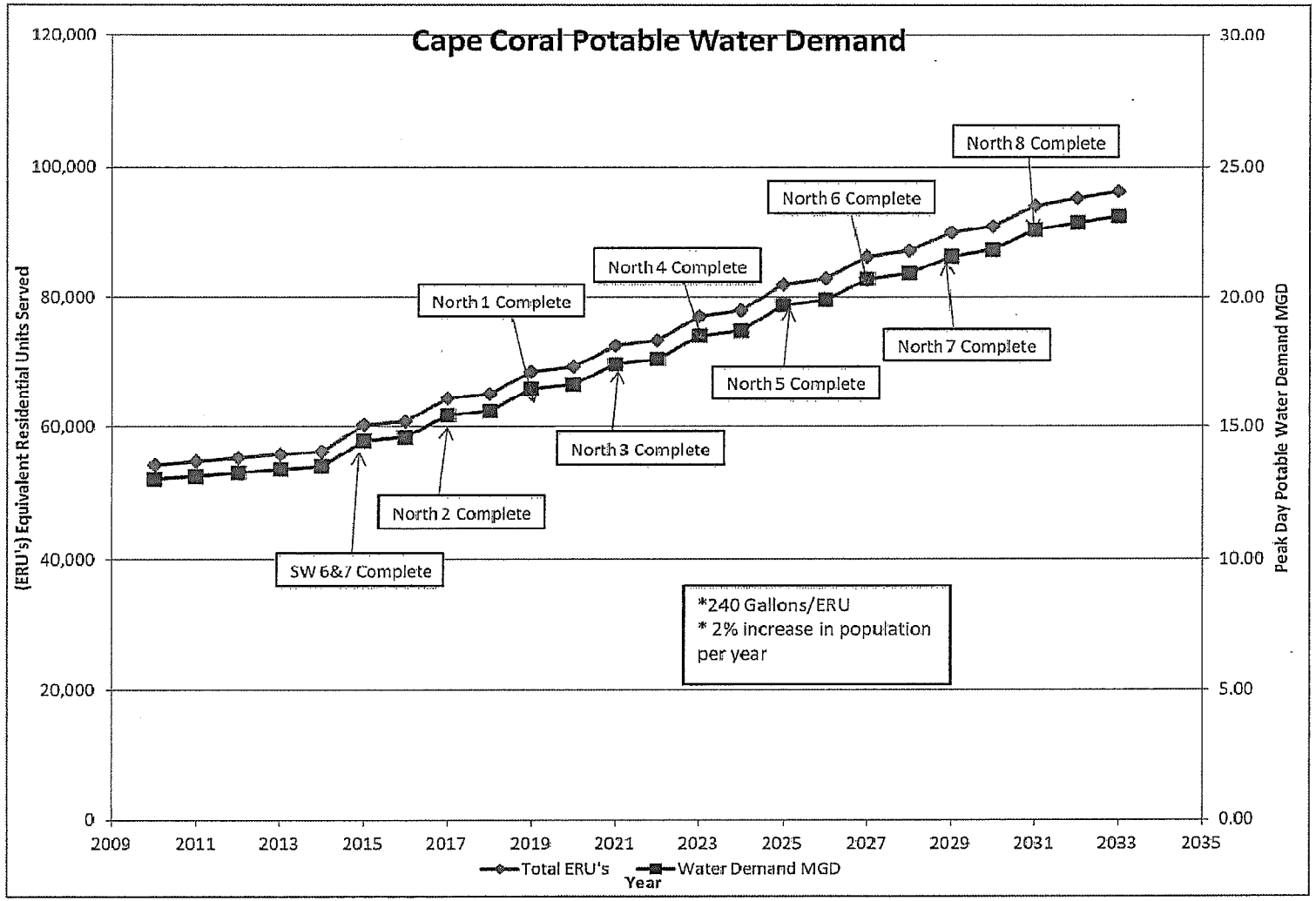

Figure 4: Potable Water Demand

Table 1: City of Cape Coral Potable Water Supply Demand

Year	Total ERU's in service	Potable Water Supply Demand Max Day (MGD)	Raw Water Max Day (MGD)
2010	54,347	13.0	16.3
2011	54,387	13.2	16.5
2012	55,347	13.3	16.6
2013	55,847	13.4	16.8
2014	56,347	13.5	16.9
2015	60,230	14.5	18.1
2016	60,798	14.6	18.3
2017	64,346	15.4	19.3
2018	64,976	15.6	19.5
2019	68,495	16.4	20.5
2020	69,188	16.6	20.8
2021	72,553	17.4	21.8
2022	73,307	17.6	22.0
2023	77,079	18.5	23.1
2024	77,904	18.7	23.4
2025	81,962	19.7	24.6
2026	82,864	19.9	24.9
2027	86,085	20.7	25.9
2028	87,050	20.9	26.1
2029	89,769	21.5	26.9
2030	90,787	21.8	27.3
2031	93,982	22.6	28.3
2032	95,065	22.8	28.5
2033	96,159	23.1	28.9

Water supply demand based upon peak demand of 240 gal/ERU. By 2031, all geographic regions of Cape Coral will have Public Utility Service

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3.5 Water Supply Provided by the City of Cape Coral

The City water system is divided into two separate systems (dual water system). The drinking water system uses subsurface brackish water aquifers as a raw water source to be processed into potable water by the City's two reverse osmosis plants. The irrigation water system is supplied by highly treated wastewater reuse quality effluent and water from the City's extensive network of freshwater canals to provide non-potable (irrigation and limited fire protection) water for the City. Development of the irrigation system was a condition of the City's Consumptive Use Permit from the South Florida Water Management District (SFWMD) permit number 36-00046-W; expiration October 2029.

In September 1984, as a condition of the consumptive use permit from the South Florida Water Management District, the City agreed to implement Phase 1 of a dual water system that would utilize canal water for the source of irrigation water. Subsequently, in November 1989, a public referendum endorsed the use of treated wastewater reuse quality effluent for residential reuse. At that point, the irrigation system was expanded to include the use of treated effluent. Since that time, the City has provided reuse irrigation water service to areas which essentially overlap the City's potable water service areas. Use of the irrigation water system has significantly enabled the City to lower its annual per capita demand for potable water.

The City of Cape Coral's potable water production facilities are supplied with brackish raw water from the Upper Floridan aquifer. There are a total of fifty-five wells. Plant No. 1 at the Southwest RO WTP, [built in 1977], is supplied by twelve wells; Plant No. 2 at the Southwest RO WTP, [built in 1985], is supplied by twenty-one wells[5]; and the North RO WTP [completed in 2010] is supplied by twenty-two wells. Each well field supplies water to its respective water treatment facility through an independent raw water transmission system.

3.6 Water Supply Provided by Other Entities

A portion of Cape Coral is served by the Greater Pine Island Water Association (GPIWA). The GPIWA service area includes Pine Island, Little Pine Island, Matlacha, portions of western Cape Coral, and portions of unincorporated Lee County. The portion of the service area in Coral Cape is bound on the north by Embers Parkway, on the east by Nott Road [Southwest 20th Street], on the south by Pine Island Road [except for a small area just south of Pine Island Road near Veteran's Parkway], and on the west by Matlacha Pass (not including the Matlacha Isles development). However, not all of this area currently receives service, as portions of the service area are currently undeveloped.

GPIWA currently provides service to commercial establishments along S.R. 78, an apartment complex and some residential units in Unit 54 and 58.

[5] Originally there were twenty-two water supply wells, although one is no longer available for use for water supply and it is being used to collect water quality samples.

The Greater Pine Island Water Association provides potable water service to a total of 6,700 customers (accounts) in unincorporated Lee County, with approximately 270 in the City of Cape Coral.

The GPIWA has a contract to service this area until the City is able to provide service to individuals in this area and will discontinue service when the City extends water to this area.

Water is supplied by groundwater wells from the Lower Hawthorn aquifer. There are three Lower Hawthorn wells located on the water treatment plant premises and an additional two wells along Stringfellow Road. Lower Hawthorn groundwater is processed through a 3.2 MGD RO plant. These facilities are permitted by the South Florida Water Management District for an average daily withdrawal of 2.44 MGD and a monthly maximum allocation of 97.0542 million gallons (annual allocation of 890 million gallons; SFWMD Consumptive Use Permit 36-00045-W; expires October 2015).

3.7 Domestic Self - supply Water

There are areas in the northern part of the City of Cape Coral where the population density has yet to reach the threshold where the City will begin extending utility service. As provided in Section 3.1, the City has a plan for extending water lines into areas generally north of Pine Island Road (currently un-served areas). The amount of well water used by the residents in these areas has been estimated based on the level service standard for the City's utility customers. This is provided in Table 2.

Table 2: Estimated Potable and Irrigation Water Use from Domestic Self-supply Wells

Year	Potable Water Estimated Use (MGD)	Irrigation Water Estimated Use (MGD)
2010	3.4	6.8
2015	3.6	7.2
2020	2.7	5.4
2025	1.2	2.4
2030	0.5	1.0
2035	minimal	minimal

The above projections for irrigation water used from domestic self supply wells assumes that private wells will be taken offline as service becomes available from the City's utility.

*Irrigation water estimated at 400 gpd/ERU
#Potable water estimated at 200 gpd/ERU

FIGURE 5 - PLOT OF WATER LEVEL ELEVATION FOR SANDSTONE AQUIFER COLLECTED IN USGS WELL L-581.

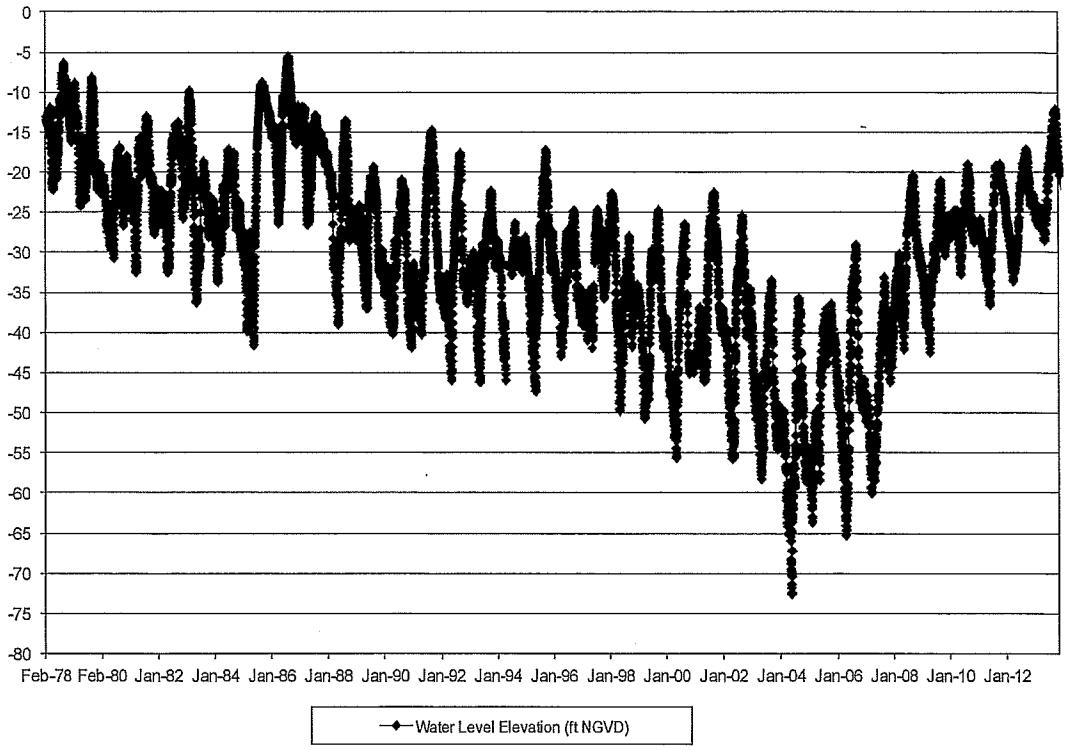

Figure 5 illustrates the benefits of extending potable water and reuse water utility service to residents of the City of Cape Coral. The large number of domestic self supply wells in this area of the City of Cape Coral had caused a drop in water levels in the sandstone and Mid-Hawthorn aquifer over a twenty-five year period. Once potable water and reuse water lines were extended into this portion of the City, the water levels in the sandstone and Mid-Hawthorn aquifer immediately began to recover.

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Table 3: Service & Bulk Purchase Agreements (outside jurisdiction)

Bulk Sales from Cape Coral Utility to Others						
Local Government Served	Bulk Sales Water Supplied (MGD)					
Year	2008	2009	2010	2011	2012	2013
Lee County Utilities	1.858	1.721	3.325	1.797	2.655	5.23

Bulk Purchases by Cape Coral Utility from Others						
Local Government Served	Bulk Sales - Water Received (MGD)					
Year	2008	2009	2010	2011	2012	2013
	-	-	-	-	-	-

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3.8 Conservation

3.8.1 Specific Actions, Programs, Regulations, or Opportunities

The City of Cape Coral has adopted a number of water conservation programs, primarily directed toward reducing the amount of potable water that is used by City residents to irrigate lawns and landscaped areas. The City also has programs promoting household water conservation. City potable water conservation programs include:

Staggered Watering Schedules

The City allows residents to water their lawns twice per week *regardless of the irrigation water source*. Permitted watering times are regulated by reference to the last number in a property's address.

The two day schedule, in effect for all of Cape Coral, is as follows:

Monday and Friday:	Midnight to 4 a.m. for addresses ending in 0
Monday and Friday:	4 a.m. to 8 a.m. for addresses ending in 1
Wednesday and Saturday:	Midnight to 4 a.m. for address ending in 3 and 5
Wednesday and Saturday:	4 a.m. to 8 a.m. for addresses ending in 7 and 9
Thursday and Sunday:	Midnight to 4 a.m. for addresses ending in 2 and 4
Thursday and Sunday:	4 a.m. to 8 a.m. for addresses ending in 6 and 8

Lawn watering is restricted to no more than four hours per each irrigation event. This program is enforced through the City's Code Compliance Division. Residents watering on the wrong day or time initially receive a "1st offense" notice, which is essentially a warning and carries no fine. A violator is charged $100 for the 2nd offense, $200 for the 3rd offense and $400 for the 4th offense. If the address is hooked up to the City's centralized irrigation system, repeat violators can be disconnected and charged an $80 fee for reconnecting. Failure to pay fines can result in a lien against the subject property.

Other Watering Restrictions

The City allows limited use of water for various outdoor activities. There are no restrictions on pressure washing or car washing. New plants, planted for less than 30 days, may be watered on Monday through Thursday of each week, between the hours of 2:00 a.m. and 8:00 a.m. New plants established between 31 and 60 days may be watered between the hours of 2:00 a.m. and 8:00 a.m., on Monday, Wednesday, Thursday and Saturday.

Water Conservation Tips

The City of Cape Coral's Watering Schedule webpage includes a link to a water conservation page established and maintained by the South Florida Water Management District (http://www.savewaterfl.com). This site features information on current water use restrictions, landscaping maintenance, and water-saving tips. There are sub-pages for homeowners, businesses, agricultural interests, utilities, government agencies, teachers and news media.

Florida Friendly Landscaping Program

The City of Cape Coral sponsors the Florida Friendly Landscaping Program in Cape Coral. The program is a partnership between the landscape industry, the University of Florida Cooperative Extension Service, Florida's National Estuary Programs, Florida's Sea Grant College Program, and various State and local environmental agencies. The program focuses on yards, as they are the first line of defense for estuaries, rivers, lakes, aquifers and the City's canal system.

The Florida Friendly Landscaping Program adheres to nine basic principles that, if implemented properly, are designed to reduce the adverse impacts of a yard on stormwater quality. Each principle contains a series of actions that landowners can take to improve the environmental health of their yards and the health of the waterways these yards drain to. Through implementation of the principles and actions program participants are awarded points, or "inches." When a participating yard achieves 36 inches (a "yard"), the yard receives a plaque, which can be placed in the yard to let everyone know that the subject property is a "Certified Florida Yard." The program's nine principles are:

- Right plant, right place;
- Water efficiently;
- Reduce stormwater runoff;
- Proper maintenance of waterfront properties (to reduce stormwater impacts);
- Mulching;
- Vegetation recycling;
- Avoid or reduce use of fertilizers;
- Avoid use of pesticides and herbicides; and,
- Maintain areas for wildlife.

More information on these nine principles can be found on the City's website.

3.8.2 Identify any Local Financial Responsibilities as Detailed in the CIE or CIS

This subsection is not applicable.

3.9 Reuse

State law supports reuse efforts. Florida's utilities, local governments, and water management districts have led the nation in the quantity of reclaimed water reused and public acceptance of reuse programs. Section 373.250(1) F.S. provides "the encouragement and promotion of water conservation and reuse of reclaimed water, as defined by the department, are state objectives and considered to be in the public interest." In addition, Section 403.064(1) F.S., states "reuse is a critical component of meeting the state's existing and future water supply needs while sustaining natural systems."

3.9.1 Regional and Countywide Issues

The City of Cape Coral continues to support and encourage water reuse initiatives under consideration by both the SFWMD and FDEP and the implementation of new regulations, programs or conservation activities designed increase the use of reclaimed water and encourage public acceptance of beneficial reuse of reclaimed water.

3.9.2 Local Government Specific Actions, Programs, Regulations, or Opportunities

Reuse water from both the Everest Parkway and Southwest WRF is distributed to the City of Cape Coral's citizens via a reuse irrigation system. In the event the reuse irrigation system does not use 100 percent of the treated reclaimed water, after filling the five reuse storage tanks [two at the Everest WRF and three at the Southwest WRF, approximately 25 million gallons of reuse storage capacity], the unused portion is disposed of via deep injection wells or, if necessary, reclaimed water from the Everest WRF could be discharged to the Caloosahatchee River. Reclaimed water from the Southwest WRF is no longer able to be discharged to the Caloosahatchee River.

When the reuse demand exceeds treatment output and available storage, reuse flow is supplemented by canal water from the City's 300 miles of freshwater canals, which is pumped from five canal pump stations maintained by the City.

As the City extends potable water and sanitary sewer service to new service areas, the City will also extend its reuse water for irrigation unless there are reasons that warrant deviation[6].

[6] Infrastructure Element of the Comp Plan Policy 2.3.4 says, "Potable water, secondary irrigation water, and sanitary sewer service will be extended concurrently to new service areas unless unusual conditions peculiar to a particular area warrant a deviation based on sound planning principals."

3.9.3 Identify any Local Financial Responsibilities as Detailed in the CIE or CIS

This subsection is not applicable.

3.10 Sector Plans

This section is not applicable.

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4.0 CAPITAL IMPROVEMENTS

4.1 Work Plan Projects

All Public, Private & Regional Utility Projects and Programs Serving the City of Cape Coral						
Utility Serving Cape Coral's Jurisdiction	Future Project or Program Providing Water to Jurisdiction	Finished Water (MGD)	Water Source for Project or Program	Date Project on line	Capital Cost	Population Served with Jurisdiction
No Projects*		-	-	-	-	-

City of Cape Coral Utility Projects and Programs serving outside its own jurisdiction						
Other Jurisdictions being served by Cape Coral	Future Project or Program Providing Water to Jurisdiction	Finished Water (MGD)	Water Source for Project or Program	Date Project on line	Capital Cost	Population Served with Jurisdiction
No Projects		-	-	-	-	-

*The City has not budgeted nor scheduled the future project to expand the North R.O. Water Treatment Plant. The City presently has sufficient potable water supply and treatment to meet their needs.

4.2 Capital Improvements Element/Schedule

CAPITAL IMPROVEMENT PROGRAM								
	Funding Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	TOTAL
Utilities Infrastructure								
South RO								
Palm Tree Water Main Extension	Water & Sewer Fees	300,000	1,700,000	-	-	-	-	2,000,000
Upgrade Security at North/South Pump Station	Water & Sewer Fees	-	100,000	-	-	-	-	100,000
Retro SW RO Wellfield Control/Communication		300,000	250,000	-	-	-	-	550,000
SW RO Control System Upgrade	Water & Sewer Fees	700,000	-	-	-	-	-	700,000
Underground Wellfields	Water & Sewer Fees	43,759	45,071	46,423	47,816	-	-	183,069
New Maintenance Shop & Storage	Water & Sewer Fees	-	750,000	-	-	-	-	750,000
Plant 2 Feed Water & Blend Line Upgrade	Water & Sewer Fees	-	-	-	1,340,000	-	-	1,340,000
Plant 2 Building Replacement	Water & Sewer Fees	-	-	-	1,000,000	-	-	1,000,000
SW RO Deep Injection Well	Water & Sewer Fees	2,500,000	2,500,000	-	-	-	-	5,000,000
SW RO Lightning & Grounding Protection	Water & Sewer Fees	125,000	-	-	-	-	-	125,000
North RO								
North RO Deep Injection Well	Water & Sewer Fees	100,000	-	2,500,000	2,400,000	-	-	5,000,000
North RO Perimeter Wall	Water & Sewer Fees	-	850,000	-	-	-	-	850,000
North RO Landscaping	Water & Sewer Fees	-	-	300,000	-	-	-	300,000
Auxiliary Power Van Loon PS & SRO	Water & Sewer Fees	300,000	-	-	-	-	-	300,000
Distribution System Automation	Water & Sewer Fees	-	950,000	-	-	-	-	950,000
Rehab/Replace Raw Water Wells	Water & Sewer Fees	800,000	-	800,000	-	800,000	-	2,400,000

4.2 Capital Improvements Element/Schedule cont.

	Funding Source	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	TOTAL
Fire Sprinkler System Conversion (Irr to PW)	Water & Sewer Fees	500,000	500,000	500,000	-	-	-	1,500,000
Potable Water Infrastructure Replacement	Water & Sewer Fees	300,000	300,000	300,000	300,000	-	-	1,200,000
Del Prado Water Transmission Improvements	Water & Sewer Fees	370,000	1,000,000	-	-	-	-	1,370,000
Coronado Potable Water Transmission Improvements	Water & Sewer Fees	-		-	-	-	1,400,000	1,400,000
Unspecified Future Projects - Water	Water & Sewer Fees	-	-	-	-	-	5,000,000	5,000,000

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5.0 GOALS, OBJECTIVES AND POLICIES

The following comprehensive plan goals, objectives, and polices (GOPs) have been reviewed for consistency with the Work Plan. The Water Supply Plan continues to be consistent with the City's Comprehensive Plan therefore there is no need to modify the plan. No changes are proposed to the City's goals, objectives and policies.

The following GOPs were adopted in the original Work Plan and have been reviewed to see if updates or revisions are needed:

a. Coordination of land uses and future land use changes with the availability of water supplies and water supply facilities. [No changes necessary]

b. Revision of potable water level of service standards for residential and non-residential users. [No changes necessary]

c. Provision for the protection of water quality in the traditional and new alternative water supply sources. [No changes necessary]

d. Revision of priorities for the replacement of facilities, correction of existing water supply and facility deficiencies, and provision for future water supply and facility needs. [No changes necessary]

e. Provision for conserving potable water resources, including the implementation of reuse programs and potable water conservation strategies and techniques. [No changes necessary]

f. Provisions for improved or additional coordination between a water supply provider and the recipient local government concerning the sharing and updating of information to meet ongoing water supply needs. [No changes necessary]

g. Coordination between local governments and the water supply provider in the implementation of alternative water supply projects, establishment of level of service standards and resource allocations, changes in service areas, and potential for annexation. [No changes necessary]

h. Coordination of land uses with available and projected fiscal resources and a financially feasible schedule of capital improvements for water supply and facility projects. [No changes necessary]

i. Additional revenue sources to fund water supply and facility projects. [No changes necessary]

j. Coordination with the respective regional water supply plan. [No changes necessary]

k. Update the Work Plan within 18 months following the approval of a regional water supply plan. [No changes necessary]

l. Concurrency requiring water supplies at the building permit stage. [No changes necessary]

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6.0 REGIONAL ISSUES IDENTIFIED IN REGIONAL WATER SUPPLY PLAN

Detailed information on regional issues can be found in Chapter 3, Issues and Evaluations, in the Lower West Coast Water Supply Plan. A summary of relevant regional issues indentified for the Lower West Coast Water Supply Planning Region can be found in sub-section 2.2 within this plan update.

A summary of the City of Cape Coral's impact on these issues:

1. The City of Cape Coral does not use the surficial aquifer or the freshwater portion of the intermediate aquifer.

2. The City of Cape Coral does not use surface water from the Lake Okeechobee.

3. The City of Cape Coral does not use freshwater from the Caloosahatchee River or Estuary.

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