BOOK 2

CPA2006-20

LEE COUNTY ORDINANCE NO. 09-13
(Water Supply Facilities Work Plan)
(CPA2006-20)

AN ORDINANCE AMENDING THE LEE COUNTY COMPREHENSIVE PLAN, COMMONLY KNOWN AS THE "LEE PLAN," ADOPTED BY ORDINANCE NO. 89-02, AS AMENDED, SO AS TO ADOPT AMENDMENT CPA2006-20 (PERTAINING TO THE WATER SUPPLY FACILITIES PLAN) APPROVED DURING THE COUNTY'S 2007/2008 REGULAR COMPREHENSIVE PLAN AMENDMENT CYCLE; PROVIDING FOR AMENDMENTS TO ADOPTED TEXT AND TABLES; PURPOSE AND SHORT TITLE; LEGAL EFFECT OF "THE LEE PLAN"; GEOGRAPHICAL APPLICABILITY; SEVERABILITY, CODIFICATION, SCRIVENER'S ERRORS, AND AN EFFECTIVE DATE.

WHEREAS, the Lee County Comprehensive Plan ("Lee Plan") Policy 2.4.1. and Chapter XIII, provides for adoption of amendments to the Plan in compliance with State statutes and in accordance with administrative procedures adopted by the Board of County Commissioners ("Board"); and,

WHEREAS, the Board, in accordance with Section 163.3181, Florida Statutes, and Lee County Administrative Code AC-13-6 provide an opportunity for the public to participate in the plan amendment public hearing process; and,

WHEREAS, the Lee County Local Planning Agency ("LPA") held a public hearing on the proposed amendment in accordance with Florida Statutes and the Lee County Administrative Code on June 23, 2008 and September 22, 2008; and,

WHEREAS, the Board held a public hearing for the transmittal of the proposed amendment on October 22, 2008. At that hearing, the Board approved a motion to send, and did later send, proposed amendment CPA2006-20 pertaining to the Water Supply Facilities Work Plan to the Department of Community Affairs ("DCA") for review and comment; and,

WHEREAS, at the October 22, 2008 meeting, the Board announced its intention to hold a public hearing after the receipt of DCA's written comments commonly referred to as the "ORC Report." DCA issued their ORC report on January 16, 2009; and,

WHEREAS, on February 25, 2009, the Board held a public hearing and adopted the proposed amendment to the Lee Plan set forth herein.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF LEE COUNTY, FLORIDA, THAT:

SECTION ONE: PURPOSE, INTENT AND SHORT TITLE

The Board of County Commissioners of Lee County, Florida, in compliance with Chapter 163, Part II, Florida Statutes, and with Lee County Administrative Code AC-13-6, conducted public hearings to review proposed amendments to the Lee Plan. The purpose of this ordinance is to adopt the amendments to the Lee Plan discussed at those meetings and approved by a majority of the Board of County Commissioners. The short title and proper reference for the Lee County Comprehensive Land Use Plan, as hereby amended, will continue to be the "Lee Plan." **This amending ordinance may be referred to as the "2007/2008 Regular Comprehensive Plan Amendment Cycle CPA2006-20 Water Supply Facilities Work Plan Ordinance."**

SECTION TWO: ADOPTION OF LEE COUNTY'S 2007/2008 REGULAR COMPREHENSIVE PLAN AMENDMENT CYCLE

The Lee County Board of County Commissioners amends the existing Lee Plan, adopted by Ordinance Number 89-02, as amended, by adopting an amendment, as revised by the Board on February 25, 2009, known as CPA2006-20. CPA2006-20 amends the Community Facilities and Services, Potable Water sub-element, the Conservation and

Coastal Management Element, and the Intergovernmental Coordination Element to coordinate appropriate aspects of the Comprehensive Plan with the South Florida Water Management District Water Supply Plan and to include a ten-year Water Supply Facilities Work Plan.

The corresponding Staff Reports and Analysis, along with all attachments for this amendment are adopted as "Support Documentation" for the Lee Plan.

POLICY 53.1.5: ~~County development regulations will be amended to specify that n~~No county development order under the ~~Development Standards Ordinance~~ Land Development Code for a residential development more intense than 2.5 dwelling units per gross acre, for a commercial development of more than 30,000 square feet of gross floor area, or for any industrial plant of more than 30,000 square feet of gross floor area, will be issued in any franchised or certificated water service area, or within Lee County Utilities' future service area, unless potable water service, at the minimum acceptable level of service, is available at the property line, or surety is given that it will be installed prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

POLICY 53.1.11: The County will expand potable water facilities consistent with those improvements identified in Table 7, the 10 Year Water Supply Development Projects Table. Table 7 will be amended as projects are completed and technological advancements in water supply facilities are made.

OBJECTIVE 53.2: WATER SUPPLY CONCURRENCY. Lee County will incorporate water supply into the concurrency management system consistent with the requirements of Section 163.3180(2)(a), F.S.

POLICY 53.2.1: County development regulations will be amended to specify that no building permit under the Land Development Code will be issued in a franchised or certificated water service area, or within Lee County Utilities' future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy does not exempt development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

POLICY 55.1.3: Lee County will actively ~~participate in the~~ implement~~ation of~~ the ~~Regional~~ Water Supply Facilities ~~Master~~ Work Plan as adopted by the Board of County Commissioners on (insert date of policy adoption). Lee County will utilize the document as the County's guide to water supply facility planning with a planning horizon through the year 2030. A copy of the adopted Water Supply Facilities Work Plan will be maintained and kept on file by Lee County Utilities. ~~The Master Plan will consider the expansion of existing surface water sources and wellfields and the interconnection of the transmission systems of existing public and private utilities to obtain the most cost efficient and reliable water system.~~

POLICY 117.1.2: The county will recognize and encourage water and wastewater management, provided that such management does not exceed the natural

assimilative capacity of the environment or applicable health standards. Appropriate water and wastewater management includes, but is not limited to, aquifer recharge, aquifer storage and recovery, reclaimed water, reverse osmosis, dual water systems, use of low volume irrigation systems, use of water-conserving vegetation, and other conservation and recycling techniques. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.1.9: The county will utilize the recommendations made in the Water Supply Facilities Work Plan (see Policy 55.1.3) as a guide to potable water facilities planning, potable water resources, and water conservation as well as expanding potable water facilities consistent with Table 7, the 10 Year Water Supply Development Projects Table.

OBJECTIVE 151.5: COORDINATION OF WATER SUPPLY PLANS AND THE LEE PLAN. Coordinate between Lee County and the South Florida Water Management District to ensure that the Lee Plan remains consistent with the District's regional water supply plans.

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan. The county will update the Water Supply Facilities Work Plan within 18 months after the South Florida Water Management District approves an update to the regional water supply plan.

POLICY 151.5.2: The county will coordinate with other government agencies and private suppliers of potable water during the water supply planning process to include the review of land use changes, addressing population projections, and acceptable level of service standards.

In addition, the table attached as Exhibit A to this ordinance is incorporated into the Lee Plan as Table 7: 10 Year Water Supply Development Projects.

SECTION THREE: LEGAL EFFECT OF THE "LEE PLAN"

No public or private development will be permitted except in conformity with the Lee Plan. All land development regulations and land development orders must be consistent with the Lee Plan as amended.

SECTION FOUR: GEOGRAPHIC APPLICABILITY

The Lee Plan is applicable throughout the unincorporated area of Lee County, Florida, except in those unincorporated areas included in joint or interlocal agreements with other local governments that specifically provide otherwise.

SECTION FIVE: SEVERABILITY

The provisions of this ordinance are severable and it is the intention of the Board of County Commissioners of Lee County, Florida, to confer the whole or any part of the powers herein provided. If any of the provisions of this ordinance are held unconstitutional by a court of competent jurisdiction, the decision of that court will not affect or impair the remaining provisions of this ordinance. It is hereby declared to be the legislative intent of the Board that this ordinance would have been adopted had the unconstitutional provisions not been included therein.

SECTION SIX: INCLUSION IN CODE, CODIFICATION, SCRIVENERS' ERROR

It is the intention of the Board of County Commissioners that the provisions of this ordinance will become and be made a part of the Lee County Code. Sections of this ordinance may be renumbered or relettered and the word "ordinance" may be changed to "section," "article," or other appropriate word or phrase in order to accomplish this intention; and regardless of whether inclusion in the code is accomplished, sections of this ordinance may be renumbered or relettered. The correction of typographical errors that do not affect the intent, may be authorized by the County Manager, or his or her designee, without need of public hearing, by filing a corrected or recodified copy with the Clerk of the Circuit Court.

SECTION SEVEN: EFFECTIVE DATE

The plan amendments adopted herein are not effective until a final order is issued by the DCA or Administrative Commission finding the amendment in compliance with Section 163.3184(9), Florida Statutes, or until the Administrative Commission issues a final order determining the adopted amendment to be in compliance in accordance with 163.3184(10), Florida Statutes, whichever occurs earlier. No development orders, development permits, or land uses dependent on this amendment may be issued or commence before the amendment has become effective. If a final order of noncompliance is issued by the Administration Commission, this amendment may nevertheless be made effective by adoption of a resolution affirming its effective status. A copy of such resolution will be sent to the DCA, Bureau of Local Planning, 2555 Shumard Oak Boulevard, Tallahassee, Florida 32399-2100.

THE FOREGOING ORDINANCE was offered by Commissioner Hall, who moved its adoption. The motion was seconded by Commissioner Mann. The vote was as follows:

Robert P. Janes	Aye
Brian Bigelow	Aye
Ray Judah	Aye
Tammara Hall	Aye
Frank Mann	Aye

DONE AND ADOPTED this 25th day of February 2009.

ATTEST:
CHARLIE GREEN, CLERK

BY: Marcia Wilson
Deputy Clerk

LEE COUNTY
BOARD OF COUNTY COMMISSIONERS

BY: R Judah
Ray Judah
Chair

DATE: 2/25/09

Approved as to form by:

Donna Marie Collins
County Attorney's Office

Exhibit A: Lee Plan Table 7: 10 Year Water Supply Development Projects

State of Florida
County of Lee

I Charlie Green, Clerk of the Circuit Court for Lee County, Florida, do hereby certify this document to be a true and correct copy of the original document filed in the Minutes Department.

Given under my hand and official seal at Fort Myers, Florida, this 16th day of March, A.D. 2009

CHARLIE GREEN, CLERK

By Marcia Wilson
Deputy Clerk

EXHIBIT A

TABLE 7

10 YEAR WATER SUPPLY DEVELOPMENT PROJECTS

CIP PROJECT #	LCU PROJECT NAME/ LWCWSP PROJECT NAME	DESCRIPTION	PROJECT STATUS	TOTAL PROJECT COST	ESTIMATED COMPLETION DATE	FUNDING SOURCE
7602	North Lee County R.O. Plant Wellfield Expansion / North Lee County Lower Hawthorn Wellfiled and Plant Expansion	Expansion of the Lower Hawthorn wellfield at the NLC WTP from 5.0 MGD to 10.0 MGD finished water	Design and land acquision underway	$15,390,000.00	2010	Enterprise Fund
7028	North Lee County WTP Expansion to 10 MGD / North Lee County Lower Hawthorn Wellfiled and Plant Expansion	Expansion of the NLC WTP from 5.0 MGD to produce 10.0 MGD finish water	Preliminary Design Underway	$15,000,000.00	2011	Enterprise Fund
None	Corkscrew WTP Expansion to 20 MGD / Not in LWCWSP	Expand the treatment capcity of the Corkscrew WTP to 20.0 MGD	Planning	$13,501,000.00	2015-2020	Debt Finance
None	Corkscrew WTP Wellfield Improvements / Not in LWCWSP	Expand the capacity of the Corkscrew Wellfield to provide a total of 20.0 MGD	Planning	$9,750,000.00	2015-2020	Debt Finance
None	Desalination Plant Transmission Mains / Not in LWCWSP	Construct finish water transmission mains to accomidate a Desalination Plant	Planning	$18,195,500.00	2015-2020	Enterprise Fund
None	Feasibilty Analysis / Design / Desalination Plant / Not in LWCWSP	Perform a feasibility analysis, design, and construct a desalination water plant	Planning	$70,000,000.00	2015-2020	Enterprise Fund

ALTERNATIVE WATER RESOURCE PROJECTS

None	Gateway WWTP ASR System / Not in LWCWSP	Develop an ASR system to provide seasonal storage of reclaimed water to serve the Gateway WWTP	Planning	$3,200,000.00	2012	Enterprise Fund
7284	Reclaimed Water ASR / Health Park Reclaimed Water ASR	Pilot and Construction of reclaimed water ASR for Wasteater Treatment Facilities	Planning	$600,000.00	2012	Enterprise Fund
7300	Reuse Valves Control, SCADA project	Construct Automated controls for reclaimed water sites	Underway	$100,000.00	2009	Enterprise Fund
None	Ben Hill Griffin Parallel Forcemain / FGCU/Miromar Lakes Reclaimed Water Main	Construct 900 L.F. of 12" reclaimed water line from 3 Oaks WWTP to FGCU / Combined with Parallel Force Main Project	Design underway	$6,000,000.00 for total project $100,000.00 for reclaimed water line portion	2011	Grant/Enterprise Fund

CPA 2006-20
WATER SUPPLY FACILITIES WORK PLAN
BoCC SPONSORED
AMENDMENT
TO THE

LEE COUNTY COMPREHENSIVE PLAN

THE LEE PLAN

BoCC Adoption Document

Lee County Planning Division
1500 Monroe Street
P.O. Box 398
Fort Myers, FL 33902-0398
(239) 533-8585

February 25, 2009

LEE COUNTY
DIVISION OF PLANNING
STAFF REPORT FOR
COMPREHENSIVE PLAN AMENDMENT
CPA 2006-20

☑ Text Amendment ☐ Map Amendment

✓	**This Document Contains the Following Reviews:**
✓	**Staff Review**
✓	**Local Planning Agency Review and Recommendation**
✓	**Board of County Commissioners Hearing for Transmittal**
✓	**Staff Response to the DCA Objections, Recommendations, and Comments (ORC) Report**
✓	**Board of County Commissioners Hearing for Adoption**

STAFF REPORT PREPARATION DATE: September 12, 2008

PART I - BACKGROUND AND STAFF RECOMMENDATION

A. SUMMARY OF APPLICATION

1. APPLICANT:
LEE COUNTY BOARD OF COUNTY COMMISSIONERS
REPRESENTED BY LEE COUNTY DIVISION OF PLANNING

2. REQUEST:
Amend the Community Facilities and Services, Potable Water sub-element, the Conservation and Coastal Management Element, and the Intergovernmental Coordination Element of the Lee Plan to coordinate appropriate aspects of the comprehensive plan with the South Florida Water Management District Water Supply Plan and to include a ten year Water Supply Facilities Work Plan as required by s. 163.3177 (6)(c), F.S.

B. REVISED STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

1. RECOMMENDATION: Planning staff recommends that the Board of County Commissioners adopt this proposed amendment with the following text changes and proposed Table 7 as shown in Attachment 2:

POLICY 53.1.5: ~~County development regulations will be amended to specify that~~ ~~n~~No county development order under the ~~Development Standards Ordinance~~ Land Development Code for a residential development more intense than 2.5 dwelling units per gross acre, for a commercial development of more

than 30,000 square feet of gross floor area, or for any industrial plant of more than 30,000 square feet of gross floor area, will be issued in any franchised or certificated water service area, or within Lee County Utilities' future service area, unless potable water service, at the minimum acceptable level of service, is available at the property line, or surety is given that it will be installed prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

POLICY 53.1.11: The County will expand potable water facilities consistent with those improvements identified in Table 7, the 10 Year Water Supply Development Projects Table. Table 7 will be amended as projects are completed and technological advancements in water supply facilities are made.

OBJECTIVE 53.2: WATER SUPPLY CONCURRENCY. Lee County will incorporate water supply into the concurrency management system consistent with the requirements of Section 163.3180(2)(a), F.S.

POLICY 53.2.1: County development regulations will be amended to specify that no building permit under the Land Development Code will be issued in a franchised or certificated water service area, or within Lee County Utilities future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy does not exempt development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

POLICY 55.1.3: Lee County will actively ~~participate in the~~ implementation ~~of~~ the ~~Regional~~ Water Supply Facilities ~~Master~~ Work Plan as adopted by the Board of County Commissioners on (insert date of policy adoption). Lee County will utilize the document as the County's guide to water supply facility planning with a planning horizon through the year 2030. A copy of the adopted ~~The Master~~ Water Supply Facilities Work Plan will be maintained and kept on file by Lee County Utilities. ~~consider the expansion of existing surface water sources and wellfields and the interconnection of the transmission systems of existing public and private utilities to obtain the most cost efficient and reliable water system.~~

POLICY 117.1.2: The county will recognize and encourage water and wastewater management, provided that such management does not exceed the natural assimilative capacity of the environment or applicable health standards. Appropriate water and wastewater management includes, but is not limited to, aquifer recharge, aquifer storage and recovery, reclaimed water, reverse osmosis, dual water systems, use of low volume irrigation systems, use of water-conserving vegetation, and other conservation and recycling techniques. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.1.9: The county will utilize the recommendations made in the Water Supply Facilities Work Plan (see Policy 55.1.3) as a guide to potable water facilities planning, potable water resources, and water conservation as well as expanding potable water facilities consistent with Table 7, the 10 Year Water Supply Development Projects Table.

OBJECTIVE 151.5: COORDINATION OF WATER SUPPLY PLANS AND THE LEE PLAN. Coordinate between Lee County and the South Florida Water Management District to ensure that the Lee Plan remains consistent with the District's regional water supply plans.

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan. The county will update the Water Supply Facilities Work Plan within 18 months after the South Florida Water Management District approves an update to the regional water supply plan.

POLICY 151.5.2: The county will coordinate with other government agencies and private suppliers of potable water during the water supply planning process to include the review of land use changes, addressing population projections, and acceptable level of service standards.

C. ORIGINAL STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

1. **RECOMMENDATION:** Planning staff recommends that the Board of County Commissioners transmit this proposed amendment with the following text changes and proposed Table 6 as shown in Attachment 2:

POLICY 53.1.5: ~~County development regulations will be amended to specify that~~ ~~n~~No county development order under the ~~Development Standards Ordinance~~ Land Development Code for a residential development more intense than 2.5 dwelling units per gross acre, for a commercial development of more than 30,000 square feet of gross floor area, or for any industrial plant of more than 30,000 square feet of gross floor area, will be issued in any franchised or certificated water service area, or within Lee County Utilities' future service area, unless potable water service, at the minimum acceptable level of service, is available at the property line, or surety is given that it will be installed prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

POLICY 53.1.11: The County will expand potable water facilities consistent with those improvements identified in Table 6, the Water Supply Development Plan Table. Table 6 will be amended as projects are completed and technological advancements in water supply facilities are made.

OBJECTIVE 53.2: WATER SUPPLY CONCURRENCY. Lee County will incorporate water supply into the concurrency management system consistent with the requirements of Chapter 163.3180(2)(a), F.S.

POLICY 53.2.1: County development regulations will be amended to specify that no county development order under the Land Development Code will be issued in any franchised or certificated water service area, or within Lee County Utilities future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

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POLICY 117.1.9: The county will utilize the recommendations made in the Water Supply Facilities Work Plan (see Policy 55.1.3) as a guide to potable water facilities planning, potable water resources, and water conservation as well as expanding potable water facilities consistent with Table 6, the Water Supply Development Plan Table.

OBJECTIVE 151.5: COORDINATION OF WATER SUPPLY PLANS AND THE LEE PLAN. Coordinate between Lee County and the South Florida Water Management District to ensure that the Lee Plan remains consistent with the District's regional water supply plans.

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

- The 2002 Legislature expanded requirements to strengthen the coordination of water supply and land use planning directing local governments to revise elements and sub-elements of their comprehensive plans to coordinate with the appropriate water management districts regional water supply plans. The requirements also direct local governments to adopt a Water Supply Facilities Work Plan for a 10 year planning period considering the water management districts regional water supply plans.

- In 2005 the Legislature further amended Chapter 163 F.S. and Senate Bill 360 implementing additional water supply concurrency requirements to ensure the availability of adequate water supplies to serve future demand in addition to facility capacity.

- In July of 2006 the SFWMD Board approved the Lower West Coast Water Supply Plan (2005-2006 update).

- The proposed Lee County Water Supply Facilities Work Plan incorporates a work plan for a planning period through the year 2030, the planning horizon for the Lee Plan. The Work Plan provides population projections and identifies the facilities necessary to serve demand through the planning period.

- Staff is proposing new text and text changes to several elements of the Lee Plan, including the implementation of water supply concurrency requirements, and a new Table based on the Work Plan in order to comply with the expanded requirements.

C. BACKGROUND INFORMATION

This amendment was initiated by the Board of County Commissioners on October 3, 2006. The amendment addresses bills enacted by the Florida Legislature to improve the coordination between land use planning and water supply planning. In 2002 legislation added requirements to Chapter 163 F.S. requiring local governments to prepare a 10 year water supply facilities work plan and incorporate the work plan into the comprehensive plan. The work plan should describe the water supply facilities necessary to serve existing and future development for a 10 year planning period. The legislation focused on the need for comprehensive plans to coincide with the regional water supply plans prepared by each water management district.

In 2003 staff prepared a work plan and an update to the Lee Plan to incorporate the new requirements and the Board of County Commissioners transmitted the amendment to the Department of Community Affairs. In 2004 the Legislature increased the timeframe for local governments to adopt a water supply plan due to the fact that the water management districts were in the process of updating and receiving approval for regional water supply plans. At that time the 2003 work plan and plan amendment were placed on hold until the South Florida Water Management District's (SFWMD) regional water supply plan could be updated and approved.

In 2005 the Legislature further amended Chapter 163 F.S. and Senate Bill 360 implementing additional water supply concurrency requirements to ensure the availability of adequate water

supplies to serve future demand in addition to the facilities serving demands. In July of 2006, the SFWMD Board approved the Lower West Coast Water Supply Plan (2005-2006 update). The subject amendment encompasses the changes enacted by the legislature through the incorporation of the Work Plan and policy changes into the Lee Plan, Lee County's Comprehensive Plan.

PART II - STAFF ANALYSIS

A. STAFF DISCUSSION

Introduction

In 2006 the SFWMD issued the most recent water supply plan, titled the *Lower West Coast Water Supply Plan*. The plan describes traditional water sources and alternative water sources to meet projected demands through 2025. Lee County Utilities participated in the SFWMD's planning during the preparation of the *Lower West Coast Water Supply Plan* and has made every effort to ensure Lee County Utilities water supply planning is consistent with the regional plan. The proposed Lee County Water Supply Facilities Work Plan incorporates a work plan for a planning period through the year 2030, the planning horizon for the Lee Plan. The Work Plan provides population projections and identifies the facilities necessary to serve demand through the planning period. The Work Plan addresses sources, consumptive use permitting, facilities, and alternative water resources, addressing water supply planning through the planning period. The proposed Water Supply Facilities Work Plan is attached to the back of this staff report and is discussed in further detail below. In addition to the adoption of the Work Plan each local government must coordinate their comprehensive plans and water supply planning as follows:

- Future Land Use - Ensure adequate water supply and facilities will be available to meet projected growth demands using data and analysis demonstrating availability for all proposed Future Land Use Map amendments submitted to the Department of Community Affairs for review.

- Water Supply Concurrency - Ensure adequate water supply and facilities are available to serve new development no later than the date of issuing a certificate of occupancy.

- Revise the Potable Water Sub-element to consider the water supply plans of the appropriate water management district, identify measures necessary to meet current and projected demands, and include a water supply work plan for constructing facilities necessary to meet current and projected demands.

- Revise the Five Year Schedule of Capital Improvements to include projects and programs to be implemented during the five year period.

- Revise the Conservation and Coastal Management Element to assess projected water needs and sources for a ten year planning period.

- Revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with the regional water supply plan.

Work Plan

The proposed Work Plan provides a planning horizon through the year 2030. The attached work plan has been prepared by Lee County Utilities and is a technical document covering existing and proposed facilities and water supply sources, the County's capital improvement plan for water supply and treatment, alternative water resources, as well as covering the County's water conservation plan.

Lee County utilities provides water supply to the areas of Lee County that are not served by incorporated cities, private utility companies, or member owned non-profit systems. Lee County Utilities currently operates (6) six water supply facilities under Water Use Permits from the SFWMD, (7) seven water treatment facilities under permits issued by the Lee County Health Department, and (4) four reclaimed water systems.

The population and flow projections calculated in the Lee County Water Supply Facilities Work Plan were based on various planning efforts. The Work Plan compares the methodology developed in the Lower West Coast Water Supply Plan, data analysis and projections by Lee County Utilities supporting modifications to a current water use permit, and population estimates and projections computed by the Lee County Division of Planning.

During the formulation of the Lower West Coast Water Supply Plan the University of Florida Bureau of Economic and Business Research medium projections were utilized and disaggregated the historic population and projected population into Traffic Analysis Zones (TAZ's) for the existing and future service area. The Lower West Coast Water Supply Plan projected annual average daily demand in 2018 is 31.08 million gallons per day (mgd).

Lee County population estimates and projections performed by the Lee County Division of Planning use assumptions based on a review of the 1980, 1990, and 2000 United States Census data. To calculate the estimated population of the area served by Lee County Utilities staff geographically selected the parcels served and joined the data with the parcel inventory to obtain unit counts and planning community information allowing population assumptions to be multiplied to unit counts. Planning staff computed the existing population for the area served by Lee County Utilities and the projected population for the future service area depicted in the Lee County comprehensive plan for 2030. The development assumptions are the same as those used to generate the 2030 land use allocation acreages adopted in Lee Plan Table 1(b). The 2018 maximum demand projection based on this analysis is 35.65 mgd.

In support of an application to modify a current consumptive use permit, Lee County Utilities available data from billing records were used to develop population and demand projections. An average annual growth rate was determined and actual system demands was used in conjunction with population data to determine the average per capita daily use rate and a peaking ratio. Population projections were then made based on annual average growth rate. The projected maximum month daily average demand is 50.70 mgd. The subject projection represents the highest projected demand in the future.

In order to ensure sufficient future capacity, Lee County Utilities is planning to meet the highest projected future demand calculated through the application to modify a current consumptive use permit. Utilities staff have concluded that the projection represents a conservative approach. This projection uses a high growth period from 2003 through 2007 to develop a growth rate for the projection representing the highest projected demand.

As noted above, the population and flow projections discussed were based on various planning efforts and are described and summarized in greater detail in Section 3 of the Lee County Water Supply Facilities Work Plan.

Under the Work Plan's assessment of needs it concludes that Lee County Utilities is in need of additional water treatment and water supply capacity in order to meet the demands of population growth to 2030. Lee County has developed and is in the process of implementing Capital Improvement Projects for water supply development as outlined in the proposed Water Supply Facilities Work Plan to expand water supply and treatment capacity to meet the anticipated growth demands for potable water. Implementation of the Capital Improvement Plan to increase production scheduled between now and 2014 will increase the combined maximum day capacity of all Lee County Utilities production facilities from approximately 32 mgd to a combined capacity of 60 mgd. This combined capacity is in excess of the projected demand of 51 mgd anticipated in 2018.

Future Land Use

In 2005 Chapter 163.3177(6)(a) F.S. was revised requiring that the future land use plan to be based on the availability of water supplies and public facilities. The statutory requirements direct each local government to ensure adequate water supply and facilities for all proposed Future Land Use Map amendments submitted to the Department of Community Affairs for review. Data and analysis should demonstrate that adequate water supply and associated facilities will be available to meet projected growth. The requirements focus on water supply planning and treatment/delivery facilities.

As part of the plan amendment review process for a Future Land Use Map amendment, staff currently evaluates existing and future conditions for facilities capable of serving the site. In response to the statutory requirements additional analysis for potable water will be evaluated pertaining to water supply, the availability of treatment facilities and transmission lines for reclaimed water, as well as any water conservation measures applied to the site. This analysis will be undertaken in addition to the current facility analysis reviewed during the plan amendment process. The additional requirements have been added to the Lee County application for a comprehensive plan amendment and are shown in underline format as follows:

> *Provide an existing and future conditions analysis for (see Policy 95.1.3):*
> *a. Sanitary Sewer*
> *b. Potable Water*
> *c. Surface Water/Drainage Basins*
> *d. Parks, Recreation, and Open Space*
> *e. Public Schools.*
>
> *Analysis should include (but is not limited to) the following (see the Lee County Concurrency Management Report):*
> - *Franchise Area, Basin, or District in which the property is located;*
> - *Current LOS, and LOS standard of facilities serving the site;*
> - *Projected 2030 LOS under existing designation;*
> - *Projected 2030 LOS under proposed designation;*
> - *Existing infrastructure, if any, in the immediate area with the potential to serve the subject property.*
> - *Improvements/expansions currently programmed in 5 year CIP, 6-10 year CIP, and long range improvements; and*
> - *Anticipated revisions to the Community Facilities and Services Element and/or Capital Improvements Element (state if these revisions are included in this amendment).*
> - *Provide a letter of service availability from the appropriate utility for sanitary sewer and potable water.*

In addition to the above analysis for Potable Water:

- *Determine the availability of water supply within the franchise area using the current water use allocation (Consumptive Use Permit) based on the annual average daily withdrawal rate.*
- *Include the current demand and the projected demand under the existing designation, and the projected demand under the proposed designation.*
- *Include the availability of treatment facilities and transmission lines for reclaimed water for irrigation.*
- *Include any other water conservation measures that will be applied to the site (see Goal 54).*

Water Supply Concurrency

Statutory provisions have also been amended to ensure adequate water supply and facilities are available to serve new development no later than the date of issuing a certificate of occupancy. In 2005 Chapter 163.3180(2)(a), F.S. was revised to add water supply as a concurrency requirement and states the following: *Consistent with public health and safety, sanitary sewer, solid waste, drainage, adequate water supplies, and potable water facilities shall be in place and available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent. Prior to approval of a building permit or its functional equivalent, the local government shall consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the local government of a certificate of occupancy or its functional equivalent.*

Lee County currently ensures facility capacity through the County's concurrency management system. Facility capacity is reviewed and capacity determinations are made prior to a concurrency certificate being issued for local development order approvals and certificates are valid for 3 years. Building permits are verified for adequate facility capacity based on a valid concurrency certificate and single family permitting procedures require a letter from the utility company verifying availability.

The Lee Plan maintains several policies reproduced below requiring facility capacity. For example, Standard 11.1 sets the threshold for mandatory connection to a public water system as well as the requirement that the projected need of a development does not exceed the supply and facility capacity of the utility. Policy 53.1.5 specifies that no development order will be issued unless potable water service, at the minimum acceptable level of service, is available or surety is given that it will be installed prior to occupancy. Policy 95.1.3 specifies the minimum acceptable level of service for potable water facilities. These requirements are reproduced below.

In addition, as part of the subject review, staff has incorporated a proposed update to Policy 53.1.5 as shown below. The update proposes to delete the statement that "County development regulations will be amended." Potable water system requirements are incorporated into the County development regulations through Lee County Land Development Code Chapter 10, Division 4, Section 10-351 and 10-352 reflecting the standards and intent of Policy 53.1.5. The update also proposes to replace the reference to the Development Standards Ordinance with the reference to the Land Development Code. The updated reference replaces the old reference with the current code.

STANDARD 11.1: WATER.

1. *Any new residential development that exceeds 2.5 dwelling units per gross acre, and any new single commercial or industrial development in excess of 30,000 square feet of gross leasable (floor) area per parcel, must connect to a public water system (or a "community" water system as that is defined by Chapter 17-22, F.A.C.).*

2. *If the proposed development lies within the boundaries of a water utility's certificated or franchised service area, or Lee County Utilities' future potable water service area (see Map 6), then the development must be connected to that utility.*

3. *The developer must provide proof that the prior commitments of the water utility, plus the projected need of the developer, do not exceed the supply and facility capacity of the utility.*

4. *All waterline extensions to new development will be designed to provide minimum fire flows, as well as adequate domestic services as required by Chapter 10D-4, F.A.C.*

5. *If a new development is located in a certificated or franchised service area, or Lee County Utilities' future potable water service area (see Map 6), and the utility cannot provide the service or cannot provide the service except at a clearly unreasonable cost to the developer, the developer is encouraged to petition the appropriate regulatory agency to contract the service area so that the development may establish its own community water system or invite another adjacent utility to expand its service area in order to provide the required service.*

6. *If a development lies outside any service area as described above, the developer may:*

   - *request that the service area of an adjacent water utility be extended to incorporate the property;*
   - *establish a community water system for the development; or*
   - *develop at an intensity that does not require a community water system.*

(Amended by Ordinance No. 94-30, 00-22)

POLICY 53.1.5: *~~County development regulations will be amended to specify that~~ ~~n~~No county development order under the ~~Development Standards Ordinance~~ Land Development Code for a residential development more intense than 2.5 dwelling units per gross acre, for a commercial development of more than 30,000 square feet of gross floor area, or for any industrial plant of more than 30,000 square feet of gross floor area, will be issued in any franchised or certificated water service area, or within Lee County Utilities' future service area, unless potable water service, at the minimum acceptable level of service, is available at the property line, or surety is given that it will be installed prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3. (Amended by Ordinance No. 00-22)*

POLICY 95.1.3: MINIMUM ACCEPTABLE LEVEL-OF-SERVICE STANDARDS. *Level-of-service (LOS) standards will be the basis for planning the provision of required public facilities within Lee County. Some of these standards will be the basis for determining the adequacy of public facilities for the purposes of permitting new development. The "Minimum Acceptable Level of Service" will be the basis for facility design, for setting impact fees, and (where applicable) for the operation of the Concurrency Management System (CMS).*

Two classes of standards are established. "Regulatory" standards are those which apply to facilities identified in state law as being essential to support development. These consist of facilities for the provision of potable water, sanitary sewer, disposal of solid waste, stormwater management, community and regional parks, and transportation. (It is the intent of this element that these standards will be the same as those established in the various relevant plan elements. If there are discrepancies between standards contained in the elements and standards as set forth herein, the standards as set forth herein will govern.) The second class, "non-regulatory" standards, are those which apply to other facilities for which the county desires to set standards for its own use; compliance with these standards will not be a requirement for continued development permitting.

REGULATORY STANDARDS

1. *Potable Water Facilities:*

   Minimum Acceptable Level of Service:

Within certificated, franchised, or designated service areas only: supply and treatment capacity of 250 gallons per day per Equivalent Residential Connection (ERC) for the peak month, except that facilities serving only mobile home residential structures must have a capacity of 187.5 gallons per day, and facilities serving only travel trailer residential structures must have a capacity of 150 gallons per day. Where a private water utility has provided an alternate standard for application within its certificated or franchised area, and that standard has been adopted into this comprehensive plan, that will be the standard to be used for concurrency management in the respective certificated or franchised area.

The additional statutory provisions require local governments to revise their comprehensive plans to address water supply concurrency. To maintain water supply concurrency the guidelines recommend policy revisions to local comprehensive plans and land development codes that suggest for example requiring a written statement from the water supplier regarding the availability of water to serve a proposed project. Determining the availability of water supply will involve determining the water use allocation through the consumptive use permit for the utility's service area based on the annual average daily withdrawal rate. An analysis of the current demand and the projected demand will identify the available water supply for all existing and proposed water demands.

The statutory requirements require assurance that adequate water supply and facilities are available to serve new development no later than issuance of a certificate of occupancy. Staff proposes new Objective 53.2 and Policy 53.2.1 as an addition to the Potable Water sub-element establishing concurrency management specifically for water supply planning. The Objective will ensure that water supply will be available concurrent with development in addition to facility capacity currently addressed through the Lee County Concurrency Management System. The Policy will ensure that new development meets concurrency standards for water supply prior to approval of a development order and the issuance of a concurrency certificate, similar to the facility requirement in Policy 53.1.5 noted above.

OBJECTIVE 53.2: WATER SUPPLY CONCURRENCY. Lee County will incorporate water supply into the concurrency management system consistent with the requirements of Chapter 163.3180(2)(a), F.S.

POLICY 53.2.1: County development regulations will be amended to specify that no county development order under the Land Development Code will be issued in any franchised or certificated water service area, or within Lee County Utilities future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

Potable Water Sub-element

Statutory provisions also require revisions to the Potable Water sub-element directing local governments to consider the water supply plans of the appropriate water management district, identify measures necessary to meet current and projected demands, and include a water supply work plan for constructing facilities necessary to meet current and projected demands.

The expansion of the comprehensive plan requirements strengthening the coordination of water supply and land use planning requires the adoption of a Water Supply Facilities Work Plan for a ten year planning period. The requirements also provide that the Potable Water sub-element should be revised to identify and incorporate alternative water supply projects identified by the regional water supply plan as well as identifying bulk sales agreements and conservation and reuse programs necessary to meet demands. Section 4 of Lee County's Work Plan addresses water supply facilities necessary to serve existing and projected development for which the local government is responsible through the

year 2030. Section 5 of the Work Plan addresses alternative water resources. Bulk water service is provided to the Town of Fort Myers Beach through a bulk water service agreement. The Work Plan notes in the introduction section of the document that the Town of Fort Myers Beach and the Gateway Service District are included in the Lee County Utilities service area. Both service areas are accounted for in Lee County Utilities data analysis. Conservation and reuse are also discussed in Section 5 of the Work Plan.

In order to address the inclusion of the Water Supply Facilities Work Plan in the Potable Water sub-element staff proposes a new Table 6, titled Water Supply Development Plan, for adoption into the Lee Plan. Table 6 is based on the Work Plan and the Capital Improvements Program currently adopted as Table 3 in the Lee Plan. Staff notes that while the proposed table shows estimated completion dates out to the year 2014, the projections assume the County's water supply needs for a ten year planning period. The proposed table can be found as Attachment 2.

Staff is also proposing new Policy 53.1.11 as an addition to the Potable Water sub-element. This policy refers to Table 6, outlining the facilities needed to meet the projections made in the Water Supply Facilities Work Plan while text changes to Policy 55.1.3 of the Potable Water sub-element implement the Water Supply Facilities Work Plan itself, fulfilling the Potable Water sub-element requirements.

> **POLICY 53.1.11:** The County will expand potable water facilities consistent with those improvements identified in Table 6, the Water Supply Development Plan Table. Table 6 will be amended as projects are completed and technological advancements in water supply facilities are made.
>
> **POLICY 55.1.3:** Lee County will actively ~~participate in the~~ implementation ~~of~~ the ~~Regional~~ Water Supply Facilities ~~Master~~ Work Plan as adopted by the Board of County Commissioners on (insert date of policy adoption). Lee County will utilize the document as the County's guide to water supply facility planning with a planning horizon through the year 2030. A copy of the adopted ~~The Master~~ Water Supply Facilities Work Plan will be maintained and kept on file by Lee County Utilities. ~~consider the expansion of existing surface water sources and wellfields and the interconnection of the transmission systems of existing public and private utilities to obtain the most cost efficient and reliable water system.~~

Five Year Schedule of Capital Improvements

The statutory requirements call for any necessary revisions to the Five Year Schedule of Capital Improvements to include projects and programs to be implemented during the five year period.

The Five Year Schedule of Capital Improvements will be updated to include projects and programs to be implemented during the five year period as part of the annual Capital Improvements Program review, per Florida Statute 163.3177(3)(b).

Conservation and Coastal Management Element

The statutory requirements require the local government to revise the Conservation Element to assess projected water needs and sources for a ten year planning period. Staff proposes the following text changes to Policy 117.1.2 as well as the addition of Policy 117.1.9 to the Conservation and Coastal Management Element. The additions to Policy 117.1.2 reflect the recommendations of the Lower West Coast Water Supply Plan, recognizing the regional water supply plan as well as implementing the Lee County Water Supply Facilities Work Plan. The addition of Policy 117.1.9 reflects the assessments made in the Water Supply Facilities Work Plan.

POLICY 117.1.2: The county will recognize and encourage water and wastewater management, provided that such management does not exceed the natural assimilative capacity of the environment or applicable health standards. Appropriate water and wastewater management includes, but is not limited to, aquifer recharge, aquifer storage and recovery, reclaimed water, reverse osmosis, dual water systems, use of low volume irrigation systems, use of water-conserving vegetation, and other conservation and recycling techniques. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.1.9: The county will utilize the recommendations made in the Water Supply Facilities Work Plan (see Policy 55.1.3) as a guide to potable water facilities planning, potable water resources, and water conservation as well as expanding potable water facilities consistent with Table 6, the Water Supply Development Plan Table.

Intergovernmental Coordination Element

Revisions to the Intergovernmental Coordination Element are also required to ensure coordination of the comprehensive plan with the regional water supply plan. The following new text, Objective 151.5 and Policy 151.5.1 are being proposed to ensure such coordination. Objective 151.5 states that the county will coordinate with the SFWMD to ensure Lee Plan consistency, while Policy 151.5.1 states that the county will continue to evaluate the District's water supply plans in order to maintain consistency.

OBJECTIVE 151.5: COORDINATION OF WATER SUPPLY PLANS AND THE LEE PLAN. Coordinate between Lee County and the South Florida Water Management District to ensure that the Lee Plan remains consistent with the District's regional water supply plans.

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan.

The Lee Plan

The Lee Plan contains an extensive amount of policies addressing water usage, conservation, protection, overlays, quality, quantity, surface water, and groundwater. Listed as Attachment 3 are those Goals, Objectives, and Policies of the Lee Plan that relate directly to the intent of the subject amendment. Included among those listed are the proposed changes in strike-through/underline format that address the additional changes required to be made to the Potable Water sub-element, the Conservation Element, and the Intergovernmental Coordination Element.

Additional Information

As part of the preparation of the Water Supply Facilities Work Plan amendment, local governments are required to coordinate with any water suppliers delivering water within the local government's jurisdiction. Planning data such as current consumptive use permits, projected demands, and planned resources for those components of the supply system that the local government does not have responsibility should be obtained from the suppliers and incorporated into the Work Plan confirming adequate sources.

The following five utility providers supply water within unincorporated Lee County: Bonita Springs Utilities, Greater Pine Island Water Association, Florida Governmental Utility Authority, Gasparilla Island Water Association, Inc., and Island Water. Bonita Utilities provides water for the city of Bonita Springs and vicinity, Greater Pine Island Water Association provides water for Greater Pine Island and

vicinity, Florida Governmental Utility Authority provides water for Lehigh Acres, Gasparilla Island Water Association, Inc. provides water for Gasparilla Island, and Island Water provides water for Sanibel and Captiva Islands.

Staff has coordinated with each of the suppliers to obtain information from their consumptive use permits as well as the suppliers projected demands and existing and planned water sources. The collected data and analysis is reviewed under Section 7 of the Lee County Water Supply Facilities Work Plan.

B. CONCLUSIONS

The 2002 Legislature expanded requirements to strengthen the coordination of water supply and land use planning. These requirements direct local governments to revise elements and sub-elements of their comprehensive plans to coordinate with the appropriate water management districts regional water supply plans. The requirements also direct local governments to adopt a Water Supply Facilities Work Plan for a 10 year planning period considering the water management districts regional water supply plans. In 2005 the Legislature further amended Chapter 163 F.S. and Senate Bill 360 implementing additional water supply concurrency requirements to ensure the availability of adequate water supplies to serve future demand in addition to the facilities serving demands. Staff is proposing new text and text changes to several elements of the Lee Plan as well as proposing a Water Supply Facilities Work Plan and a new Lee Plan Table based on the Work Plan in order to comply with the expanded requirements.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners transmit this proposed amendment. This recommendation is based upon the previously discussed issues and conclusions of this report. Planning staff recommends the Board of County Commissioners transmit the changes to the Lee Plan as proposed in Part I.C.1. of this report.

PART III - LOCAL PLANNING AGENCY REVIEW AND RECOMMENDATION

DATE OF PUBLIC HEARING: September 22, 2008

A. LOCAL PLANNING AGENCY REVIEW

Planning staff gave a brief presentation concerning the proposed amendment. One member of the LPA asked what is being planned for developing a desalinization plant. Lee County Utilities staff provided that desalinization is an option covered in the Water Supply Work Plan. Utilities staff provided that Lee County Utilities is currently in negotiations for a contract with a consultant to do an integrated water resource master plan which will look at desalinization. Staff has also been following the efforts of the water management district. The member of the LPA then asked if it is anticipated that Lee County will have sufficient water resources for urban use for the next 20 to 30 years. Utilities staff noted that the work plan addresses potable demands and the conclusions made in the work plan confirm that Lee County is planning enough capacity development to meet the projected demand out at least 10 years and depending on the demand projection you use, meeting the projected demand out to 2025. Another member of the LPA noted that utility staff will be attending the water conference and was interested in hearing an update when staff returned. Utilities staff noted that the water supply work plan must be updated every 5 years, 18 months after the Lower West Coast Water Supply Plan is revised.

B. LOCAL PLANNING AGENCY RECOMMENDATION AND FINDINGS OF FACT SUMMARY

1. **RECOMMENDATION:** The LPA recommends that the Board of County Commissioners transmit the proposed amendment.

2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The LPA accepted the findings of fact as advanced by the staff.

C. VOTE:

NOEL ANDRESS	**AYE**
LES COCHRAN	**AYE**
RONALD INGE	**AYE**
JACQUE RIPPE	**AYE**
CARLETON RYFFEL	**AYE**
LELAND TAYLOR	**ABSENT**
RAE ANN WESSEL	**AYE**

PART IV - BOARD OF COUNTY COMMISSIONERS HEARING FOR TRANSMITTAL OF PROPOSED AMENDMENT

DATE TRANSMITTAL HEARING: October 22, 2008

A. BOARD REVIEW: The Board of County Commissioners provided no discussion concerning the proposed plan amendment. No public input was provided concerning the proposed plan amendment. This item was approved on the consent agenda.

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. **BOARD ACTION:** The Board of County Commissioners voted to transmit the proposed plan amendment.

2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The Board accepted the findings of fact as advanced by staff and the LPA.

C. VOTE:

A. BRIAN BIGELOW	**AYE**
TAMMARA HALL	**AYE**
ROBERT P. JANES	**AYE**
RAY JUDAH	**AYE**
FRANKLIN B. MANN	**AYE**

PART V - DEPARTMENT OF COMMUNITY AFFAIRS OBJECTIONS, RECOMMENDATIONS, AND COMMENTS (ORC) REPORT

DATE OF ORC REPORT: January 16, 2009

A. DCA OBJECTIONS, RECOMMENDATIONS AND COMMENTS

The Department of Community Affairs has raised objections to proposed amendment CPA2006-20. The DCA objections are reproduced below:

Objection: *The proposed new Policies 53.1.11 and 117.1.9 adopt by reference Table 6 "Capital Improvement Projects" which is a list of water supply projects that the data and analysis recommends the County implement. The proposed Five-Year Schedule of Capital Improvements (Amendment 2008-11) does not include financially feasible projects consistent with the list of projects contained in Table 6 for projects that need to be completed within the time period of the Five-Year Schedule. Thus, the Water Supply Facilities Work Plan is not coordinated with the Capital Improvements Element.*

The proposed new Policy 53.2.1 addresses concurrency management for water supply; however, Policy 53.2.1 does not ensure that prior to issuance of a building permit or its functional equivalent, the County will consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the County of a certificate of occupancy or its functional equivalent as required by Section 163.3180(2)(a), F.S. The proposed new Policy 151.5.1 addresses coordination of the County's Water Supply Facilities Work Plan with the South Florida Water Management District; however, Policy 151.5.1 does not specifically require the County to amen the Comprehensive Plan to update the Ten-Year Water Supply Facilities Work Plan within 18 months after the governing board of the South Florida Water Management District approves an updated regional water supply plan.

The Water Supply Facilities Work Plan includes several different population projections, and the Work Plan is not clear as to which population projections are the official projections that are to be used as the basis for projecting future demand for water. The population projections should be consistent with the population projections that are used for the other plan elements. The Water Supply Facilities Work Plan is not clear as to the number of people per Equivalent Residential Connection and how this was determined. The Water Supply Facilities Work Plan does not demonstrate that the County, City of Fort Myers, and the franchised utilities have consistent population and demand projections for those unincorporated areas not served by the County, or for those portions of municipalities that are served by the County. The Water Supply Facilities Work Plan does not: (1) identify areas of predominant current and future self supply by private individual single family wells and the total projected withdrawal amounts; and (2) Address the water supply needs for irrigation.

Policy 151.5 does not establish meaningful and predictable guidelines to address coordination between the County, the water suppliers, and local governments in Lee County that provide water to areas within unincorporated Lee County. The policy does not identify the specific programs for the regular sharing of information regarding changes in land-use, population projections, and level of service.

Rules 9J-5.005(2, 5 and 6); 9J-5.006(1 and 2); 9J-5.011(1 and 2); 9J-5.013(1); and 9J-5.016(1, 2 and 4), F.A.C.; and Sections 163.3167(13); 163.31777(1, 2, 3, 4 and 8); 163.3177(6)(a, c, and d); and 163.3177(6)(h)1 and 2, F.S.

Recommendation: *Revise the Capital Improvements Element Five-Year Schedule of Capital Improvements, to include financially feasible projects that have been identified by the Water Supply Facilities Work Plan as needed over the five-year planning period. Support the Five-Year Schedule of Capital Improvements with data and analysis of project yearly revenues demonstrating the financial feasibility of the projects. Review Policy 53.2.1 to ensure that prior to issuance of a building permit or its functional equivalent, the County will consult with the applicable water supplier to determine whether adequate water supplies to serve the new development will be available no later than the anticipated date of issuance by the County of a certificate of occupancy or its functional equivalent as required by Section 163.318(2)(a), F.S. Revise Policy 151.5.1 to require the County to amend the Comprehensive Plan to update the Ten-Year Water Supply Facilities Work Plan with 18 months after the governing board of the South Florida Water Management District approves an updated regional water supply plan.*

Revise the Water Supply Facilities Work Plan to: (1) identify the population projections that are the basis for the projection of water demand; (2) clarify the number of people per Equivalent Residential Connection and how this was determined; (3) demonstrate that the County, City of Fort Myers, and the franchised utilities have consistent population and demand projections for those unincorporated areas not served by the County, or for those portions of municipalities that are served by the County; (4) identify areas of predominant current and future self supply by private individual single family wells and the total projected withdrawal amounts; and (5) address the water supply needs for irrigation.

B. STAFF DISCUSSION

The DCA has objected to inconsistencies between Table 6, 10 Year Water Supply Development Projects, proposed for adoption into the Lee Plan as part of the subject amendment and the County's Capital Improvements Program currently adopted as Table 3 in the Lee Plan. Staff has revised Table 6 and the Water Supply Facilities Work Plan to reflect the latest Schedule of Capital Improvements adopted through CPA2008-11 on December 9, 2008. Revised Table 6 can be found as Attachment 2 to this report. Please note that Policy 53.1.11 and Policy 117.1.9 have been revised to correct the numbering of the table from Table 6 to Table 7. The policies have also been updated to reflect the revised title, the 10 Year Water Supply Development Projects Table.

In addition, Section 4.4 *Capital Improvement Plan* in the Water Supply Facilities Work Plan has been revised based on the recently adopted Capital Improvement Plan. Capital Improvement Projects have been updated throughout the Work Plan as well. Section 4.4 describes that the components of the Work Plan to increase production of potable water are scheduled between now and 2018. The projects included in the Capital Improvement Plan will increase the combined maximum day capacity of all Lee County Utilities production facilities from approximately 35 mgd to a combined capacity of 50.63 mgd. This combined capacity is sufficient to meet the projected demand of 38.40 mgd based on the population projections performed by the Lee County Division of Planning.

The DCA has also provided that proposed Policy 53.2.1 does not ensure that prior to the issuance of a building permit the County will consult with the water supplier to determine whether adequate water supplies will be available by the anticipated date of the issuance of a certificate of occupancy. Policy 53.2.1 has been revised to specify that County regulations will be amended to assure potable water supply will be available, or will be available prior to occupancy, at the time of building permit issuance. In order to ensure water supply as a concurrency requirement, as required by Section 163.3180(2)(a), F.S., the policy has been revised as follows:

POLICY 53.2.1: County development regulations will be amended to specify that no ~~county development order~~ building permit under the Land Development Code will be issued in ~~any~~ a franchised or certificated water service area, or within Lee County Utilities future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy ~~will in no way~~ does not exempt ~~any~~ development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

The DCA has also provided that proposed Policy 151.5.1 does not require the County to amend the comprehensive plan to update the Water Supply Facilities Work Plan within 18 months after the water management district updates the regional water supply plan. Policy 151.5.1 has been revised to specify the Water Supply Facilities Work Plan will be updated as follows:

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan. The county will update the Water Supply Facilities Work Plan within 18 months after the South Florida Water Management District approves an update to the regional water supply plan.

The DCA has provided that the Work Plan includes several different population projections and that the population projections should be consistent with the projections used for the other comprehensive plan elements. In response to DCA's objection, Section 3.4 *Summary of Demand Projections* in the Water Supply Facilities Work Plan has been updated to specify the projection performed by the Lee County Division of Planning as the official projection used in the Work Plan.

In addition, Section 4.4 *Capital Improvement Plan* in the Water Supply Facilities Work Plan has been revised based on the recently adopted Capital Improvement Plan and the projected demand is based on the population projections performed by the Lee County Division of Planning.

The DCA has provided that the Work Plan is not clear as to the number of people per Equivalent Residential Connection (ERC) and how this was determined. Section 3.7 *Level of Service* has been added to the Work Plan providing an analysis of the level of service standard for potable water as described by Policy 95.1.3: Minimum Acceptable Level-of-Service Standards in the Lee Plan. The analysis provided in the Work Plan clarifies that utilizing the population served in 2007 the number of people per ERC was determined to be 1.44. The level of service analysis is further described in Section 3.7 of the Work Plan.

The DCA has provided that the Work Plan does not demonstrate that the County, City of Fort Myers, and franchised utilities have consistent population and demand projections for areas not served by the County. The following five utility providers supply water within unincorporated Lee County: Bonita Springs Utilities, Florida Governmental Utility Authority, Gasparilla Island Water Association, Greater Pine Island Water Association, and Island Water Association. Section 7 of the Work Plan describes the service areas for each utility and has included the suppliers projected demands and existing and planned water sources as well as utilizing information from consumptive use permits. At this time staff has used the best available population and demand projections in the preparation of the Work Plan as requested and gathered from the private utilities as well as utilizing projections and information gathered from permitting applications filed by these entities.

The DCA has provided that the Work Plan does not identify areas of predominant current and future self supply by single family wells and the projected withdrawal amounts. Section 8 *Domestic Self-Supply* has been added to the Work Plan describing current and future self supply by single family wells. This Section also describes projected withdrawal amounts.

The DCA has provided that the Work Plan does not address water supply needs for irrigation. Section 6.3 *Irrigation Water Demands* has been added to the Work Plan describing that a comprehensive analysis of the demand for irrigation water will be completed as part of the Integrated Water Resource Master Plan referenced in Section 6.2 *Comprehensive Long Term Water Supply Planning* of the Work Plan.

In conclusion, the DCA has provided that Objective 151.5 does not establish guidelines to address coordination between the County, water suppliers, and local governments that provide water within unincorporated Lee County with regard to changes in land use, population projections, and level of service.

Staff notes that as it relates to changes in land use, all future land use amendments are required to provide an analysis of existing and future conditions for facilities capable of serving the site. Additional analysis evaluating water supply, the availability of treatment facilities and transmission lines for reclaimed water, as well as any water conservation measures have been added as a requirement in the evaluation of comprehensive plan amendments as described in the Future Land Use section of this report.

Staff is proposing to add Policy 151.5.2 to Objective 151.5 specifying that the County will coordinate and share information as part of land use changes as well as coordinating and sharing information regarding population projections and level of service as part of water supply planning efforts.

OBJECTIVE 151.5: COORDINATION OF WATER SUPPLY PLANS AND THE LEE PLAN. Coordinate between Lee County and the South Florida Water Management District to ensure that the Lee Plan remains consistent with the District's regional water supply plans.

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan. The county will update the Water Supply Facilities Work Plan within 18 months after the South Florida Water Management District approves an update to the regional water supply plan.

POLICY 151.5.2: The county will coordinate with other government agencies and private suppliers of potable water during the water supply planning process to include the review of land use changes, addressing population projections, and acceptable level of service standards.

Staff has also made minor changes to Objective 53.2 changing the reference from "Statute" to "Section" and minor changes to Policy 53.2.1 revising grammar in the policy:

OBJECTIVE 53.2: WATER SUPPLY CONCURRENCY. Lee County will incorporate water supply into the concurrency management system consistent with the requirements of ~~Chapter~~ Section 163.3180(2)(a), F.S.

POLICY 53.2.1: County development regulations will be amended to specify that no ~~county development order~~ building permit under the Land Development Code will be issued in ~~any~~ a franchised or certificated water service area, or within Lee County Utilities future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy ~~will in no way~~ does not exempt ~~any~~ development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners adopt the proposed amendment as shown in Part I.B.1. of this report.

PART VI - BOARD OF COUNTY COMMISSIONERS HEARING FOR ADOPTION OF PROPOSED AMENDMENT

DATE OF ADOPTION HEARING: February 25, 2009

A. BOARD REVIEW:

The Board of County Commissioners provided no discussion concerning the proposed plan amendment. No public input was provided concerning the proposed plan amendment. This item was approved on the administrative agenda.

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

The Board of County Commissioners adopted the proposed amendment.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

The Board of County Commissioners accepted the facts advanced by staff and the LPA.

C. VOTE:

A. BRIAN BIGELOW	**AYE**
TAMMARA HALL	**AYE**
ROBERT P. JANES	**AYE**
RAY JUDAH	**AYE**
FRANKLIN B. MANN	**AYE**

TABLE 7

10 YEAR WATER SUPPLY DEVELOPMENT PROJECTS

CIP PROJECT #	LCU PROJECT NAME/ LWCWSP PROJECT NAME	DESCRIPTION	PROJECT STATUS	TOTAL PROJECT COST	ESTIMATED COMPLETION DATE	FUNDING SOURCE
7602	North Lee County R.O. Plant Wellfield Expansion / North Lee County Lower Hawthorn Wellfiled and Plant Expansion	Expansion of the Lower Hawthorn wellfield at the NLC WTP from 5.0 MGD to 10.0 MGD finished water	Design and land acquision underway	$15,390,000.00	2010	Enterprise Fund
7028	North Lee County WTP Expansion to 10 MGD / North Lee County Lower Hawthorn Wellfiled and Plant Expansion	Expansion of the NLC WTP from 5.0 MGD to produce 10.0 MGD finish water	Preliminary Design Underway	$15,000,000.00	2011	Enterprise Fund
None	Corkscrew WTP Expansion to 20 MGD / Not in LWCWSP	Expand the treatment capcity of the Corkscrew WTP to 20.0 MGD	Planning	$13,501,000.00	2015-2020	Debt Finance
None	Corkscrew WTP Wellfield Improvements / Not in LWCWSP	Expand the capacity of the Corkscrew Wellfield to provide a total of 20.0 MGD	Planning	$9,750,000.00	2015-2020	Debt Finance
None	Desalination Plant Transmission Mains / Not in LWCWSP	Construct finish water transmission mains to accomidate a Desalination Plant	Planning	$18,195,500.00	2015-2020	Enterprise Fund
None	Feasibilty Analysis / Design / Desalination Plant / Not in LWCWSP	Perform a feasibility analysis, design, and construct a desalination water plant	Planning	$70,000,000.00	2015-2020	Enterprise Fund
		ALTERNATIVE WATER RESOURCE PROJECTS				
None	Gateway WWTP ASR System / Not in LWCWSP	Develop an ASR system to provide seasonal storage of reclaimed water to serve the Gateway WWTP	Planning	$3,200,000.00	2012	Enterprise Fund
7284	Reclaimed Water ASR / Health Park Reclaimed Water ASR	Pilot and Construction of reclaimed water ASR for Wasteater Treatment Facilities	Planning	$600,000.00	2012	Enterprise Fund
7300	Reuse Valves Control, SCADA project	Construct Automated controls for reclaimed water sites	Underway	$100,000.00	2009	Enterprise Fund
None	Ben Hill Griffin Parallel Forcemain / FGCU/Miromar Lakes Reclaimed Water Main	Construct 900 L.F. of 12" reclaimed water line from 3 Oaks WWTP to FGCU / Combined with Parallel Force Main Project	Design underway	$6,000,000.00 for total project $100,000.00 for reclaimed water line portion	2011	Grant/Enterprise Fund

Potable Water Policy in the Lee Plan

Future Land Use Element

STANDARD 11.1: WATER.

1. Any new residential development that exceeds 2.5 dwelling units per gross acre, and any new single commercial or industrial development in excess of 30,000 square feet of gross leasable (floor) area per parcel, must connect to a public water system (or a "community" water system as that is defined by Chapter 17-22, F.A.C.).

2. If the proposed development lies within the boundaries of a water utility's certificated or franchised service area, or Lee County Utilities' future potable water service area (see Map 6), then the development must be connected to that utility.

3. The developer must provide proof that the prior commitments of the water utility, plus the projected need of the developer, do not exceed the supply and facility capacity of the utility.

4. All waterline extensions to new development will be designed to provide minimum fire flows, as well as adequate domestic services as required by Chapter 10D-4, F.A.C.

5. If a new development is located in a certificated or franchised service area, or Lee County Utilities' future potable water service area (see Map 6), and the utility cannot provide the service or cannot provide the service except at a clearly unreasonable cost to the developer, the developer is encouraged to petition the appropriate regulatory agency to contract the service area so that the development may establish its own community water system or invite another adjacent utility to expand its service area in order to provide the required service.

6. If a development lies outside any service area as described above, the developer may:

   - request that the service area of an adjacent water utility be extended to incorporate the property;
   - establish a community water system for the development; or
   - develop at an intensity that does not require a community water system.

(Amended by Ordinance No. 94-30, 00-22)

Community Facilities and Services Element

Potable Water Sub-Element

GOAL 53: POTABLE WATER INFRASTRUCTURE. To ensure the public health, welfare, and safety by the provision of high-quality central potable water service throughout the future urban areas of unincorporated Lee County, and to ensure that the costs of providing facilities for the supply of potable water are borne by those who benefit from them.

OBJECTIVE 53.1: The County will ensure the provision of acceptable levels of potable water service throughout the future urban areas of the unincorporated county, either directly

by Lee County Utilities, or indirectly through franchised utility companies. (Amended by Ordinance No. 94-30, 00-22, 03-04)

POLICY 53.1.1: The Board of County Commissioners hereby establishes service areas for the Lee County Utilities water systems throughout which it will provide standard service as required by demand, and within which it will challenge applications by private water utilities to obtain a Certificate of Operation from the Florida Public Service Commission and reject all applications for a county franchise therein. These service areas are illustrated in Map 6. Within the Fort Myers urban reserve area, the service areas shown on the map are subject to modifications in accordance with existing and future interlocal agreements. (Amended by Ordinance No. 93-25)

POLICY 53.1.2: The minimum acceptable level-of-service standards (see Policy 95.1.3) for potable water connections to Lee County Utilities will be:

- An available supply and treatment capacity of 250 gallons per day per equivalent residential connection (ERC) for the peak month, except that facilities serving only mobile home residential structures must have a capacity of 187.5 gallons per day and facilities serving only travel trailer residential structures must have a capacity of 150 gallons per day. (Amended by Ordinance No. 92-35, 00-22)

POLICY 53.1.3: The Board of County Commissioners encourages all private utilities to set a minimum acceptable level of service to be adopted herein for use in the concurrency management system within their respective franchised or certificated areas. After the effective date of this plan or September 1, 1989, whichever is later, if the county has not adopted such standards into this plan, the standards adopted for the Lee County Utilities' water systems will apply in those certificated or franchised areas and will be used in enforcing concurrency regulations (see Policy 95.1.3).

After the deadline set above any private utility that cannot meet the Level-of- Service standards set forth for Lee County Utilities will have the opportunity to petition for a Plan Amendment for a revised Level-of-Service requirement for the specific private utility plant if it can be proved that such utility has sufficient plant and system capacity to properly service it's franchised or certificated area. The proof will be in the form of properly documented daily flow reports, occupancy rates or related statistical information, and any other necessary information that may be pertinent to the justification of the requested action, to establish a new individual Level-Of-Service standard. This data should be for a period covering at least the last two prior years. (Amended by Ordinance No. 92-35, 00-22)

POLICY 53.1.4: The Board of County Commissioners urges all utilities to construct and install sufficient treatment facilities and distribution systems that will meet or exceed the minimum acceptable service standards and with the capacity to deliver water at a pressure of 20 pounds per square inch (wp PSI static) at the meter anywhere on the individual system (excluding fire flow conditions). In addition, by September 30, 1994, all utilities are urged to deliver water pressure of 40 pounds per square inch (static pressure, excluding fire flow conditions). Each utility is encouraged to advise the planning and engineering staffs of the county regarding system expansions or modifications to ensure coordination with other utilities and with all other issues of public interest and to prevent duplication of facilities and services. (Amended by Ordinance No. 92-35)

POLICY 53.1.5: ~~County development regulations will be amended to specify that~~ ~~n~~No county development order under the ~~Development Standards Ordinance~~ Land Development Code for a residential development more intense than 2.5 dwelling units per gross acre, for a commercial development of more than 30,000 square feet of gross floor area, or for any industrial plant of more than 30,000 square feet of gross floor area, will be issued in any franchised or certificated water service area, or within Lee County Utilities' future service area, unless potable water service, at the minimum acceptable level of service, is available at the property line, or surety is given that it will be installed prior to occupancy. This policy will in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3. (Amended by Ordinance No. 00-22)

POLICY 53.1.6: No permit will be issued allowing any utility to use a public right-of-way or to cut a pavement in a public right-of-way to extend service outside of its certificated or franchised area or to extend service into an area allocated to another utility, unless the other utility concurs in writing. This will be enforced along municipal and state rights-of-way by interlocal agreement and memoranda of agreement as required. (Amended by Ordinance No. 00-22)

POLICY 53.1.7: In allocating Industrial Development Revenue Bond capacity, the county will give priority to private water utility firms proposing to construct basic facilities and to provide or upgrade infrastructure serving developed areas and antiquated subdivisions undergoing redevelopment. (Amended by Ordinance No. 00-22)

POLICY 53.1.8: The costs of new or augmented potable water infrastructure that is developed by Lee County will be borne by those who benefit from the improved supply. (Amended by Ordinance No. 94-30, 00-22)

POLICY 53.1.9: New development will pay through appropriate financial mechanisms its fair share of the costs of providing standard potable water for that development. (Amended by Ordinance No. 00-22)

POLICY 53.1.10: By 1999, county staff will formulate the study proposal to determine the appropriateness of requiring certain existing residential developments at a density equal to or in excess of 2.5 dwelling units per acre to connect to a potable water or sewer system, if available. The study will address the issue of health related problems and will include the collection and analysis of well samples to determine if there is an immediate health problem as well as a cost benefit analysis. This study proposal will include recommendations regarding which pre-platted communities and subdivisions should be required to connect to a potable water or sewer system, if available. (Added by Ordinance No. 98-09, Amended by Ordinance No. 00-22)

POLICY 53.1.11: The County will expand potable water facilities consistent with those improvements identified in Table 7, the 10 Year Water Supply Development Projects Table. Table 7 will be amended as projects are completed and technological advancements in water supply facilities are made.

OBJECTIVE 53.2: WATER SUPPLY CONCURRENCY. Lee County will incorporate water supply into the concurrency management system consistent with the requirements of Section 163.3180(2)(a), F.S.

POLICY 53.2.1: County development regulations will be amended to specify that no building permit under the Land Development Code will be issued in a franchised or certificated water service area, or within Lee County Utilities future service area, unless potable water supply will be available to meet current and projected growth demands, or surety is given that it will be available prior to occupancy. This policy does not exempt development of any size from meeting the levels of service required for concurrency under Policies 53.1.2 and 95.1.3.

GOAL 54: CONSERVATION. To ensure that future populations have access to potable water supplies and services at a reasonable price by using and encouraging conservation and resource management measures to reduce consumption of potable water.

OBJECTIVE 54.1: The county will continue its programs in education, technical advice, demonstration, rate revisions, and reuse to reduce potable water consumption and the consumption of large volumes of potentially potable water. Water consumption per Equivalent Residential Unit will be decreased by 2.5% annually through the year 2000. (Amended by Ordinance No. 94-30, 00-22)

POLICY 54.1.1: Using the personnel and resources of various county agencies, Lee County will continue to offer a program of public information and education. This program should include the use of print media, advertising, and public service announcements on radio and television highlighting and advocating various strategies of water conservation, including, but not limited to:

- creating incentives for "gray water" systems or other recycling activities;
- adopting incentives for household and commercial use of appliances with low water consumption rates;
- advising householders to reduce water use;
- creating a demand for low water use appliances by publishing ratings of water use efficiency for appliances analogous to the energy efficiency ratings for electrical appliances;
- advocating the cost-effective use of appliances and water: i.e. run only full loads or use low water settings when appropriate;
- encouraging the building or grounds manager, including the individual householder, to maintain the water system, i.e. timely repair of dripping faucets, leaking water closets, broken or maladjusted sprinkler heads, etc.;
- installing alternatives to spray irrigation devices for lawns and grounds management such as drip or seep systems, or at least attending to the ambient humidity and evapo-transpiration rates in controlling sprinkler systems;
- encouraging the use of drought-tolerant ground covers and shrubbery according to the principles of "xeriscape" (see glossary and Objective 117.2) and demonstrating the uses of native vegetation in landscaping; and

- generally encouraging the thoughtful use of water in all necessary activities. (Amended by Ordinance No. 94-30, 00-22)

POLICY 54.1.2: In developing and implementing local landscape regulations including the preservation, reforestation, and wetlands restoration requirements, preference will be given to native species which are adapted to the region's climatic regime.

POLICY 54.1.3: Xeric landscaping, stressing the use of native vegetation, is to be emphasized through modifications to the county's development regulations and through direct action while landscaping county-owned projects.

POLICY 54.1.4: The Board of County Commissioners will periodically re-examine the "step rate" structure for the Lee County Utilities water systems which encourages water conservation by requiring that the commodity charge (basic monthly charge less readiness to serve fee and capital debt contribution) above a specified amount of water use increase continuously or by specified increments for that increased use of water. (Amended by Ordinance No. 94-30, 00-22)

POLICY 54.1.5: The Board of County Commissioners will encourage privately operated potable water utilities to adopt a "conservation" rate structure for users in their respective service areas. (Amended by Ordinance No. 00-22)

POLICY 54.1.6: Development regulations will continue to require that any development will pay the appropriate fees and connect to a re-use water system if such system is near or adjacent to the development and has sufficient surplus to supply the development. Development regulations will be amended further as follows:

- Where a significant modification is proposed to a major development subject to Chapter 10 of the Land Development Code, wastewater reuse systems will be required in the same manner as for new developments.

- The county will require by ordinance the connection of specified existing development to a utility wastewater distribution system when one is available near or adjacent to the property.

(Amended by Ordinance No. 91-19, 94-30, 00-22)

POLICY 54.1.7: It is hereby declared that the conservation of potable water supply and facility capacity is of such importance to the orderly growth of the community that in order to further provide incentive for its use, reuse water may be provided at a price significantly lower than finished potable water (the residual costs of operation being charged to the sewer users as part of the cost of effluent disposal).

POLICY 54.1.8: Priority in the use of Industrial Development Revenue Bonds or other mechanisms of public finance will be given to regulated private utilities where not prohibited by the Florida constitution or statutes in order to achieve these public ends. (Amended by Ordinance No. 00-22)

POLICY 54.1.9: Lehigh Acres (as defined by outer boundaries of its Privately Funded Infrastructure overlay on the Future Land Use Map) is hereby declared a critical area for future potable water supply due to fluctuating water levels in the Sandstone aquifer. In response to this designation, the county will amend current regulations to provide that

new wells in Lehigh Acres must be constructed to accommodate submersible pumps. (Also see Policy 1.7.10 for new permit requirements for irrigation wells in Bonita Springs, and Policy 2.4.2 for special requirements for amendments to the Future Land Use Map.) (Amended by Ordinance No. 94-30, 00-22, 02-02)

POLICY 54.1.10: The county will continue to implement and enforce regulations to reduce the amount of effluent being discharged into surface waters. (Amended by Ordinance No. 91-19, 94-30, 00-22)

POLICY 54.1.11: Continue to encourage new and existing developments to utilize the Fort Myers Beach/Iona-McGregor sewer system's dual water system. (Amended by Ordinance No. 94-30, Amended and Relocated by Ordinance No. 98-09)

POLICY 54.1.12: Promote water conservation through the use of incentives and evaluate and apply a community based planning approach to water conservation, enabling more precision to be applied in achieving reduction targets. (Added by Ordinance No. 07-16)

GOAL 55: ORGANIZATION OF SERVICE AND FACILITY DELIVERY. To provide greater local coordination of the activities of public and private utilities within the county.

OBJECTIVE 55.1: Ensure an adequate, reliable, and economical supply of potable water to meet the forecasted needs for all residents of Lee County through the year 2020 through regional planning and intergovernmental participation. (Amended by Ordinance No. 94-30)

POLICY 55.1.1: Lee County Utilities and Lee County Division of Natural Resources will plan and coordinate with other government agencies in the development of comprehensive plans as they relate to well field protection, aquifer recharge, water supply, and related capital facilities. (Added by Ordinance No. 00-22, Amended and Relocated by Ordinance No. 03-04).

POLICY 55.1.2: Lee County Division of Natural Resources in conjunction with Lee County Utilities will perform groundwater modeling and analysis for new development, as needed, to assess the potential impact on the water resources of Lee County. The analysis will focus on the following issues:

- Adequacy of water supply, including groundwater level draw-down
- Avoidance of adverse impacts on natural systems from water supply withdrawals.

(Added by Ordinance No. 00-22, Amended and Relocated by Ordinance No. 03-04)

POLICY 55.1.3: Lee County will actively ~~participate in the~~ implementation ~~of~~ the ~~Regional~~ Water Supply Facilities ~~Master~~ Work Plan as adopted by the Board of County Commissioners on (insert date of policy adoption). Lee County will utilize the document as the County's guide to water supply facility planning with a planning horizon through the year 2030. A copy of the adopted ~~The Master~~ Water Supply Facilities Work Plan will be maintained and kept on file by Lee County Utilities. ~~consider the expansion of existing surface water sources and wellfields and the interconnection of the transmission systems of existing public and private utilities to obtain the most cost efficient and reliable water system.~~ (Amended by Ordinance No. 94-30, Amended and Relocated by Ordinance No. 00-22, Relocated by Ordinance No. 03-04)

POLICY 55.1.4: Lee County will continue to collect data from private suppliers of potable water, including reporting of water flows, storage capacity, pressures, number of customers, and committed future connections, and proposed expansion plans. This data will be updated on a yearly basis. (Amended by Ordinance No. 94-30, Amended and Relocated by Ordinance No. 00-22)

Surface Water Management Sub-Element

GOAL 61: PROTECTION OF WATER RESOURCES. To protect the county's water resources through the application of innovative and sound methods of surface water management and by ensuring that the public and private construction, operation, and maintenance of surface water management systems are consistent with the need to protect receiving waters.

OBJECTIVE 61.1: WATER SUPPLY PLANNING. All county water supply planning will include the recognition of surface water runoff as a possible resource and will consider integrating the use of surface water runoff in any supply program or strategy that results. (Amended by Ordinance No. 00-22)

POLICY 61.1.1: Lee County recognizes that all fresh waters are a resource to be managed and allocated wisely, and will support allocations of the resource on the basis 1) of ensuring that sufficient water is available to maintain or restore valued natural systems, and 2) of assigning to any specified use or user the lowest quality fresh water compatible with that use, consistent with financial and technical constraints. (Amended by Ordinance No. 00-22)

POLICY 61.1.2: The county will explore, and implement where financially and technically feasible, all existing options for storing and utilizing excess surface water runoff for human consumption and other uses. Such options may include surface impoundments; back-pumping to reservoirs, to upland wetlands, or to ground storage; and ground storage by exfiltration systems or by aquifer storage and recovery systems. Maximum contaminant levels consistent with Florida DEP and USEPA regulations governing receiving waters will be met through treatment as required. Excess surface water runoff will be defined as that water not required to maintain or restore estuarine waters or other valued wetland systems. (Amended by Ordinance No. 94-30, 00-22)

POLICY 61.1.3: In the event that the timing and volume of freshwater discharges necessary to maintain the health and productivity of estuaries and other wetlands cannot be determined or supported by existing scientific data, the county will sponsor, in collaboration with other agencies, institutions, and organizations, adequate research programs to make such data available. (Amended by Ordinance No. 00-22, 07-12)

POLICY 61.1.4: The county's Surface Water Management Master Plan will place particular emphasis on 1) routing surface water runoff from areas of excess to areas where additional subsurface storage is available; and 2) maintaining and increasing historic surface and groundwater levels in the Density Reduction/Groundwater Resource land use category. (Amended by Ordinance No. 00-22)

POLICY 61.1.5: Work with the appropriate agencies to pursue funding a "mixing model" (freshwater flow into saltwater) as a management tool that will benefit recreation, water quality, public health, etc. (Added by Ordinance No. 07-16)

Groundwater Recharge Sub-Element

OBJECTIVE 63.2: POTABLE GROUNDWATER. Base all future development and use of groundwater resources on determinations of the safe yield of the aquifer system(s) in order not to impair the native groundwater quality or create other environmental damage. Criteria for safe-yield determinations will be determined by the SFWMD, the agency charged with permitting these activities. (Amended by Ordinance No. 94-30, 00-22)

POLICY 63.2.1: For maximum protection of groundwater resources, identify future wellfields and/or relocation site(s) for existing wellfields well in advance of need. Coordinate with SFWMD, other water suppliers, and DEP to avoid duplication and to assist in data collection and interchange. (Amended by Ordinance No. 94-30)

POLICY 63.2.2: Institute a program to identify sources of groundwater pollutants in Lee County and to map these (point and non-point) on a county-wide basis.

POLICY 63.2.3: Identify water needs consistent with projections of human population and the needs of natural systems in order to determine the future demands for groundwater. (Amended by Ordinance No. 94-30)

POLICY 63.2.4: Expand current programs to identify and map the contamination potential of groundwater resources for those areas of Lee County not currently under public ownership.

POLICY 63.2.5: Lee County, in cooperation with other agencies and the municipalities, will budget to maintain its current program of plugging non-valved, abandoned, or improperly-cased artesian wells so that at least seventy-five of these wells are plugged each year until such wells are eliminated. (Amended by Ordinance No. 94-30, 00-22)

Capital Improvements Element

POLICY 95.1.3: MINIMUM ACCEPTABLE LEVEL-OF-SERVICE STANDARDS. Level-of-service (LOS) standards will be the basis for planning the provision of required public facilities within Lee County. Some of these standards will be the basis for determining the adequacy of public facilities for the purposes of permitting new development. The "Minimum Acceptable Level of Service" will be the basis for facility design, for setting impact fees, and (where applicable) for the operation of the Concurrency Management System (CMS).

Two classes of standards are established. "Regulatory" standards are those which apply to facilities identified in state law as being essential to support development. These consist of facilities for the provision of potable water, sanitary sewer, disposal of solid waste, stormwater management, community and regional parks, and transportation. (It is the intent of this element that these standards will be the same as those established in the various relevant plan elements. If there are discrepancies between standards contained in the elements and standards as set forth herein, the standards as set forth herein will govern.) The second class, "non-regulatory" standards, are those which apply to other facilities for which the county desires to set standards for its own use; compliance with these standards will not be a requirement for continued development permitting.

REGULATORY STANDARDS

1. Potable Water Facilities:

   Minimum Acceptable Level of Service:

   Within certificated, franchised, or designated service areas only: supply and treatment capacity of 250 gallons per day per Equivalent Residential Connection (ERC) for the peak month, except that facilities serving only mobile home residential structures must have a capacity of 187.5 gallons per day, and facilities serving only travel trailer residential structures must have a capacity of 150 gallons per day. Where a private water utility has provided an alternate standard for application within its certificated or franchised area, and that standard has been adopted into this comprehensive plan, that will be the standard to be used for concurrency management in the respective certificated or franchised area.

Conservation and Coastal Management Element

OBJECTIVE 112.2: The county will continue to participate with other governments to prepare and implement water management plans, including the Estero Bay Agency on Bay Management, Charlotte Harbor National Estuary Program, the Charlotte Harbor Management Plan, the Water Management District Surface Water Improvement and Management (SWIM) plans, DEP aquatic preserve management plans, water supply plans, and other water resource management plans. (Amended by Ordinance No. 94-30, 98-09, 00-22)

GOAL 117: WATER RESOURCES. To conserve, manage, and protect the natural hydrologic system of Lee County to insure continued water resource availability. (Amended by Ordinance No. 94-30)

OBJECTIVE 117.1: WATER SUPPLIES. Insure water supplies of sufficient quantity and quality to meet the present and projected demands of all consumers and the environment, based on the capacity of the natural systems.

POLICY 117.1.1: Natural water system features which are essential for retention, detention, purification, runoff, recharge, and maintenance of stream flows and groundwater levels shall be identified, protected, and managed.

POLICY 117.1.2: The county will recognize and encourage water and wastewater management, provided that such management does not exceed the natural assimilative capacity of the environment or applicable health standards. Appropriate water and wastewater management includes, but is not limited to, aquifer recharge, aquifer storage and recovery, reclaimed water, reverse osmosis, dual water systems, use of low volume irrigation systems, use of water-conserving vegetation, and other conservation and recycling techniques. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.1.3: Freshwater resources will be managed in order to maintain adequate freshwater supplies during dry periods and to conserve water. (Amended by Ordinance No. 00-22)

POLICY 117.1.4: Development designs must provide for maintaining surface water flows, groundwater levels, and lake levels at or above existing conditions. (Amended by Ordinance No. 00-22)

POLICY 117.1.5: The county will cooperate with the United States Geological Survey, South Florida Water Management District, and state agencies to develop an area-wide water resources plan emphasizing planning and management of water resources on the basis of drainage basins; and addressing the needs of the existing and potential built environment, natural hydrologic system requirements, and freshwater flow impacts on estuarine systems. (Amended by Ordinance No. 00-22)

POLICY 117.1.6: The county will continue to support a monitoring program of existing baseline conditions of water resources. (Amended by Ordinance No. 00-22)

POLICY 117.1.7: The county will cooperate fully with emergency water conservation measures of the South Florida Water Management District. (Amended by Ordinance No. 00-22)

POLICY 117.1.8: The county will support the acquisition and protection of the Flint Pen Strand as a major water retention and aquifer recharge area. (See also Policy 107.11.4.) (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.1.9: The county will utilize the recommendations made in the Water Supply Facilities Work Plan (see Policy 55.1.3) as a guide to potable water facilities planning, potable water resources, and water conservation as well as expanding potable water facilities consistent with Table 7, the 10 Year Water Supply Development Projects Table.

OBJECTIVE 117.2: XERISCAPE LANDSCAPE. The county will continue to promote xeriscape landscaping techniques. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.2.1: The county will continue to encourage xeriscape landscaping techniques for new development in the Land Development Code. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.2.2: The county will provide education on water conservation through creative landscaping, and promote the conservation and use of native plant species through xeriscape landscaping techniques. (Amended by Ordinance No. 94-30, 00-22)

POLICY 117.2.3: The county will establish local guidelines that will assist in efforts to reduce landscape irrigation water use to the lowest and most efficient, practical level. (Amended by Ordinance No. 00-22)

Intergovernmental Coordination Element

OBJECTIVE 151.3: COORDINATION OF ROADWAY AND UTILITY IMPROVEMENTS. Coordinate, where possible, between the Lee County Department of Transportation (DOT) and utility companies, including Lee County Utilities and the various privately operated water and wastewater companies, to insure that capital and maintenance projects are not adversely affected by subsequent utility construction. (Added by Ordinance No. 94-30)

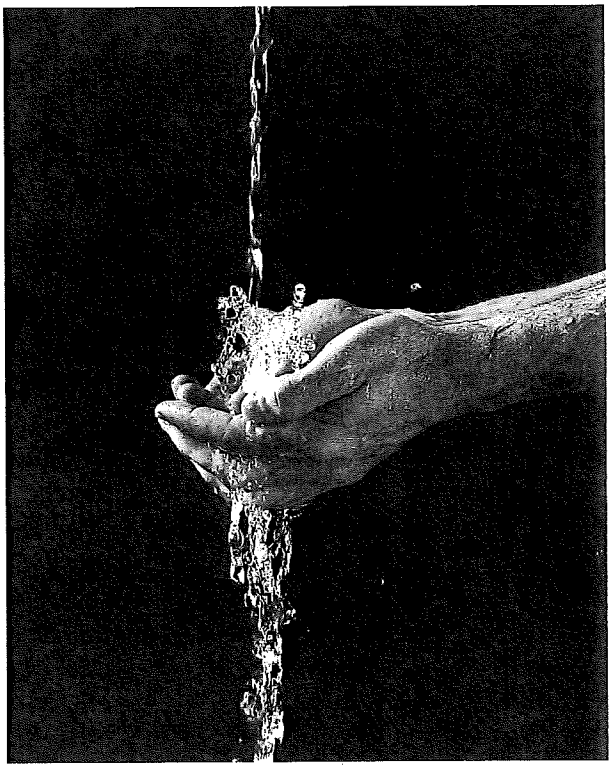
POLICY 151.3.1: Lee County DOT will continue open communications with the various water and wastewater utility companies to coordinate expected utility construction projects with programmed roadway maintenance and capital projects. (Added by Ordinance No. 94-30, Amended by Ordinance No. 07-12)

OBJECTIVE 151.5: COORDINATION OF WATER SUPPLY PLANS AND THE LEE PLAN. Coordinate between Lee County and the South Florida Water Management District to ensure that the Lee Plan remains consistent with the District's regional water supply plans.

POLICY 151.5.1: The county will continue to evaluate the latest water supply plans issued by the South Florida Water Management District to ensure consistency in the Lee Plan and the County's Water Supply Facilities Work Plan. The county will update the Water Supply Facilities Work Plan within 18 months after the South Florida Water Management District approves an update to the regional water supply plan.

POLICY 151.5.2: The county will coordinate with other government agencies and private suppliers of potable water during the water supply planning process to include the review of land use changes, addressing population projections, and acceptable level of service standards.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY, FLORIDA



Prepared by Lee County Utilities and Lee County Planning
February 2009

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WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
LEE COUNTY, FLORIDA

Section 1
INTRODUCTION

1.1 PURPOSE

This Water Supply Facilities Work Plan has been prepared by Lee County Utilities (LCU) to meet the requirements of section 163.3177(6)(c), of the Florida Statutes regarding water supply planning.

1.2 PLAN OBJECTIVES

The objectives of this plan include:

- Identify population and water demands for a planning period from 2007 to 2030 with focus on the planning period from 2007 to 2017.
- Identify existing and planned potable and reclaimed water facilities that will be utilized to meet the projected demand to 2017.
- Identify sources of raw water required to meet the projected demand.
- Identify planned potable water supply and reclaimed water projects required to meet projected demands and specify when they must be developed and how they will be funded.
- Demonstrate that the proposed water supply development projects are feasible with respect to facility capacity and consumptive use permitting.
- Describe LCU's efforts in developing alternative water supplies.

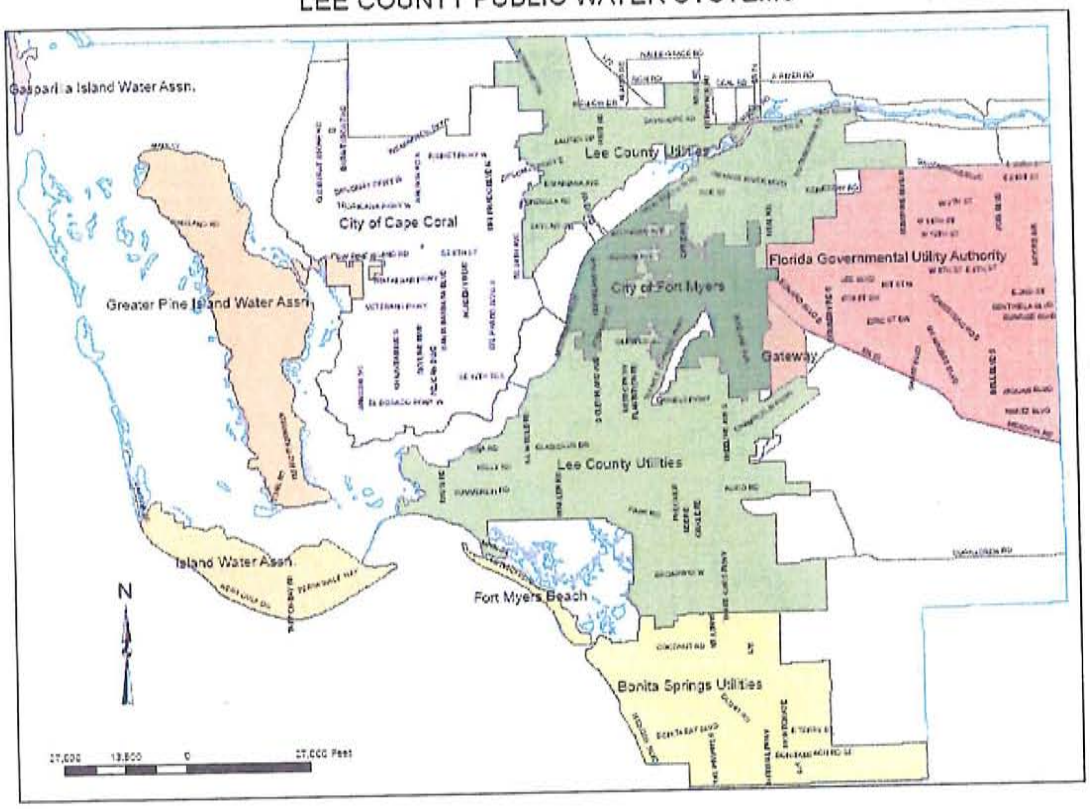
1.3 BACKGROUND

Lee County Utilities was a founding member of the former Lee County Regional Water Supply Authority (LCRWSA). The LCRSWA issued a Water Supply Master Plan in 1993 that was updated in 2000. This Water Supply Master Plan used a planning horizon through 2030. The information provided in this current Lee County Plan is an update to the work that was previously done by the LCRWSA as well as information that has been compiled and submitted to the South Florida Water Management District (SFWMD) in support of Water Use Permit applications as well as population projections performed by Lee County Planning Department.

Lee County Utilities provides water service to those portions of unincorporated Lee County that are not served by either a private utility company, member-owned non-profit systems operating under a franchise agreement from Lee County, or public utility formed through State legislation. These water utilities include; Florida Government Utility Authority (FGUA). Bonita Springs Utilities (BSU), Greater Pine Island Water Association (GPIWA), Gasparilla Island Water Association, and Island Water Association. Sections 1 through 6 of this Plan identify only the water supply needs for Lee County Utilities water system and service area. Section 7 of this Plan describes the water supply needs of the other utilities listed above. This Plan does not include water utilities serving incorporated cities within Lee County, including City of Fort Myers, City of Cape Coral, City of Bonita Springs, and City of Sanibel. Each of these entities is responsible for developing their own 10-Year Water Supply Facilities Work Plan to be

included in its City's comprehensive plan. The figure below depicts the service areas of the large water utilities throughout Lee County.

LEE COUNTY PUBLIC WATER SYSTEMS



It should be noted that LCU provides potable water service through a bulk water service agreement to the Town of Fort Myers Beach. Therefore, in this plan the Town of Fort Myers Beach is included in LCU service area and data presented in this portion of the Plan, include the areas within the Town of Fort Myers Beach. In addition the map above shows the Gateway Service District (GSD) as a water utility. LCU also provides water to GSD as a bulk customer and therefore demands in GSD service area are accounted for in LCU's demand data.

In addition to the public water supply utilities listed above, there are several small public water supply systems within Lee County that are serving developments such as mobile home parks and small developments. An inventory of these systems along with data related to permitted capacity and annual average daily flows is presented in the table below.

SMALL POTABLE WATER SELF SERVED DEVELOPMENTS IN LEE COUNTY

Facility	Design Capacity Avg Gal/Day	Max Day (GPD) Actual 2005	Max Day (GPD) Actual 2006	Max Day (GPD) Estimated 2007	Max Day (GPD) Projected 2008
Bayshore Utilities WTP	216,000	88,000	88,600	89,204	89,812
Citrus Park WTP	650,000	625,000	633,000	641,102	649,309
Lake Fairways WTP	300,000	219,000	263,000	270,000	275,000
Raintree WTP	230,000	53,000	41,200	45,000	48,000
Charleston Park WTP	20,000	24,000	21,700	19,000	19,000
Fountain View RV Park WTP	70,000	40,300	36,200	40,300	n/a
Oak Park MHV WTP	150,000	66,000	74,360	80,000	85,000
River Lawn Terrace WTP	7,800	7,405	8,610	7,000	7,000
Saldivar Migrant Camp WTP	160,000	151,000	120,700	125,000	130,000
Sunrich Mobile Home WTP	20,000	10,600	n/a	12,000	12,000
Useppa Island Club WTP	56,000	73,800	84,292	50,000	50,000

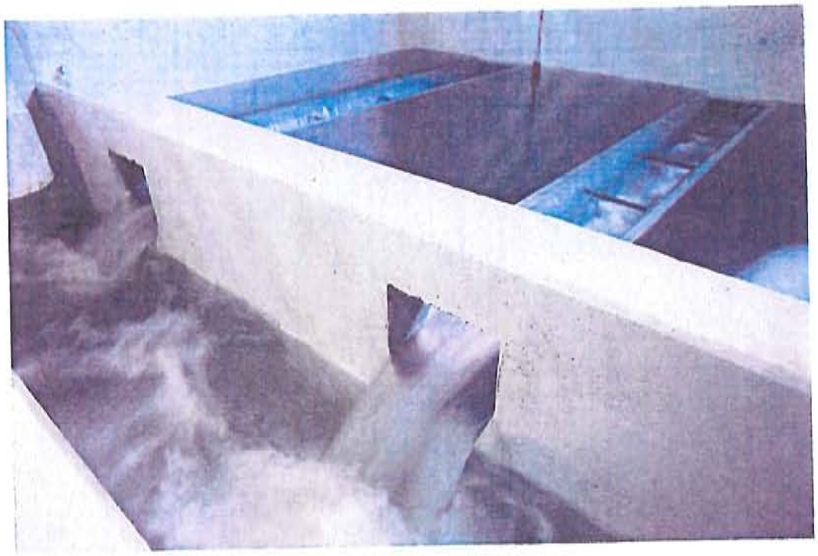
Source: Lee County Concurrance Report 2007 and Lee County Department of Health

1.4 LEE COUNTY UTILITIES SERVICE AREA

Lee County Utilities currently provides potable water throughout several areas in Unincorporated Lee County. Lee County Utilities has a large potential service area (see Figure 1). Essentially this area consists of all unincorporated areas of Lee County that are not served by private utilities through a franchise agreement with the County. The areas currently served within this potential service area are shown in Figure 2. The areas projected to be served by the year 2030 are depicted in Figure 3. It should be noted that the service area depicted in Figure 3 is also the Potable Water Future Service Area in the Lee County Comprehensive Plan.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
LEE COUNTY, FLORIDA

Section 2
EXISTING FACILITIES



2.1 EXISTING WATER SUPPLY RESOURCES

Lee County Utilities currently operates the following water supply facilities under Water Use Permits from the SFWMD. The general location of these facilities is depicted in Figure 4.

- The Olga surface water intake can withdraw up to 10.0 mgd from the Caloosahatchee River when flows in the river exceed 500 cfs at S-79 (Franklin Locks).
- The Corkscrew Wellfield can withdraw up to 10 mgd from 31 wells that withdraw water from the Surficial aquifer and the Sandstone aquifer.
- The Green Meadows Wellfield can withdraw up to 9 mgd from 27 wells that withdraw water from the Surficial aquifer and the Sandstone aquifer.
- The Waterway Estates Wellfield can withdraw up to 1.5 mgd from 18 wells that withdraw water from the Surficial aquifer, Mid-Hawthorn aquifer, and Lower Hawthorn aquifer.
- The Pinewoods Wellfield can withdraw up to 3.6 mgd from 27 wells that withdraw water from the Water Table, Sandstone, and Lower Hawthorn aquifers.
- The San Carlos Wellfield can withdraw up to 2.5 mgd from 5 wells that withdraw water from the Water Table aquifer.
- The North Lee County Wellfield can withdraw up to 6.25 mgd from 8 wells that withdraw brackish water from the Lower Hawthorn aquifer.

These water resources are described in more detail in the following sections.

2.1.1 Olga Surface Water Intake

The Olga WTP was constructed in 1967 and draws surface water from the Caloosahatchee River (SFWMD Canal C-43). The intake is located at the plant site in Section 23, T43S, R26E along the banks of the river approximately one mile East of the Franklin Locks (see Figure 4). The Olga WTP currently uses three raw water pumps to withdrawal water from the river. In 2000 an Aquifer Storage and Recovery (ASR) well was constructed at the Olga WTP. In 2007, a second ASR well was constructed at the facility. Three additional proposed ASR wells are included in the facilities water use permit.

2.1.2 Corkscrew Wellfield

The original Corkscrew Wellfield is 476 acres in size and is located in Section 22, T46S, R26E at the Northeast corner of Alico and Corkscrew Roads (See Figure 4 and 5). The original wellfield consists of a total of 23 wells. Six of these wells draw water from the Sandstone Aquifer and 17 wells draw water from the Surficial aquifer. In 1999 the wellfield was expanded and 8 wells were installed south of Corkscrew Road approximately one mile west of the existing wellfield. These wells were placed in four clusters, each cluster having one Sandstone aquifer well and one Surficial aquifer well. A description of the wells at Corkscrew is presented in Table 3.

Lee County Utilities has installed five Aquifer Storage and Recovery (ASR) wells at the Corkscrew facility (see Figure 14). These wells are currently fully operational and permitted for injection and recovery. Each well is 12 inch in diameter and has a capacity of 450 gallons per minute. The wells are used to store finished water seasonally in the Mid-Hawthorn aquifer. All of the wells have experienced close to 100% recovery rate. During periods of low demand, which coincides with the wet season, water is injected in the ASR wells. Water is withdrawn from the ASR wells during high demand periods, which coincides with the dry season. This allows for meeting peak demands and offset withdrawals from traditional sources during the dry season. A description of the ASR wells at Corkscrew is presented in Table 10.

2.1.3 Green Meadows Wellfield

The Green Meadows Wellfield is located in Sections 33, 34, 35 and 36 T45S, R26E and Section 31, T47S, R27E in South Lee County approximately 3 miles North of the Corkscrew Water Plant and 2 miles Southeast of the International Airport (See Figure 4). The wellfield has been in existence since 1974, with wells added as demand increased. Currently the wellfield consists of 27 wells. Fourteen of these wells draw water from the Surficial aquifer and thirteen of these wells draw water from the Sandstone aquifer. The linear configuration of this wellfield has minimized the effects of drawdown in the Surficial aquifer (see Figure 6). A description of the wells at Green Meadows is presented in Table 4.

2.1.4 Waterway Estates Wellfield

The Waterway Estates wellfield has been in operation since the late 1950's. Wells have gradually been added as the need arises. There are a total of 18 wells, 14 of which are in close proximity to the plant in Section 16, T44S, R24E (see Figure 4). One well is located in Section 9, T44S, R24E. In addition, there are three wells located in North Cape Coral in Section 6, T44S, R24E (see Figure 10). Six of the wells draw water from the Surficial Aquifer, 11 from the mid-Hawthorn and one from the Lower Hawthorn. LCU has experienced a reduced yield in the existing Waterway Estates Wellfield which has reduced the ability to withdrawal the entire permitted capacity for this facility. An additional Lower Hawthorn well is proposed and is permitted by the SFWMD. A description of the wells at Waterway Estates is presented in Table 7.

2.1.5 Pinewoods Wellfield

The Pinewoods wellfield was acquired by Lee County Utilities in 2003 from Gulf Environmental Services. The wellfield is located in Section 36, T456S, R25E in East Lee County south of Corkscrew Road (see Figure 4). The wellfield and treatment facility were expanded in 2007. Currently the wellfield consists of 19 wells. Eleven of these wells draw water from the Water Table aquifer, three draw water from the Sandstone aquifer and five new wells draw water from the Lower Hawthorn aquifer (see Figure 7). The wellfield is permitted by the SFWMD with a capacity of 3.60 MGD. A description of the wells at Pinewoods is presented in Table 5.

2.1.6 San Carlos Wellfield

The Bartow WTP is supplied by the San Carlos wellfield which was acquired by Lee County Utilities in 2003 from Gulf Environmental Services. The wellfield is located in Section 36, T456S, R25E, in South Lee County, south of Alico Road, North of Corkscrew Road and West of Interstate 75 (see Figure 4). Currently the wellfield consists of 5 wells (see Figure 8). Four of the five wells are active. The wellfield is permitted by the SFWMD with a capacity of 2.5 MGD. All four active wells are permitted to draw water from the Water Table aquifer. This treatment facility and related wellfield is currently off-line No expansion is planned for this wellfield. A description of the wells at San Carlos is presented in Table 5.

2.1.7 North Lee County Wellfield

The North Lee County Water Treatment Plant is located on Durrance Road in North Fort Myers (see Figure 4). The plant was placed into operation in August 2006 and was anticipated to produce 5.0 mgd of finished water through treatment of approximately 6.5 mgd of brackish water from the Lower Hawthorn aquifer. Eight wells were constructed to provide raw water to this first phase of the project (see Figure 11). A description of the existing wells is provided in Table 8. Early in 2007 LCU began to experience declining water quality in this wellfield. As a result one well was placed out of service and plugged and production from 3 wells was reduced, lowering the production capability of this facility to 3.5 mgd. To regain the full production capacity of this facility back to 5.0 mgd, LCU is developing a project to replace the one plugged well and add two additional wells. All three wells are proposed to be constructed off the existing wellfield site as a linear configuration has been recommended for a more sustainable yield from the wellfield. A description of the wells at the North Lee County Wellfield is presented in Table 8.

2.2 EXISTING CONSUMPTIVE USE PERMITS

LCU has three existing consumptive use permits issued by the SFWMD.
The following facilities are covered under Permit # 36-00003-W; Corkscrew wellfield, Olga surface water intake, Green Meadows wellfield and Cypress Lake wellfield (College Parkway).
The following facilities are covered under Permit # 36-00122-W; Pinewoods wellfield, and San Carlos wellfield (Bartow).
The following facilities are covered under Permit # 36-00152-W; Waterway Estates wellfield, and North Lee County wellfield.
The three permits have a combined annual allocation of 12,248 million gallons or 33.55 million gallons per day. Below is a table summarizing the existing consumptive use permits. The right side of this table shows the specific source limitations included in each permit. The difference between the total allocation and the combined daily source limits in each permit is fulfilled with sources that do not have specific limitations.

LEE COUNTY UTILITIES WATER USE PERMIT SUMMARY

Permit #	Facilities	Expiration Date	Annual Allocation (MGD)	Max Month Daily Allocation (MGD)	Max Day Allocation (MGD)	Source Limits	
						Source	Limit (MGD)
36-00003-W	Corkscrew Olga Green Meadows Cypress Lake	4/10/2008	21.23	31.38	30.37	Mid-Hawthorne (C.L.) Sandstone Surficial (Corskrew) Surficial (GM)	0.75 8.00 6.00 4.20
36-00122-W	Pinewoods San Carlos	9/9/2014	6.09	7.23	N/A	Surficial (San Carlos) Sandstone (Pinewoods) Surficial (Pinewoods)	2.50 0.75 2.30
36-00152-W	Waterway Estates North Lee County	1/15/2024	6.23	8.45	N/A	Surficial&Mid Hawthorne	1.55
TOTAL			33.55	47.06			

Notes
1. Annual Allocation (MGD) based on Perimtted Annual Total Allocation divided by 365
2. Max Month Daily Allocation (MGD) based on Permitted Max Month Total Allocation divided by 30
3. Max Day Allocation (MGD): Permits#'s 36-00122-W and 36-00152-W do not specify a Max Day

2.3 EXISTING WATER TREATMENT FACILITIES

Lee County Utilities currently operates the following water treatment facilities under permits issued by the Lee County Health Department as the local agency on behalf of the Florida Department of Environmental Protection (FDEP).

- The Olga Water Treatment Plant has a capacity of 5 mgd and treats water withdrawn from the Caloosahatchee River.
- The Corkscrew Water Treatment Plant has a capacity of 15 mgd and treats water withdrawn from the Corkscrew Wellfield.
- The Green Meadows Water Treatment Plant has a capacity of 9 mgd and treats water from the Green Meadows Wellfield.
- The Waterway Estates Water Treatment Plant has a capacity of 1.5 mgd and treats water from the Waterway Estates Wellfield.
- The Pinewoods Water Treatment Plant has a capacity of 5.14 mgd and treats water from the Pinewoods Wellfield.
- The Bartow Water Treatment Plant has a capacity of 2.4 mgd and treats water from the San Carlos Wellfield.

These water treatment plants are described in more detail in the following sections.

2.3.1 Olga Water Treatment Plant

The Olga plant is permitted as a Class "A", Category I potable water treatment facility by the Florida Department of Environmental Protection (FDEP) and is staffed 24 hours a day, 365 days a year. The current designed and permitted capacity of the Olga WTP is 5.0 MGD. The plant processes water through lime softening, coagulation, filtration and disinfection.

2.3.2 Corkscrew Water Treatment Plant

The Corkscrew plant is permitted as a Class "A", Category I potable water treatment facility by the Florida Department of Environmental Protection (FDEP) and is staffed 24 hours a day, 365 days a year. The current designed and permitted capacity of the Corkscrew WTP is 15.0 MGD. The plant processes water through lime softening, coagulation, filtration and disinfection.

2.3.3 Green Meadows Water Treatment Plant

The Green Meadows plant is permitted as a Class "A", Category I potable water treatment facility by the Florida Department of Environmental Protection (FDEP) and is staffed 24 hours a day, 365 days a year. The current designed and permitted capacity of the Green Meadows WTP is 9.0 MGD. The plant processes water through lime softening, coagulation, filtration and disinfection.

2.3.4 Waterway Estates Water Treatment Plant

The Waterway Estates Water Treatment Plant is a 1.5 MGD plant, permitted with the FDEP as a Class "B", Category I potable water treatment facility and is staffed 16 hours per day 365 days per year. The plant processes water through lime softening, coagulation, filtration and disinfection.

2.3.5 Pinewoods Water Treatment Plant

The Pinewoods facility consists of two treatment plants. The original Water Treatment Plant is a 2.12 MGD plant, permitted with the FDEP as a Class "B", Category II, potable water treatment facility. The plant processes water through nano-filtration membrane treatment and disinfection and treats raw water from the water table and sandstone aquifers. The second plant, which was completed in 2007, treats water withdrawn from the Lower Hawthorn aquifer and produces 3.0 mgd through low pressure reverse osmosis.

2.3.6 Bartow Water Treatment Plant (San Carlos Wellfield)

The Bartow Water Treatment Plant was a 2.41 MGD plant, permitted with the FDEP as a Class "B", Category I, potable water treatment facility. This facility was decommissioned in 2008. LCU is currently examining the feasibility of reactivating this facility and exploring different treatment options for a new facility at this location.

2.3.7 North Lee County Water Treatment Plant

The North Lee County Water Treatment Plant is a 5.0 mgd plant, permitted with the FDEP as a Class "B", Category II, potable water treatment facility. The plant processes raw water from the Lower Hawthorn aquifer through low pressure reverse osmosis.

2.4 EXISTING WATER STORAGE FACILITIES

Lee County Utilities currently operates seven potable water storage facilities. These existing storage facilities have the capacity to store a total of 33.0 million gallons. Figure 13 identifies the location of these facilities that are listed in Table 2. Regarding design criteria for minimum storage capacity within a public water system, Florida Administrative Code 62-555.320 (19) (a) states the following; "the total useful finish-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire flow demand".

Assuming a fire flow demand of 3 fires each with 2 fire trucks pumping at 1,500 gpm for 4 hours, the fire flow demand would be 2.16 mgd. LCU's maximum daily flow in 2007 was 32.253 million gallons. Therefore; (32.253 X 0.25) + 2.16 = 10.22 million gallons. As stated above, LCU's current storage capacity is 33.0 million gallons.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
LEE COUNTY, FLORIDA

Section 3

PROJECTIONS

3.1 LOWER WEST COAST WATER SUPPLY PLAN 2005-2006

During the formulation of the 2005-2006 update to the Lower West Coast Water Supply Plan (LWCWSP) the SFWMD staff worked closely with LCU to refine the area currently served by LCU to develop a baseline for the plan's demand projections for LCU's service area. In addition, the methodology utilized for projecting population that was utilized by the District staff was very similar to those utilized in past planning efforts performed by LCU. That is, University of Florida Bureau of Economic and Business Research medium projections were utilized and this data was used to disaggregated the historic population and projected population into Traffic Analysis Zones (TAZs) for LCU's existing and future service area. The projected population and annual average finish water demand from the LWCWSP is shown below. From baseline years it was determined that LCU's per capita was 118 gallons of finished water per day per person. The demand is expressed in annual average daily flow.

Lower West Coast Water Supply Plan
Demand Projection for Lee County Utilities

Year	Population	Finish Water Demand (MGD)
2005	201,286	23.7
2015	250,687	29.6
2025	291,302	34.3

3.2 LCU WATER USE PERMIT APPLICATION – APRIL 2008

In support of an application to modify LCU's current consumptive use permit number 36-00003-W in April 2008, available data from LCU's billing records were utilized to develop a population and demand projection. The available data from LCU's billing records included equivalent residential unit (ERU) counts and estimated population from 2003-2007. The population at the end of the month of May in every year from 2003 through 2007 was determined using the records from the billing office. The population in 2007 was determined by utilizing the factors shown in the Table below.

Estimation of LCU Service Area Population from ERU Data - M

Residential Unit	Number of Units	Population Factor	Estimated Population
Single Family	74,922	2.3	172,321
Multi-Family	44,804	2.0	89,608
Mobile Homes	15,574	1.8	28,033
RV	7,991	1.5	11,948
Total	143,291		301,948

Utilizing this method, a population served for every year from 2003 to 2007 was determined. The analysis resulted in an annual average growth rate of 3.6%. Actual water system demand data for this time period was then used in conjunction with the population data to determine an average per capita daily use rate and a peaking ratio to determine a maximum month per capita. The average use rate was determined to be 87 gallons per capita per day (gpcd). The maximum month use rate was determined to be 102 gpcd, with a peaking ratio of 1.17.

Population projections were then made for the years 2008 through 2018 based on the annual average growth rate determined above. Future water demands were then determined by multiplying the per capita rates determined above by the projected population for each year. It should be noted that limitations in water supply and infrastructure during the base line years from 2003 to 2007 resulted in artificially low water pressure throughout LCU's water system. To account for the increases in demand as a result of returning the system to normal operation pressures, a factor of 1.10 was applied to the projected demands. The resulting demand projection is presented below.

LEE COUNTY UTILITIES DEMAND PROJECTION
FROM WUP APPLICATION APRIL 2008

Year	Projected Average Population	Projected Annual Average Demand (MGD)	Projected Max Month Average Daily Demand (MGD)
2008	312,945	29.92	35.46
2009	324,343	31.00	36.75
2010	336,156	32.13	38.09
2011	348,399	33.30	39.47
2012	361,088	34.52	40.91
2013	374,239	35.77	42.40
2014	387,869	37.08	43.94
2015	401,995	38.43	45.55
2016	416,636	39.82	47.20
2017	431,810	41.28	48.92
2018	447,537	42.78	50.70

For purposes of this plan, this growth rate was then projected out to the year 2025 and in shown in graphs that follow.

3.3 LEE COUNTY PLANNING DEPARTMENT – MAY 2008

In May of 2008 the Lee County Planning Department performed an analysis of current population served by LCU and the projected population served by LCU. The sections below describe the methodology utilized by the Lee County Planning Department.

3.3.1 Population Assumptions:

Lee County population estimates and projections have used assumptions based on the United States' Census data which are updated after each decennial census is released. The primary assumptions derived from each census are persons per household and the occupancy characteristics of dwelling units. Due to changes in census boundaries between the 1970 and 1980 censuses, the current assumptions are based on a review of the 1980, 1990, and 2000 censuses.

Originally, these assumptions were applied on a county-wide basis. However, over time, staff has refined these assumptions to reflect differences throughout the county. Historically, the coastal areas of the county have a larger percentage of seasonally occupied units and fewer residents per unit. Information is summarized for each of the 22 Lee Plan Planning Communities. This allows for estimates and projections to be customized for different areas of the county. Similarly, the persons per unit (PPU) assumptions were refined to reflect differences between unit types. It was determined that then number of occupants was significantly different between single family detached units and other types of units.

3.3.2 Existing Population:

The Planning Division estimates the current population of an area by multiplying the number of each type of dwelling unit (single family or non-single family) to the corresponding PPU and occupancy rate (OR) assumed for the corresponding planning community. The dwelling unit information is maintained by the Planning Division staff for the unincorporated areas of Lee County, Fort Myers Beach, and Bonita Springs (areas where building permits have been processed by Lee County) in a parcel specific land use inventory. This inventory is updated using certificate of occupancy and change of use information from building permit data.

To calculate the estimated population of the area served by Lee County Utilities, Planning Staff geographically selected the parcels served. This data was joined with the Planning Division inventory to obtain unit counts and planning community information. This allowed appropriate assumptions to be multiplied to the unit counts to estimate the population served. For those areas served by Lee County Utilities within the municipalities of Cape Coral and Fort Myers the unit information was obtained from the Lee County Property Appraiser's tax roll information.

3.3.3 Build out population:

Planning Staff has also projected the build out population for Lee County. In addition to the assumptions used to estimate the existing population, staff made assumptions for future development patterns in the undeveloped areas of the county. The underlying assumption made was that the no dramatic change in development patterns was anticipated. This is Lee County's "Status Quo" projection of population for the Future Land Use Map in effect in December 2006 when this study was initiated. The development assumptions included in the build out analysis are the same as those used to generate the 2030 land use allocation acreages adopted in the Lee Plan, Table 1(b).

First, using the Planning Division existing land use inventory, the amount of vacant and agricultural land remaining in each of the 22 Planning Communities was calculated. This data was also summarized by Future Land Use Map Designation. The population accommodation analysis for the Lee County Comprehensive Plan, the Lee Plan, anticipated the portion of each land use category that will be developed with residential uses. This percentage has been monitored over the years and adjusted to reflect emerging development trends when appropriate.

Second, for each Future Land Use Designation within each Planning Community the existing Dwelling Units per acre was calculated (DUPA). This calculation includes data from approved planned developments regardless of the development status of the project. This figure is compared to the Lee Plan Assumption for DUPA in each Future Land Use designation. Development patterns vary across the county and the DUPA for each designation is expected to be different for each Planning Community. Planning staff compared the historical DUPA to the assumed county wide DUPA for each designation and made the appropriate adjustments. In certain areas of the county, such as the Estero Planning Community, staff gave more consideration to the development patterns of more recent approvals that have been influenced by the adoption of the Estero Community Plan. In other areas, such as Lehigh Acres, staff found no compelling reason to anticipate that future development patters would be significantly different from the historical patterns.

The 4 assumptions used in formulating the build out population projections are:

- Persons per Unit (by planning community) - PPU
- Occupancy Rate (by planning community) - OR
- Percent of Residential Land (by future land use designation) - %RL
- Dwelling Units Per Acre (by future land use designation and planning community) – DUPA

Calculating build out population

1. Total Residential Land (TRL) = Total acreage of land in each future land use designation for each planning community is multiplied by the %RL assumption.
2. New Residential Land (NRL) = TRL – existing residential. (this acreage figure is compared to the available land supply (vacant land + agricultural land) and adjusted if required).
3. New Dwelling Units (NDU) = NRL multiplied by the appropriate DUPA.

4. Build out Dwelling Untis (BDU) = NDU + existing Dwelling Units.
5. Projected Occupied Build out Dwelling Units (OBDU) = BDU multiplied by the appropriate OR.
6. Build out Population = OBDU multiplied by the appropriate PPU.

3.3.4 Demand Projection

The Lee County Planning Department computed the population within the area of un-incorporated Lee County served by LCU in 2007.The computed permanent population for 2007 was 230,581. The Planning Department then computed the projected population for Lee County Utilities entire future service as depicted in the Lee County Comprehensive Plan for the year 2030. The 2030 projected population for LCU's service area was determined to be 296,256. The actual annual average demand for LCU in 2007 was 24.95 MGD and the maximum day demand was 31.72 MGD. Utilizing this data an annual average per-capita rate of 108.2 gallons per capita day (gpcd) and a maximum day per-capita rate of 137.58 gpcd was determined. Applying these per-capita rate to the population projection performed by the Lee County Planning Department yields a projected annual average demand of 30.51 MGD and a maximum day demand of 38.79 MGD in 2025 (see table below).

LCU DEMAND PROJECTION BASED ON LEE COUNTY PLANNING DEPARTMENT

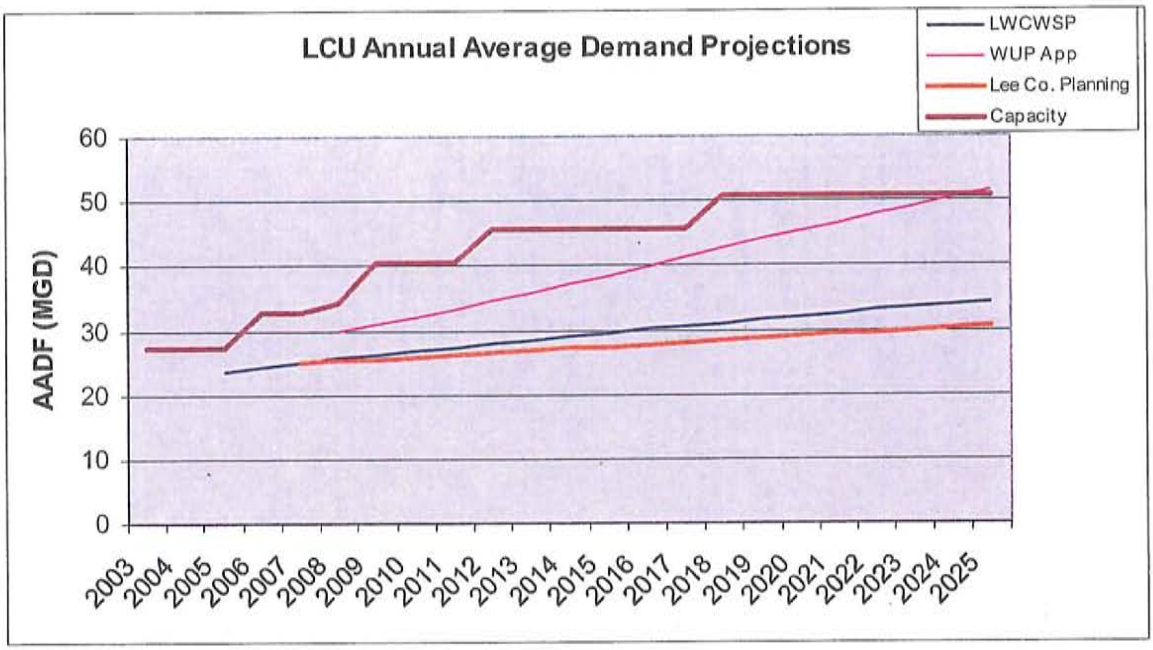
Year	Population	Demand AADF	Demand MDF
2007	230581	24.95	31.72
2008	233436	25.26	32.12
2009	236292	25.57	32.51
2010	239147	25.88	32.90
2011	242003	26.18	33.29
2012	244858	26.49	33.69
2013	247714	26.80	34.08
2014	250569	27.11	34.47
2015	253424	27.42	34.87
2016	256280	27.73	35.26
2017	259135	28.04	35.65
2018	261991	28.35	36.04
2019	264846	28.66	36.44
2020	267702	28.97	36.83
2021	270557	29.27	37.22
2022	273412	29.58	37.62
2023	276268	29.89	38.01
2024	279123	30.20	38.40
2025	281979	30.51	38.79
2026	284834	30.82	39.19
2027	287690	31.13	39.58
2028	290545	31.44	39.97
2029	293400	31.75	40.37
2030	296256	32.05	40.76

3.4 SUMMARY OF DEMAND PROJECTIONS

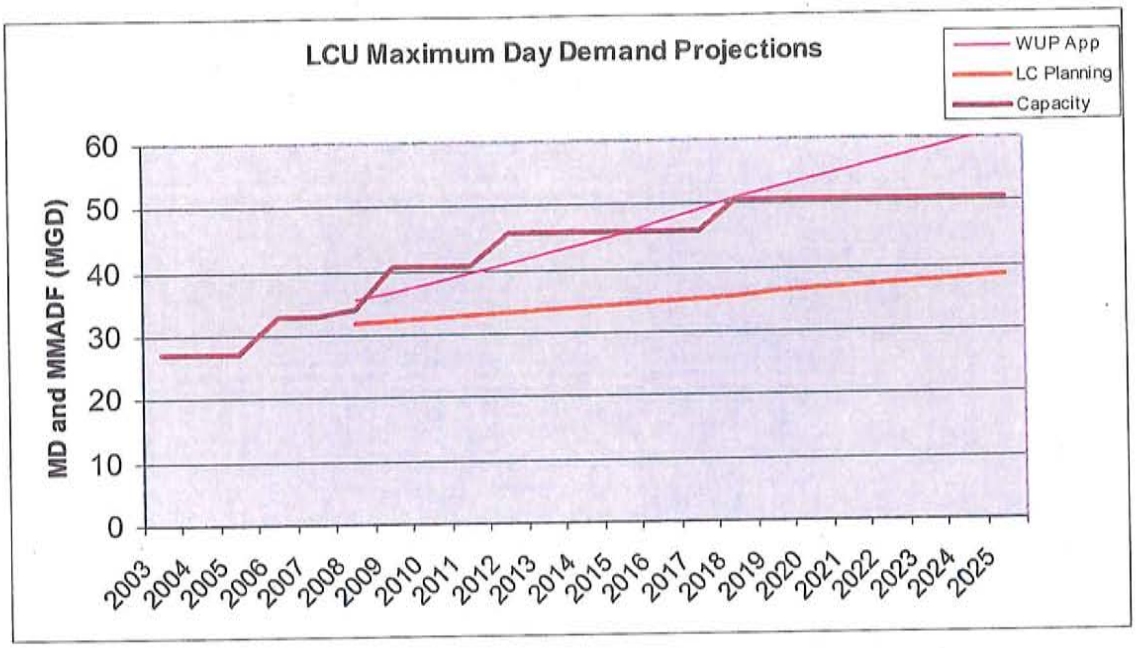
The table below summarizes the projections from the various Planning efforts described above. The following graph depicts the annual average daily demand projection for each and the actual annual average daily flows from 2003 through 2007.

Planning Effort	2025 AADF (MGD)	2025 MDF (MGD)	2025 MMADF (MGD)	Per Capita (gpcd)	2025 Population
2006 LWCWSP	34.30	N/A	N/A	118	290,677
2008 WUP Application	51.60	N/A	61.15	87	593,103
2008 Lee Co. Planning Dept.	30.51	38.79	N/A	108.2	281,979

The projections described above are shown in the graphs below.



In the graph above, the blue line represents the annual average daily demand projection as calculated for the SFWMD Lower West Coast Regional Water Supply Plan. The magenta line represents the annual average daily demand projection as calculated in support of the application for renewal of LCU water use permit. The thick orange line represents the annual average daily flow projection calculated utilizing the population projection performed by the Lee County Planning Department. The thick purple line represents capacity development planned by LCU. A summary of capacity development is summarized in the next section.



In the graph above the magenta line represents a projection of the maximum month daily average demand as calculated in support of a water use permit application submitted by LCU. The thick Orange line represents the maximum daily demand as calculated utilizing the population projection provided by the Lee County Planning Department. The projection performed during the SFWMD Lower West Coast Water did not consider maximum month or maximum daily demands. The thick purple line depicts capacity development planned by LCU. Capacity development is summarized in the next section.

The projections performed for the water use permit and the Lower West Coast Water Supply Plan are shown for informational purposes only. The projection performed by the Lee County Planning Department will serve as the official projection for purposes of demonstrating that LCU has planned and programmed sufficient capacity development projects to meet projected demands.

3.5 SUMMARY OF CAPACITY DEVELOPMENT

As shown in previous sections LCU is at various stages of capacity development at several of its facilities. The following is a summary of these plans for developing capacity.

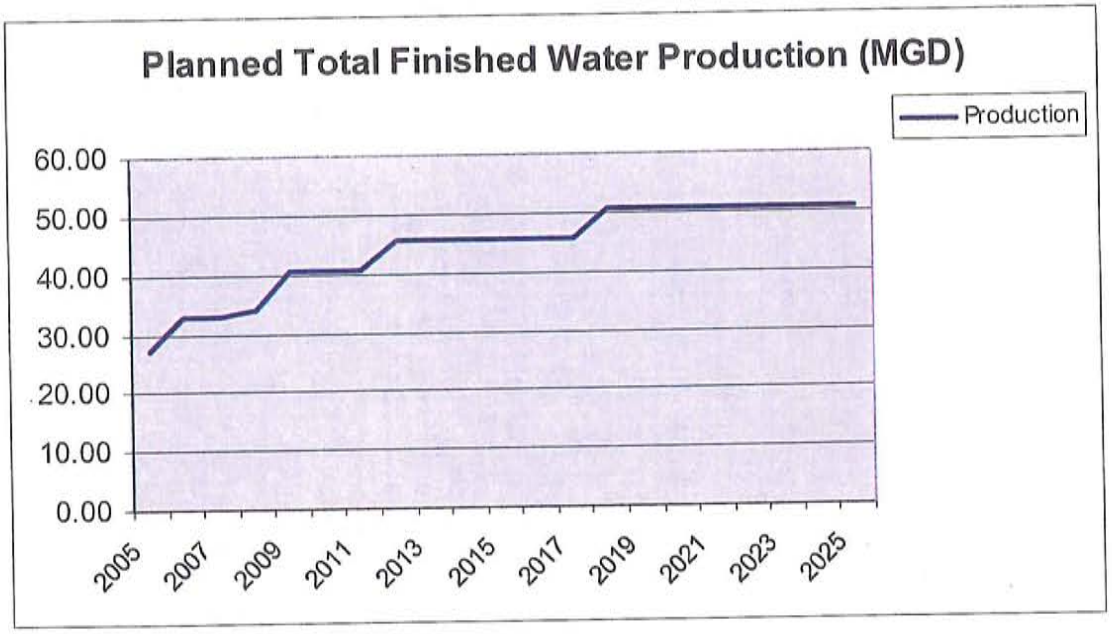
2009 - Regain capacity of the North Lee County Wellfield from 3.50 mgd to 5.0 mgd and complete Corkscrew Wellfield expansion to 15.0 mgd. This represents an increase in capacity of **6.5 mgd**.

2012 - Complete expansion of North Lee County Water Plant and Wellfiled to increase capacity from 5.0 mgd to 10.0 mgd. This represents an increase in capacity of **5.0 mgd**.

2016 - Complete Green Meadows Water Plant and Wellfield expansion increasing capacity from 9.0 mgd to 16.0 mgd and complete expansion of Olga Water Plant from 5.0 to 10.0 mgd. Potential sources for expansion at Olga are presently being studied. This represents an increase in capacity of **12.0 mgd**. This increase in capacity is not reflected in the analysis as a water use permit for Green Meadows expansion has not been issued yet and the two projects are not included in the current CIP.

2018 – Complete expansion of Corkscrew WTP and associated wellfield from a capacity of 15.0 mgd to 20.0 mgd representing an increase in capacity of **5.0 mgd**

The graph below depicts the increases in total system capacity as a result of these planned expansions as well as those increases in capacity that were completed between 2005 and 2008. The planned capacity shown on this graph is also shown as a dark purple line on the previous two graphs along with the projected demands.



3.6 SUMMARY

The above graphs and tables show the projected annual average and maximum demands from various planning efforts. They also show LCU's planned capacity development. LCUs planned capacity in 2018 is 50.63 mgd. The Lower West Coast Water Supply Plan projected annual average daily demand in 2018 is 31.08 mgd. The 2018 maximum day demand projection based on the Lee County Planning Department's population projection, the official projection being utilized by this plan, is 35.65 mgd. Therefore, the analysis demonstrates that LCU is planning and has programmed in the approved CIP, projects sufficient to meet the maximum day demand in 2018 as projected by the Lee County Planning Department, the official projection being utilized for this water supply facility work plan.

3.7 LEVEL OF SERVICE

The adopted level of service for potable water in the Lee County Comprehensive Plan is 250 gallons per day per Equivalent Residential Connection (ERC) for peak month, except that facilities serving only mobile home residential structures must have a capacity of 187.5 gallons per day and facilities serving only travel trailer residential structures must have a capacity of 150 gallons per day.

An analysis to determine if the current level of service in the Lee Plan is appropriate was performed. Utilizing billing records, the total number of ERC's in the LCU system in May 2007 was determined. The records indicated that a total of 143,291 ERC's existed in May 2007. Utilizing the population served in 2007 determined by the Lee County Planning Department of 230,581 people the persons per ERC was determined to be 1.44 people per ERC. Utilizing the maximum day per-capita consumption of 137.58 which was derived from actual maximum day demand in 2007 and the existing population determined by the Lee County Planning Department the gallons per day per ERC was calculated to be 198.12 gpd/ERC. It should be noted that the number of ERU's used for this analysis represents the total number of ERC's connected to the system not necessarily the number of ERU's actually in use at that time.

In addition to the calculation performed above it was determined from billing records that in May 2006 there were 59,226 single family residential accounts that were billed for usage. The total monthly number of gallons metered for these accounts was 442,533,000 gallons. These figures result in a consumption of 241.08 gpd/residential connection. This figure does not represent the total amount of finished water required as there is a certain amount of water loss within the water distribution system. In May 2006 this percentage of loss was calculated to be 3.62%. Therefore, adding the May 2006 unaccounted for water percentage of 3.62% to this figure yields a use rate of 249.75 gpd/residential connection.

The analysis performed above supports the current adopted Level of Service for potable water in the Lee Plan.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
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Section 4
PROPOSED FACILITIES

4.1 PROPOSED WATER SUPPLY SOURCES

4.1.1 Olga Surface Water Intake

Two additional pumps are permitted by the SFWMD and are part of a planned expansion of the facility (see Table 9). This expansion would increase the current capacity of 5.0 MGD to 10.0 MGD. This planned increase in capacity is not included in the analysis to demonstrate sufficient capacity or included in the CIP as LCU is currently in the processes of determining the feasibility of expanding capacity at the Olga facility.

An additional 3 ASR wells are permitted by the SFWMD for this facility (see Table 10). They are planned to be installed during the plant expansion. The existing and proposed ASR wells along with the plant expansion at the Olga plant will provide seasonal storage of water. This will allow for maximizing withdrawals during high river flows in the rainy season and minimizing the withdrawal from the river during low flows in the dry season, thereby aiding in the recovery of a MFL water body, the Caloosahatchee River. The ASR program at this facility is on hold due to permitting issues regarding Arsenic. LCU anticipates this issue will be resolved shortly and the program can progress.

LCU is also conducting a study to identify additional raw water supply alternatives for this facility. Potential supply options being studied include both traditional and alternative sources.

4.1.2 Corkscrew Wellfield

An expansion of the Corkscrew Treatment Plant was completed in 2006. The expansion increased the treatment capacity of the facility from 10.0 MGD to 15.0 MGD. The wellfield expansion project associated with the plant expansion is currently under construction and is expected to be completed by the end of 2008. The wellfield expansion includes the addition of 25 wells which are currently permitted by the SFWMD. Eleven of these wells will withdrawal water from the Sandstone aquifer, eleven will withdrawal water from the Surficial aquifer and three will withdrawal water from the Lower Hawthorn aquifer. The overall objective in the design of this expansion is to widen the aerial extent of the wellfield, while maintaining the same amount of withdrawal from the Surficial aquifer. This should spread out the withdrawal to minimize the drawdown in the Surficial aquifer surrounding the wellfield (See Figure 5). In addition LCU is developing 2 Lower Hawthorn aquifer wells to augment raw water supplies from traditional sources. An expansion of the treatment plant and wellfield to 20.0 MGD is planned and programmed into the CIP for years 6-10.

4.1.3 Green Meadows Wellfield

LCU's current water use permit for this facility allows for an expansion of the wellfield including the installation of 21 new wells. The permit allows for the installation of nine Surficial aquifer wells, nine Sandstone aquifer wells and three Lower Hawthorn wells.

Instead, LCU proposes to construct a new 16.0 mgd reverse osmosis (RO) water treatment plant to replace the aging existing lime softening treatment system currently permitted for 9.0 mgd at this site. Additional withdrawals of brackish water from the Lower Hawthorn aquifer along with current withdrawals from Surficial and Sandstone aquifers will be blended and treated in the new facility. An increase in allocation from traditional fresh water sources currently permitted is not proposed. Fourteen new Lower Hawthorn wells located in LCU's existing easement are proposed to increase the capacity of the wellfield (see Figure 6). A Lower Hawthorn pilot/production well is currently under construction and an application to modify LCU's current water use permit has been submitted. This planned increase in capacity is not included in the analysis to demonstrate sufficient capacity or programmed in the CIP as LCU is currently in the processes of determining the feasibility of expanding capacity at the Green Meadows facility and the water use permit related to this increase in capacity is under review.

4.1.4 Pinewoods Wellfield

An expansion of the Pinewoods Wellfield was completed in 2007. See the section addressing existing water supply resources and treatment facilities for a description. The expansion increased the utilization of the Lower Hawthorn aquifer and did not increase the use of traditional fresh water aquifers. Utilizing the Lower Hawthorn aquifer instead of the fresh water aquifers allowed for expansion while relieving some of the stress placed on traditional sources.

4.1.5 North Lee County Wellfield

As mentioned in a previous section, this wellfield has lost production since being placed into service in August 2006. The finish water production has been lowered from 5.0 mgd to a sustainable yield of 3.5 mgd. This loss in production was caused by interference between wells caused by the current configuration of the wellfield and well spacing. The first phase of wellfield expansion for this facility will involve regaining the capacity to produce 5.0 mgd. Three new Lower Hawthorn wells are proposed to be constructed off-site. The wells will be spaced farther apart that the existing wells and a linear configuration will be employed. These three wells should allow LCU to regain the 5.0 finish water capacity as originally intended. LCU expects to complete this project by 2009.

The North Lee County Water Treatment Plant was designed to be easily expandable to 10.0 mgd. The second phase of expansion for this facility will involve expansion of the treatment plant to 10.0 mgd. An associated expansion of the wellfield is also proposed. Seven additional Lower Hawthorn Wells will be required to provide sufficient raw water to produce the additional 5.0 mgd of finished water. Phase II of the wellfield expansion and expansion of the treatment facility is expected to be completed by 20132. See Figure 11 for the proposed configuration of this wellfield.

4.2 PROPOSED MODIFICATIONS TO CONSUMPTIVE USE PERMITS

4.2.1 Permit # 36-00003-W

LCU has recently submitted an application to renew/modify Consumptive Use Permit number 36-00003-W covering the Corkscrew, Green Meadows wellfields as well as the surface water withdrawal at the Olga facility. LCU is requesting the following in the application:

- Continued use, at the current allocation, of surface water from the Caloosahatchee River (C-43), and fresh groundwater from the Sandstone, Surficial, and Water-table aquifers.
- An increase in annual allocation from the Lower Hawthorn (Upper Floridan) aquifer at the Green Meadows Wellfield to 2,471 MG.
- An increase in maximum monthly allocation from the Lower Hawthorn (Upper Floridan) aquifer at the Green Meadows Wellfield to 322.4 MG.

The increase in allocation from the Lower Hawthorn aquifer will allow LCU to operate the proposed Green Meadows R.O. Treatment facility at full capacity (16.0 mgd) without exceeding current fresh water withdrawal limits (see Proposed Water Resources, Green Meadows wellfield above). It should be noted that due to a supply deficit in the last few years, LCU has been operating the water distribution system at lower pressure than normal to manage the demand in the system. The requested allocation in this permit renewal application was based on a projection that assumed a 10% increase in demand as a result of increasing pressure in the system to acceptable levels.

4.2.2 Permit # 36-00152-W

In addition, LCU has recently submitted an application to modify Consumptive Use Permit number 36-00152-W covering the Waterway Estates and North Lee County wellfields. The requested permit duration is 20 years. The requested modification includes the addition of 10 Lower Hawthorn aquifer water supply wells and an increase in allocation from that aquifer to serve as raw water for the North Lee County Water Treatment Plant. The application requests an annual average daily allocation of 8.808 MGD and a maximum monthly average daily demand of 12.5 MGD. This added allocation will allow LCU to expand the North Lee County Plant to produce 10.0 MGD of finished water.

LCU's requested allocation will provide redundancy allowing for flexibility in source options to meet demands.

The Table below summarizes the proposed water use permits.

PROPOSED LEE COUNTY UTILITIES WATER USE PERMIT SUMMARY

Permit #	Facilities	Expiration Date	Annual Allocation (MGD)	Max Month Daily Allocation (MGD)	Max Day Allocation (MGD)	Source Limits	
						Source	Limit (MGD)
36-00003-W	Corkscrew Olga Green Meadows Cypress Lake	**Application Submitted**	**28.00**	**40.77**	N/A	Mid-Hawthorne (C.L.) Sandstone Surficial (Corskrew) Surficial (GM)	0.75 8.00 6.00 4.20
36-00122-W	Pinewoods San Carlos	9/9/2014	6.09	7.23	N/A	Surficial (San Carlos) Sandstone (Pinewoods) Surficial (Pinewoods)	2.50 0.75 2.30
36-00152-W	Waterway Estates North Lee County	**Application Submitted**	**8.808**	**12.5**	N/A	Surficial&Mid Hawthorn	1.55
TOTAL			42.898	60.5			

Notes
1. Annual Allocation (MGD) based on Perimtted Annual Total Allocation divided by 365
2. Max Month Daily Allocation (MGD) based on Permitted Max Month Total Allocation divided by 30
3. Max Day Allocation (MGD): Permits no longer specify a Max Day
4. Boldface represents requested increases in allocation

4.3 PROPOSED WATER TREATMENT FACILITIES

4.3.1 Olga Water Treatment Plant

Lee County Utilities plans on expanding the Olga WTP from 5.0 to 10.0 mgd. The primary mode of treatment at this facility will likely change as LCU identifies the various source water options in the study mentioned in the section 4.1.1.

4.3.2 Corkscrew Water Treatment Plant

Lee County Utilities has recently completed an expansion of the Corkscrew WTP from 10.0 mgd to 15.0 mgd. The treatment remains the same as the original plant, which is lime softening followed by filtration. An expansion to 20.0 mgd is planned in 6-10 years.

4.3.3 Green Meadows Water Treatment Plant

Lee County Utilities plans on expanding the Green Meadows WTP from 9.0 mgd to 16.0 mgd. A new low pressure reverse osmosis treatment plant is proposed.

4.3.4 Pinewoods Water Treatment Plant

Lee County Utilities recently completed the 3.0 mgd low pressure reverse osmosis plant at this facility. This added capacity coupled with the original low pressure nano-filtration plant brings the total treatment capacity of this facility to 5.0 mgd.

4.3.5 North Lee County Water Treatment Plant

The new 5.0 mgd North Lee County WTP was completed in August 2006. The facility was constructed for future expansion to 10.0 mgd. This facility is a reverse osmosis facility treating brackish water (Lower Hawthorn). Expansion of the treatment plant from 5.0 mgd to 10.0 mgd will be completed in conjunction with Phase II wellfield expansion and is expected to be completed by 2012.

A table summarizing the water supply development proposed by LCU is shown below.

LEE COUNTY UTILITIES EXISTING AND PROPOSED WATER SUPPLY RESOURCES SUMMARY

EXISTING					PROPOSED				
Facility	Existing Treatment Capacity (MGD)	Existing Source Capacity (MGD)	Existing Number of Wells/Pumps	Source	Facility	Proposed Treatment Capacity (MGD)	Proposed Source Capacity (MGD)	Proposed Additional Wells/Pumps	Source
Olga	5.00	5.00	3	Surface Water	Olga	5.00	5.00		Surface Water
Corkscrew	15.00	10.00	21	Surficial	Corkscrew	20.00	20.00	11	Surficial
			10	Sanstone				11	Sandstone
								3	**Lower Hawthorn**
Green Meadows	9.00	9.00	14	Surficial	Green Meadows	9.00	9.00		
			13	Sandstone					
Cypress Lake	0.00	0.00		Decommisioned	Cypress Lake	0.00	0.00	none	
Waterway Estates	1.50	1.50	6	Surficial	Waterway Estates	1.50	1.50	none	
			11	Mid-Hawthorn					
			1	Lower Hawthorn					
Pinewoods	5.13	5.13	11	Water Table	Pinewoods	5.13	5.13	none	
			3	Sandstone					
			5	**Lower Hawthorn**					
San Carlos	0.00	0.00	4	Water Table	San Carlos	0.00	0.00	none	
North Lee County	5.00	3.60	7	**Lower Hawthorn**	North Lee County	10.00	10.00	10	**Lower Hawthorn**
TOTAL	40.63	34.13			TOTAL	50.63	50.63		

BOLD FACE = Proposed and recently developed Alternative Water Supplies

4.4 CAPITAL IMPROVEMENT PLAN

Lee County Utilities' Capital Improvement Plan is summarized in Table 11. Implementation of the primary components of this plan to increase production of potable water is scheduled between 2008 and 2018. The projects will increase the combined maximum day capacity of all of the Lee County Utilities production facilities from 35.10 mgd to a combined capacity of 50.63. This combined capacity of 50.63 mgd is sufficient to meet the projected maximum daily demand of 38.40 mgd which is the projected demand based on the population projection performed by the Lee County Planning Department.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
LEE COUNTY, FLORIDA

Section 5
ALTERNATIVE WATER RESOURCES

5.1 Introduction

Lee County Utilities is proactively implementing, utilizing, and exploring alternative water resources. LCU's use of alternative sources is supported by the South Florida Water Management District's Lower West Coast Water Supply Plan. Several alternatives are incorporated in the current program or are proposed; they include:

- Aquifer Storage and Recovery
- Reclaimed Water Irrigation Systems
- Use of Floridan Aquifer
- Captured Storm water
- Desalination
- Water Conservation

Many benefits are obtained from Lee County's alternative water resource program; they include:

- Maintain sustainability of the shallow fresh water aquifers.
- Maintain a steady raw water supply for growth.
- Minimize stress on the wellfields.
- Provide landscape irrigation water supply during droughts.
- Minimize the amount of water withdrawn from the Surficial aquifer.
- Minimize withdrawal from a Minimum Flow and Level (MFL) water body during droughts.
- Recharging the Surficial Aquifer

Below is a summary of each component of the program.

5.2 Aquifer Storage and Recovery

In simple terms, Aquifer Storage and Recovery (ASR) is the storage of excess fresh water by injection into a confined aquifer for recovery during periods of high demand. Typically, treated fresh water is injected into an aquifer suitable for storage during the rainy season which in Southwest Florida coincides with the low demand period. As seasonal residents and tourists arrive, typically during the dry season, stored water is recovered from the ASR wells to meet the increase in demand. Utilization of ASR is an effective means to maintain a steady raw water supply and minimize stress on wellfields and surrounding wetlands by minimizing the amount of water withdrawn from the Surficial aquifer during the dry season. In the case of the Olga WTP ASR program, use of ASR will minimize the withdrawal of water during the dry season from a water body that has an established Minimum Flow and Level.

5.2.1 Potable Water ASR

Lee County Utilities has experienced a great deal of success with its ASR program. Currently, there are five ASR wells at the Corkscrew Water Treatment Plant (see Figure 14). These five wells have been in full operation for several years and a recovery rate of nearly 100% has been realized. LCU also has installed two ASR wells at the Olga Water Treatment Plant and one well at the North Reservoir site (see Figure 4 &13). Three additional ASR wells are planned for the Olga WTP. These wells will allow for additional injection of treated surface water from the Caloosahatchee River during the rainy season and recovery during the dry season. A description of the eight existing and three proposed ASR wells are shown in Table 10. It should be noted that the progress of LCU's Potable Water ASR program has been slowed due to a change in regulation regarding Arsenic. LCU is moving forward cautiously with this program as FDEP and EPA formulate a policy regarding Arsenic as it relates to potable water ASR wells.

5.2.2 Groundwater to Groundwater ASR

LCU has plans to develop a groundwater to groundwater ASR well system in the Green Meadows area. Groundwater from the Sandstone aquifer will be withdrawn during the rainy season and stored in ASR for recovery during the dry season.

5.2.3 Reclaimed Water ASR

LCU is examining the feasibility of utilizing ASR technology for the storage of reclaimed water. Seasonal Storage of reclaimed water will allow for better management of this resource, allowing for a higher percentage of utilization and possibly eliminate the need for disposal through a deep injection well or surface water discharge.

5.3 Reclaimed Water Systems

5.3.1 Introduction

Lee County Utilities owns and maintains several reclaimed water systems (see Figure 15). These systems provide many benefits. They reduce the amount of groundwater that is withdrawn in their respective service areas as well as recharge the local aquifers. Increasing the utilization of reclaimed water reduces the amount of water lost through surface water discharge or down a deep injection well. Lee County Utilities has taken and plans to take several steps to reduce these losses. LCU has installed interconnects between systems to enable systems with low demand to provide reclaimed water to systems with high demands. LCU has installed storage facilities to better manage reclaimed water and increase utilization. LCU has plans to enhance storage of reclaimed water. These plans include conventional above ground facilities for short-term storage and LCU is exploring the possibility of reclaimed water ASR for long-term seasonal storage. LCU was an active participant and contributed funds to the SFWMD's Regional Irrigation Distribution System Study. Below is a brief description of LCU's reclaimed water systems.

5.3.2 Fort Myers Beach WWTP

Lee County Utilities initiated its reclaimed water program in 1990 with the completion of the Fort Myers Beach WWTP Reuse System (see Figure 16). At that time the system consisted of 10 reuse sites, most of which were large users such as golf courses. Also included in the system is a set of 6 percolation ponds with a capacity of 60 million gallons. Since that time the system has grown and now consists of more than 25 reuse sites and the percolation ponds with a deep injection well for alternative disposal. The Fort Myers Beach WWTP has a permitted capacity of 6.0 million gallons per day (MGD). The plant currently produces approximately 3.8 mgd of reclaimed water. In 2007, an annual average of 3.81 MGD of the reclaimed water produced at the plant and 0.38 MGD was sent to the reuse service through an interconnect with LCU's Fiesta Village reuse system. Of the 4.19 MGD available for use 3.55 MGD was reused. Reclaimed water utilization in 2007 for this facility was 85%.

5.3.3 Fiesta Village WWTP

In 1999 Lee County Utilities purchased the Fiesta Village WWTP Reclaimed Water System from Florida Cities Water Company (see Figure 16). With two of the reuse sites being placed into service in the early 1970's, this reclaimed water system is one of the oldest public access reclaimed water system in Florida. The system currently consists of more than 10 reuse sites consisting of golf courses, parks, roadway medians and common areas. For alternative disposal the system has a permit to discharge into the Caloosahatchee River. The permitted capacity of the plant is 5.0 MGD. The plant currently produces approximately 2.5 mgd of reclaimed water. In 2007 the plant produced 2.95 mgd on annual average. Of this 2.95 mgd, 1.93 mgd was reused. Reclaimed water utilization in 2007 for this facility was 65%.

In an effort to increase the reclaimed water utilization for this facility and reduce the amount reclaimed water discharged to the Caloosahatchee River an interconnect between the Fiesta Village reuse system and the Fort Myers Beach reuse system was installed in 2002. This interconnect allows for a transfer of reclaimed water from the Fiesta Village system, which has a low demand to the Fort Myers Beach system which has a high demand.

5.3.4 Waterway Estates WWTP

In 1999 Lee County Utilities purchased the Waterway Estates WWTP Reclaimed Water System from Florida Cities Water Company (see Figure 17). The system currently consists of 2 reuse site, a proposed golf course, and the City of Cape Coral. LCU also has a permit to discharge into the Caloosahatchee River for alternative disposal. The permitted capacity of this facility is 1.3 mgd. The plant currently produces approximately 1.0 mgd of reclaimed water, on annual average. In 2007 the plant produced 0.983mgd of reclaimed water on annual average. Of this 0.983 mgd, only 0.325 mgd was reused. Reclaimed water utilization in FY 2007 for this facility was 33% and 50% for calendar year 2007.

In the past, issues related to storage in this reclaimed water system have resulted in low reclaimed water utilization. In an effort to increase the reclaimed water utilization for this facility, and reduce the amount reclaimed water discharged to the Caloosahatchee River, LCU has taken the following steps. A reclaimed water interconnect between the Waterway Estates system and the City of Cape Coral's reclaimed water system has been installed. A reuse agreement between Lee County Utilities and The City of Cape Coral has been executed. A 0.75 million-gallon storage tank and pumping facility was constructed and placed into service in mid 2007. Completion of this infrastructure has enhanced delivery of reclaimed water to the City of Cape Coral and will enhance delivery to the proposed golf course. Having this storage tank in the system for half of FY 2007 has increased the annual average utilization from 0% to 33% and to 50% in calendar year 2007. LCU will continue to enhance the reclaimed water system in the service area with a goal of achieving as close as 100% reclaimed water utilization as possible.

5.3.5 Three Oaks WWTP

In 2003 Lee County Utilities purchased the Three Oaks WWTP Reclaimed Water System from Gulf Environmental Services Inc (see Figure 18). The system currently consists of 6 active reuse sites all are golf course communities. The plant currently has a permitted capacity of 3.0 mgd. A plant expansion to bring this facility to 6.0 mgd is currently underway and the expansion should be completed by the end of 2008. Included in the expansion project is a deep injection well which will be utilized for wet weather disposal. The plant currently produces approximately 1.84 mgd of reclaimed water on an annual average. 100% or the reclaimed water that is currently produced at this facility is reclaimed for irrigation.

5.3.6 San Carlos WWTP

In 2003 Lee County Utilities purchased the San Carlos WWTP Reclaimed Water System from Gulf Environmental Services Inc (see Figure 18). The system currently consists of 1 reuse site, a golf course. Like the Fiesta Village system, the San Carlos WWTP Reclaimed Water System enjoys the distinction of being one of the oldest public access reclaimed water systems. The plant has been serving its one customer since the early 1970's. The plant has a permitted capacity of 0.30 mgd. The plant currently produces approximately 0.218 mgd of reclaimed water on an annual average. Having no alternative disposal method, this system's reclaimed water utilization is 100%.

5.3.7 Pine Island WWTP

In 1999 Lee County Utilities constructed the Pine Island WWTP. The plant has a treatment capacity of 0.50 mgd and a permitted capacity of 0.474 mgd. It is currently producing approximately 0.117 mgd of reclaimed water. The reclaimed water produced at this plant recharges the local shallow aquifer through two spray irrigation fields. The plant also has wet weather disposal capability through a

deep injection well shared with the Greater Pine Island Water Association. LCU has recently executed agreements for delivery of reclaimed water for irrigation of common areas and agricultural operations in the regional reuse service area permitted through FDEP. Currently this systems reclaimed water utilization is 100%.

5.3.8 High Point WWTP

The High Point plant is a small package plant in North Fort Myers that produces approximately 0.012mgd of reclaimed water. The plant has a permitted capacity of 0.024 mgd. The reclaimed water from this plant is sent to percolation ponds were it recharges the local shallow aquifer.

5.3.9 Gateway WWTP

In 2003 Lee County Utilities purchased the Gateway WWTP Reclaimed Water System from Gateway Services District. The system currently consists of 1 reuse site, the Gateway community and golf course. The plant has a permitted capacity of 1.0 mgd. The plant currently produces approximately 0.601 mgd of reclaimed water on an annual average. The Gateway Community's irrigation demand is far greater than the reclaimed water produced by this facility, therefore, this system's reclaimed water utilization in 100%. A design to expand this facility to 3.0 mgd has been completed and construction of this expansion is in progress with completion expected in early to mid 2010.

The table below provides a summary of LCU's reclaimed water system.

LEE COUNTY UTILITIES
RECLAIMED WATER SYSTEMS
DETAILS

Facility	Reuse Type (golf course, residential, etc.)	Alternative Disposal	FY 2006-2007 % Reclaimed Utilization
Fort Myers Beach WWTP	golf course, residential, parks, percolation ponds, road median,	Deep Injection Well	93%
Fiesta Village WWTP	golf course, sports field, residential, road median	Surface Water Discharge	65%
Three Oaks WWTP	golf course	Deep Injection Well	100%
San Carlos WWTP	golf course	None	100%
Pine Island WWTP	spray fields	None	100%
Waterway Estates WWTP	golf course, bulk service to another reclaimed water system	Surface Water Discharge	33% *
High Point WWTP	perc ponds	None	100%
Gateway WWTP	golf course, residential common areas	None	100%

* increased to 50% in calendar year 2007

5.4 Use of the Floridan Aquifer

Lee County Utilities has recently initiated and plans to continue use of this alternative source for drinking water. By utilizing this deep saline aquifer LCU will reduce its dependency on conventional sources such as shallow aquifers and surface water.

5.4.1 North Lee County Water Treatment Plant

Placed on-line in August 2006 the North Lee County Water Treatment Plant and wellfield initially produced 5.0 mgd of water from the Floridan aquifer. Due to lost production the facility is currently yielding 3.5 mgd. Phase I of the wellfield expansion project will regain the loss in production back to 5.0 mgd. Phase II will involve expanding the treatment plant and the wellfield to a capacity of 10.0 mgd.

5.4.2 Corkscrew Water Treatment Plant

Currently under construction is an expansion to the Corkscrew Wellfield. Expansion of the wellfield includes the installation of 3 Lower Hawthorn aquifer wells. Raw water from these 3 wells will be blended with water from conventional sources to provide additional capacity to the facility (see Proposed Wells LH1-LH3, Figure 5).

5.4.3 Pinewoods Water Treatment Plant

An expansion of the Pinewoods wellfield was completed in 2007. The expansion included the addition of 5 Lower Hawthorn aquifer wells (see Figure 7). Raw water from these 5 wells is treated in a new reverse osmosis plant also completed in 2007. The finish water from the RO facility is blended with water from conventional sources to provide additional capacity to the facility.

5.4.4 Green Meadows Water Treatment Plant

LCU proposes to construct a new 16.0 mgd reverse osmosis (RO) water treatment plant to replace the aging existing lime softening treatment system currently permitted for 9.0 mgd at this site. Additional withdrawals of brackish water from the Lower Hawthorn aquifer along with current withdrawals from Surficial and Sandstone aquifers will be blended and treated in the new facility. An increase in allocation from traditional fresh water sources currently permitted is not proposed. Fourteen new Lower Hawthorn wells located in LCU's existing easement are proposed to increase the capacity of the wellfield (see Figure 6). The proposed capacity increase of 7.0 mgd will be supplied by raw water from the Lower Hawthorn aquifer, an alternative source. The project is currently under preliminary design and an application for modification to the consumptive use permit has been submitted to the SFWMD. Once the water use permit associated with this project is obtained, the project will be programmed into the CIP.

5.4.5 Olga Water Treatment Plant

LCU is currently performing a study on alternative water supplies for the Olga facility. One of the options being considered is use of the Floridan aquifer for a source of supply for this facility.

5.5 Captured Storm Water

LCU is currently exploring opportunities for capturing storm water for potable water supply. Multiple benefits can be realized from developing storm water storage. Along with the possibility of providing raw water for meeting potable water demands there is a potential for providing flood protection, improvement in water quality, and restoration of base flows to in natural systems.

5.6 Desalination

LCU has cooperated with, provided information for, and remained engaged with previously completed feasibility studies regarding desalination facilities. In June 2002 one such feasibility study was completed. The study was commissioned by the SFWMD and Florida Power and Light (FP&L) and completed by Water Resource Associates, Inc. and URS. This study was titled, "Feasibility Study for Co-Locating Reverse Osmosis Treatment Facilities with Electric Power Plants". The study evaluated 23 potential sites for co-locating a desalination facility with a power plant. Of the 23 sites evaluated two sites were deemed "highly desirable" and recommended for further evaluation. One of those sites was the Florida Power and Light site on S.R. 80, within LCU's service area and in close proximity to one of LCU's main water transmission lines. The conclusion of this study prompted LCU to give serious consideration to the option of desalination. Since this study was released, LCU representatives have participated in several meetings with FP&L and the SFWMD to discuss the potential for co-location a desalination facility at the location referenced above. Another feasibility study titled "Technical & Economic Feasibility of Co-Locating Desalination Facilities" was completed by Metcalf and Eddy in December of 2006. This study further refined technical, economic and regulatory feasibility of the desalination option. As in the first study the FP&L site in LCU's service area emerged as a top ranking potential site. LCU continues to give serious consideration to the desalination option. LCU is also considering a pilot study to further evaluate the feasibility of this option. A Feasibility Analysis/Design of a desalination facility along with related transmission mains are programmed in the CIP in years 6-10.

5.7 Water Conservation Plan

1) Permanent Irrigation Ordinance – Patterned after the SFWMD rule FAC 40E-24 "Mandatory Year-Round Landscape Irrigation Measures for Lee, Collier & Charlotte Counties", an ordinance, which restricts landscape irrigation to the hours of 5:00 p.m. to 9:00 a.m. two days per week, is in effect for Le County Utilities' service area (Lee County Ordinance 05-10). This ordinance is more restrictive than the SFWMD rule referenced above. The ordinance also incorporates the SFWMD water shortage rules by reference.

2) Xeriscape Ordinance –An ordinance that requires the use of xeriscape landscape principles has not been adopted, however, Lee County Land Development Code does require Xeriscaping. Chapter 10, Article III, Division 6 (Open Space, Buffering, and Landscaping), Section 10-412 (Purpose and Intent) states: "Promote water conservation and xeriscape principles by requiring the use of native plants, organic mulch, reduction of turf grass, and appropriate irrigation." Also Section 10-421 (Plant Installation and Maintenance Standards) states: "All required plants used in buffers and landscaping must be installed using xeriscape principles. Xeriscape principles include water conservation through drought-tolerant landscaping, the use of appropriate plant material, mulching and reduction of turf areas."

3) Ultra-low Volume Plumbing Fixture Ordinance – An ordinance that requires ultra-low volume plumbing fixtures on all new construction is in effect for the service area (Lee County Ordinance 92-36.)

4) Water Conservation Rate Structure – Lee County Resolution No. 07-08-70, adopted August 14, 2007, provides for an increasing block rate structure. The resolution also provides for an 18% surcharge to the rates in the event of a District declared reduction in water use of 15% or greater due to a declared water shortage.

5) Leak Detection Program – Lee County has an unaccounted-for water and leak detection program. The latest available data indicate that "unaccounted for" water losses are only 6.22% (calendar year 2006).

6) Rain Sensor Device Ordinance – In January 1999 the Lee County Land Development Code was revised to include a requirement for rain sensors on irrigation systems. Chapter 10, Article III, Division 6, Section 10-414(b)(3) states: "A moisture (rain) sensor will be included in the irrigation system and located on the site so that it will receive direct rainfall, not impeded by other objects."

7) Water Conservation Education Program – In the summer of 2000 Lee County Utilities developed a web site that is updated regularly. This web site contains several pages devoted to water conservation and water restrictions. The address for this site is http://www.lee-county.com/utilities/. In addition, Lee County Utilities periodically prints water conservation tips on the water bills. These messages direct the customer to the web site for additional information. The annual Consumer Confidence Report is also used to direct customers to the web

site for additional information. Water Conservation posters and pamphlets are placed in schools, libraries, and other county offices. During times of water restrictions Lee County Utilities has run public service announcements in cooperation with the District. LCU has an active program that provides water conservation presentations to third grade students in several schools throughout Lee County. Approximately 20 presentations are given to third graders every year. LCU also participates in the Lee County Speakers Bureau program resulting in 4-5 water conservation presentations being provided to civic organization throughout Lee County.

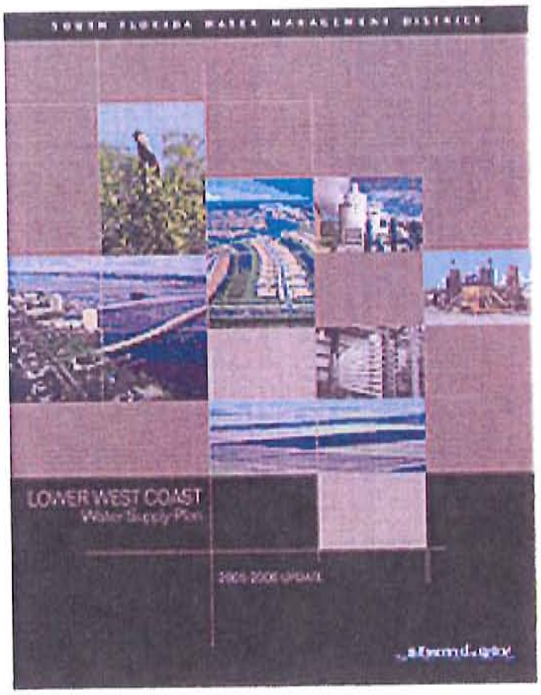
8) Reclaimed Water – Reuse (Reclaimed) water is a very important part of Lee County Utilities' water conservation strategy. Currently, seven wastewater treatment plants that serve the LCU service area produce reuse water under permit from FDEP. They are Fort Myers Beach WWTP, Fiesta Village WWTP, Waterway Estates WWTP, Pine Island WWTP, Three Oaks WWTP, San Carlos WWTP and Gateway WWTP. The percentage of reclaimed water utilization by LCU has increased steadily throughout the years as the use of reclaimed water has expanded. In fiscal year 2006/2007, approximately 79.3% of the wastewater treated by LCU was beneficially used for irrigation.

9) Conservation Plan Updating – Lee County staff recognizes the importance of regularly evaluating its conservation plan. Assessment of future demands leads to discussion and research into possibilities for the reduction of water demand. Continuing education of customers and cooperation with various agencies' programs of water reduction and re-use reduce the need for increased treatment capacity. As more advanced leak detection and accounting methods become available, it is the best interest of Lee County to utilize these tools.

10) Television Ads on Water Conservation – Lee County T.V. air daily information on water conservation. We keep these ads up to date. The ads address many ways with which our customers can save this precious resource.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
LEE COUNTY, FLORIDA

Section 6
CONSISTENCY WITH REGIONAL PLAN



6.1 CONSISTENCY WITH REGIONAL PLAN

Based on recommendations from previous Lower West Coast Water Supply Plans, LCU has followed a strategy of diversifying water supply options and developing alternative sources and storage options. LCU currently utilizes the following sources of raw water; Water Table, Surficial, Sandstone, Mid-Hawthorn and Lower Hawthorn aquifers as well as surface water. In addition LCU continues to increase its use of reclaimed water, increasing the percentage of utilization of this resource every year. LCU has developed interconnects between reclaimed water systems in an effort to maximize its use of this resource. LCU has also developed several successful potable water ASR systems and plans to develop reclaimed ASR systems in the future.

In July of 2006 the SFWMD adopted the updated Lower West Coast Water Supply Plan 2005-2006 (LWCWSP). Lee County Utilities participated in the regional planning conducted during preparation of the Plan and has made every effort to ensure that LCU's water supply planning is consistent with the regional plan. The focus of the 2005-2006 LWCWSP is the development of alternative water sources. LCU has followed the recommendations of the plan and has developed alternative water supplies. LCU has developed supplies from the Lower Hawthorn aquifer at the North Lee County WTP, Pinewoods WTP and Corkscrew WTP. LCU plans to utilize the Lower Hawthorn aquifer at the Green Meadows WTP. LCU has developed potable water ASR facilities at the Corkscrew WTP and the Olga WTP and plans to expand the use of potable water ASR at the Olga facility as well as in the Green Meadows/Corkscrew area. LCU is also planning to utilize ASR for the storage of reclaimed water in the future. As demonstrated in the proceeding information presented in this plan, all of LCU's future water supply development is planned to be from alternative water supply sources. Presented below is a table showing the Lee County Utilities' alternative water supply projects listed in the 2005-2006 LWCWSP.

LEE COUNTY UTILITIES
ALTERNATIVE WATER SUPPLY PROJECTS LISTED IN THE
2005-2006 LOWER WEST COAST WATER SUPPLY PLAN

Project	Water Source	Project Capacity (MGD)	Year Water is First Produced	Total Esimated Capital Cost ($M)	Annual O&M Costs ($M)
Corkscrew Lower Hawthorne Wells Phase II	Brackish	0.75	2007	$0.35	$0.01
Green Meadows Lower Hawthorne Wells	Brackish	2.00	2007	$0.80	$0.01
North Lee County Lower Hawthorne Wellfield & Plant Expansion	Brackish	5.00	2008	$20.00	$0.07
Pinewoods WTP Expansion Phase II	Brackish	3.00	2007	$6.67	$1.65
Green Meadows ASR	Capture ASR	0.37	2008	$7.00	$0.09
Three Oaks Parkway Reclaimed Water Transission System	Reclaimed	1.00	2007	$1.22	$0.00
Fort Myers Beach WWTP Reclaimed Water Elevated Storage Tank	Reclaimed	1.20	2007	$1.50	$0.01
Health Park Reclaimed Water ASR Phase I	Reclaimed	1.00	2008	$1.20	$0.01
Health Park Reclaimed Water ASR Phase II	Reclaimed	1.00	2010	$0.80	$0.01
FGCU / Mirror Lakes Reclaimed Water Main	Reclaimed	1.00	2007	$0.30	$0.00
RCS Reclaimed Water Interconnect	Reclaimed	1.00	2007	$0.55	$0.00

Several of the projects listed above have been completed and some others have had a change in scope since being published in the 2005-2006 LWCWSP. As required, LCU submitted an updated list and status report for alternative water supply projects listed in the LWCWSP to the SFWMD in October of 2007. Below is a summary of the update that was provided. Since submission of this list in January 2008, some project schedules have been revised and some projects have been added.

LEE COUNTY UTILITIES
ALTERNATIVE WATER SUPPLY PROJECTS LISTED IN THE
2005-2006 LOWER WEST COAST WATER SUPPLY PLAN
PROJECT UPDATE JANUARY 2008

Project	Water Source	Project Capacity (MGD)	Year Water is First Produced	Scope Change	Status
Corkscrew Lower Hawthorne Wells Phase II	Brackish	2.00	2008	Original Scope changed from 1 well producing 0.75mgd to 2 wells producing a total of 2.0 mgd	Project underway, scheduled for completion by August 08
Green Meadows Lower Hawthorne Wells	Brackish	7.00	2011	Original Scope changed from 2 wells producing 2.0 mgd to 14 Lower Hawthorne wells to produce 7.0mgd finished water	Phase I, Pilot /Production well under construction
North Lee County Lower Hawthorne Wellfield & Plant Expansion	Brackish	5.00	2010	No change in scope	Water Use Permit application for modification submitted, planning underway
Pinewoods WTP Expansion Phase II	Brackish	3.00	2007	No change in scope	Project Complete
Green Meadows ASR	Capture ASR	3.35	2010	Original scope was to procuce 0.37 mgd. Feasibility Study has indicated 3.35 mgd	Planning
Three Oaks Parkway Reclaimed Water Transission System	Reclaimed	3.00	2007	Originally anticipated to increase capacity of reclaimed system by 1.0, however enhancement will add an ultimate capacity of 3.0mgd	Completed
Fort Myers Beach WWTP Reclaimed Water Elevated Storage Tank	Reclaimed	1.20	2010	No change in scope	A low cost interim alternative has eliminated the emmediate need for this project, rescheduled to 2010
Health Park Reclaimed Water ASR Phase I	Reclaimed	1.00	2011	No change in scope	Issues related to Arsenic have delayed the project, now scheduled for 2011
Health Park Reclaimed Water ASR Phase II	Reclaimed	1.00	2012	No change in scope	Issues related to Arsenic have delayed the project, now scheduled for 2012
FGCU / Mirror Lakes Reclaimed Water Main	Reclaimed	1.00	2008	No change in scope	Lack of immediate need by developer has delayed the project one year
RCS Reclaimed Water Interconnect	Reclaimed	0.00	N/A	No change in scope	Lack of reclaimed water supply and finacial feasibility has reulted in postponing this project to a later date. The project is on hold.

6.2 COMPREHENSIVE LONG TERM WATER SUPPLY PLANNING

LCU is currently negotiating a contract with a consultant to develop an "Integrated Water Resources Master Plan" for Lee County Utilities. The Plan will integrate water supply, water treatment, wastewater collection, wastewater treatment, and the use of reclaimed water. This study will explore further use of alternative water sources such as brackish groundwater and surface water, expanded use of reclaimed water, the potential for utilizing storm water for supply, improved storage opportunities such as ASR and above ground storage, as well as the potential for seawater desalination. LCU expects to have the contract for this planning effort executed by June 2008 and a completed plan by early 2010.

6.3 IRRIGATION WATER DEMANDS

Irrigation includes two main components, agricultural irrigation and urban irrigation. The most current agricultural irrigation permit information is available through the South Florida Water Management District's office. Residential permit information is available through the Lee County Health Department, a state agency.

A comprehensive analysis of the demand for irrigation water in LCU's service area along with strategies for meeting these demands will be completed as part of the "Integrated Water Resource Master Plan" referenced above.

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY, FLORIDA

SECTION 7
OTHER UTILITIES IN UN-INCORPORATED LEE COUNTY

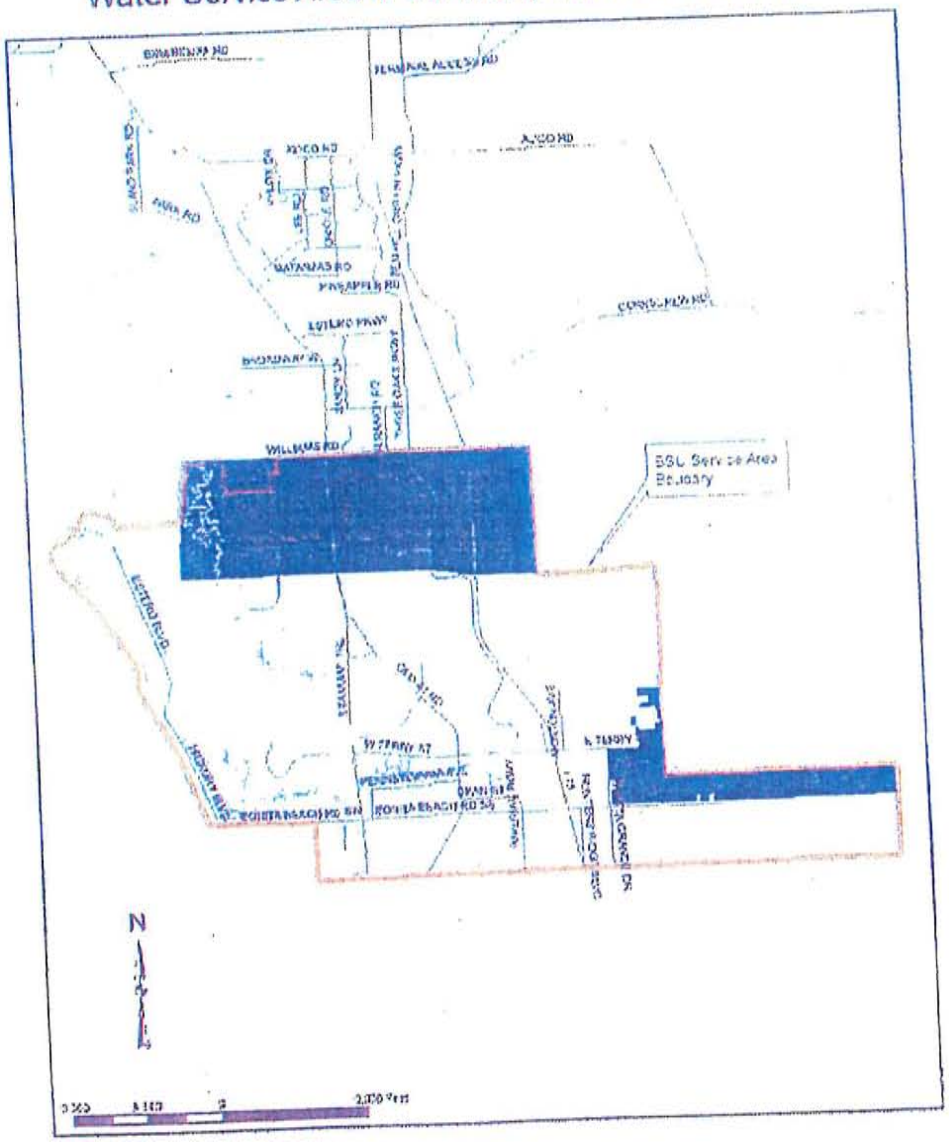
SECTION 7.1
BONITA SPRINGS UTILITIES

BONITA SPRINGS UTILITIES

Service Area

Bonita Springs Utilities (BSU) provides potable water service within the City of Bonita Springs as well as areas within Un-Incorporated Lee County. The BSU service area within Un-Incorporated Lee County is shown on the figure below. Approximately 25% of the BSU service area is within Un-Incorporated Lee County.

Bonita Springs Utilities
Water Service Area in Un-Incorporated Lee County



Consumptive Use Permits

BSU has two Consumptive Use Permits issued by the SFWMD. A summary of the general permit information is presented below.

Permit Number: 36-00008-W
Issued: August 9, 2007
Expires: August 9, 2027
Annual Allocation: 2,094 million gallons (2,094/365=5.74 mgd)
Maximum Month Allocation: 222.3 million gallons (222.3/30=7.41 mgd)
Source Limitation Annual: 985.5 mg (Lower Tamiami-West Wellfield)
Source Limitation Daily: 3.18 mg (Lower Tamiami-West Wellfield)

Permit Number: 36-04062-W
Issued: January 21, 2005
Expires: January 21, 2025
Annual Allocation: 4,769 million gallons (4,769/365=13.06 mgd)
Maximum Daily Allocation: 16.0 mgd

Existing Water Supply

BSU has three wellfields, the East Wellfield, West Wellfield, and the R.O. Wellfield.

East and West Wellfields – Lower Tamiami
The East and West Wellfields withdrawal water from the Lower Tamiami Aquifer. The location of these two wellfields is shown on the attached map labeled Exhibit 3 from the consumptive use permit staff report of permit number 36-00008-W referenced above. There are a total of 22 Lower Tamiami wells in these two wellfields. The diameter of these wells range from 8" to 12" and they range in depth from 80 feet to 115 feet. The capacity of each well range from 125 gpm to 1,000 gpm. The combined total capacity of all the wells is 11,550 gpm.

R.O. Wellfield
The R.O. wellfield withdrawals water from the Floridan Aquifer. The location of this wellfield is shown on the attached map labeled Exhibit 3 from the consumptive use permit staff report of permit number 36-04062-W referenced above. The wellfield consists of 8 existing wells. The diameter of these wells range from 12" to 16" and the total depths range from 701 feet to 1,080 feet. The capacities of the wells range from 1,000 gpm to 2,000 gpm. The combined total capacity of all the wells is 9,000 gpm.

Treatment Facilities

Raw water from the East and West wellfields is treated in a conventional lime softening water treatment plant with a permitted capacity of 9.0 mgd. Water from the R.O. wellfield is treated in a Reverse Osmosis treatment Plant with a permitted capacity of 6.54 mgd. The plant is expandable to 12 mgd. Both facilities are located on East Terry Street on the west side of I-75, in Bonita Springs.

Storage Facilities

BSU has above ground storage tanks with a combine total of 7.75 million gallons of capacity to meet peak hour demands in the system.

Demand Projections

Water demand projections are presented in the table below. This demand projection was supplied to Lee County by Bonita Springs Utilities.

BONITA SPRINGS UTILITIES
WATER DEMAND PROJECTIONS

Year	Projected Population	Number of Units (ERC's)	Average Daily Demand (MGD)	Maximum Day Demand (MGD)
2005	65,300	43,100	9.3	12.9
2010	71,700	48,700	10.5	14.6
2015	73,650	49,600	10.7	14.8
2020	74,500	50,200	10.8	15.0

Proposed Water Supply Sources

BSU plans to install seven additional Floridan wells in its R.O. wellfield. The wells are proposed to be 16" in diameter, 900 feet deep and each with a capacity of 1,400 gpm. The wells are currently included in permit number 36-04062-W. As mentioned above the existing R.O. plant is expandable to 12 mgd.

Note

It should be noted that the information provided above includes the entire service area for BSU. The unincorporated portion of this service area only represents approximately 25% of the total.

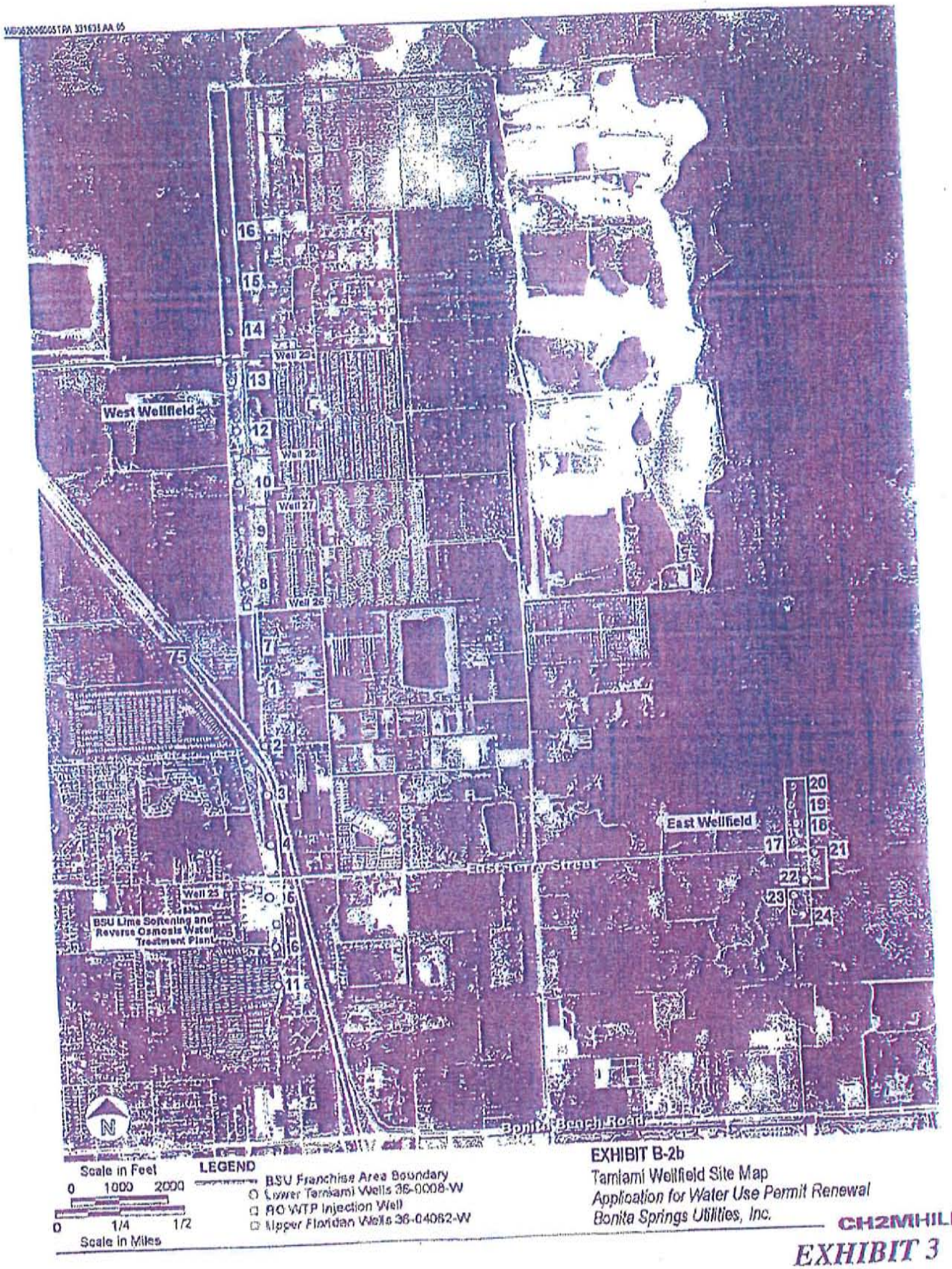


EXHIBIT B-2b
Tamiami Wellfield Site Map
Application for Water Use Permit Renewal
Bonita Springs Utilities, Inc.

CH2MHILL

EXHIBIT 3

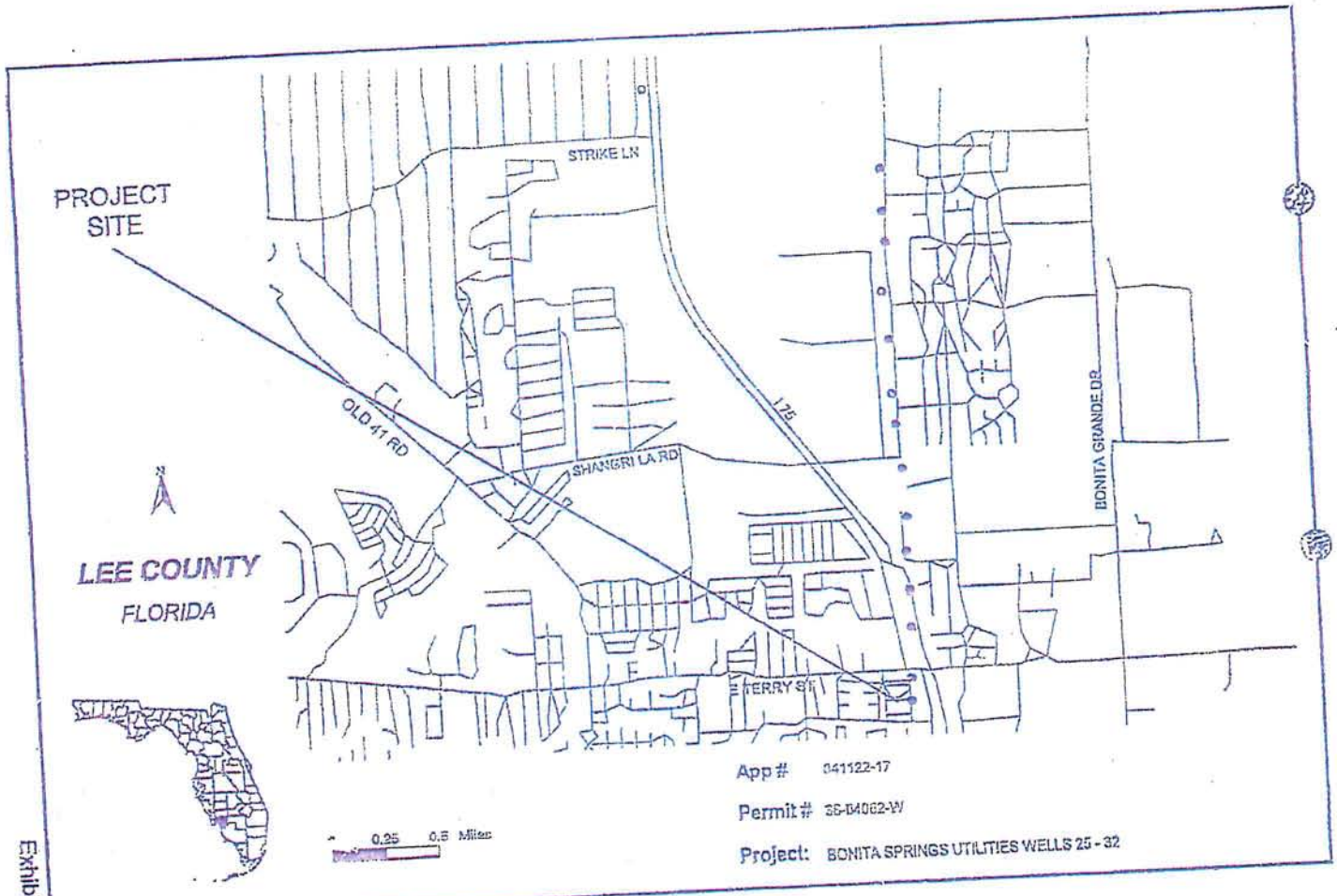

PROJECT SITE
STRIKE LN
OLD 41 RD
SHANGRI LA RD
BONITA GRANDE DR
TERRY ST
LEE COUNTY
FLORIDA
0.25
0.5 Miles
App # 041122-17
Permit # 36-04062-W
Project: BONITA SPRINGS UTILITIES WELLS 25 - 32

Exhibit 3

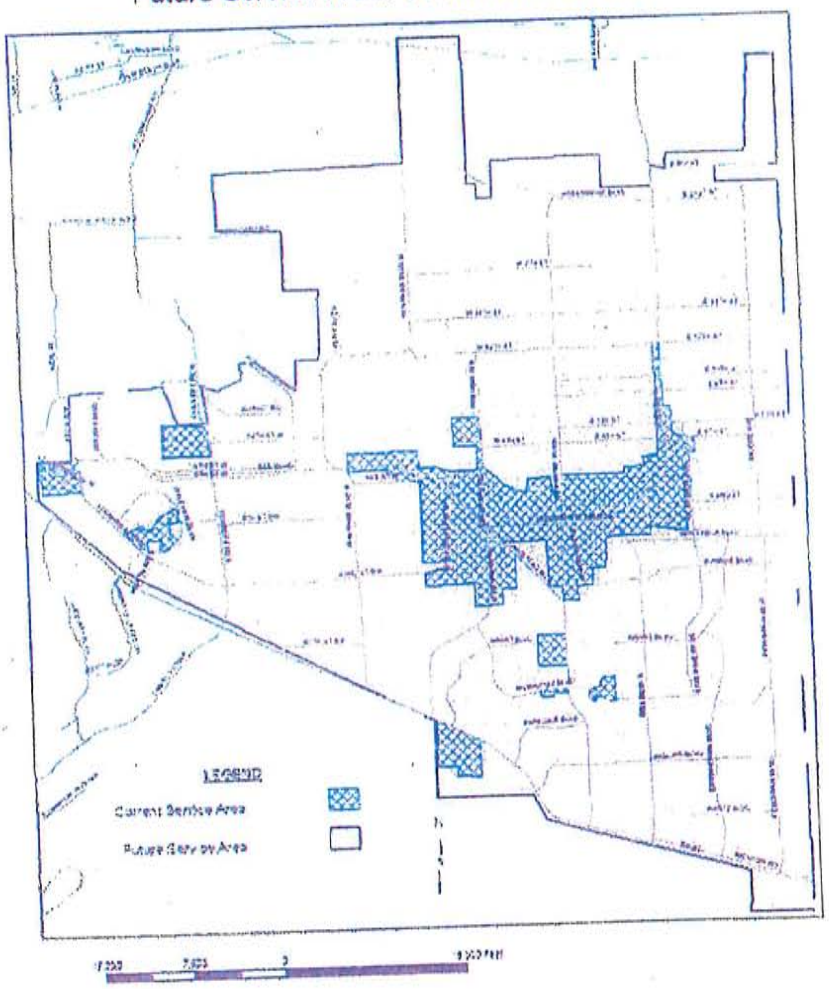
SECTION 7.2
FLORIDA GOVERNMENTAL UTILITY AUTHORITY

FLORIDA GOVERNMENTAL UTILITY AUTHORITY

Service Area

The Florida Governmental Utility Authority (FGUA) has a franchise area that generally encompasses the area of un-incorporated Lee County known as the community of Lehigh Acres. The area currently served with water is shown in blue cross hatch. The area shown in pink is FGUA's entire service area and the proposed area to be served in the future.

FLORIDA GOVERNMENTAL UTILITY AUTHORITY
Future Service Area, Current Service Area



Existing Consumptive Use Permit

FGUA has a Consumptive Use Permit issued by the SFWMD. A summary of the general permit information is presented below.

Permit Number: 36-00166-W
Issued: March 11, 2004
Expired: December 11, 2006
Annual Allocation: 1,206 Million Gallons (1206/365= 3.304 MGD AADF)
Maximum Monthly Allocation: 112.499 Million Gallons (112.499/30 = 3.75 MGD)
Note: a timely application for renewal / modification was submitted on 12/8/06, (see discussion below)

Existing Water Supply

The existing FGUA wellfield in the center of Lehigh Acres 13 existing Sandstone aquifer wells that vary in diameter from 6" to 12" in diameter. There is one existing Sandstone well at the new wellfield location near the corner of Bell Blvd. and Milwaukee Ave (see attached figure Exhibit 3A from FGUA's CUP) The wells are rated at capacities between 150 gallons per minute (gpm) and 500 gpm. The wells have a total capacity of 3,050 gpm. The existing permit includes 3 proposed Sandstone aquifer wells with a total capacity of 1,500 gpm. The location of the existing and proposed wells is shown on the attached figures titled Exhibit 3A, 3B, and 3C. These exhibits are copies of exhibits from FGUA's existing consumptive use permit staff report. A description of these wells is shown on the attached copy of Table A, labeled Exhibit No: 8 from FGUA's existing consumptive use permit staff report.

Existing Treatment Facilities

FGUA's Treatment Plant #1 is rated at 3.11 MGD and treats raw water from the 13 Sanstone aquifer wells referenced above. FGUA's recently completed Treatment Plant #2 has a capacity of 1.10 MDG. Treatment Plant #2 will initially treat raw water from the 3 of the four permitted sandstone aquifer wells at the plant site.

Existing Storage Facilities

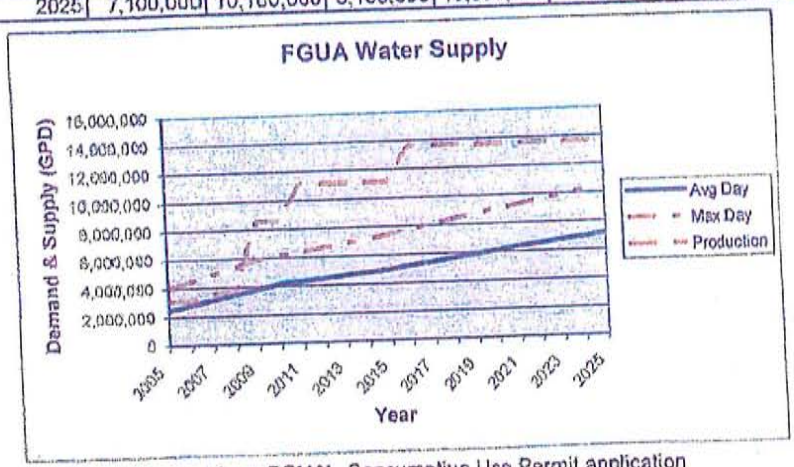
FGUA currently has two storage facilities. One elevated storage tank at he corner of Homestead Road and Arthur Ave with a storage capacity of 0.25 MG and a ground storage tank on Lee Blvd. and Abrams Blvd with a capacity of 0.5 MG.

Demand Projections

Finished water demand projections are presented in the table below. This demand projection was obtained from FGUA's recent consumptive use permit application. This projection is based on the median values of a projection performed by Lee County Planning Department and a linear projection based on past growth. The table also shows the proposed production from the various existing and proposed water treatment plants (WTP) and related wellfields.

FLORIDA GOVERNMENT UTILITY AUTHORITY, LEHIGH ACRES
WATER PROJECTED DEMAND AND PROPOSED PRODUCTION

YEAR	DEMAND AVG DAY (GPD)	DEMAND MAX DAY (GPD)	OUTPUT WTP #1 (GPD)	OUTPUT WTP #2 (GPD)	FT MYERS INTER-CONNECT (GPD)	TOTAL PRODUCTION
2005	2,471,810	3,213,355	3,100,000	0	0	3,100,000
2006	2,800,000	4,010,000	3,100,000	0	0	3,100,000
2007	3,130,000	4,480,000	3,100,000	0	500,000	3,600,000
2008	3,460,000	4,950,000	2,200,000	1,100,000	500,000	3,800,000
2009	3,800,000	5,430,000	3,100,000	5,000,000	500,000	8,600,000
2010	4,130,000	5,900,000	3,100,000	5,000,000	500,000	8,600,000
2011	4,300,000	6,140,000	3,100,000	7,500,000	500,000	11,100,000
2012	4,470,000	6,390,000	3,100,000	7,500,000	500,000	11,100,000
2013	4,640,000	6,630,000	3,100,000	7,500,000	500,000	11,100,000
2014	4,810,000	6,880,000	3,100,000	7,500,000	500,000	11,100,000
2015	4,980,000	7,120,000	3,100,000	7,500,000	500,000	11,100,000
2016	5,200,000	7,440,000	3,100,000	10,000,000	500,000	13,600,000
2017	5,430,000	7,760,000	3,100,000	10,000,000	500,000	13,600,000
2018	5,660,000	8,090,000	3,100,000	10,000,000	500,000	13,600,000
2019	5,880,000	8,410,000	3,100,000	10,000,000	500,000	13,600,000
2020	6,110,000	8,730,000	3,100,000	10,000,000	500,000	13,600,000
2021	6,310,000	9,020,000	3,100,000	10,000,000	500,000	13,600,000
2022	6,510,000	9,300,000	3,100,000	10,000,000	500,000	13,600,000
2023	6,710,000	9,590,000	3,100,000	10,000,000	500,000	13,600,000
2024	6,900,000	9,870,000	3,100,000	10,000,000	500,000	13,600,000
2025	7,100,000	10,160,000	3,100,000	10,000,000	500,000	13,600,000



Source: Data obtained from FGUA's Consumptive Use Permit application

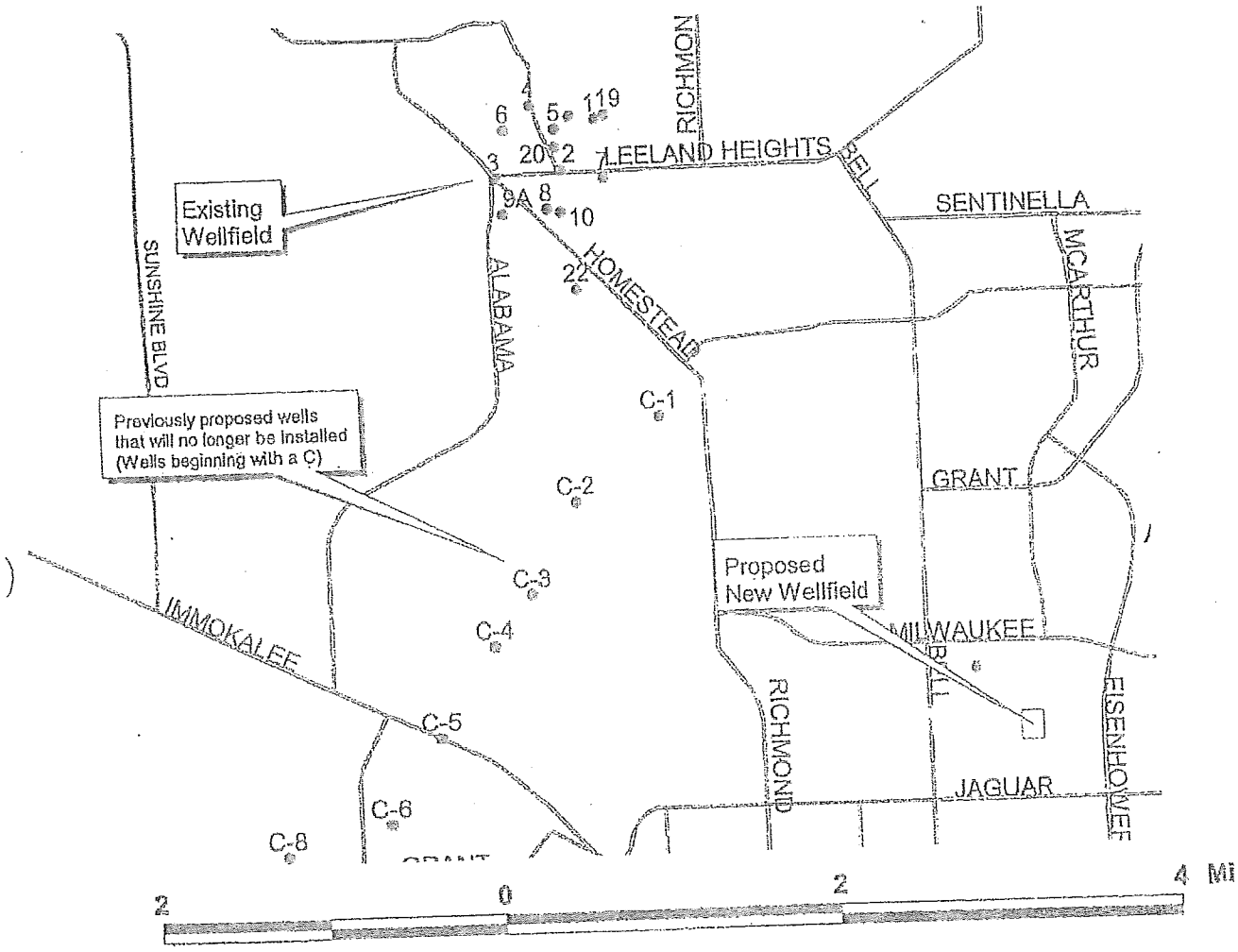
Proposed Water Supply Sources

On, Dec 8, 2006, prior to the expiration date of the existing CUP, FGUA submitted an application to renew and modify the above referenced permit. FGUA has applied for a 20 year permit with a capacity of 7.30 MGD annual average daily flow. In the application FGUA proposes to continue the existing use of the sandstone aquifer currently permitted for 3.3 MGD. The additional 4.0 MGD is proposed to meet future growth and the source will be from an alternative source. In addition FGUA has entered into an agreement with the City of Fort Myers to obtain finished water through an inter-connect.

Proposed Water Supply Facilities

Two water supply facilities will be needed to supply the projected demand. Water Treatment Plant #1 (existing) has a capacity of 3.1 MGD. Water Treatment Plant #2, also known as the Mirror Lakes Water Treatment Plant, will initially produce 1.1 MGD finish water. Withdrawals will be from the Sandstone aquifer. In 2009 WTP#2 will be expanded to 5.0 MGD and treat brackish water from an alternative source (Lower Hawthorne, Mid-Hawthorne, Upper Hawthorne). Pilot testing is currently underway to determine which aquifer will be utilized for future development. Future expansions of WTP#2 will also utilize an alternative source. Timing of these expansions are reflected in the table above.

FGUA Lehigh Acres Wellfields



N
W E
S

State Roads
WU GW PWS Wells, Lee

Exhibit 3A

USGS Sandstone Monitor Wells in the Vcinity of the proposed new Lehigh Acres Utilities/FWS Wellfield

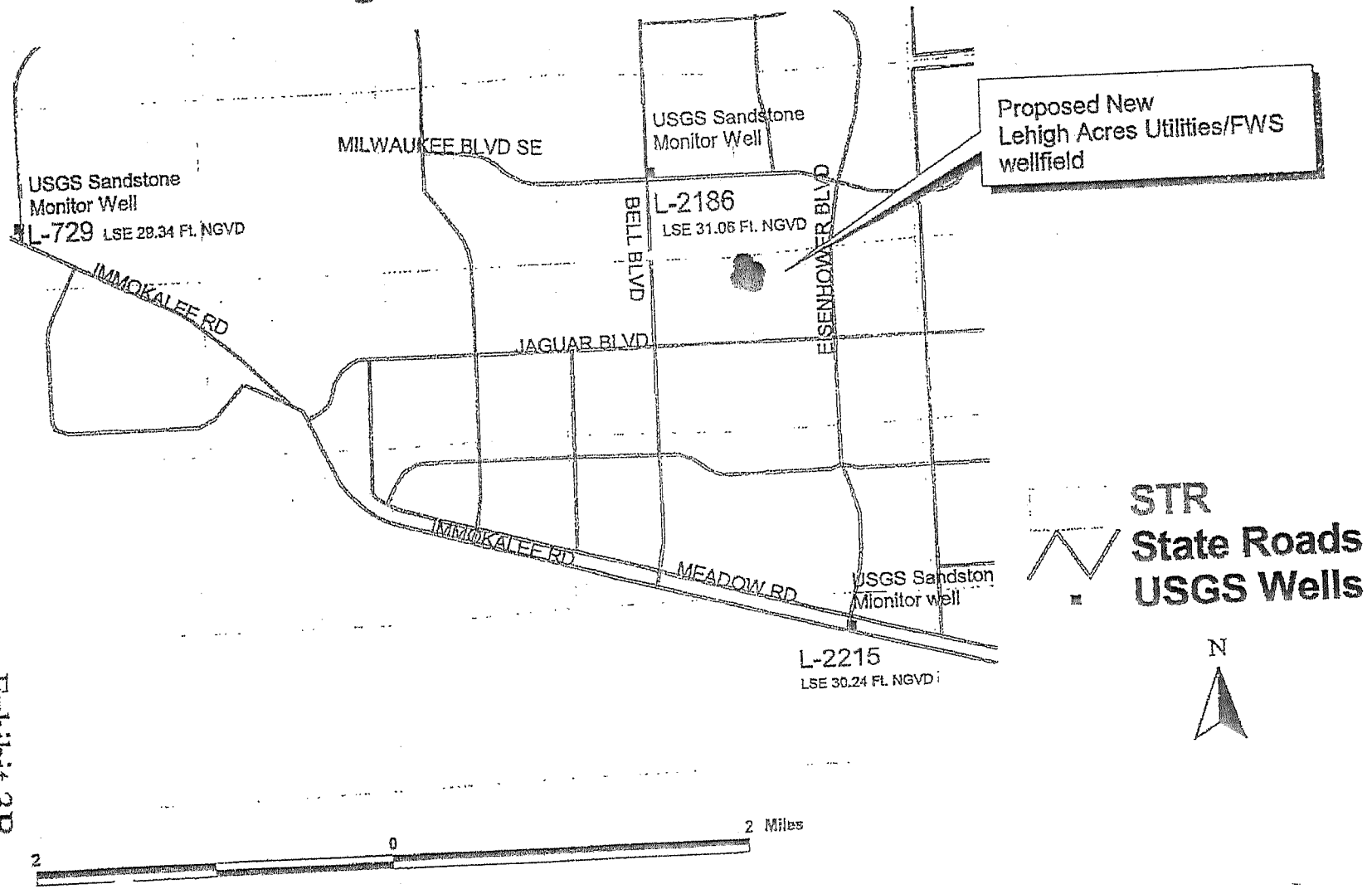
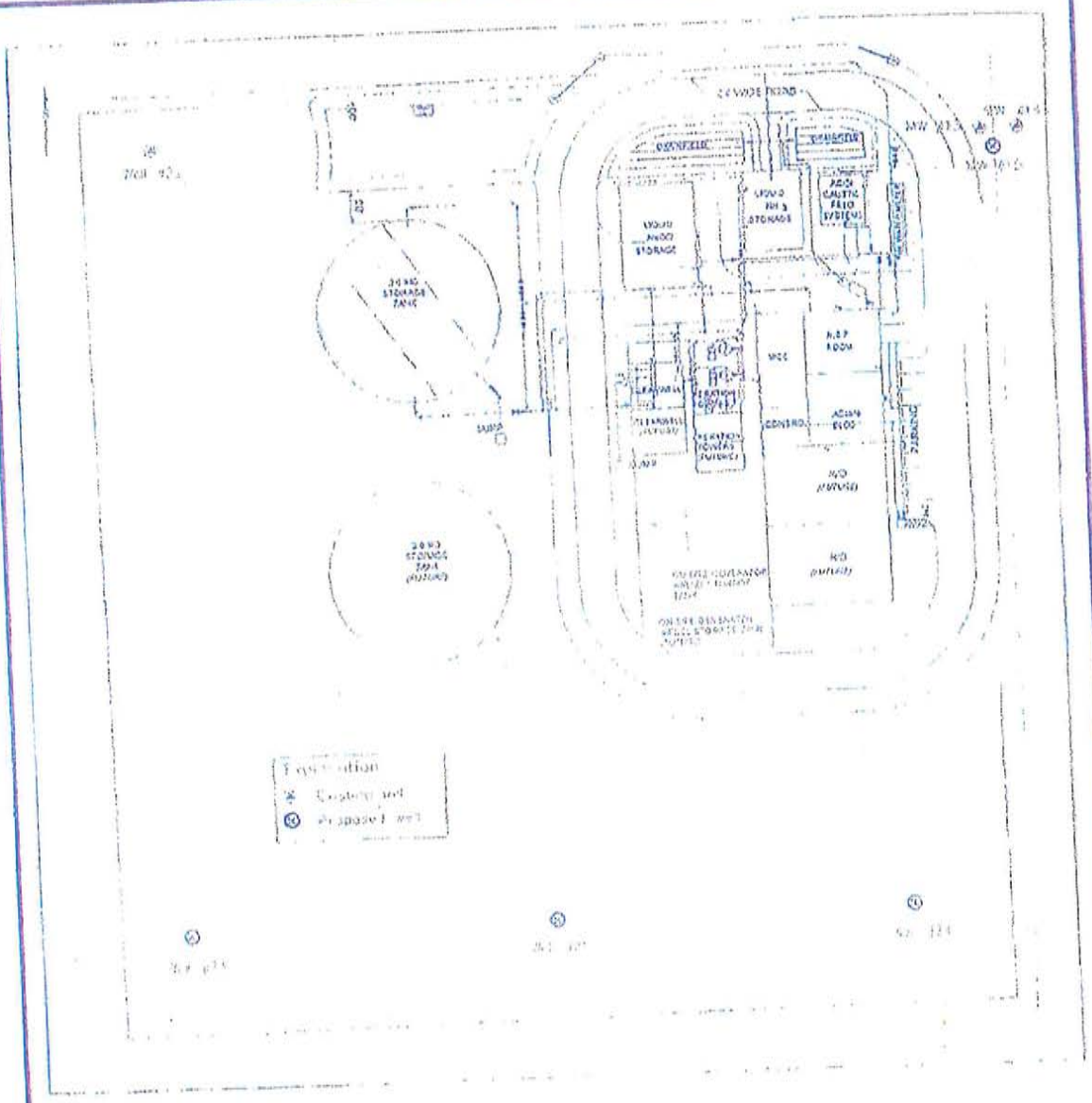


Exhibit 3B



CCI Connect Consulting, Inc. Water Resources Consultants 18963 SE Fernwood Dr. Tequesta, FL 33469 561/747-9917	SITE MAP				FIGURE NUMBER: 1
	FGUA 814 N. Wymore Road Winter Park, FL 32789		Lehigh Acres South Wellfield		
	SCALE: 1 in = 100 ft	DRAWN BY: glm	DATE: 1/26/04		

Exhibit 3C

TABLE - A
Description Of Wells.

Application Number: 030521-21

Well ID	32388	32389	32390	32391	32392	32393
Name	1	2	3	4	5	6
Map Designator	1	2	3	4	5	6
FLUWID Number						
Well Field						
Existing/Proposed	E	E	E	E	E	E
Well Diameter(Inches)	6	6	8	8	8	8
Total Depth(feet)	55	69	68	85	66	62
Cased Depth(feet)	50	52	58	50	54	52
Facility Elev. (ft. NGVD)						
Screened Interval From	0	0	0	0	0	0
To	0	0	0	0	0	0
Pumped Or Flowing	P	P	P	P	P	P
Pump Type	turbine	turbine	turbine	turbine	turbine	turbine
Pump Int. Elev. Feet (NGVD)						
Feet (BLS)	0	0	0	0	0	0
Pump Capacity(GPM)	150	150	150	150	150	100
Year Drilled	1955	1962	1970	1970	1962	1970
Planar Location Source	Migrate	Migrate	Migrate	Migrate	Migrate	Migrate
Feet East	448529	447360	445257	446461	447213	445586
Feet North	826905	825368	825155	827396	826643	826635
Accounting Method	unspecified	unspecified	unspecified	unspecified	unspecified	unspecified
Use Status	Primary	Primary	Primary	Primary	Primary	Primary
Water Use Type	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply
Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer

Exhibit No: 8

TABLE - A
Description Of Wells.

Application Number: 030521-21

Well ID	32394	32395	32396	32397	32405	32407
Name	7	8	9A	10	19	20
Map Designator	7	8	9A	10	19	20
FLUWID Number						
Well Field						
Existing/Proposed	E	E	E	E	E	E
Well Diameter(Inches)	8	8	8	8	8	8
Total Depth(feet)	85	80	80	82	95	95
Cased Depth(feet)	57	62	63	55	55	55
Facility Elev. (ft. NGVD)						
Screened Interval From	0	0	0	0	0	0
To	0	0	0	0	0	0
Pumped Or Flowing	P	P	P	P	P	P
Pump Type	turbine	turbine	turbine	turbine	turbine	turbine
Pump Int. Elev. Feet (NGVD)						
Feet (BLS)	0	0	0	0	0	0
Pump Capacity(GPM)	200	250	200	350	200	200
Year Drilled	1970	1970	1970	1989	1999	9999
Planar Location Source	Migrate	Migrate	Migrate	Migrate	REVIEWER	REVIEWER
Feet East	448758	446918	445479	447344	446825	447202
Feet North	825106	824182	824043	824084	827042	826073
Accounting Method	unspecified	unspecified	unspecified	unspecified	other	other
Use Status	Primary	Primary	Primary	Primary	Primary	Primary
Water Use Type	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply
Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer

Exhibit No: 8

TABLE - A
Description Of Wells.

Application Number: 030521-21						
Well ID	131113	145779	145783	145784	145788	138650
Name	21	Well 22	Well 23	Well 24	Well 25	I.-2186
Map Designator	21	Well 22	Well 23	Well 24	Well 25	
FLUWID Number						
Well Field						
Existing/Proposed	E	E	P	P	P	E
Well Diameter(inches)	10	12	12	12	12	
Total Depth(feet)	100	180	180	180	180	150
Cased Depth(feet)	60	70	80	80	80	133
Facility Elev. (ft. NGVD)	20	30	30	30	30	
Screened Interval						
From						
To						
Pumped Or Flowing	P	P	P	P	P	none
Pump Type	unspecified	submersible	submersible	submersible	submersible	
Pump Int. Elev.						
Feet (NGVD)		-40	-40	-40	-40	
Feet (BLS)		70	79	70	70	
Pump Capacity(GPM)	300	500	500	500	500	0
Year Drilled	2003	2003	2004	2004	2004	
Planar Location						
Source	REVIEWER	DIGITIZED	DIGITIZED	DIGITIZED	DIGITIZED	
Feet East	447707	461398	461414	462021	461726	
Feet North	827017	806162	807510	807499	807518	
Accounting Method	flow meter	flow meter	flow meter	flow meter	flow meter	none
Use Status	Primary	Primary	Primary	Primary	Primary	Monitor
Water Use Type	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Monitor
Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer

Exhibit No. 8

TABLE - A

Description Of Wells.

Application Number: 030521-21

Well ID	138651	138652	145789	146772	146773
Name	L-2215	L-729	MW-13	MW-14	MW-15
Map Designator			MW-13		
FLUWID Number					
Well Field					
Existing/Proposed	E	E	P	P	P
Well Diameter(inches)			4	4	4
Total Depth(feet)	149	103	180	84	20
Cased Depth(feet)	99	81	145	54	15
Facility Elev. (ft. NGVD)					
Screened Interval From					
To				F	
Pumped Or Flowing	none	none	none	none	none
Pump Type					
Pump Int. Elev. Feet (NGVD)					
Feet (BLS)	0	0	0	0	0
Pump Capacity(GPM)			2004	2004	2004
Year Drilled					
Planar Location Source			DIGITIZED		
Feet East			461971		
Feet North			808147		
Accounting Method	none	none	none	none	none
Use Status	Monitor	Monitor	Monitor	Monitor	Monitor
Water Use Type	Monitor	Monitor	Monitor	Monitor	Monitor
Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Sandstone Aquifer	Water Table Aquifer

Exhibit No: 8

Public Water Supply Demands

Application Number: 030521-21

Service Area: LEHIGH ACRES, EASTERN LEE COUNTY

System Efficiency:

Treatment Name:

Standard PCUR: 67

Standard Max Monthly Ratio: 1.12

Standard Max Day Ratio:

Past Water Use (Table-F):

Year	Population	PCUR	Average Use (MGD)	Max Day Use (MGD)	Ratio	Average Monthly Use(MG)	Max Monthly Use (MG)	Ratio	Basis For Demand	Basis For Ratio
						38.91	41.10	1.06	Y	
1998	22,275	57	1.28			44.32	48.04	1.08	Y	
1999	22,699	64	1.46			49.04	53.57	1.09	Y	Y
2000	22,843	71	1.61			52.04	55.84	1.07	Y	Y
2001	23,513	73	1.71			52.14	62.12	1.19	Y	Y
2002	25,119	68	1.72							

Projected Water Use(Table-G):

Year	Population	PCUR	Recommended Average (MGD)	Recommended Max Day (MGD)	Ratio	Average Monthly Use(MG)	Rec Max Monthly (MG)	Ratio	Basis for Allocation
						57.92	67.83	1.17	
2003	26,833	71	1.91			70.59	82.8	1.17	
2004	28,667	81	2.32			84.72	99.6	1.18	
2005	30,623	91	2.79			100.45	111.494	1.11	Y
2006	32,714	101	3.30						

Exhibit No. 9

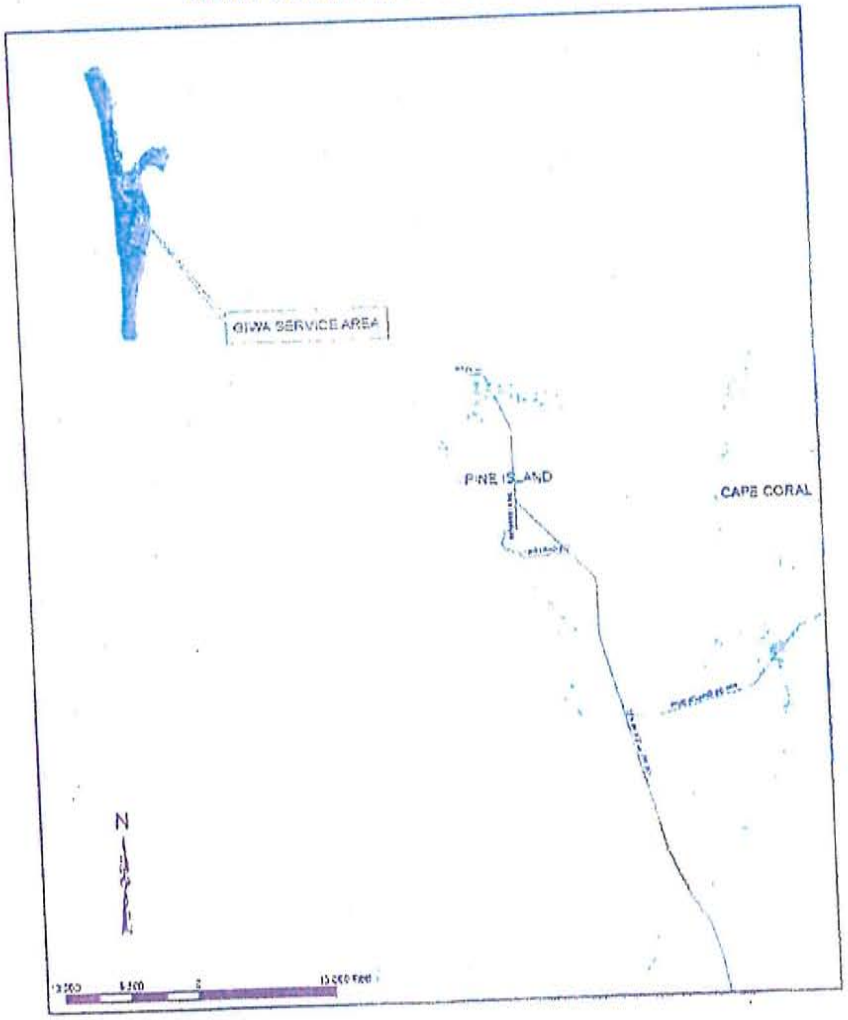
SECTION 7.3
GASPARILLA ISLAND WATER ASSOCIATION

GASPARILLA ISLAND WATER ASSOCIATION

Service Area

The Gasparilla Island Water Association (GIWA) serves potable water to the Gasparilla Island and a small portion of the mainland in Charlotte County. GIWA serves water customers in both Charlotte County and Lee County. The GIWA service area within unincorporated Lee County is shown below. GIWA has calculated that 59.8% of the units they serve are within un-incorporated Lee County. However based on water demand data for fiscal year 2006-2007, 76.4% of the water produce by GIWA was used in the Lee County portion of their service area.

Gasparilla Island Water Association
Water Service Area in Lee County



Consumptive Use Permit

GIWA has a Consumptive Use Permit issued by Southwest Florida Water Management District (SWFWMD). A summary of the general permit information is presented below.

Permit Number: 718.008
Issued: June 26, 2001
Expires: June 26, 2011
Annual Average Allocation: 1,537,600 gallons per day
Peak Daily Allocation: 1,952,800 gallons per day

Existing Water Supply

GIWA currently utilizes reverse osmosis treatment to treat brackish raw water from an intermediate aquifer. SWFWMD records indicate that the permitted annual average withdrawal from this source is 1,076,300 gallons per day. GIWA also utilizes surficial aquifer wells for raw water and provides treatment for color removal from this wellfield. SWFWMD records indicate that the permitted annual average withdrawal from the surficial aquifer is 461,300 gallons per day. In addition, GIWA has an interconnect with Charlotte County Utilities.

Demand Projections

Demand Projections for GIWA are presented below. The data in this table was provided by GIWA and was developed in support of their application to renew the above referenced consumptive use permit. GIWA projects that Gasparilla Island will reach build-out by 2011. In addition, GIWA has informed Lee County that areas served by GIWA in Charlotte County are being turned over to Charlotte County Utilities.

Gasparilla Island Water Association Projected Water Use

Year	Funcional Population	Gross Per Capita Water Use (gpcd)	Projected Gross Water AADF (gpd)	Projected Treatment Loss (%)	Projected Raw Water AADF (gpd)	Peak Factor	Projected Peak Month ADF (gpd)
2005	4,449	262	1,165,638	23%	1,513,816	1.27	1,922,546
2006	4,461	262	1,168,782	23%	1,517,899	1.27	1,927,731
2007	4,472	262	1,171,664	23%	1,521,642	1.27	1,932,485
2008	4,483	262	1,174,546	23%	1,525,384	1.27	1,937,238
2009	4,496	262	1,177,952	23%	1,529,808	1.27	1,942,856
2010	4,507	262	1,180,834	23%	1,533,551	1.27	1,947,609
2011	4,519	262	1,183,978	23%	1,537,634	1.27	1,952,795

Proposed Water Supply Sources

GIWAS plans one last expansion of their reverse osmosis treatment facility and related raw water supply to add an additional 170,000 gallons per day. The utility is also planning to conduct an analysis of options for future water supplies in the event their shallow water wellfield is impacted by salt water intrusion.

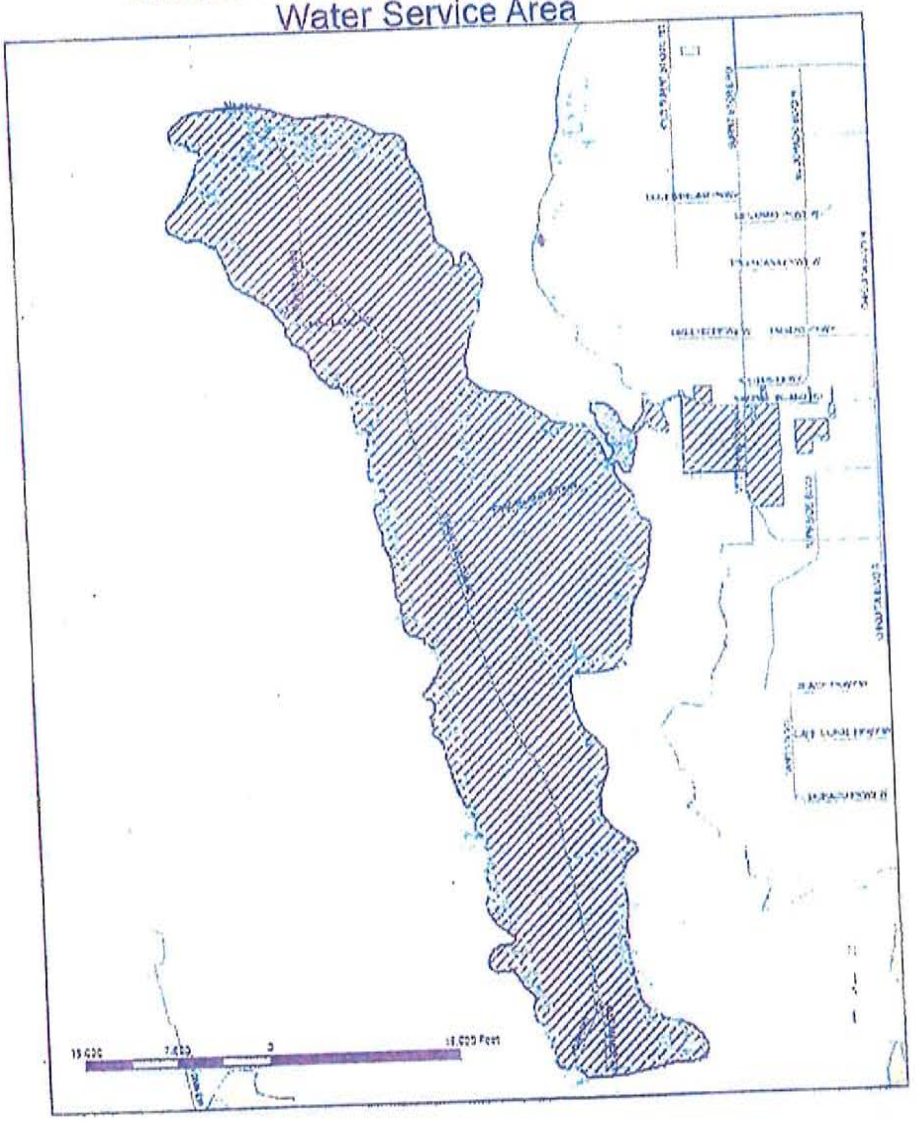
SECTION 7.4
GREATER PINE ISLAND WATER ASSOCIATION

Greater Pine Island Water Association

Service Area

The Greater Pine Island Water Association (GPIWA) serves potable water to the islands of Matlacha as well as Pine Island proper. Also included in the GPIWA service area is a small portion of the mainland. The GPIWA service area is shown below.

Greater Pine Island Water Association
Water Service Area



Consumptive Use Permit

GPIWA has a Consumptive Use Permit issued by the SFWMD. A summary of the general permit information is presented below.

Permit Number: 36-00045-W
Issued: October 12, 2005
Expires: October 12, 2015
Annual Allocation: 890 Million Gallons (890/365= 2.44 MGD AADF)
Maximum Monthly Allocation: 97.1 Million Gallons (97.1/30 = 3.24 MGD)

Existing Water Supply

The GPIWA wellfield on Pine Island consist of 4 Lower Hawthorne wells that are 12" in diameter. Each well is rated at 700 gallons per minute for a total well capacity of 2,800 gallons per minute. The location of these existing wells, is shown on the attached copy of Figure 6-1 from GPIWA's consumptive use permit staff report. A description of these wells is shown on the attached copy of Table A, labeled Exhibit No: 7 from GPIWA's consumptive use permit staff report.

Treatment Facility
Raw water from the wellfield is treated at GPIWA's Reverse Osmosis Treatment Plant. The plant is permitted to treat 2.25 MGD. The location of this facility is also shown on Figure 6-1 reference above. A deep injection well at the plant site is used for concentrate disposal.

Storage Facilities
Storage facilities along with their capacities are shown on the attached copy of Figure 1-2 from GPIWA's consumptive use permit staff report.

Demand Projections

Finished water demand projections are presented in the table below. This demand projection was supplied by GPIWA.

GREATER PINE ISLAND WATER ASSOCIATION
WATER DEMAND PROJECTION

Year	Water Demand ADF-MGD
2006	1.659
2007	1.742
2008	1.829
2009	1.92
2010	2.017
2011	2.117
2012	2.223
2013	2.334
2014	2.451
2015	2.574
2016	2.702
2017	2.837

Proposed Water Supply Sources

GPIWA plans to construct a fifth Lower Hawthorne aquifer production well to meet future needs. The proposed well is planned to be 783 feet deep and have a capacity of 700 gallons per minute, bringing the total pumping capacity of the wellfield to 3,500 gallons per minute. This wells is projected to be on-line in 2009.

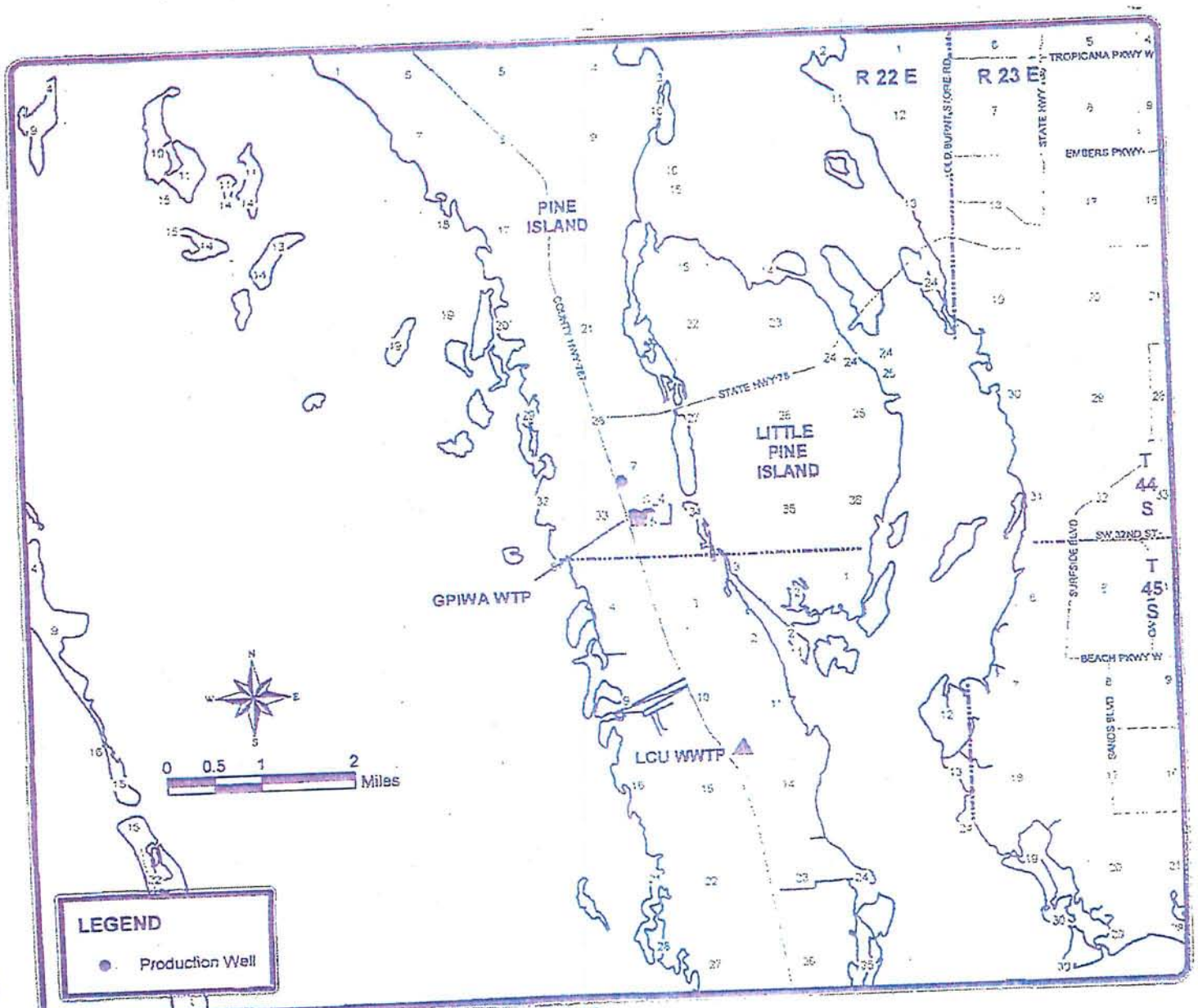


FIGURE 6-1. MAP SHOWING EXISTING GPIWA PRODUCTION WELLS

EXHIBIT 5

TABLE - A
Description Of Wells.

Application Number: 050524-9

Well ID	22056	22057	22058	22059	184315
Name	RO-4	RO-5	RO-6	RO-7	RO-8
Map Designator	4	5	6	7	7
FLUWID Number					
Well Field					
Existing/Proposed	E	E	E	E	P
Well Diameter(inches)	12	12	12	12	12
Total Depth(feet)	739	770	737	783	770
Cased Depth(feet)	583	563	598	598	600
Facility Elev. (ft. NGVD)					
Screened Interval From	0	0	0	0	
To	0	0	0	0	
Pumped Or Flowing	P	P	P	P	P
Pump Type	submersible	submersible	submersible	submersible	submersible
Pump Int. Elev. Feet (NGVD)					
Feet (BLS)	0	0	0	0	0
Pump Capacity(GPM)	700	700	700	700	700
Year Drilled	1991	1991	1992	2001	
Planar Location Source	Migrate	Migrate	Migrate	Migrate	Migrate
Feet East	293103	292839	292666	292295	293157
Feet North	824786	824315	824791	826006	822453
Accounting Method	totalizer	totalizer	totalizer	totalizer	totalizer
Use Status	Primary	Primary	Primary	Primary	Primary
Water Use Type	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply	Public Water Supply
Aquifer	Lower Hawthorn Aquifer	Lower Hawthorn Aquifer	Lower Hawthorn Aquifer	Lower Hawthorn Aquifer	Lower Hawthorn Aquifer

Exhibit No: 7

Public Water Supply Demands

Application Number: 050524-9

Service Area: GREATER PINE ISLAND
Treatment Name: RO Membrane
Standard PCUR: 98

System Efficiency: 78%

Standard Max Monthly Ratio: 1.31

Standard Max Day Ratio:

Past Water Use (Table-F):

Year	Population	PCUR	Average Use (MGD)	Max Day Use (MGD)	Ratio	Average Monthly Use(MG)	Max Monthly Use (MG)	Ratio	Basis For Demand	Basis For Ratio
						33.72	45.27	1.34	Y	
1999	11,787	94	1.11			36.40	48.26	1.33	Y	Y
2000	11,999	100	1.20			37.33	49.12	1.32	Y	Y
2001	12,273	100	1.23			36.11	47.61	1.32		
2002	12,550	95	1.19			35.36	45.50	1.29		
2003	12,950	90	1.16			39.47	50.95	1.29	Y	Y
2004	13,197	98	1.30							

Projected Water Use(Table-G):

Year	Population	PCUR	Recommended Average (MGD)	Recommended Max Day (MGD)	Ratio	Average Monthly Use(MG)	Rec Max Monthly (MG)	Ratio	Basis for Allocation
						39.50	51.7505	1.31	
2005	13,260	98	1.30			42.24	55.3332	1.31	
2006	14,178	98	1.39			44.99	58.9394	1.31	
2007	15,102	98	1.48			47.76	62.5611	1.31	
2008	16,030	98	1.57			50.54	66.2102	1.31	
2009	16,965	98	1.66			53.34	69.8788	1.31	
2010	17,905	98	1.75			54.21	71.0184	1.31	
2011	18,197	98	1.78			55.10	72.1814	1.31	
2012	18,495	98	1.81			56.01	73.3756	1.31	
2013	18,801	98	1.84			56.94	74.5855	1.31	
2014	19,111	98	1.87			57.88	75.8188	1.31	Y
2015	19,427	98	1.90						

Exhibit No. 8

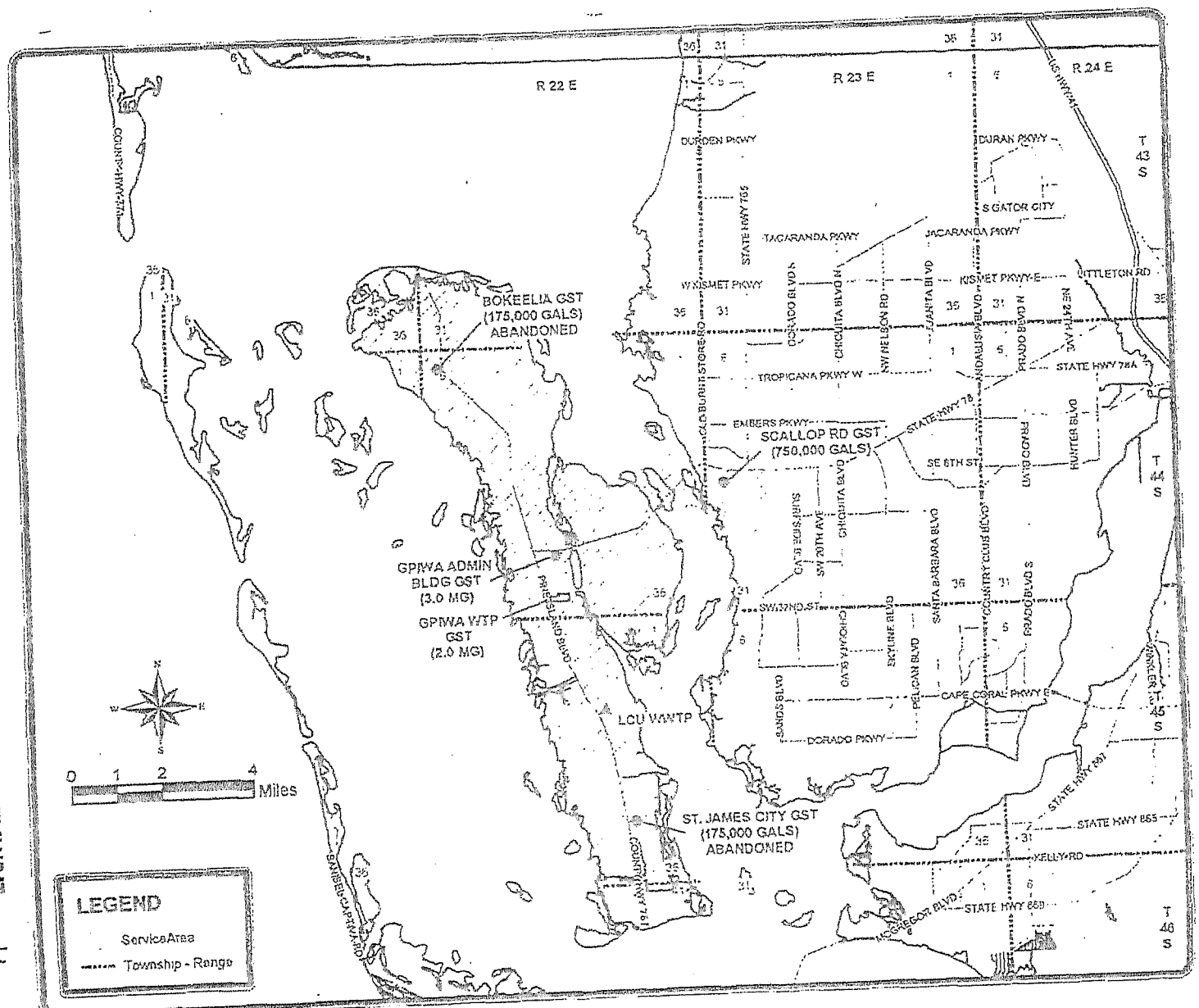


FIGURE 1-2. MAP SHOWING GPIWA SERVICE AREA

EXHIBIT 4

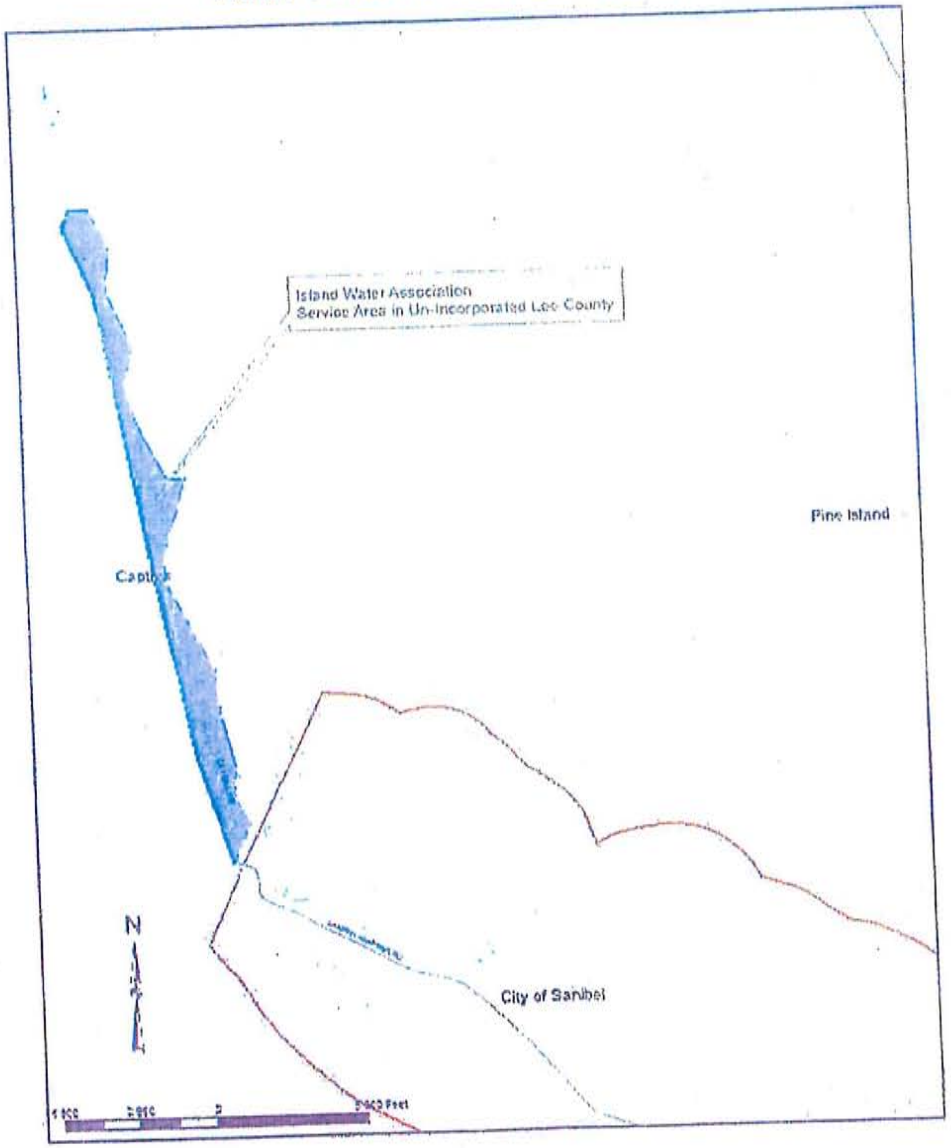
SECTION 7.5
ISLAND WATER ASSOCIATION

ISLAND WATER ASSOCIATION

Service Area

The Island Water Association (IWA) provides water service to Sanibel Island and Captiva Island. IWA serves areas within the City of Sanibel and Un-Incorporated Lee County. The IWA service area located within unincorporated Lee County is shown on the figure below. IWA has calculated that the unincorporated Lee County portion of its service area accounts for 25% of its potable water demand.

Island Water Association
Water Service Area in Lee County



Consumptive Use Permit

IWA has a Consumptive Use Permit issued by South Florida Water Management District (SFWMD). A summary of the general permit information is presented below.

Permit Number: 36-00034-W
Issued: November 13, 1997
Expires: November 13, 2017
Annual Allocation: 1809 Million Gallons (1809/365 = 4.96MGD AADF)
Maximum Daily Allocation: 8.08 MGD

Existing Water Supply

The IWA wellfield on Sanibel Island consists of 8 Floridan aquifer wells and 10 Lower Hawthorne aquifer wells. These wells range in diameter from 6" to 10". The capacity of the wells range from 30 gallons per minute (gpm) to 525 gpm. The total capacity of the 18 wells is 6460 gpm. The depths of these wells range from 605 feet to 770 feet. The location of these wells is depicted in the attached figure labeled Exhibit 4 from IWA's consumptive use permit staff report. IWA maintains an interconnect with Greater Pine Island Water Association. The location of this interconnect is depicted on the attached map titled "IWA Facilities and Service Area" provided by IWA.

Treatment Facility

Raw water from the brackish water wellfield is treated at the IWA's Reverse Osmosis Treatment Plant. The plant has a permitted capacity of 4.7 MGD. Concentrate disposal for the facility is provided through a discharge to the Gulf of Mexico.

Storage Facilities

The location of storage facilities in IWA's system along with their capacities are shown on the attached map titled "IWA Facilities and Service Area" provided by IWA.

Demand Projections

Raw Water demand projections are presented in the table below. This demand projection was supplied by IWA and is in Table F&G of the IWA's consumptive use permit staff report.

ISLAND WATER ASSOCIATION
WATER DEMAND PROJECTION

Year	Permanent Population	Per Capita Usage	Demand AADF (MGD)	Demand Maximum Day (MGD)
2005	7,753	556	4.31	7.02
2006	7,866	554	4.36	7.11
2007	7,979	553	4.41	7.19
2008	8,092	552	4.47	7.28
2009	8,206	551	4.52	7.37
2010	8,318	550	4.58	7.46
2011	8,431	549	4.63	7.56
2012	8,545	548	4.68	7.64
2013	8,657	547	4.74	7.72
2014	8,771	546	4.79	7.81
2015	8,884	546	4.85	7.9
2016	8,997	545	4.9	7.99
2017	9,110	544	4.96	8.08

Proposed Water Supply Sources

IWA plans to install 3 additional Floridan aquifer wells. The wells are proposed to be 10" in diameter, each with a capacity of 525 gallons per minute which will provide an additional 2.27 MGD. These wells are included in IWA's current consumptive use permit.

Note

It should be noted that the information provided above included the entire service area for IWA. The unincorporated portion of this service area only represents approximately 25% of the total.

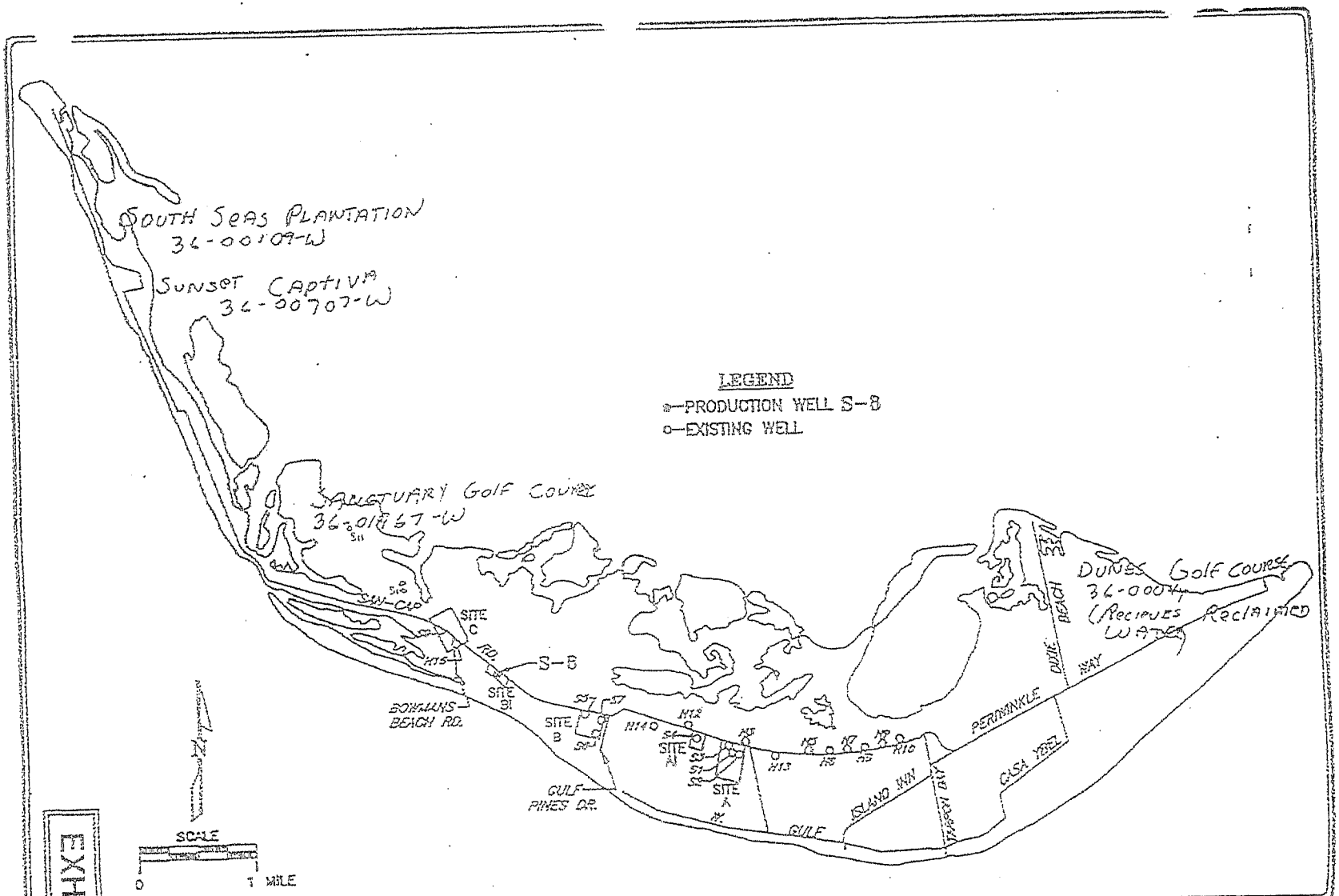
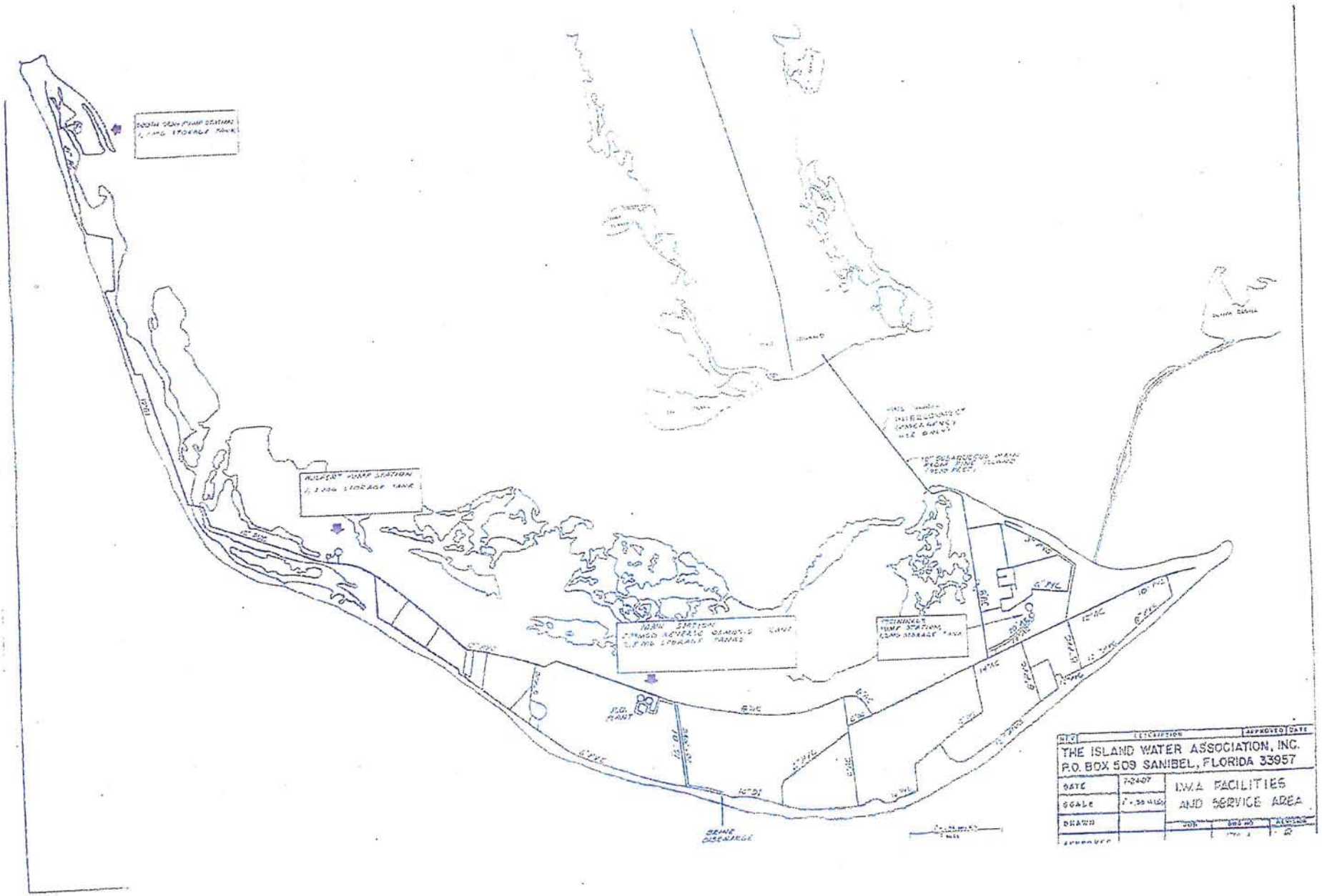


EXHIBIT 4

3A

ENVIRONMENTAL AND GROUNDWATER SERVICES	Missimer & Associates, Inc.
DRN. BY: TWO DWG NO. A-C1629SIT-3 DATE: 4/7/92	
PROJECT NAME: IWA S-8 WELL PROJECT NUMBER: CH1-629	

FIGURE 2-1. MAP SHOWING THE LOCATION OF IWA PRODUCTION WELLS.


NO.
DESCRIPTION
APPROVED
DATE
THE ISLAND WATER ASSOCIATION, INC.
P.O. BOX 509 SANIBEL, FLORIDA 33957
DATE
7-24-07
SCALE
DRAWN
APPROVED
I.W.A. FACILITIES
AND SERVICE AREA
JOB NO.
DWG NO.
REVISION

WATER SUPPLY FACILITIES WORK PLAN
LEE COUNTY UTILITIES
LEE COUNTY, FLORIDA

Section 8
DOMESTIC SELF-SUPPLY

DOMESTIC SELF-SUPPLY

The largest concentration of Domestic Self-Supply (DSS) wells in Lee County is located in the Lehigh Acres community. Florida Governmental Utility Authority (FGUA) is the utility provider for this area of the County. FGUA's 2008-2012 Capital Program includes water treatment capacity expansions which will assist in reducing the reliance of private wells for potable water in the Lehigh Acres area.

It is expected that future domestic self supply will occur outside of the future service areas of Lee County's utility providers. These areas are mainly the northern portions of Lee County and the Density Reduction/Groundwater Resource area in the southeast area of Lee County.

Lee County Planning staff projects that in the year 2030 there will be 19,602 permanent and 3,294 seasonal residents living in areas with domestic self supplied water. This projection only includes residents not within a franchise area. The projection uses the adopted 2030 population from the Lee Plan which is based on the BEBR mid-range projection from Florida Population Studies, 2006 Projections of Florida Population published February 2006. Planning staff has disaggregated this population projection by the 22 Planning Communities and then by the Future Land Use Map designations. From this breakdown, staff was able to aggregate the projection population to the anticipated areas of domestic self supplied water.

A map depicting the Lee County Utilities future service area as well as other utility franchise areas is provided on the following page. Parcels with domestic self-supplied utilities located outside of a franchise area are identified on the map.

The Lee County Division of Natural Resources currently maintains an ongoing database of permitted wells in unincorporated Lee County. The database is updated on a monthly basis. At this time it is estimated that there is a domestic self-supply consumption rate of 100 gallons per day per person. Currently the Lee County Division of Natural Resources staff is working with a consultant to refine a projection for the number of gallons used per day.

LEE COUNTY

Parcels With Domestic Self-Supplied Water Utilties

Existing Land Use

- Residential Use
- Other Uses
- City Limits

Franchise Name

- FGUA Franchise Area
- Other Franchise Area
- Lee County Future Water Service Area

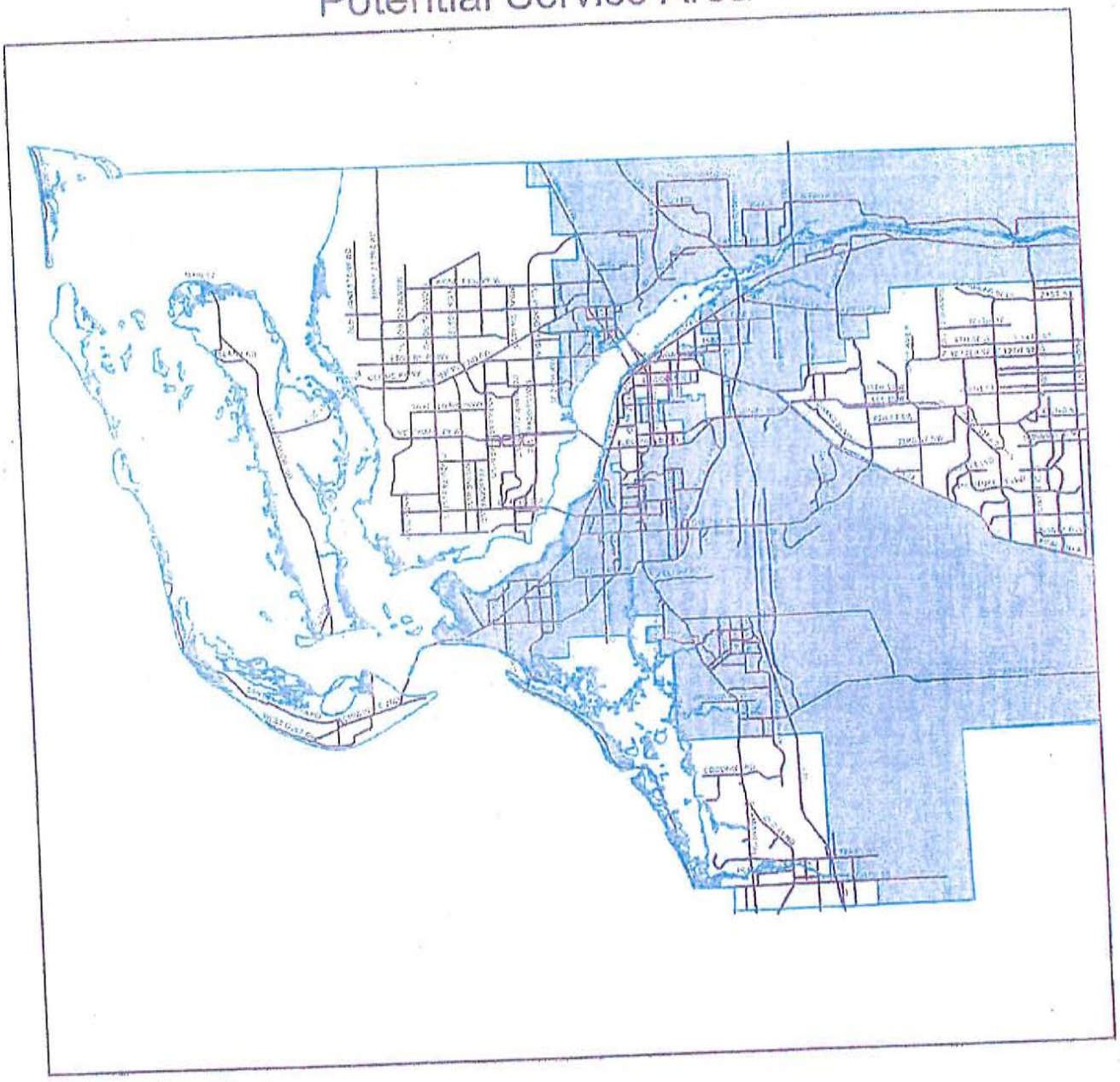
LEE COUNTY
SOUTHWEST FLORIDA
DIVISION OF PLANNING

N
W E
S

0.8 0.4 0 0.8 1.6 2.4 3.2
Miles

Map Generated: November 2008
City Limits current to date of map generation

Figure 1
Lee County Utilities
Potential Service Area



N
W E
S

Legend
sde.DOT.MajorRoads
sde.GIS.CountyBoundary
Potential Service Area

FIGURE 2

Lee County Utilities
Current Area Served

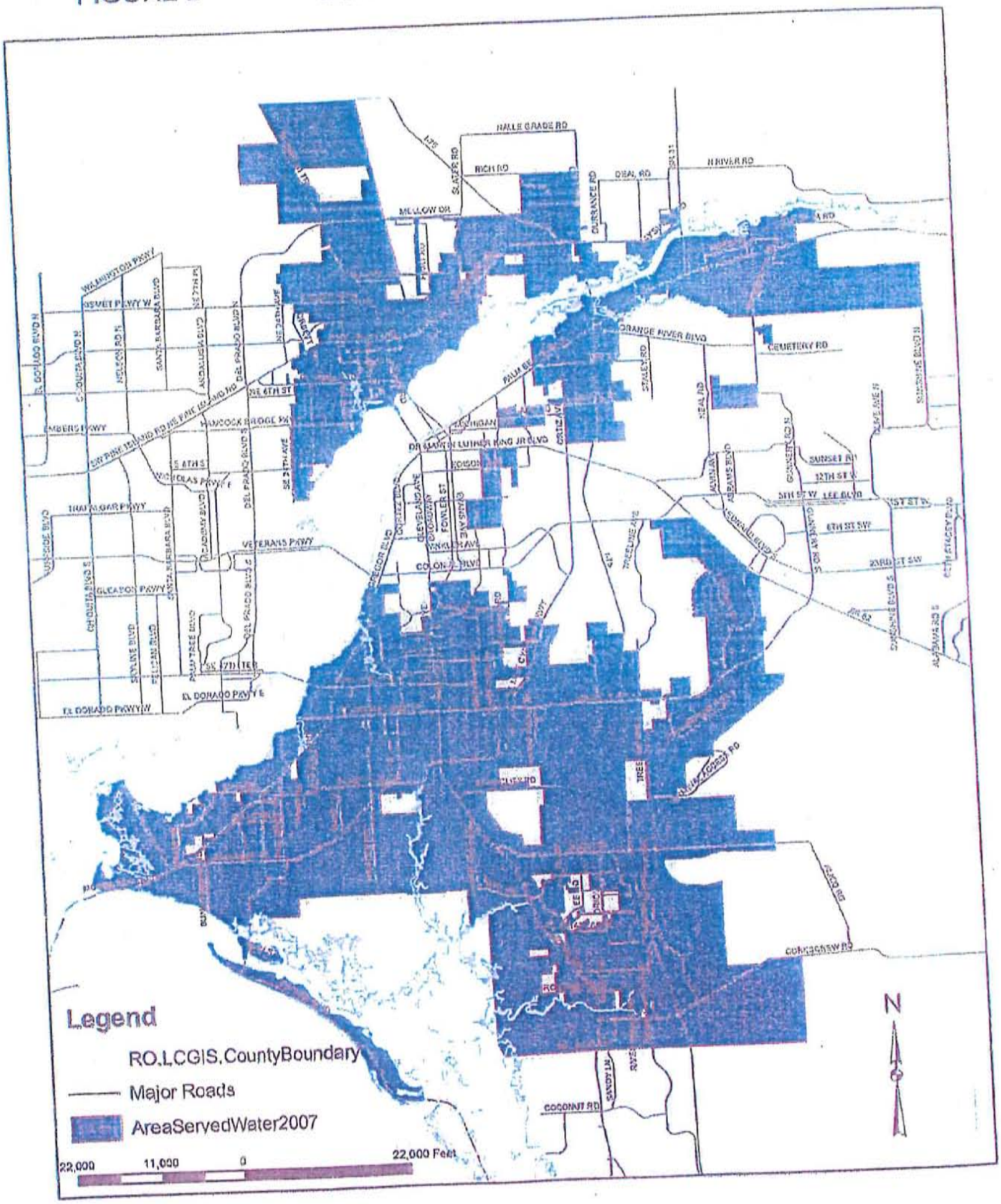


FIGURE 3

Lee County Utilities
Future Service Area

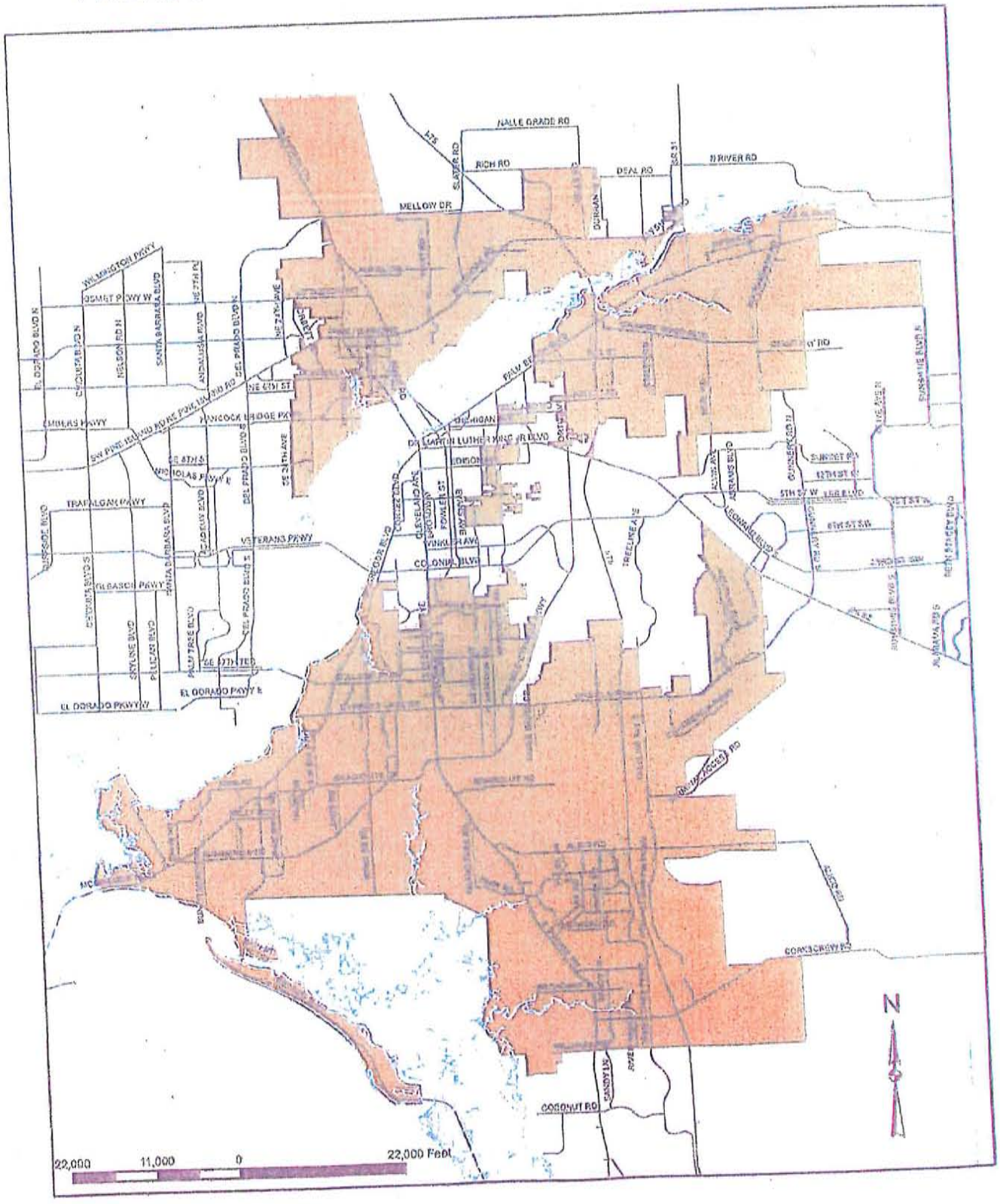


FIGURE 4
Lee County Utilities Water Treatment Facilities

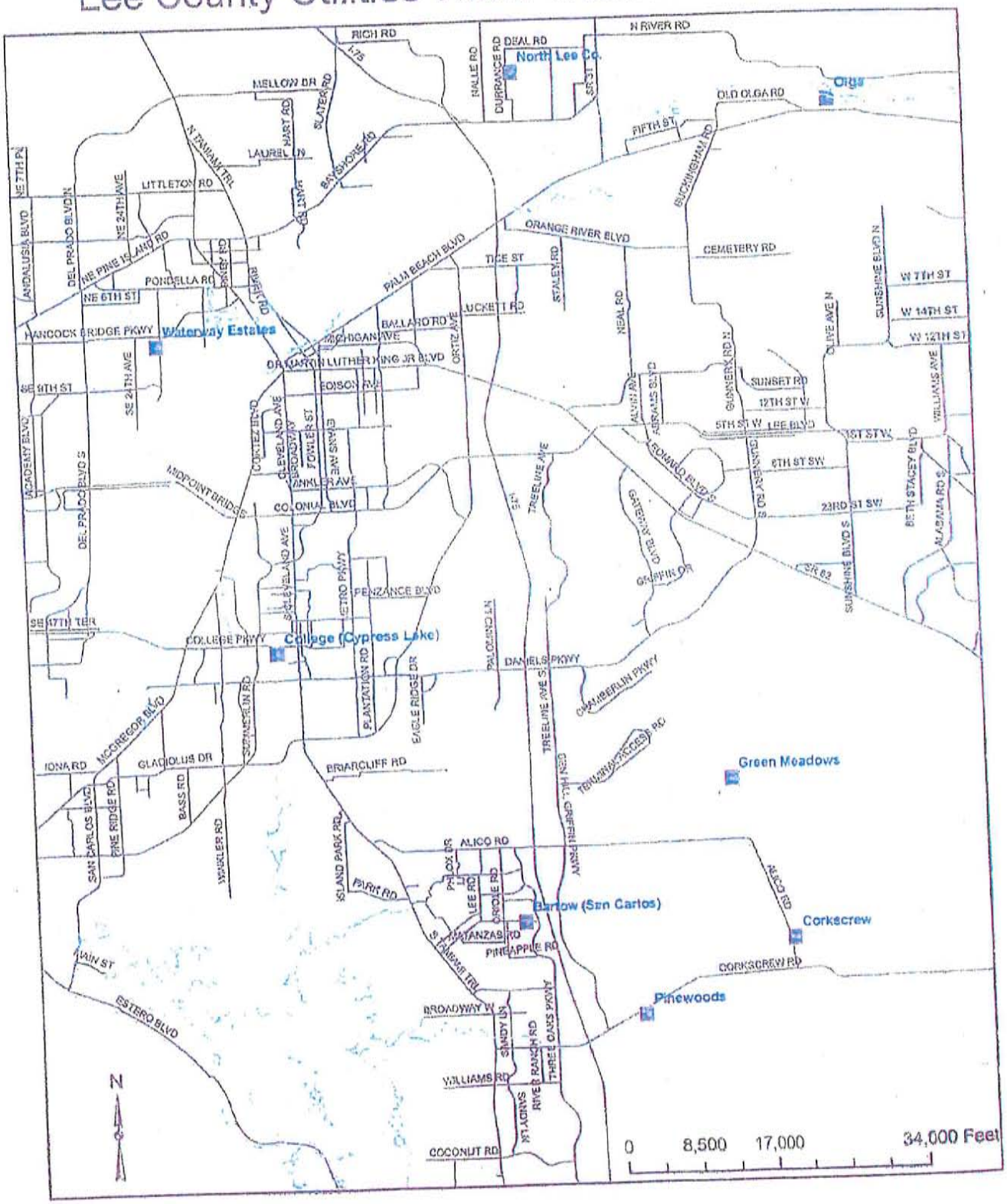


FIGURE 5

Corkscrew Wellfield

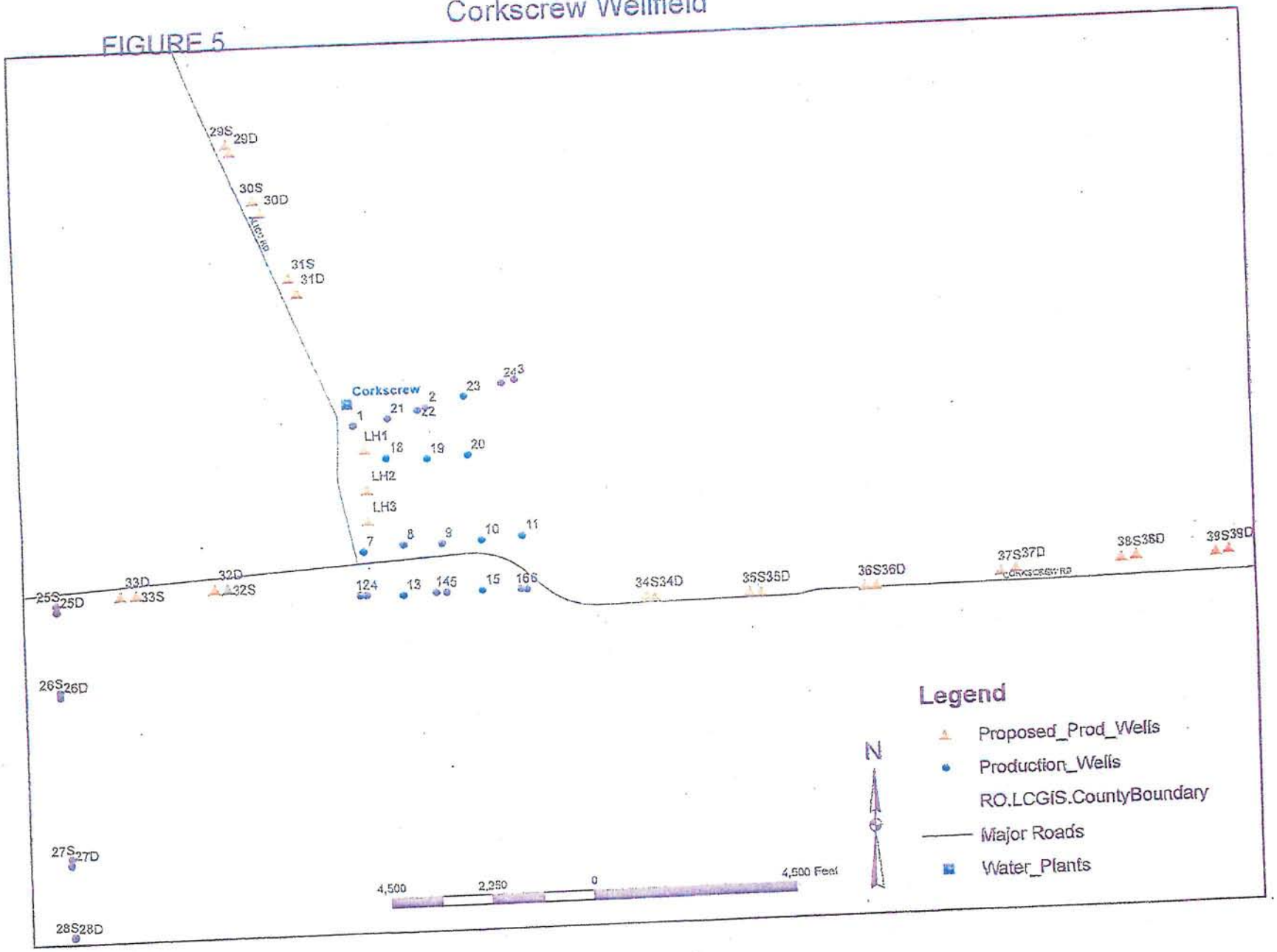
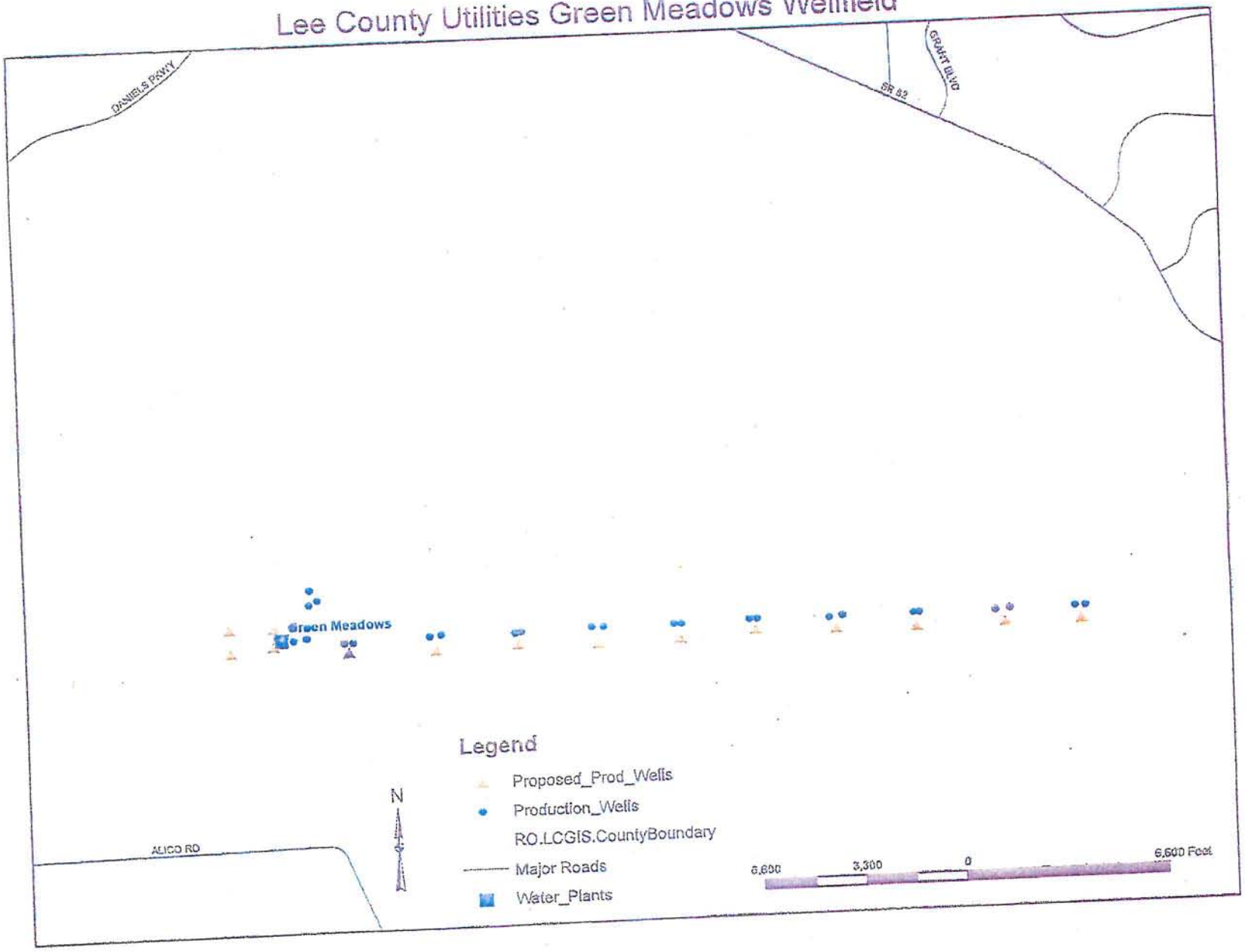
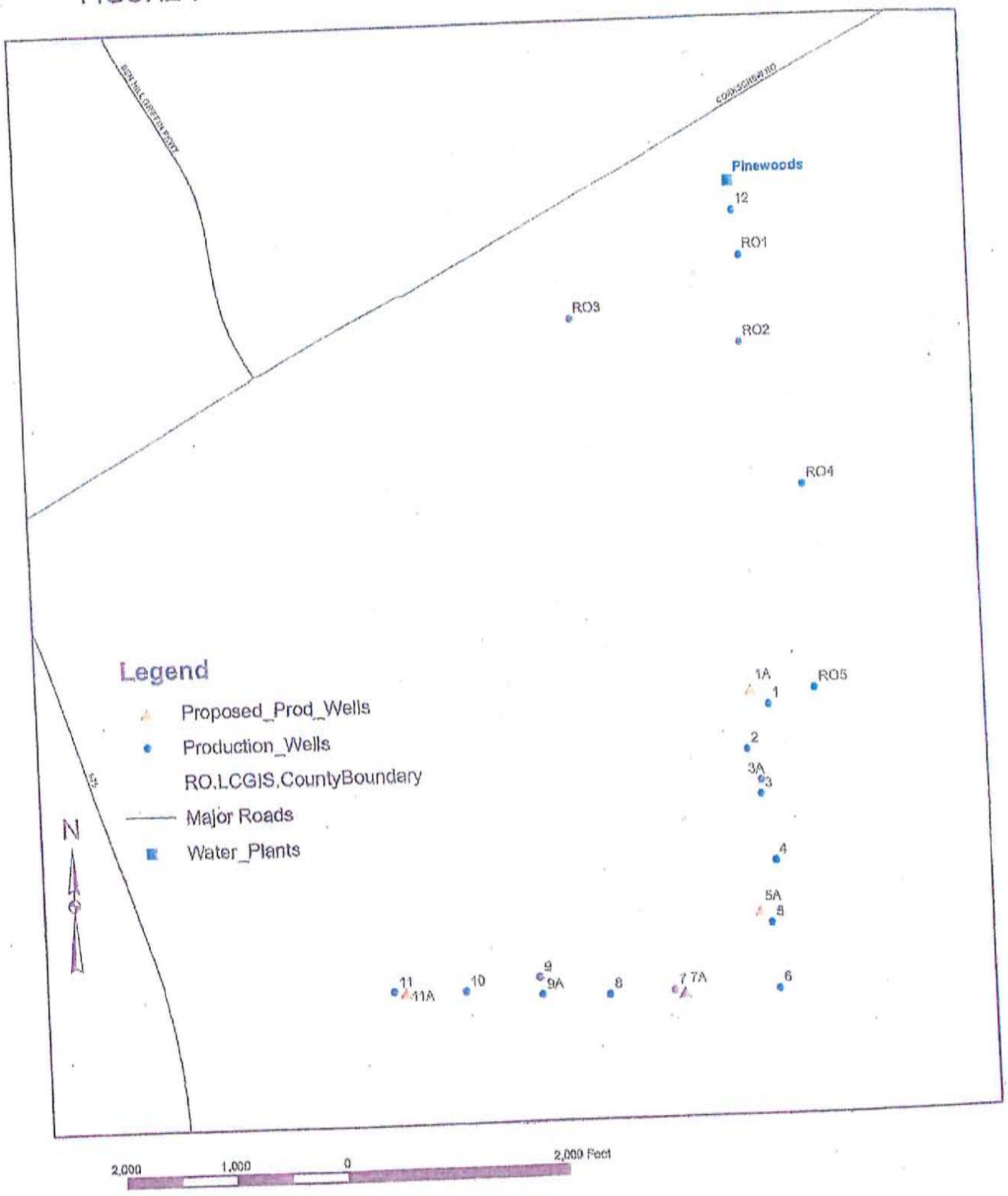


FIGURE 6
Lee County Utilities Green Meadows Wellfield



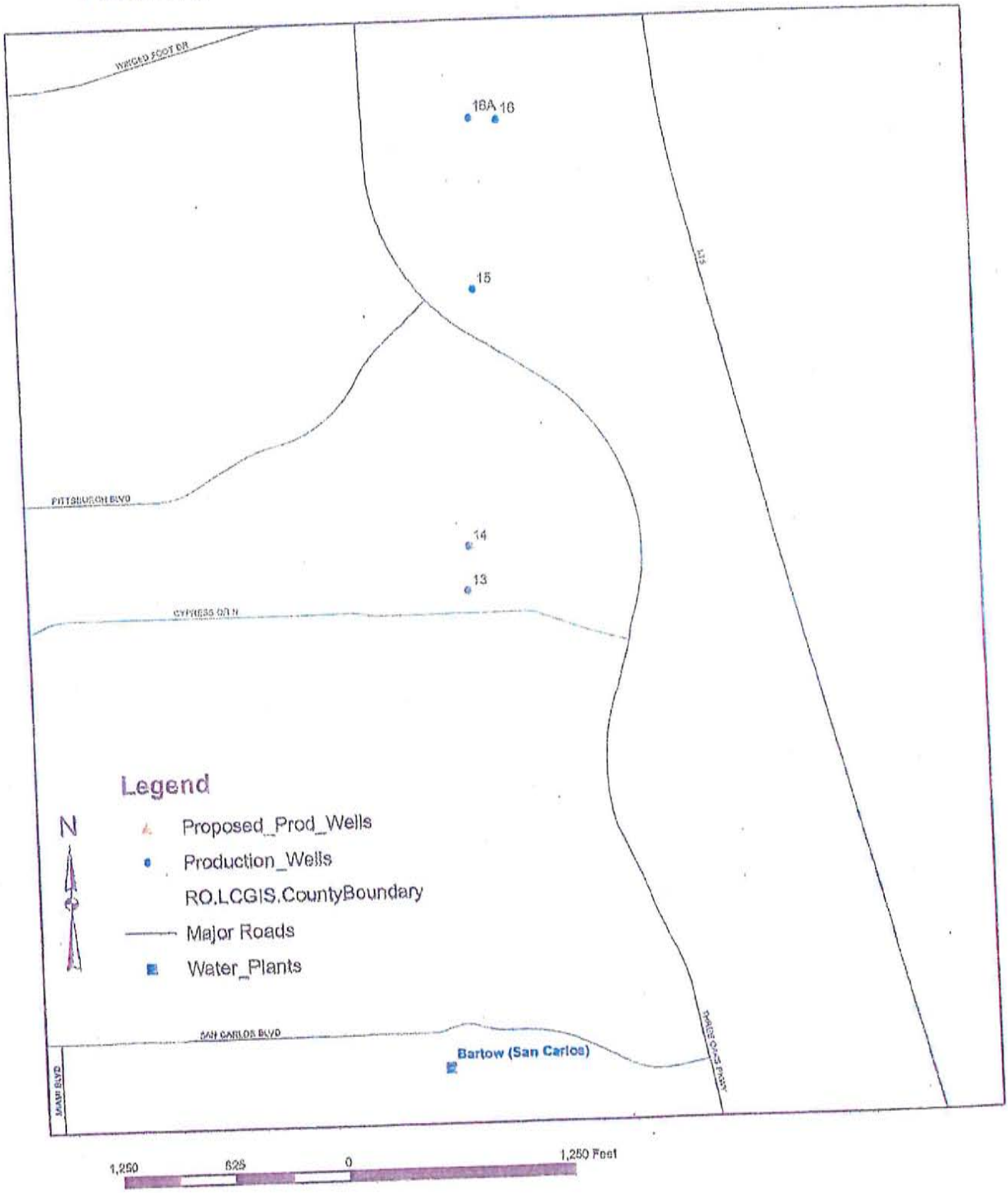
Pinewoods Wellfield

FIGURE 7



San Carlos / Bartow Wellfield

FIGURE 8



Waterway Estates Wellfield

FIGURE 10

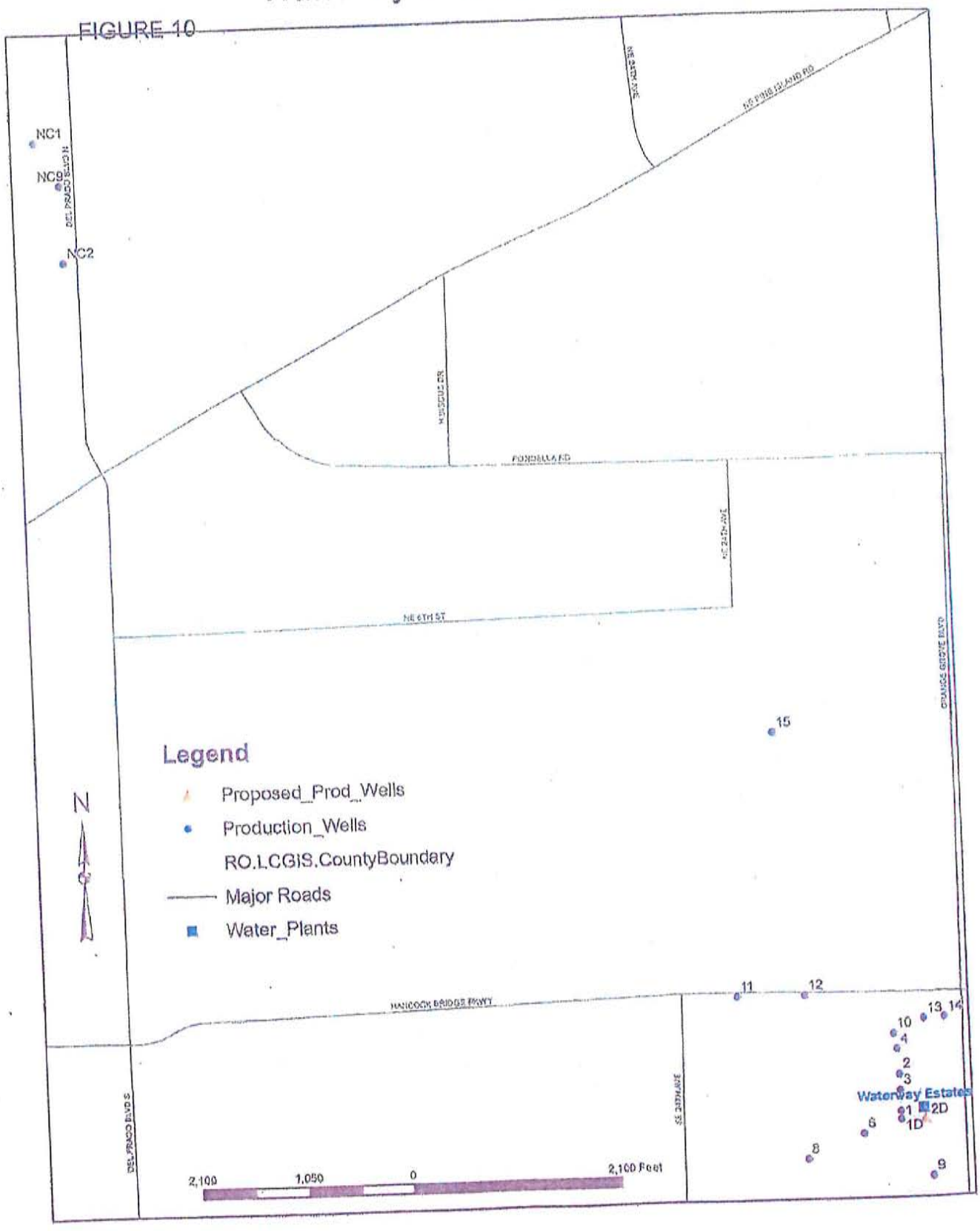


FIGURE 11
North Lee County Existing and Proposed Wellls

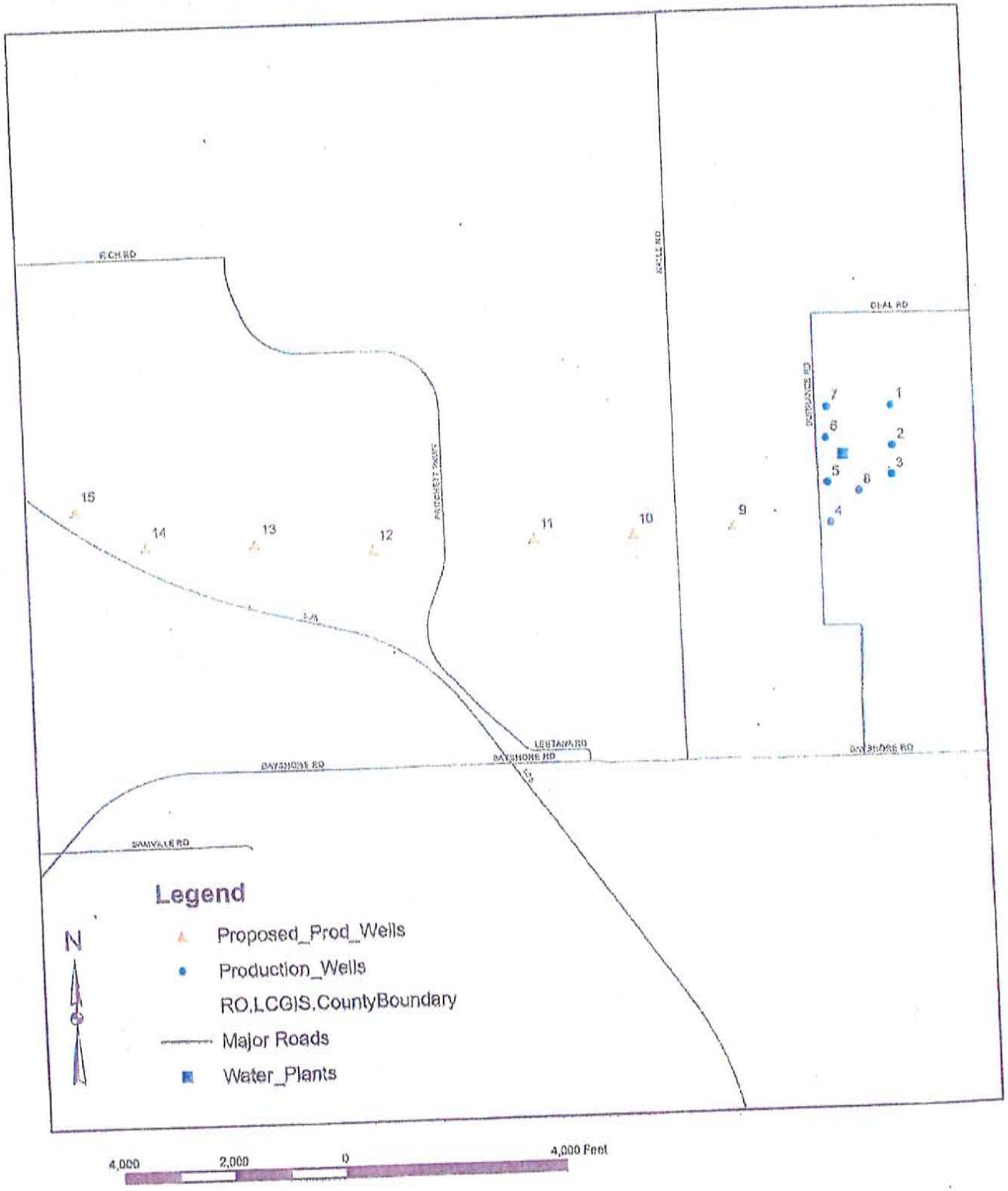


FIGURE 13
Lee County Utilities Storage Facilities

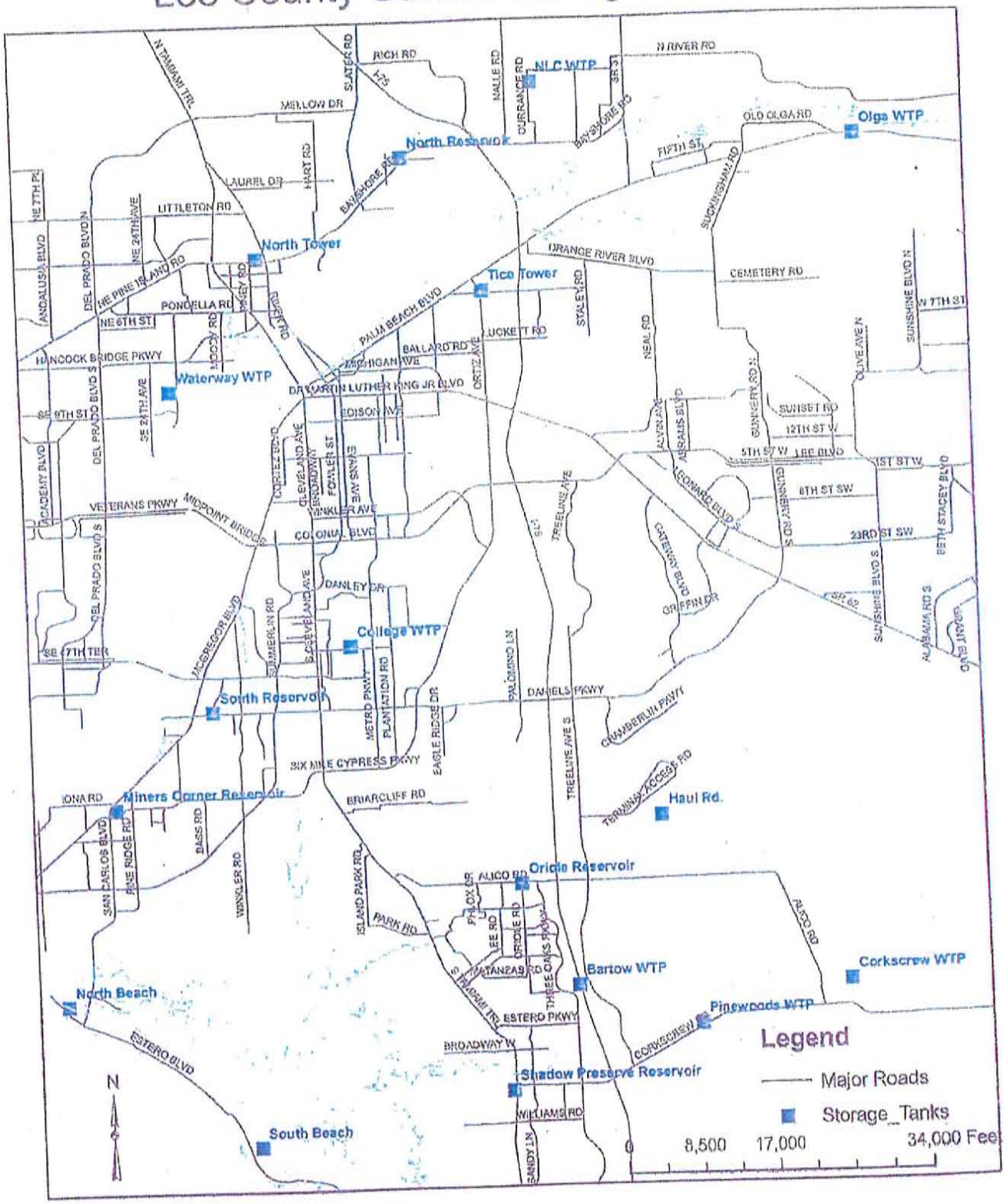


FIGURE 14
Lee County Utilities Corkscrew ASR Wells

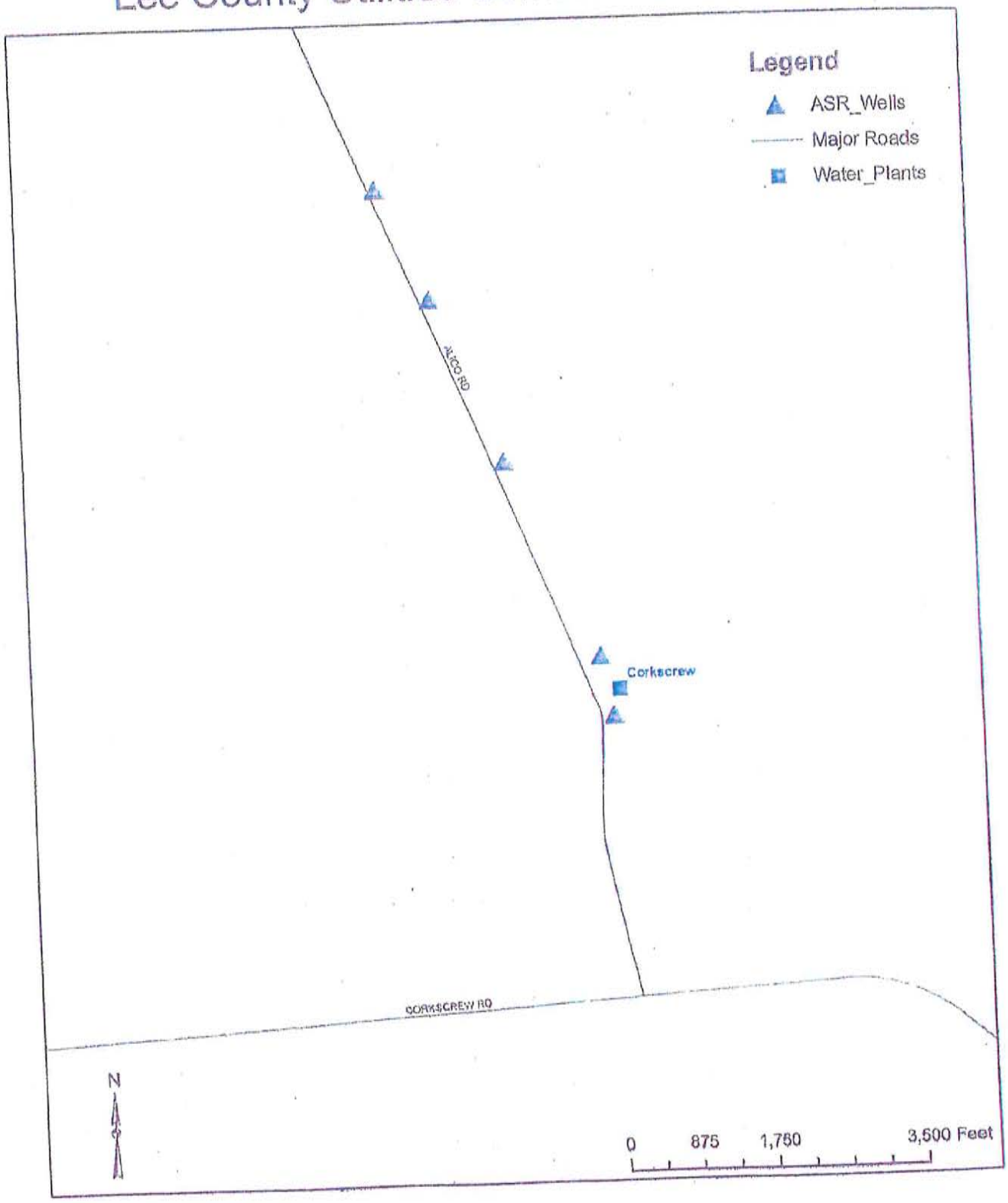


Figure 15
Wastewater Plants & Reuse Lines

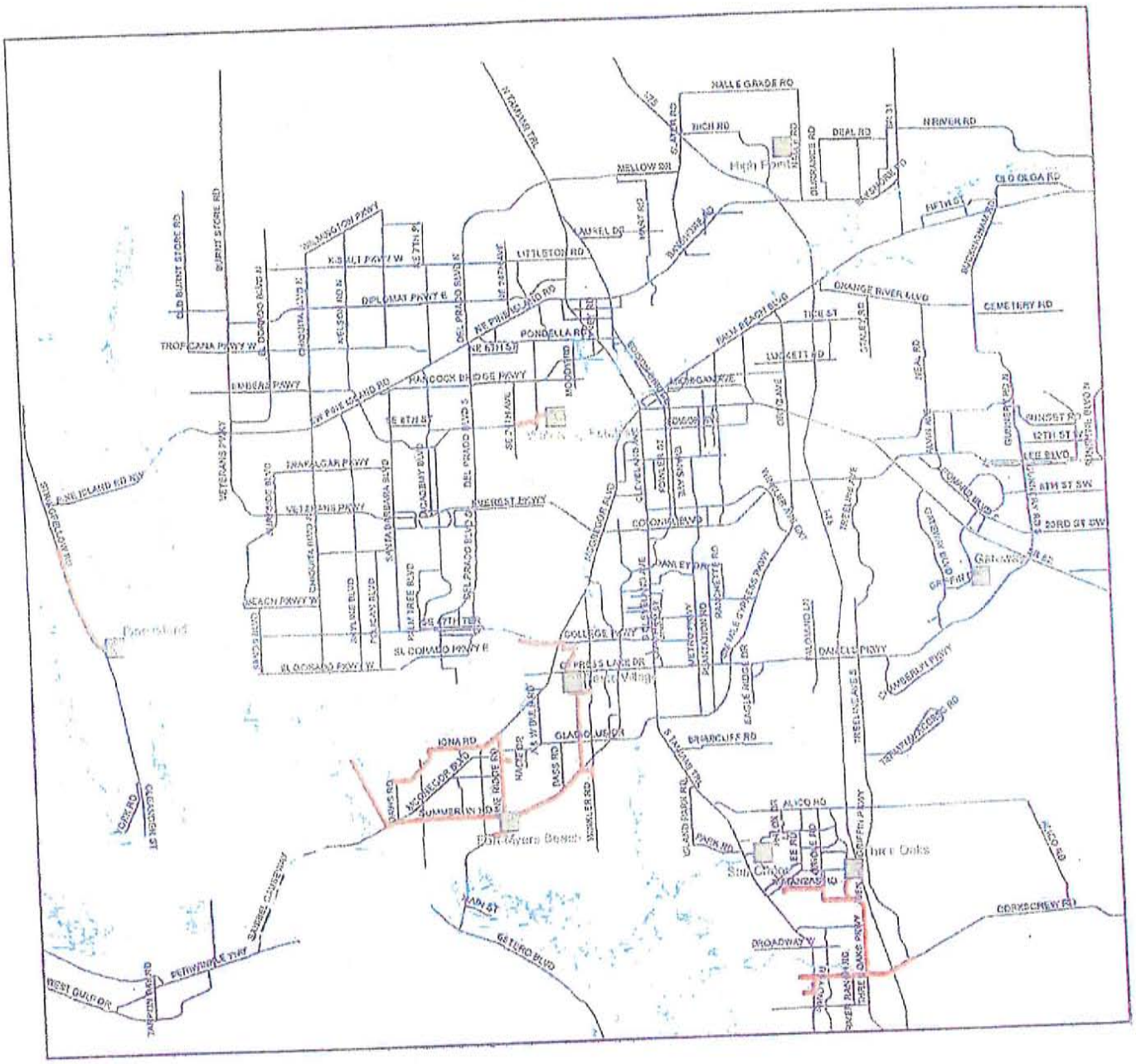


Figure 16
Fort Myers Beach WWTP
& Fiesta VillageWWTP Reuse Lines

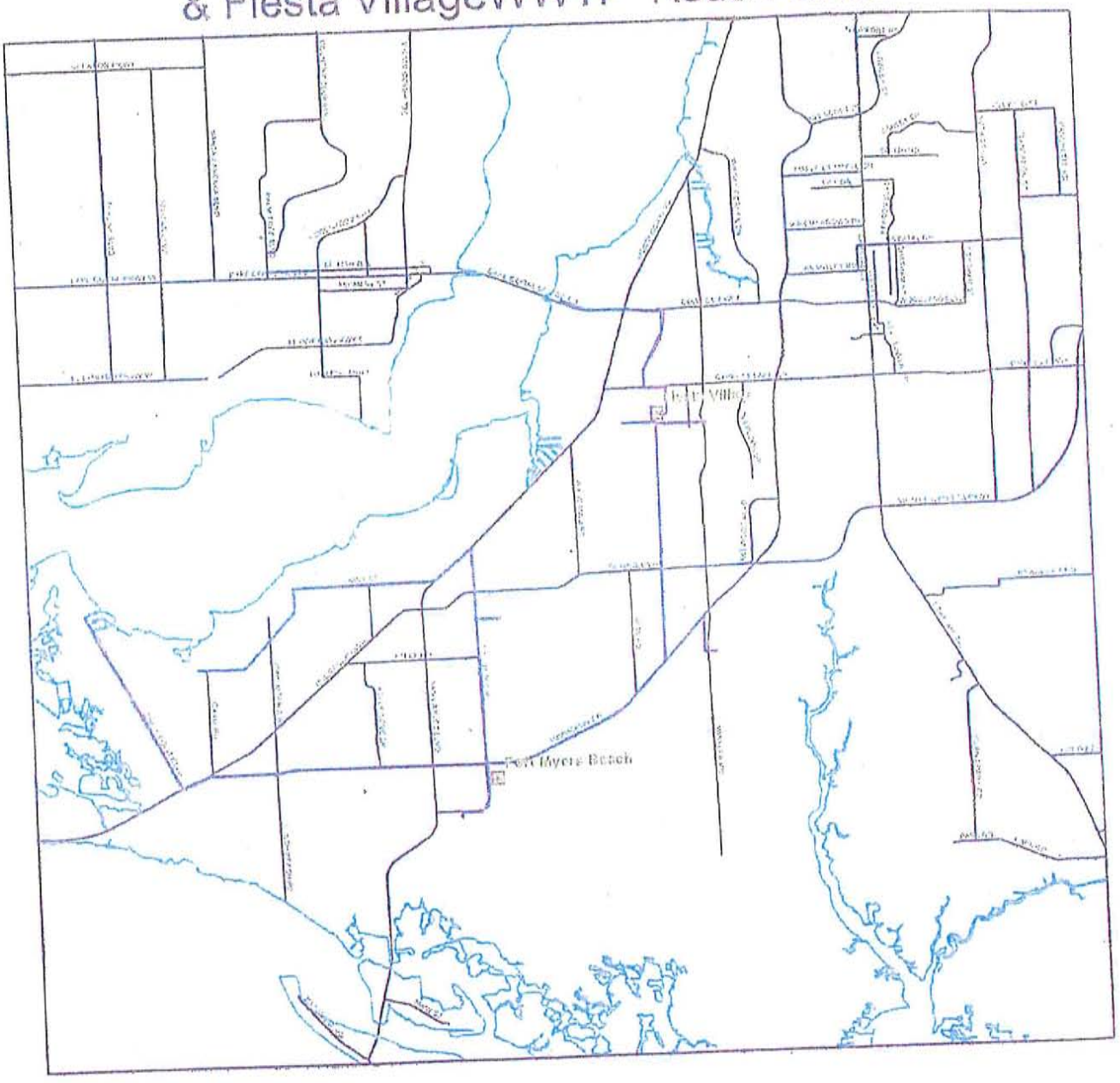


FIGURE 17
Lee County Utilities Waterway Estates Reuse

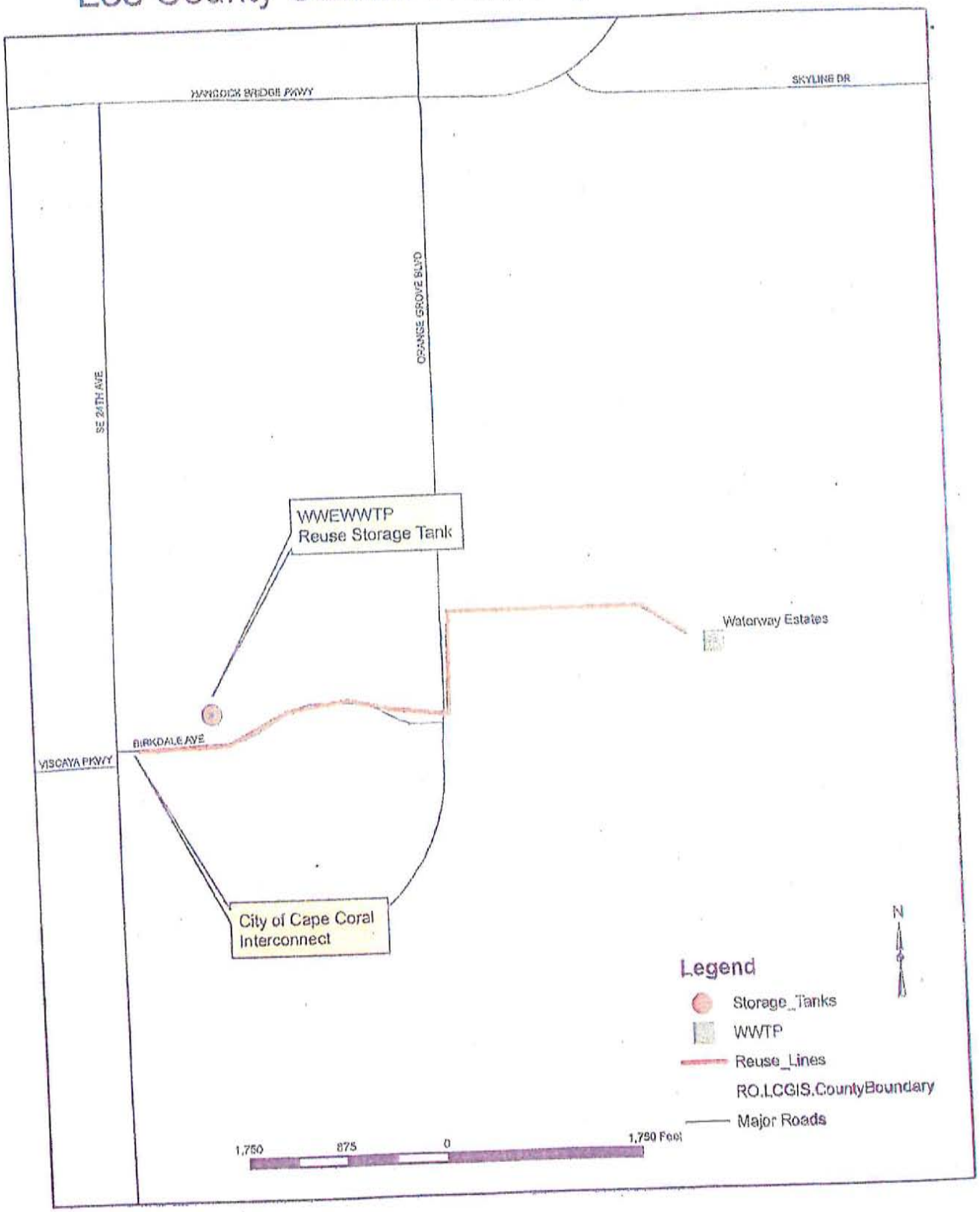


Figure 18
Three Oaks WWTP
& San Carlos WWTP Reuse Lines

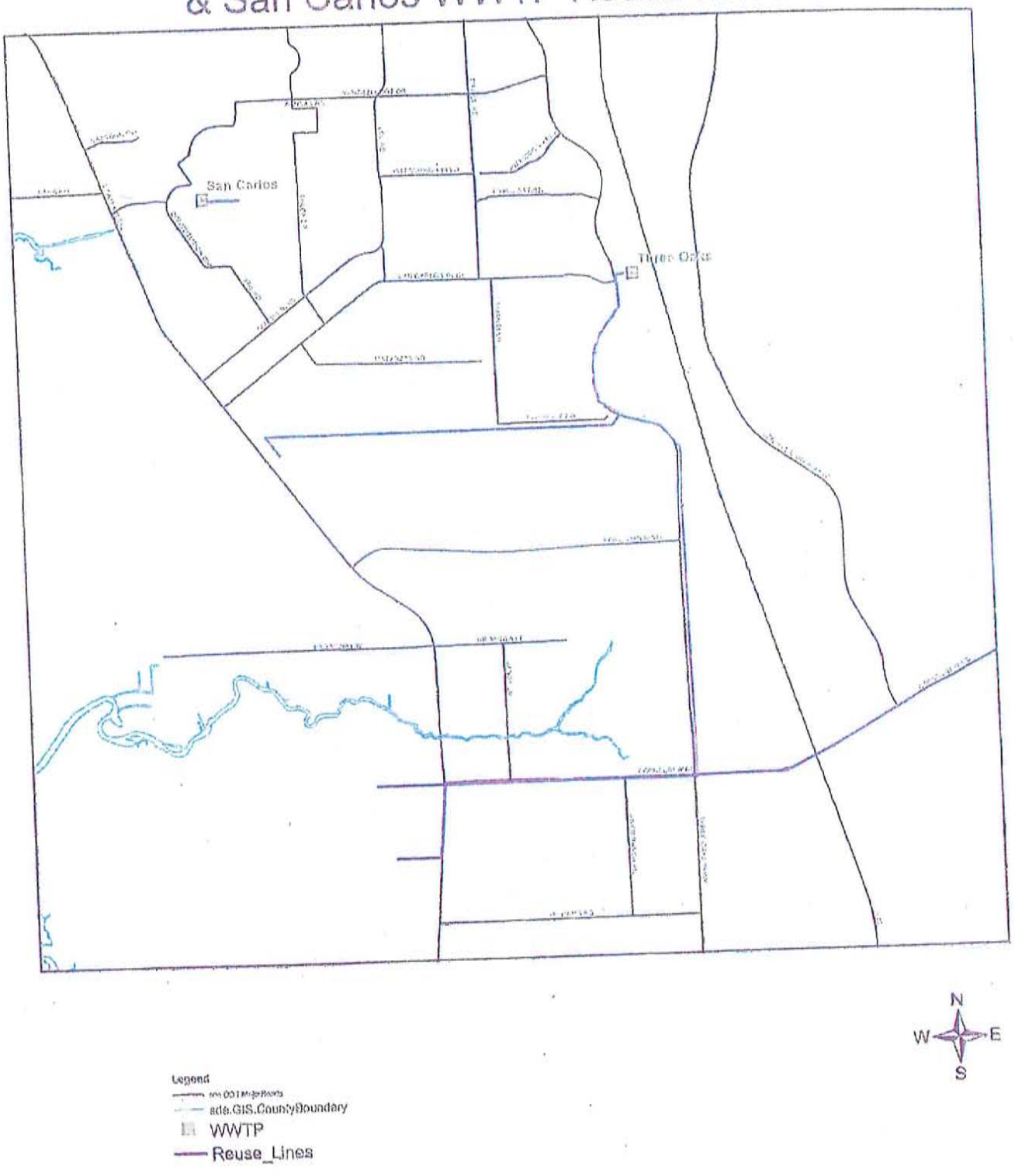


TABLE 2
Potable Water Storage Facilities

Name	Existing / Proposed	Type	Material	Capacity Million Gallons
North Tower	E	Elevated Tank	Steel	0.2
North Reservoir	E	Ground Storage	Concrete	2.0
South Reservoir	E	Ground Storage	Concrete	2.0
Tice Tower	E	Elevated Tank	Steel	0.3
Miners Corner Reservoir	E	Ground Storage	Concrete	2.0
Alico Reservoir	E	Ground Storage	Concrete	1.0
41 Reservoir	E	Ground Storage	Steel	1.0
Airport Haul Road	E	Ground Storage	Concrete	10.0
North Lee County WTP	E	Ground Storage	Concrete	5.0
Olga WTP	E	Ground Storage	Concrete	1.0
Corkscrew WTP	E	Ground Storage	Concrete	2.0
South Beach Tank	E	Ground Storage	Concrete	1.0
North Beach Tank	E	Ground Storage	Concrete	0.5
Waterway Estates WTP	E	Ground Storage	Concrete	1.0
College Pkwy WTP	E	Ground Storage	Concrete	1.5
Pinewoods WTP	E	Ground Storage	Concrete	2.0
Bartow WTP	E	Ground Storage	Concrete	0.5
Total System Storage				33.0

TABLE 3
CORKSCREW WELLFIELD
DESCRIPTION OF WELLS
EXISTING WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Capacity	Active	Year Drilled
1	E	12	293	132	open hole	500	Yes	2007
2	E	12	305	209	open hole	500	Yes	2004
3	E	12	305	209	open hole	500	Yes	2004
4	E	12	305	209	open hole	500	Yes	2004
5	E	12	305	209	open hole	500	Yes	2004
6	E	12	305	209	open hole	500	Yes	2004
7	E	12	135	45	45-130	500	Yes	1980
8	E	12	145	60	60-140	500	Yes	1980
9	E	12	145	55	55-140	500	Yes	1980
10	E	12	156	60	60-150	500	Yes	1980
11	E	12	155	55	55-145	500	Yes	1980
12	E	12	145	50	50-140	500	Yes	1980
13	E	12	140	50	50-135	500	Yes	1980
14	E	12	150	50	50-145	500	Yes	1980
15	E	12	150	58	58-145	500	Yes	1980
16	E	12	155	78	78-149	500	Yes	1980
18	E	12	115	45	45-105	500	Yes	1980
19	E	12	120	50	50-110	500	Yes	1980
20	E	12	120	50	50-110	500	Yes	1980
21	E	12	105	35	35-95	500	Yes	1980
22	E	12	110	40	40-100	500	Yes	1980
23	E	12	115	45	45-105	500	Yes	1980
24	E	12	120	50	50-110	500	Yes	1982
25S	E	12	80	30	30-80	500	Yes	1998
26S	E	12	80	30	30-70	500	Yes	1998
27S	E	12	80	30	30-70	500	Yes	1998
28S	E	12	85	30	30-75	500	Yes	1998
25D	E	12	180	115	115-170	360	Yes	1998
26D	E	12	170	120	120-160	350	Yes	1998
27D	E	12	170	120	120-160	360	Yes	1998
28D	E	12	185	125	125-175	350	Yes	1998

PROPOSED WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Capacity	Active	Year Drilled
29S	P	12	130	40	N/A	400	No	2008
29D	P	12	250	150	N/A	500	No	2008
30S	P	12	130	40	N/A	400	No	2008
30D	P	12	250	150	N/A	500	No	2008
31S	P	12	130	40	N/A	400	No	2008
31D	P	12	250	150	N/A	500	No	2008
32S	E	12	89	40	N/A	400	No	2008
32D	E	12	292	79	N/A	500	No	2008
33S	E	12	79	40	N/A	400	No	2008
33D	E	12	288	130	N/A	500	No	2008
34S	P	12	130	40	N/A	400	No	2008
34D	P	12	300	215	N/A	500	No	2008
35S	P	12	130	40	N/A	400	No	2008
35D	P	12	295	210	N/A	500	No	2008
36S	P	12	130	40	N/A	400	No	2008
36D	P	12	290	190	N/A	500	No	2008
37S	P	12	130	40	N/A	400	No	2008
37D	E	12	217	183	N/A	500	No	2008
38S	P	12	130	40	N/A	400	No	2008
38D	P	12	286	185	N/A	500	No	2008
39S	P	12	130	40	N/A	400	No	2008
39D	P	12	280	180	N/A	500	No	2008
40	P	12	820	700	N/A	1000	No	2008
41	E	12	810	699	open hole	1000	No	2008

TABLE 4
GREEN MEADOWS WELLFIELD
DESCRIPTION OF WELLS

EXISTING WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
1	E	16	180	95	N/A	N/A	500	Yes	1974	Flow Meter
1D	E	10	38	20	N/A	N/A	500	Yes	1983	Flow Meter
2	E	16	182	99	N/A	N/A	500	Yes	1974	Flow Meter
2A	E	10	36	20	N/A	N/A	500	Yes	1983	Flow Meter
3	E	16	195	100	N/A	N/A	500	Yes	1975	Flow Meter
3A	E	10	42	23	N/A	N/A	500	Yes	1983	Flow Meter
3B	E	10	42	23	N/A	N/A	500	Yes	1983	Flow Meter
4	E	16	185	104	N/A	N/A	500	Yes	1978	Flow Meter
4A	E	10	43	20	N/A	N/A	500	Yes	1983	Flow Meter
5	E	16	185	109	N/A	N/A	500	Yes	1977	Flow Meter
5A	E	10	24	20	N/A	N/A	200	Yes	1991	Flow Meter
6	E	16	235	50	N/A	N/A	500	Yes	1981	Flow Meter
6A	E	10	40	18	N/A	N/A	200	Yes	1991	Flow Meter
7	E	16	235	90	145	N/A	500	Yes	1981	Flow Meter
7A	E	10	38	18	N/A	N/A	200	Yes	1990	Flow Meter
8	E	16	235	91	N/A	N/A	500	Yes	1989	Flow Meter
8A	E	10	42	20	N/A	N/A	500	Yes	1989	Flow Meter
9	E	16	180	91	N/A	N/A	500	Yes	1981	Flow Meter
9A	E	10	42	20	N/A	N/A	500	Yes	1983	Flow Meter
10	E	16	200	97	N/A	N/A	500	Yes	1983	Flow Meter
10A	E	10	42	18	N/A	N/A	200	Yes	1980	Flow Meter
11	E	10	185	115	N/A	N/A	500	Yes	1989	Flow Meter
11A	E	10	55	23	N/A	N/A	200	Yes	1989	Flow Meter
12	E	10	212	142	N/A	N/A	500	Yes	1990	Flow Meter
12A	E	10	43	21	N/A	N/A	200	Yes	1990	Flow Meter
13	E	10	210	140	N/A	N/A	500	Yes	1990	Flow Meter
13A	E	10	40	20	N/A	N/A	200	Yes	1990	Flow Meter

PROPOSED WELLS IN EXISTING PERMIT

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Proposed Year Drilled	Meter Type
15	P	12	200	100	N/A	N/A	500	No	N/A	N/A
15A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
16	P	12	200	100	N/A	N/A	500	No	N/A	N/A
16A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
17	P	12	200	100	N/A	N/A	500	No	N/A	N/A
17A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
18	P	12	200	100	N/A	N/A	500	No	N/A	N/A
18A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
19	P	12	200	100	N/A	N/A	500	No	N/A	N/A
19A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
20	P	12	200	100	N/A	N/A	500	No	N/A	N/A
20A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
21	P	12	200	100	N/A	N/A	500	No	N/A	N/A
21A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
22	P	12	200	100	N/A	N/A	500	No	N/A	N/A
22A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
23	P	12	200	100	N/A	N/A	500	No	N/A	N/A
23A	P	12	50	20	N/A	N/A	200	No	N/A	N/A
24	P	12	800	500	N/A	N/A	600	No	N/A	N/A
25	P	12	800	500	N/A	N/A	600	No	N/A	N/A
26	P	12	800	500	N/A	N/A	600	No	N/A	N/A

PROPOSED WELLS IN PROPOSED PERMIT

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Proposed Year Drilled	Meter Type
1F	P	14	650	650	N/A	100	700	No	2008	Flow Meter
2F	P	14	650	650	N/A	100	700	No	2008	Flow Meter
3F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
4F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
5F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
6F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
7F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
8F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
9F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
10F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
11F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
12F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
13F	P	14	650	650	N/A	100	700	No	2009	Flow Meter
15F	P	14	650	650	N/A	100	700	No	2009	Flow Meter

TABLE 6
PINEWOODS WELLFIELD
DESCRIPTION OF WELLS

EXISTING WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
1	E	16	31	16	N/A	N/A	450	Yes	1988	Flow Meter
2	E	16	40	19	N/A	N/A	450	Yes	1988	Flow Meter
3	E	16	40	19	N/A	N/A	450	Yes	1988	Flow Meter
4	E	16	39	19	N/A	N/A	450	Yes	1988	Flow Meter
5	E	16	42	20	N/A	N/A	450	Yes	1988	Flow Meter
6	E	16	32	22	N/A	N/A	450	Yes	1988	Flow Meter
7	E	16	39	19	N/A	N/A	450	Yes	1988	Flow Meter
8	E	16	30	20	N/A	N/A	450	Yes	1988	Flow Meter
9	E	16	30	21	N/A	N/A	450	Yes	1988	Flow Meter
10	E	16	30	18	N/A	N/A	450	Yes	1988	Flow Meter
11	E	16	30	17	N/A	N/A	75	Yes	1990	Flow Meter
12	E	6	123	83	N/A	N/A	75	Yes	2001	Flow Meter
9A	E	8	171	85	85-125	N/A	75	Yes	2002	Flow Meter
3A	E	8	138	85	N/A	N/A	700	Yes	2003	Flow Meter
RO-1	E	14	651	603	N/A	N/A	700	Yes	2007	Flow Meter
RO-2	E	14	700	550	N/A	N/A	700	Yes	2007	Flow Meter
RO-3	E	14	700	550	N/A	N/A	700	Yes	2007	Flow Meter
RO-4	E	14	700	550	N/A	N/A	700	Yes	2007	Flow Meter
RO-5	E	14	700	550	N/A	N/A	700	Yes	2007	Flow Meter

PROPOSED WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
1A	P	8	200	85	N/A	N/A	75	No	N/A	N/A
5A	P	8	200	85	85-125	N/A	75	No	N/A	N/A
7A	P	8	200	85	85-125	N/A	75	No	N/A	N/A
11A	P	8	200	85	85-125	N/A	75	No	N/A	N/A

SAN CARLOS WELLFIELD
DESCRIPTION OF WELLS

EXISTING WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
13	E	8	41	19	N/A	N/A	500	Standby	1988	Flow Meter
14	E	8	45	22	N/A	N/A	500	Standby	1984	Flow Meter
15	E	8	40	18	N/A	N/A	500	Standby	1980	Flow Meter
16	E	8	40	19	N/A	N/A	N/A	No	1980	Flow Meter
16A	E	8	40	22	N/A	N/A	375	Standby	2000	Flow Meter

TABLE 7
WATERWAY ESTATES WELLFIELD
DESCRIPTION OF WELLS

EXISTING WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Capacity	Active	Year Drilled	Meter Type
1	E	8	48	30	40	Yes	1957	Flow Meter
2	E	8	57	42	75	Yes	1957	Flow Meter
3	E	8	130	130	30	Yes	1966	Flow Meter
4	E	8	48	14	50	Yes	1966	Flow Meter
6	E	8	205	124	45	Yes	1971	Flow Meter
8	E	8	43	13	40	Yes	1976	Flow Meter
9	E	8	230	125	50	Yes	1971	Flow Meter
10	E	8	235	134	30	Yes	1972	Flow Meter
11	E	10	230	130	85	Yes	1983	Flow Meter
12	E	10	80	40	60	Yes	1983	Flow Meter
13	E	10	80	50	30	Yes	1983	Flow Meter
14	E	10	230	136	85	Yes	1982	Flow Meter
15	E	8	208	160	65	Yes	1988	Flow Meter
NC-1	E	8	240	140	70	Yes	1970	Flow Meter
NC-2	E	8	240	140	85	Yes	1975	Flow Meter
NC-9	E	8	225	164	110	Yes	1975	Flow Meter
1D	E	4	600	300	100	Yes	1989	Flow Meter

PROPOSED WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Capacity	Active	Year Drilled	Meter Type
2D	P	12	600	300	N/A	No	N/A	N/A

TABLE 8
NORTH LEE COUNTY WELLFIELD
DESCRIPTION OF WELLS

EXISTING WELLS

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
1	E	17	637	500	N/A	120	700	Yes	2003	Flowmeter
2	E	17	700	493	N/A	120	700	Yes	2003	Flowmeter
3	E	17	592	441	N/A	120	800	Yes	2003	Flowmeter
4	E	17	653	451	N/A	120	780	Yes	2003	Flowmeter
5	E	17	670	500	N/A	120	550	Yes	2003	Flowmeter
6	E	17	700	475	N/A	N/A	Plug&Aban	No	2003	Flowmeter
7	E	17	700	478	N/A	140	500	Yes	2002	Flowmeter
8	E	17	600	470	N/A	120	670	Yes	2003	Flowmeter

PROPOSED WELLS IN EXISTING PERMIT

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
9	P	12	N/A	N/A	N/A	N/A	580	N/A	2008	N/A
10	P	12	N/A	N/A	N/A	N/A	580	N/A	2008	N/A
11	P	12	N/A	N/A	N/A	N/A	580	N/A	2008	N/A
12	P	12	N/A	N/A	N/A	N/A	580	N/A	2008	N/A

PROPOSED WELLS IN PROPOSED PERMIT

Well #	Existing / Proposed	Diameter	Total Depth	Cased Depth	Screen Interval	Intake Depth	Capacity	Active	Year Drilled	Meter Type
9	P	17	700	500	N/A	120	725	No	2008	Flowmeter
10	P	17	700	500	N/A	120	725	No	2008	Flowmeter
11	P	17	700	500	N/A	120	725	No	2008	Flowmeter
12	P	17	700	500	N/A	120	725	No	2008	Flowmeter
13	P	17	700	500	N/A	120	725	No	N/A	Flowmeter
14	P	17	700	500	N/A	120	725	No	N/A	Flowmeter
15	P	17	700	500	N/A	120	725	No	N/A	Flowmeter
16	P	17	700	500	N/A	120	725	No	N/A	Flowmeter
17	P	17	700	500	N/A	120	725	No	N/A	Flowmeter
18	P	17	700	500	N/A	120	725	No	N/A	Flowmeter

TABLE 9
OLGA WTP
SURFACE WATER PUMP DESCRIPTION

Pump #	Existing/ Proposed	Pump Manufacturer	Pump Type	Capacity(GPM)	Horsepower	Diameter	Elevation of Intake
1	E	Peerless	Verticle Turbine	3850	75	14	5.4
2	E	Peerless	Verticle Turbine	3000	40	14	5.4
3	E	Peerless	Verticle Turbine	3850	60	14	5.4
4	P	N/A	N/A	2900	50	16	5.4
5	P	N/A	N/A	2900	50	16	5.4

TABLE 10
ASR WELLS
DESCRIPTION OF WELLS

EXISTING

Well #	Facility	Existing / Proposed	Diameter	Total Depth	Cased Depth	Capacity	Active	Year Drilled	Meter Type
ASR#1	Corkscrew	E	12	397	328	450	Y	1995	Flowmeter
ASR#2	Corkscrew	E	12	397	337	450	Y	2000	Flowmeter
ASR#3	Corkscrew	E	12	347	285	450	Y	2000	Flowmeter
ASR#4	Corkscrew	E	12	368	310	450	Y	2000	Flowmeter
ASR#5	Corkscrew	E	12	291	253	450	Y	2000	Flowmeter
ASR#1	N. Res.	E	12	642	540	500	Y	1999	Flowmeter
ASR#1	Olga	E	16	920	859	500	Y	2000	Flowmeter
ASR#5	Olga	E	16	925	864	500	Y	2007	Flowmeter

PROPOSED

Well #	Facility	Existing / Proposed	Diameter	Total Depth	Cased Depth	Capacity	Active	Year Drilled	Meter Type
ASR#2	Olga	P	16	650	550	375	N	NA	N/A
ASR#3	Olga	P	16	650	550	375	N	NA	N/A
ASR#4	Olga	P	16	650	550	375	N	NA	N/A

TABLE 11
CAPITAL IMPROVEMENT PROJECTS
APPROVED LEE COUNTY CIP FY 08/09

WATER SUPPLY DEVELOPMENT PROJECTS

CIP PROJECT #	LCU PROJECT NAME/ LWCWSP PROJECT NAME	DESCRIPTION	PROJECT STATUS	TOTAL PROJECT COST	ESTIMATED COMPLETION DATE	FUNDING SOURCE
7602	North Lee County R.O. Plant Wellfield Expansion / North Lee County Lower Hawthorn Wellfiled and Plant Expansion	Expansion of the Lower Hawthorn wellfield at the NLC WTP from 5.0 MGD to 10.0 MGD finished water	Design and land acquision underway	$15,390,000.00	2010	Enterprise Fund
7028	North Lee County WTP Expansion to 10 MGD / North Lee County Lower Hawthorn Wellfiled and Plant Expansion	Expansion of the NLC WTP from 5.0 MGD to produce 10.0 MGD finish water	Preliminary Design Underway	$15,000,000.00	2011	Enterprise Fund
None	Corkscrew WTP Expansion to 20 MGD / Not in LWCWSP	Expand the treatment capcity of the Corkscrew WTP to 20.0 MGD	Planning	$13,501,000.00	2015-2020	Debt Finance
None	Corkscrew WTP Wellfield Improvements / Not in LWCWSP	Expand the capacity of the Corkscrew Wellfield to provide a total of 20.0 MGD	Planning	$9,750,000.00	2015-2020	Debt Finance
None	Desalination Plant Transmission Mains / Not in LWCWSP	Construct finish water transmission mains to accomidate a Desalination Plant	Planning	$18,195,500.00	2015-2020	Enterprise Fund
None	Feasibilty Analysis / Design / Desalination Plant / Not in LWCWSP	Perform a feasibility analysis, design, and construct a desalination water plant	Planning	$70,000,000.00	2015-2020	Enterprise Fund

ALTERNATIVE WATER RESOURCE PROJECTS

None	Gateway WWTP ASR System / Not in LWCWSP	Develop an ASR system to provide seasonal storage of reclaimed water to serve the Gateway WWTP	Planning	$3,200,000.00	2012	Enterprise Fund
7284	Reclaimed Water ASR / Health Park Reclaimed Water ASR	Pilot and Construction of reclaimed water ASR for Wasteater Treatment Facilities	Planning	$600,000.00	2012	Enterprise Fund
7300	Reuse Valves Control, SCADA project	Construct Automated controls for reclaimed water sites	Underway	$100,000.00	2009	Enterprise Fund
None	Ben Hill Griffin Parallel Forcemain / FGCU/Miromar Lakes Reclaimed Water Main	Construct 900 L.F. of 12" reclaimed water line from 3 Oaks WWTP to FGCU / Combined with Parallel Force Main Project	Design underway	$6,000,000.00 for total project $100,000.00 for reclaimed water line portion	2011	Grant/Enterprise Fund