ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Applications For An Amendment Of Certificate For An Extension Of Territory And For an Original Water And Wastewater Certificate (for a utility in existence and charging for service)	)	Docket No. 992040-WS
In re: Application by Nocatee Utility Corporation for Original Certificates for Water & Wastewater Service in Duval and St. Johns Counties, Florida	)	Docket No. 990696-WS

INTERVENOR TESTIMONY OF

JIM MILLER

ON BEHALF OF INTERCOASTAL UTILITIES, INC.

INTERVENOR TESTIMONY OF JIM MILLER

Q: Are you the same Jim Miller who prefiled on behalf of Intercoastal Utilities?

A: Yes

Q: Mr. Miller, please state your full name and employment address.

A: My name is James H. Miller, Jr. and I am employed by PBS&J at 7785 Baymeadows Way, Suite 202, Jacksonville, Florida 32256.

Q: By whom are you employed and in what capacity?

A: I am employed by PBS&J. I am a vice president and senior program manager for the Jacksonville water and wastewater program.

Q: Please list your professional and educational experience post-high school.

A: I am a registered professional engineer in Florida since 1979 (#24398), North Carolina since 1985 (#12802), and Alabama since 1985 (#15020). I hold and active Florida Engineering Society Certificate of Continuing Professional Development and am current with my required continuing education for both North Carolina and Alabama. I attended Georgia Institute of Technology, Atlanta, Ga., majoring in Civil engineering (1963-1967). I am an active member of the Florida Engineering Society, National Society of Professional Engineers, American Water Works Association, Water Environment Federation, Society of American Military Engineers, and Florida Water Resources Association. I have worked continuously in Jacksonville, Florida area since 1968. I was employed at RS&H as a project engineer/computer modeler from 1968-1972. In that capacity, I served as a project engineer for the 1968 City of Jacksonville Water Study, and various other water system studies for the City of Tallahassee, U.S. Navy, and City of North Miami Beach. I participated on the design team for the City of Jacksonville Water Improvement Program in 1969-1972, which included

design of numerous water transmission main extensions and water treatment plants. From 1972-1979, I served as the water and wastewater project manager for Fred Wilson & Associates. My primary clients included the Town of Orange Park, University of Florida, and U.S. Navy. During my tenure at Fred Wilson and Associates, I was project engineer/manager for both water and waterwater studies, plant expansions, and transmission, distribution, and collection mains. In 1979 I joined PBS&J as a project manager in their Jacksonville office and was responsible for several water and wastewater projects for the City of Panama City Beach, completion of the Cedar Hills Pumping Station for the City of Jacksonville, 201 Facilities Plan for the City of Panama City Beach, and water and sewer systems for Honeymoon Island State Park.

I was employed by Flood Engineers, as an associate vice president and project manager, from 1981 to 1983 and continued to serve a project manager for the City of Panama City Beach, as well as clients such as the City of St. Augustine and U.S. Navy. Projects included water and wastewater studies, treatment system design, and transmission/distribution system design. In 1983, I joined the firm of Connelly & Wicker, Inc. as one of the three principals and executive vice president in charge of company wide production. During my tenure at Connelly & Wicker, I served as project manager for all General Development Utility projects including plant design, low pressure sewer system design and rehabilitation, studies, and transmission/distribution systems. In 1990, I sold out my interest in Connelly & Wicker and rejoined PBS&J as a vice president and senior program manager to reopen the Jacksonville office. During my tenure at PBS&J, I have managed water and wastewater projects for the City

of Jacksonville and later JEA, City of Jacksonville Beach, City of Neptune Beach, City of Jasper, as well as numerous other private clients.

Q: Have you reviewed the prefiled testimony and other materials filed by NUC and DDI on February 11, 2000?

A: Yes, I have reviewed the prefiled testimony of Douglas C. Miller, on behalf of Nocatee Utility Corporation; Deborah D. Swain, on behalf of Nocatee Utility Corporation; H. Jay Skelton, on behalf of Nocatee Utility Corporation; and Nocatee Utility Corporation's Supplement and Amendment to Certificate Application. Additionally, I have reviewed the deposition of Douglas C. Miller, P.E. taken March 1, 2000.

Q: Do the latest filings by NUC and DDI on February 11, 2000 indicate a change in the Nocatee Development?

A: The February 11, 2000 filing by NUC and DDI, indicated a change to the previous data which was provided to Intercoastal Utilities. The new data refines the equivalent residential connections (ERC's) and flow projections for the water, wastewater, and reclaimed water systems. The documents, firmly identify JEA as the wholesale provider for NUC, and thus all onsite utility plants have been eliminated.

Q: Is such a change in a development of that scale, at this stage of the project unusual in your experience?

A: While minor changes to a development of this size relating to number and types of units can be expected as an ongoing process, it is unusual to make a change from the apparent intended use of on-site treatment facilities to a wholesale provider at this late date. This is particularly unusual in light of the time and expenses that have gone in the preparation of a ground water development plan

that did not indicate any major negative impacts to the area groundwater. In fact, the water supply impact is now shifted to the Mandarin area of Duval County, where well siting issues have drawn considerable public attention.

Q: Do you know whether or not Intercoastal attempted to obtain this type of detailed information from Nocatee in the past?

A: It is my understanding that Intercoastal requested all the latest information regarding ERC projections and phasing information, along with any utility related documents.

Q: Despite those efforts, was the filing of Nocatee on February 11, 2000 the first time that Intercoastal had been able to obtain much of the detailed information about Nocatee?

A: Yes, the filings of February 11, 2000 revealed many key details that previously weren't provided or available.

Q: And did the information filed on February 11, 2000 also alter some of the previous understandings and assumptions of Intercoastal which were based on information obtained from or about Nocatee in the past?

A: Assumptions regarding ERC's, phasing, and location of Phase 1 development were changed based on the information filed on February 11, 2000. Based on a more defined location of Phase 1 development, we can now more accurately locate proposed transmission mains and treatment facilities.

Q: Do the filings of DDI and Nocatee on February 11, 2000 change any aspect of Intercoastal's application or its filing?

A: Yes, because of changes in the development which are shown for the first time in the February 11 documents, the Conceptual Master Plan, prepared by PBS&J has been modified.

Q: Please describe Exhibit JM-2 and the reasons for filing Exhibit JM-2.

A: Exhibit JM-2 is a Revised March 2000 Conceptual Master Plan that has been prepared based on additional data made available in the NUC and DDI filing of February 11, 2000. Revisions include Table of Contents, List of Tables, List of Figures, Section 3.0, Section 4.0, and Section 5.0.

Q. Does Exhibit JM-2 reflect your work product and opinions?

A. Yes.

Q: Have you reviewed the representations of DDI and Nocatee as to the reuse demand for the Nocatee project?

A: Yes

Q: Do you have concerns or questions regarding that projected reuse demand?

A: I think the projections for reclaimed water usage are on the high side, particularly for golf course irrigation. The projections for golf course irrigation usage, approximately 650,000 gallons per day, appear to be more in line with what would be expected for south Florida rather than usage normally associated with central to north Florida, which are typically, 300,000 to 400,000 gallons per day annual average. Many of the area golf courses have a greater problem with drainage of standing or casual water than a high demand for irrigation. This is due in part to soil conditions and a relatively high groundwater table.

Q: Assuming that the reuse demand is Phase 1 is as represented, will Intercoastal be able to meet that demand?

A: Yes

Q: Please describe the various scenarios under which Intercoastal could meet that demand.

A: Even assuming the correctness of the reuse projections provided in the NUC and

DDI filing of February 11, 2000, Intercoastal can meet the demands utilizing the reclaimed water generated from the proposed wastewater treatment facility and the excess reclaimed water from Intercoastal's Sawgrass Wastewater Treatment Plant, plus a temporary water supply ranging from a negligible 135,000 gpd the first year to 10,000 gpd the third year. This temporary water supply would only be needed, if the projected reuse demands, which appear to be high, are actually achieved and if additional stormwater over the projected 20% cannot be utilized. The stormwater utilization issue is discussed later. This temporary water supply can be obtained from an irrigation well drilled into the lower Floridian aquifer, as recommended in the "Nocatee Groundwater Supply Development Plan".

Q: In point of fact, and from an engineering standpoint, if Intercoastal entered into the same sort of relationship with JEA that is apparently contemplated by NUC, could Intercoastal put into place the same plan of service proposed by NUC in a timely, cost-efficient and effective manner?

A: Certainly, Intercoastal already has in place the administrative and operational team needed to serve the immediate needs Nocatee. This service to Nocatee would be merely an extension of their existing service area and would need marginal expansion with the growth of Nocatee. If JEA is the wholesaler or if on-site treatment is provided, Intercoastal is still the most cost-efficient provider of utility service to Nocatee.

Q: Does NUC propose to use stormwater to meet part of the demand for reuse in the Nocatee development.

A: Yes

Q: Please describe their proposal in that regard.

A: According to their February 11, 2000 filing, they intend to supplement their reuse supply by an additional 20% from stormwater . This would primarily be in the public access areas, such as golf courses, where the reuse supply will supplement the lakes (stormwater ponds) that are used as the source for the public access irrigation. This additional supplement from stormwater is not part of the reuse system or utility, since the reuse system supplements the lakes or ponds where public access irrigation water is withdrawn.

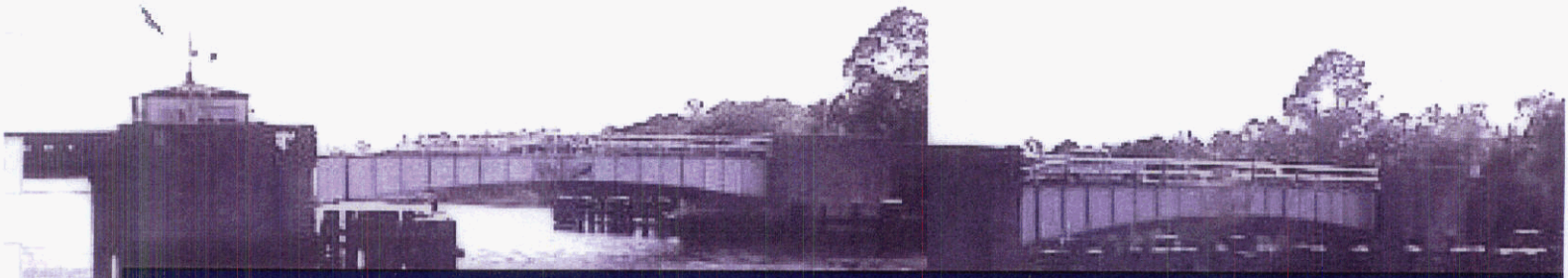
Q: In your opinion, can Intercoastal meet and/or comply with all the environmental concerns expressed by Nocatee's Application for Development Approval?

A: Certainly, there is no magic approach to environmental issues. Permitting required by the regulatory agency(s) will dictate the impact on environmentally-sensitive areas of Nocatee. Any utility company providing service to Nocatee will be required to comply with all environmental issues and permitting requirements. The approach taken by NUC in the February 11, 2000 filing, to minimize the environmental impact on Nocatee by utilizing JEA as a wholesale supplier only serves to shift the environmental impact from Nocatee to areas of Duval County, where there is already concern by Mandarin residents over new wells and their impact on the existing private wells in the area. This plan will ultimately require the expansion of JEA's Mandarin WRF, in the already congested area near I-295 and SR 13, or construction of future facilities within or near Nocatee. It will also require construction or expansion of long water, sewer, and reuse lines to provide service from these distant treatment facilities. Intercoastal's plan to provide on-site water and wastewater treatment and return the Those large projects have both significant economic and environmental impacts not present with on-site services. Intercoastal's plan to

provide on-site water and wastewater treatment and return the reclaimed water to the recharge the area's water resources shows not only environmental concern for Nocatee, but also for the surrounding community.

Q: Does this conclude your testimony?

A: Yes



Intercoastal Utilities, Inc.

CONCEPTUAL MASTER PLAN

Revised March 2000

Prepared By

PBS&J

EXHIBIT

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JM-2

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Intercoastal Utilities, Inc.

CONCEPTUAL MASTER PLAN

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Contents

Tables

Figures

1.0 Introduction

1.1 General (Location, General Description)

Intercoastal Utilities began operation in 1983 with the acquisition of the Sawgrass Utility System from the Arvida Corporation. Beginning as a system primarily serving the Sawgrass PUD, the utility has expanded and extended facilities to serve the high growth in the northeast are of St Johns County. The system currently encompasses a service area of approximately 4,500 acres and extends from the Atlantic Ocean in the North and East to the Intra Coastal Waterway in the South and West.

The system primarily serves upscale single family and condominium/apartment communities with an expanding commercial area. Current growth is in the west and southwest toward the Intracoastal Waterway and is expected to remain relatively stable. The utility is currently expanding the water and wastewater facilities to meet growth in the service area and upgrading the wastewater treatment process to meet new regulatory requirements.

With a majority of the existing service area earmarked for planned development and the Guana Preserve restricting growth to the south on the east side of the Intracoastal Waterway, the utility recognized that the County Road 210 (CR210) corridor west of the Intracoastal would be the next area for further development. In 1996, the utility submitted a Water Supply Needs and Sources Assessments (WSNSA) plan through the year 2020 to the St Johns Water Management District (SJRWMD). The WSNSA addressed future needs on both the east and west sides of the facility.

1.2 Scope and Objectives (20 year focus)

Under this Scope of Work, PBS&J reviewed development plans and evaluated alternatives to meet the 20 year needs of the existing Intercoastal East and the proposed Intercoastal West service areas. This evaluation relied on existing conditions, existing flow and demand projections, and existing developer plans for the CR210 corridor. The recommendations of this report are intended to be a conceptual master plan for future development of the utility.

The objectives of the conceptual master plan include the following::

1. Develop recommendations for providing water, wastewater, and reclaimed water services to Intercoastal West, while continuing to provide for service and growth in Intercoastal East the for the 20 year planning horizon.

2. Concentrate on facilities that are needed to serve the developments, rather than providing service within the developments.

3. Develop recommendations for the time sensitive initial phases of the strategy.

2.0 Background

2.1 Intercoastal East (St Johns County)

The Intercoastal East service area encompasses approximately 4,500 acres in Northeast St Johns County. A map of the service area is presented in Figure 2-1[a]. As of June 1, 1999, the utility provided water and sewer service to approximately 3,517 active accounts.

The service area is approximately 90 percent high end residential with the remainder being retail and commercial.

2.2 Existing Facilities

Two water treatment plants, located at Sawgrass and The Plantations, provide the potable water supply and treatment for the existing system. Wastewater treatment and disposal for the system is provided by a wastewater treatment plant located at Sawgrass.

2.2.1 Potable Water Facilities

A map of the potable water system, indicating location of treatment facilities and major water lines is shown in Figure 2-2[b].

An inventory of the existing equipment and the associated capacities is summarized in Table 2-1. The rated capacity of the system, using Florida Department of Environmental Protection (FDEP) criteria is approximately 2.81 mgd based on the capacity (limiting factor) of the high service pumps. The rated capacity of the system, and using PBS&J criteria is approximately 1.77 mgd based on the capacity (limiting factor) of the high service pumps.

Design for the expansion of the potable water system is currently underway. The proposed additions to the facility are summarized in Table 2-2. The expansion is expected to be completed by the end of the year 2000.

On completion of the expansion, the rated capacity of the system, using FDEP criteria will be approximately 5.00 mgd based on the capacity (limiting factor) of the high service pumps. The rated capacity of the system, using PBS&J criteria will be approximately 3.70 mgd based on the capacity (limiting factor) of the high service pumps.

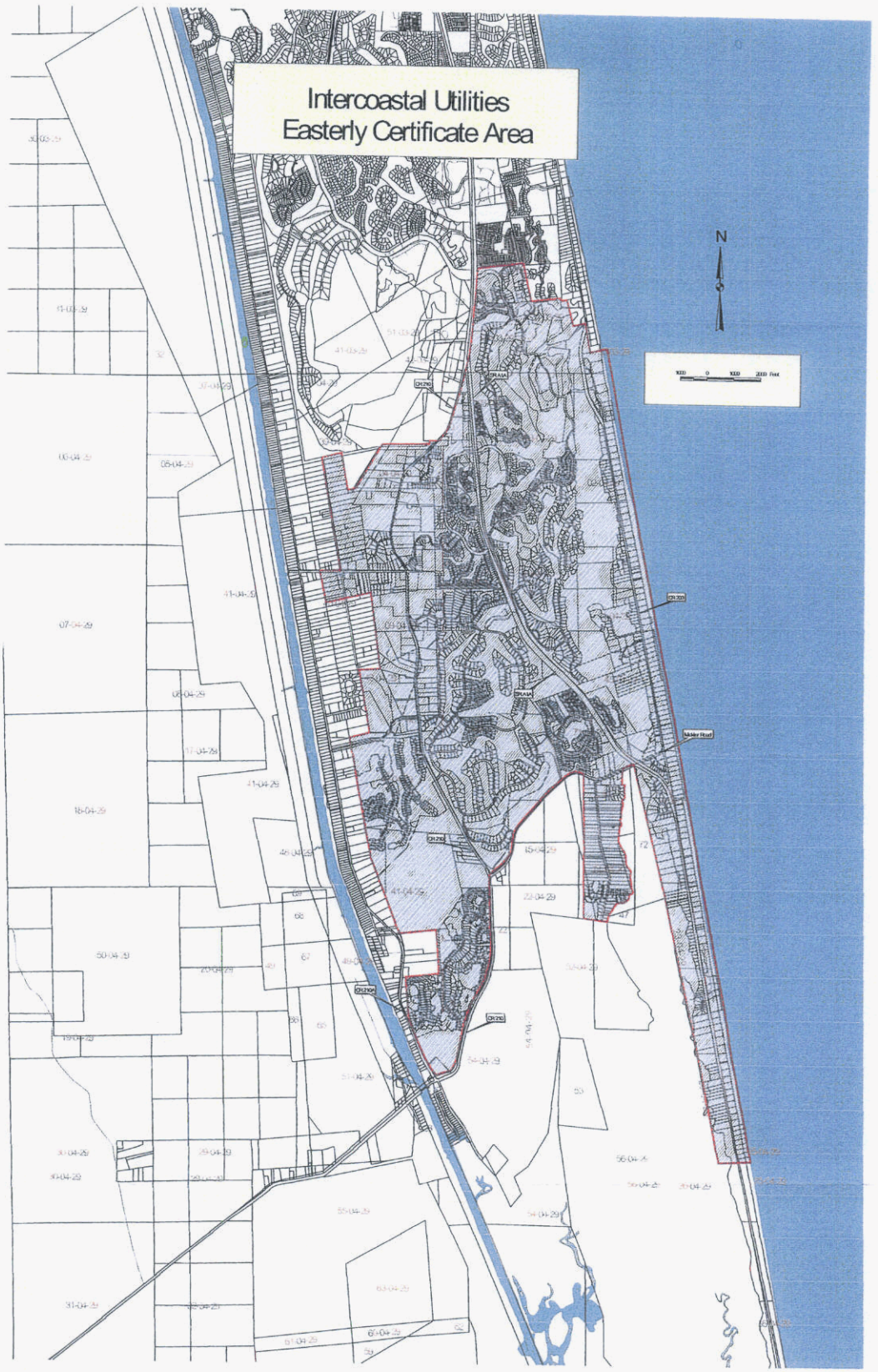
2.2.2 Wastewater Facilities

A map of the wastewater system, indicating the wastewater treatment plant, gravity sewers, lift stations, and force mains, is shown in Figure 2-3[c].

The wastewater treatment facility is operated under Permit Number FL0117897 issued by FDEP on July 31, 1997. The permit authorizes the utility to operate a 0.8 mgd Annual Average Daily Flow (AADF) extended aeration treatment plant and to construct and operate a new 1.5 mgd AADF advanced secondary treatment plant with a new 1.2 mgd AADF outfall to the Intracoastal Waterway (ICWW). The new facilities will be

[a] Based on Intercoastal Utilities, Inc. service area descriptions provided to PBS&J.
[b] Based on Intercoastal system maps provided to PBS&J.
[c] Based on Intercoastal system maps provided by PBS&J.

completed and placed in service by December 30, 1999. After the new facilities are placed in operation, the utility will be permitted to discharge 0.30 mgd AADF of reclaimed water to the Sawgrass Golf and Country Club and 1.2 mgd AADF to the ICWW.



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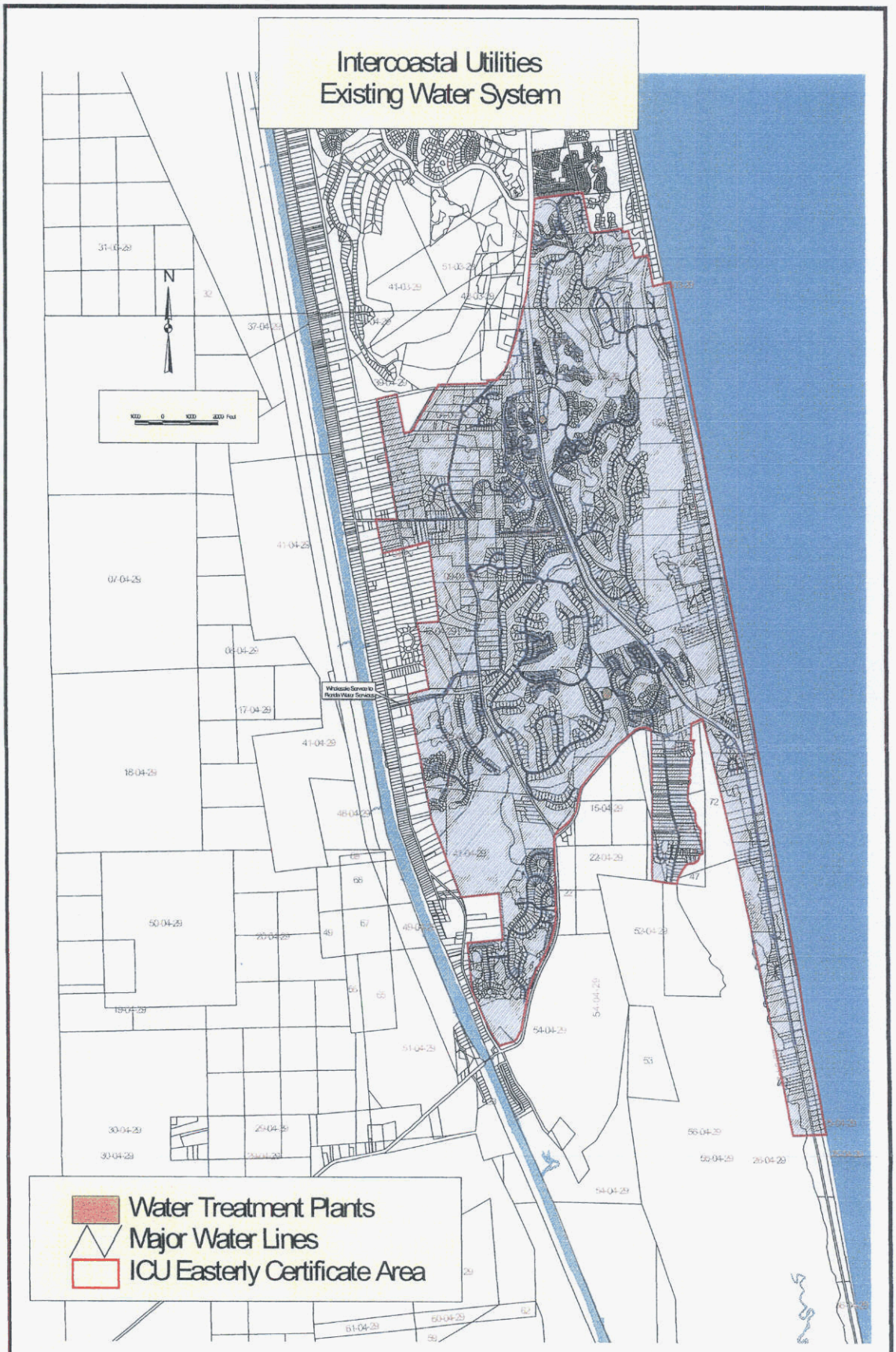
Easterly Certificate Area

2-1



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Existing Water System

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Table 2-1[d]

Intercoastal Utilities
Existing Water Supply and Treatment Facilities

Plant Component	Sawgrass		Plantation		Total	
Supply Wells (gpm)	1 @ 1,104		1 @ 1,500 1 @ 1,500			
Total	**1,104**		**3,000**		**4,104**	
Rated Well Capacity (gpm)	552	491	1,500	1,333	2,052	1,842
Aeration (gpm)	**2,300**		**2,300**		**4,600**	
Rated Aeration Capacity (gpm)	1,150	1,022	1,150	1,022	2,300	2,044
Storage (gallons)	**500,000**		**500,000**		**1,000,000**	
Rated Storage Capacity (gpm)	1,389	1,389	1,389	1,389	2,778	2,778
High Service Pumps (gpm)	2 @ 780 1 @ 600		1 @ 1,500 1 @ 1,000 1 @ 1,250 1 @ 1,900			
Total	**2,160**		**5,650**		**7,810**	
Rated Pumping Capacity (gpm)	540	307	1,413	833	1,953	1,229
Limiting Factor (gpm)	**540**	**307**	**1,150**	**833**	**1,953**	**1,229**
Plant Throughput	**1,317**	**1,062**	**1,617**	**1,296**	**3,060**	**2,398**
Fire Flow Capacity	**4,187**	**3,618**	**4,492**	**3,852**	**9,060**	**7,731**

Rated Capacity (mgd)	FDEP	PBS&J
Supply Wells	2.95	2.62
Aerator	3.31	2.94
Storage	4.00	4.00
High Service Pumps	2.81	1.77
Plant Throughput	4.40	3.45
Fire Flow Capacity	13.0	11.1

Throughput = (Limiting Capacity + (Storage/240))/ Max Day Factor

Fire Flow = ((Limiting Capacity –500) +(Storage/60))/Max Day Factor

Rated Capacity	FDEP Criteria	PBS&J Criteria
Wells	max day of 200% adf	Max day of 225% adf with largest well out of service
Aerators	max day flow rate of 200% adf	max day flow rate of 225% adf
Storage	16 hour flow rate of 150% and 4 hours detention time	16 hour flow rate of 150% and 4 hours detention time
High Service Pumps	peak hour flow rate of 400%	peak hour flow rate of 450% adf with largest pump out of service

Calculations of the plant capacities are summarized in Appendix C.

[d] Compilation of Waitz & Moye, Inc. data provided to PBS&J.

Table 2-2[e]

Intercoastal Utilities
Year 2000 Water Supply and Treatment Facilities

Plant Component	Sawgrass		Plantation		Total	
Supply Wells (gpm)	1 @ 1,104 1 @ 1,000		4 @ 1,500			
Total	**2,104**		**6,000**			**8,104**
Rated Well Capacity (gpm)	1,052	935	3,000	1,800	4,052	2,935
Aeration (gpm)	**2,300**		**7,500**			**9,800**
Rated Aeration Capacity (gpm)	1,150	1,022	3,750	3,333	4,900	4,355
Storage (gallons)	**500,000**		**1,000,000**			**1,500,000**
Rated Storage Capacity (gpm)	1,389	1,389	2,778	2,778	3,472	3,472
High Service Pumps (gpm)	1 @ 2,350 2 @ 1,175		3 @ 1,500 2 @ 2,350			
Total	**4,700**		**9,200**			**13,900**
Rated Pumping Capacity (gpm)	1,175	1,044	2,300	1,522	3,475	2,566
Limiting Factor (gpm)	**1, 052**	**935**	**2,300**	**1,522**	**3,472**	**2,566**
Plant Throughput	**1,569**	**1,341**	**3,233**	**2,528**	**4,861**	**3,918**
Fire Flow Capacity	**4,443**	**3,897**	**9,233**	**7,862**	**12,636**	**12,029**

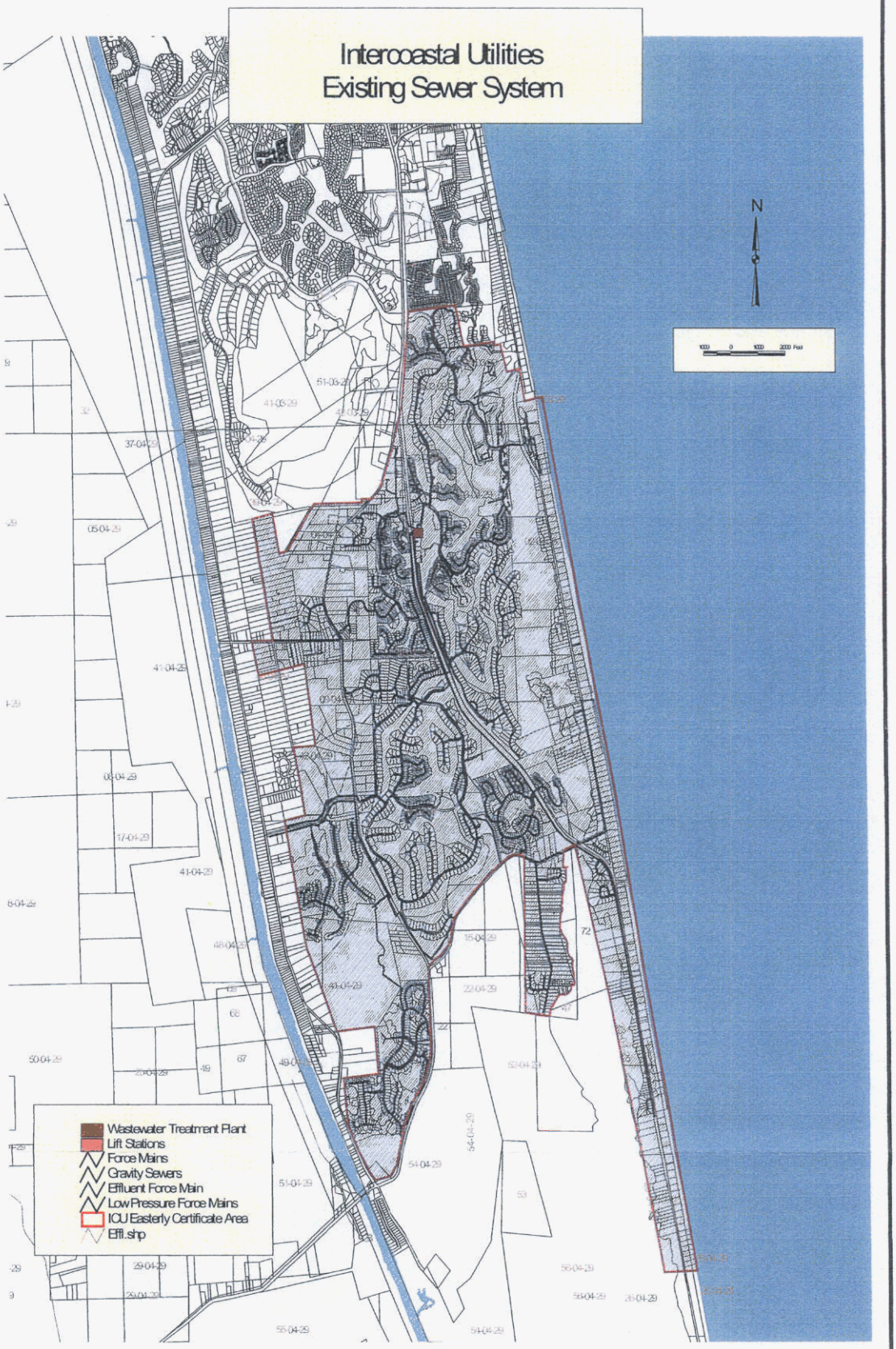
Rated Capacity (mgd)	FDEP	PBS&J
Supply Wells	5.83	4.23
Aerator	7.06	6.27
Storage	5.00	5.00
High Service Pumps	5.00	3.70
Plant Throughput	7.00	5.64
Fire Flow Capacity	18.20	17.32

Throughput = (Limiting Capacity + (Storage/240))/ Max Day Factor

Fire Flow = ((Limiting Capacity –500) +(Storage/60))/Max Day Factor

Rated Capacity	FDEP Criteria	PBS&J Criteria
Wells	max day of 200% adf	Max day of 225% adf with largest well out of service
Aerators	max day flow rate of 200% adf	max day flow rate of 225% adf
Storage	16 hour flow rate of 150% and 4 hours detention time	16 hour flow rate of 150% and 4 hours detention time
High Service Pumps	peak hour flow rate of 400%	peak hour flow rate of 450% adf with largest pump out of service

[e] Compilation of Waitz & Moye, Inc. data provided to PBS&J.



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Existing Sewer System

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2.3 Development Plans and Demand Projections

The existing service area is essentially built out. While a portion of the currently undeveloped area may be redeveloped from single family residences at 2 units per acre to cluster homes with a higher density per acre, significant additional growth is not planned or expected.

2.3.1 Wastewater Flow Projections

As of June 1, 1999, Intercoastal had 3,142 metered accounts. These accounts discharged an average wastewater flow of approximately 800,000 gpd to the Sawgrass Wastewater Treatment Plant or approximately 255 gpd/metered account[f].

The WWTP has a permitted treatment and disposal capacity of 1,500,000 gpd. Based on and Equivalent Residential Connection ERC of 255 gpd, the system has a build out wastewater capacity of approximately 5,882 ERC's or metered accounts. Thus, as of June 1, 1999, the service area was approximately 53.4 percent occupied.

Based on a historical rates of growth, the system will reach buildout between the 2005 and 2006 at a 10 percent growth rate and between 2009 and 2010 at a growth rate of 6 percent. The flow and account projections are summarized in Table 2-3.

Table 2-3

INTERCOASTAL EAST
WASTEWATER FLOW PROJECTIONS

Parameter	1999	2005	2006	2009	2010
Accounts @ 6 %/year	3,142	4,457	4,724	5,627	5,964
Flow, gpd @ 6 %/year	800,000	1,113,481	1,202,904	1,432,678	1,518,638
Accounts @ 10 %/year	3,142	5,556	6,123	---	---
Flow, gpd @ 10 %/year	800,000	1,417,248	1,558,973	---	---

2.3.2 Water Demand Projections

As of June 1, 1999, Intercoastal had 3,517 metered water accounts. The accounts included 3,142 water and wastewater accounts and 375 water only accounts. Based on a service area occupancy of 53.4 percent, the existing territory has an estimated build out capacity of approximately 6,586 metered accounts[g].

Based on a historical rates of growth, the system will reach buildout between the 2005 and 2006 at a 10 percent growth rate and between 2009 and 2010 at a growth rate of 6 percent. The flow and account projections are summarized in Table 2-4.

[f] Intercoastal customer/account data provided to PBS&J
[g] Intercoastal customer/account data provided to PBS&J

Table 2-4

INTERCOASTAL EAST
WATER FLOW PROJECTIONS

Parameter	1999	2005	2006	2009	2010
Accounts @ 6 %/year	3,517	4,989	2,288	6,298	6,676
Flow, gpd @ 6 %/year[(a)]	1,230,950	1,746,126	1,850,894	2,204,444	2,336,711
Flow, gpd @ 6 %/year[(b)]	1,834,116	2,601,728	2,757,832	4,757,223	5,232,946
Accounts @ 10 %/year	3,517	6,321	6,854	---	---
Flow, gpd @ 10 %/year[(a)]	1,230,950	2,180,703	2,398,773	---	---
Flow, gpd @ 10 %/year[(b)]	1,834,116	3,249,247	3,574,172	---	---

(a) Flow based on 350 gpd/ERC or Account as an Annual Average.
(b) Flow based on 350 gpd/ERC or Account as an Annual Average plus 49 percent based on historical irrigation flows.

2.3.3 Reclaimed Water Demands

Intercoastal currently provides 0.3 mgd of reclaimed water to the Sawgrass Country Club for irrigation of the Sawgrass golf course. This is the only use of reclaimed water currently allowed by the FDEP permit.

The Plantations development currently use stormwater for irrigation of the Plantations golf course, but has recently requested that the St Johns River Water Management District (SJRWMD) permit a irrigation well as a backup source of water. The District, as part of the permit for the new well, is expected to require that the Plantations use reclaimed water from Intercoastal as the primary backup supply[h]. Intercoastal has agreed to provide a connection to the Plantations for this backup supply. However, since this is a backup supply to the stormwater irrigation supply, the reclaimed water demand for the Plantations will be minimal. With no other potential sites for using reclaimed water, Intercoastal will have approximately 1.0 to 1.2 mgd of excess reclaimed water that will be discharged to the Intracoastal Waterway.

[h] Letter to M.L. Forrester (Intercoastal), dated 9/24/99 from Jay C. Lawrence, P.G. (SJRWMD).

3.0 Proposed Franchise Expansion

3.1 Intercoastal West (St Johns and Duval Counties)

In response to planned development, Intercoastal is proposing to expand its franchise area to serve new Planned Unit Developments (PUD) west of the ICWW. The proposed new franchise area is presented in Figure 3-1[a]. Major new developments are discussed below.

3.2 Development Plans

Major proposed developments west of the ICWW include the following:

- Walden Chase
- Marsh Harbour
- Nocatee

The Walden Chase PUD will cover approximately 346 acres and will include the following:

- 585 Single Family Residences
- 160 Multi Family Residences
- 170,000 square feet of office space
- 100,000 square feet of commercial space
- 280,000 square feet of light industrial space
- 65 Acres of preserved wetlands
- 10 acres of park land.

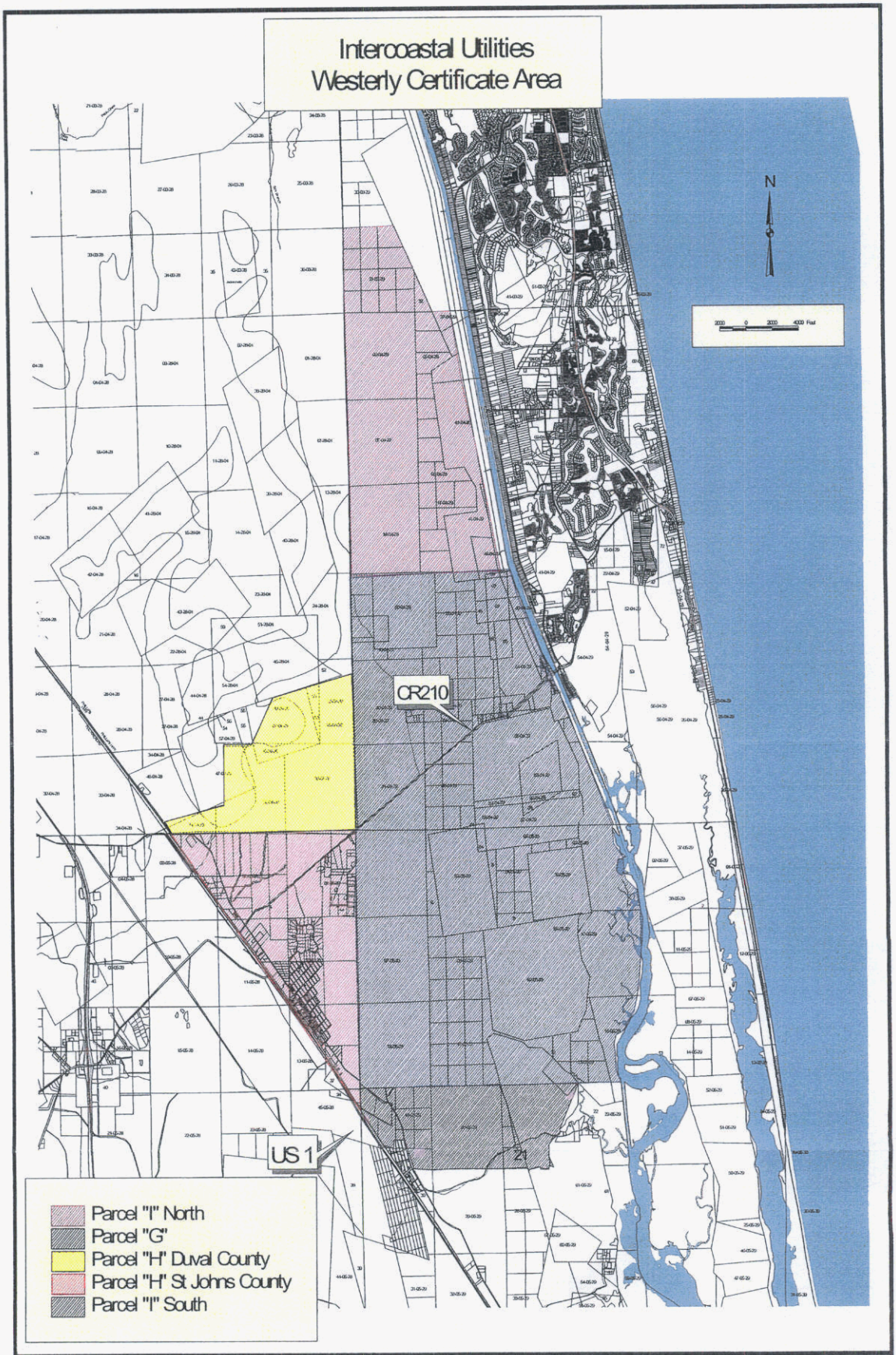
Development is scheduled to begin sometime in the year 2000 with completion in the year 2008.

The Marsh Harbour PUD will cover approximately 123 acres and include 76 Single Family Residences and 5 acres reserved for future commercial development. Development schedule is uncertain.

The Nocatee development covers approximately 16,000 acres planned as mixed-use community on the level of a new town. Plans for the area include the following[b]:

- 14,200 Residential Units
- 720 Assisted Living Units
- 1,000,000 square feet of retail/commercial space
- 4,208,000 square feet of office space
- 250,000 square feet of light industrial space
- 1,286,155 square feet of institutional and school space
- 50,000 square feet of governmental space
- 710 hotel rooms
- Nocatee Preserve
- Greenway System
- 330 acres of parks
- 580 acres of golf courses (3 courses)

[a] Based on description of franchise area provided to PBS&J by Intercoastal.
[b] Nocatee ADA – January 2000



PBS&J

Proposed Westerly Certificate Area

3-1

Development of the Nocatee community is expected to begin in the year 2002 and is expected to proceed in five, five-year phases over a period of 25 years. The development phases, as summarized in the ADA Application[c] are summarized in Table 3-1 below:

Table 3-1
ADA Application Phasing Data

	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Residential	DU	1,700	2,600	3,300	3,300	3,300
Assisted Living Units	DU		180	180	180	180
Hotel Rooms	No.			200	225	285
Golf Courses	Holes	18		18	18	
Schools	GSF	98,588	197,176	526,447	365,356	98,588
Parks	Acres	37	62	77	77	77
Gov't/Library	GSF				25,000	25,000
Office	GSF	521,200	915,500	943,300	923,000	905,000
Retail/Service	GSF	100,000	150,000	250,000	250,000	250,000
Light Industrial	SSF		125,000	125,000		

Since the development schedule for Marsh Harbour is uncertain and initial utility service to Walden Chase is under construction, by others, both developments were omitted from this revised conceptual planning document. These developments can easily be integrated into Intercoastal's service area if requested. Additional properties in the proposed franchise area that currently employ septic tanks and wells include Quail Run, Palm Harbor, and individual properties along County Road 210 between the ICWW and US 1. These properties are not included in this planning document but may be offered service as the system develops.

3.3 Equivalent Residential Connection (ERC) Projections

Projections for growth in the westerly certificate area were taken directly from planning documents supplied by Nocatee[d]. Each year of the five phases were projected on straight-line growth within the phase. Golf courses within the phase were projected for the initial year of the phase. Table 3-2 summarizes the total Equivalent Residential Connections (ERC's) anticipated over the planning (build-out) period for Nocatee.

[c] January 2000, ADA Application
[d] NUC Supplement and Ammendment to Certificate Application., February 11, 2000

Table 3-2
ICU West (Nocatee)
Projected ERC's

Year End	Water	Wastewater	Reuse
2002	416	438	2713
2003	416	438	498
2004	416	438	498
2005	416	438	498
2006	418	441	498
2007	635	672	643
2008	635	672	643
2009	635	672	643
2010	635	672	643
2011	635	673	646
2012	853	917	2204
2013	853	917	743
2014	853	917	743
2015	853	917	743
2016	855	921	745
2017	812	866	2414
2018	812	866	681
2019	812	866	681
2020	812	866	681
2021	814	869	681
2022	780	825	482
2023	780	825	482
2024	780	825	482
2025	780	825	482
2026	780	828	482
Total	**17486**	**18604**	**20649**

3.4 Design Criteria

Criteria used for flow projections for the westerly certificate area include the following [e]:

- Potable Water Demand – 350 gallons per day per ERC
- Wastewater Flow – 280 gallons per day per ERC
- Reclaimed Water Usage – 261 gallons per day per ERC

A factor of 200% of the average daily flow has been used for maximum day usage. The peak hour flow rate for both water and wastewater has been estimated at 350% of the average daily flow. For reuse or reclaimed water a peak hour flow rate of 600% has been assigned due to the normal duration of irrigation.

Other special demands or uses include the following:

[e] Prefiled Testimony, Douglas C. Miller, P.E., February 11, 2000

- Fire Flow
  - 750 gallons per minute for two hour duration (residential)
  - 1,500 gallons per minute for two hour duration (commercial)

Fire flow demand criteria is based on standard accepted criteria, in lieu of any special demands that may be prescribed later by particular land usage, type construction, etc. However, final design of any system components will be in accordance with any special fire flow requirements.

- Golf Course Irrigation – 650,000 gallons per day per golf course (annual average)

The golf course irrigation usage anticipated by Nocatee is higher than what is normally considered a standard for north Florida. Usage in this area of the state normally ranges between 300,000 and 400,000 gallons per day. For the purposes of our planning, the Nocatee rate of 650,000 gallons was used.

3.5 Water System

Table 3-3 summarizes projected potable water demands from Year 2002 through anticipated buildout in Year 2026.

Table 3-3
Projected Potable Water Demands

Year End	*Annual ERC's*	*Total ERC's*	*Water ADF (mgd)*
2002	416	416	0.146
2003	416	832	0.291
2004	416	1248	0.437
2005	416	1664	0.582
2006	418	2082	0.729
2007	635	2717	0.951
2008	635	3352	1.173
2009	635	3987	1.395
2010	635	4622	1.618
2011	635	5257	1.840
2012	853	6110	2.139
2013	853	6963	2.437
2014	853	7816	2.736
2015	853	8669	3.034
2016	855	9524	3.333
2017	812	10336	3.618
2018	812	11148	3.902
2019	812	11960	4.186
2020	812	12772	4.470
2021	814	13586	4.755
2022	780	14366	5.028
2023	780	15146	5.301
2024	780	15926	5.574
2025	780	16706	5.847
2026	780	17486	6.120

3.5.1 Evaluation of Alternatives for Potable Water System

Two basic alternatives were examined during the conceptual planning for the potable water system to serve the westerly franchise area:

- Provide initial service from the existing easterly Intercoastal system, with future service provided by new facilities west of the Intracoastal Waterway (ICWW)
- Provide new facilities for initial and future phases

In each alternative the design concepts were consistent with all regulatory requirements, including the Safe Drinking Water Act, Ten States Standards, OSHSA, FDEP, etc. The facility(s) anticipated for this westerly franchise area will provide, at a minimum, the same level of service that could be expected from a governmental entity providing the same service.

Anticipated water treatment plant capacities (based on maximum day flow) are summarized on Table 3-4 on the following page. These design flows are the key to the phasing of the water treatment plant facilities to serve this area. Every effort has been made to provide cost effective phasing, while minimizing overbuilding of facilities resulting from a lower growth rate than anticipated in the development plans.

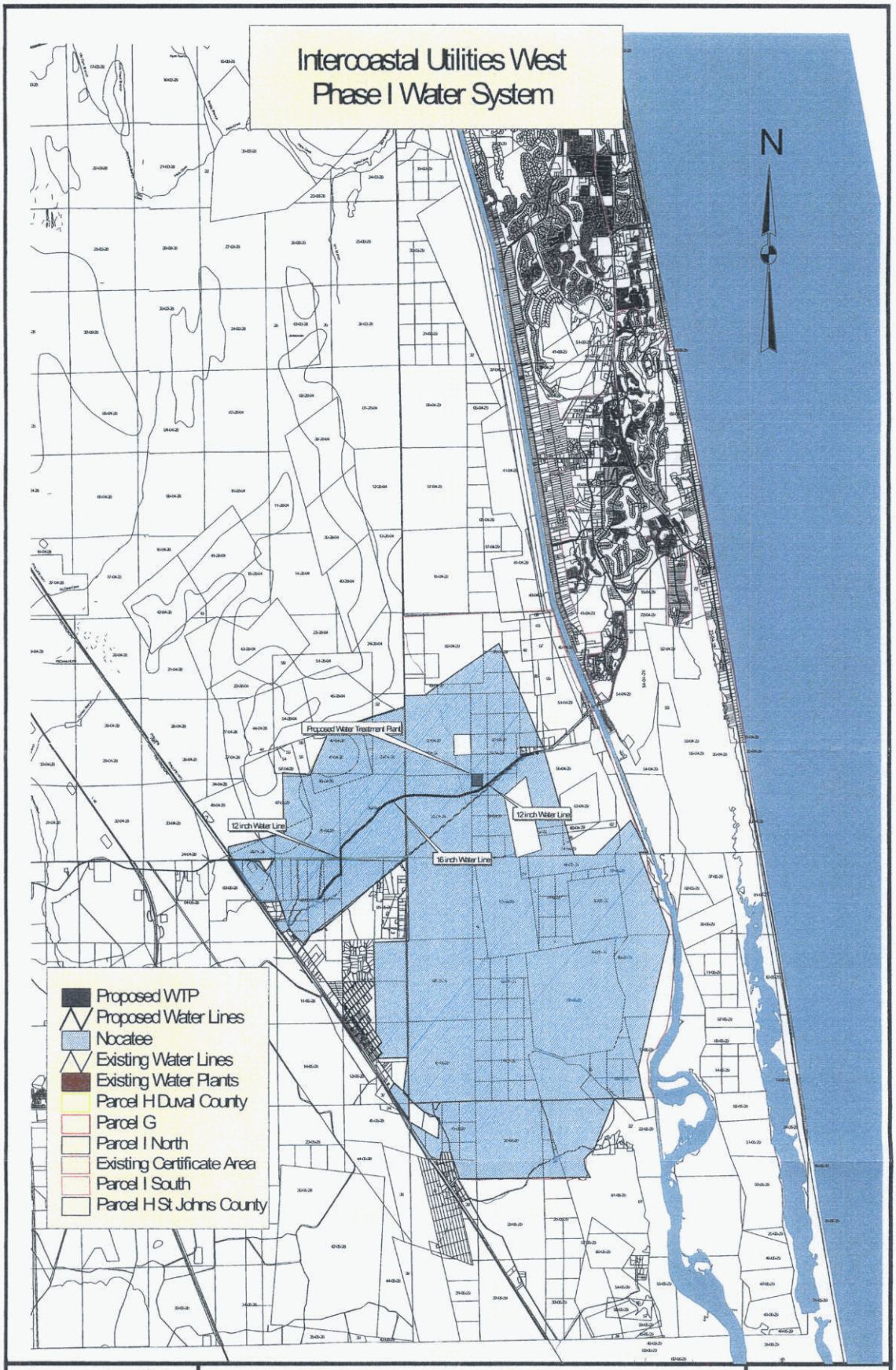
To minimize initial capital expenditures until a growth pattern was established, we examined the alternative for providing initial service from the current excess capacity in the existing ICU system east of the ICWW. Based on system pressure and flow tests[f] obtained from ICU, PBS&J analyzed the ability of the existing system to provide the necessary flows and pressures to service the initial development west of the ICWW. This analysis indicated that existing system has the ability to provide "off-peak" flows to the west to provide supply to storage reservoir(s), but repumping would be required to meet fire flow and pressure requirements. This concept would require not only a 16-inch supply main from the east, crossing under the ICWW, but would require storage and repump in the westerly franchise area. It was quickly determined that the cost to provide a transmission main from the east with a subaqueous crossing at the ICWW, would far exceed the cost to provide supply wells at a westerly facility. Based on this analysis the second alternative was selected and conceptual planning continued based on a separate facility to serve the westerly franchise area. This, however, does not rule out a future interconnection to the easterly system to provide even more system reliability and backup for customers on both sides of the ICWW.

A map of the initial (Phase 1) water facilities in shown in Figure No. 3-2.

[f] W.W. Gay Fire Protection, Inc. – Fire Hydrant Flow Tests – Various dates 1997 - 1999

Table 3-4
Anticipated Water Treatment Plant Capacities
(Maximum Day Flow)

Year End	Water ADF (mgd)	Water Max Day (mgd)	WTP Capacity (mgd)
2002	0.146	0.291	2.0
2003	0.291	0.582	
2004	0.437	0.874	
2005	0.582	1.165	
2006	0.729	1.457	
2007	0.951	1.902	4.0
2008	1.173	2.346	
2009	1.395	2.791	
2010	1.618	3.235	
2011	1.840	3.680	
2012	2.139	4.277	7.0
2013	2.437	4.874	
2014	2.736	5.471	
2015	3.034	6.068	
2016	3.333	6.667	
2017	3.618	7.235	10.0
2018	3.902	7.804	
2019	4.186	8.372	
2020	4.470	8.940	
2021	4.755	9.510	
2022	5.028	10.056	13.0
2023	5.301	10.602	
2024	5.574	11.148	
2025	5.847	11.694	
2026	6.120	12.240	



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Proposed Water System

3-2

3.5.2 Water System Phasing

Based on the anticipated plant capacities (maximum day flows) indicated in Table 3-4 the following potable water facilities is proposed:

- Phase 1 (Year 2002) – Provide a 2.0 mgd water treatment plant, including three (3) supply wells (750 gpm each[g]), 2.0 mg ground storage reservoir, with transmission mains for connection to developer provided distribution systems. **Maximum day capacity = 2.0 mgd**

- Phase 2 (Year 2007) – Expansion of the water treatment plant to 4.0 mgd capacity with the addition of additional supply wells and 2.0 mg ground storage reservoir. **Maximum day capacity = 4.0 mgd**

- Phase 3 (Year 2012) – Addition of second water treatment plant (WTP #2) complete with supply wells, transmission mains, and 2.0 mg ground storage reservoir. **Maximum day capacity = 7.0 mgd**

- Phase 4 (Year 2017) – Expansion of WTP #2 with new supply wells and 2.0 mg ground storage reservoir. **Maximum day capacity = 10.0 mgd**

- Phase 5 (Year 2022) – Additional supply wells and well headers. **Maximum day capacity = 13.0 mgd**

Preliminary opinion of the estimated construction costs are shown in Section 4.0.

3.6 Wastewater System

Table 3-5 summarizes projected wastewater flows from Year 2002 through anticipated buildout in Year 2026.

3.6.1 Evaluation of Alternatives for Wastewater System

Two basic alternatives were also examined during the conceptual planning for the wastewater system to serve the westerly franchise area:

- Provide initial service from the existing easterly Intercoastal system, with future service provided by new facilities west of the Intracoastal Waterway (ICWW)
- Provide new facilities for initial and future phases

As with the potable water facilties, each alternative the design concepts were consistent with all regulatory requirements, including the EPA, OSHSA, FDEP, etc. The facility(s) anticipated for this westerly franchise area will provide, at a minimum, the same level of service that could be expected from a governmental entity providing the same service.

[g] Supply well capacity and development based on "Nocatee Groundwater Supply Development Plan", England, Thims and Miller, Inc. / CH2Mhill, May 1999

Table 3-5
Projected Wastewater Flows

Year End	Annual ERC's	Total ERC's	Wastewater ADF (mgd)	WWTP Capacity (mgd)
2002	438	438	0.123	1.0
2003	438	876	0.245	
2004	438	1314	0.368	
2005	438	1752	0.491	
2006	441	2193	0.614	
2007	672	2865	0.802	2.0
2008	672	3537	0.990	
2009	672	4209	1.179	
2010	672	4881	1.367	
2011	673	5554	1.555	
2012	917	6471	1.812	3.0
2013	917	7388	2.069	
2014	917	8305	2.325	
2015	917	9222	2.582	
2016	921	10143	2.840	
2017	866	11009	3.083	4.5
2018	866	11875	3.325	
2019	866	12741	3.567	
2020	866	13607	3.810	
2021	869	14476	4.053	
2022	825	15301	4.284	5.5
2023	825	16126	4.515	
2024	825	16951	4.746	
2025	825	17776	4.977	
2026	828	18604	5.209	

Utilitizing excess capacity in the Sawgrass Wastewater Treatment Plant was evaluated, and similar to the evaluation for the use of easterly potable water capacity, was found not to be a cost-effective alternative. In order to provide initial service from the Sawgrass WWTP a new force main and master lift station east of the ICWW, as well as, a subaqueous force main under the ICWW would be required. This alternative, at most, could provide three to four years capacity, based on project growth of both the easterly and westerly areas. The estimated cost for this alternative approached $3 million and provides no permanent plant capacity.

Again it was determined that the most cost-effective alternative was to provide a "standalone" facility to serve the westerly franchise area. The conceptual plan for the facility provides for an advanced wastewater treatment facility providing a high level disinfected reclaimed water for reuse throughout the area. A wet weather discharge will be provided to the ICWW, should reclaimed water discharge exceed the reclaimed usage and storage capacity during seasons of high rainfall and low irrigation. This facility will be staged in five phases, unless growth rates require adjustment to the proposed phasing. The basic

facility design will include a series of sequential batch reactors (SBR's) with a pretreatment unit, flow equalization, filtration, and disinfection utilizing ultraviolet lights or sodium hypochlorite. Complete operations building and laboratory will be provided. Emergency generation equipment and provisions for remote monitoring will be provided to insure Class I reliability. It is anticipated that the facility will be located along the northerly boundary of Nocatee. Master lift stations and force mains have been included to connect to the developer provided sewers.

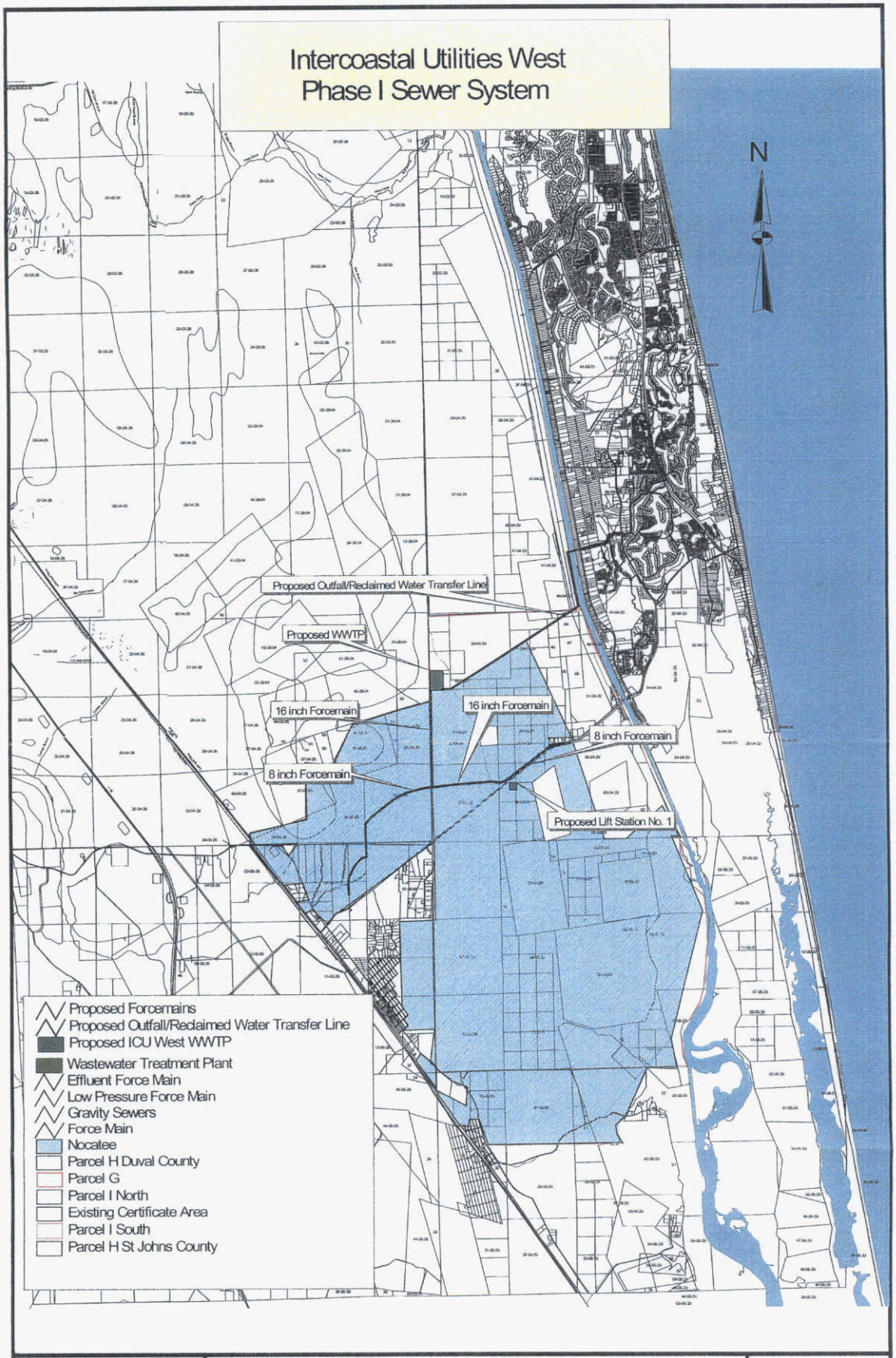
A map of the initial (Phase 1) water facilities in shown in Figure No. 3-3.

3.6.2 Wastewater System Phasing

Wastewater system development should generally follow the phasing summarized below:

- Phase 1 (Year 2002) – Provide a 1.0 mgd wastewater treatment plant, complete with master lift station, force mains, and wet weather outfall. **WWTP Capacity = 1.0 mgd**
- Phase 2 (Year 2007) – Expansion of the wastewater treatment plant to 2.0 mgd capacity. **WWTP Capacity = 2.0 mgd**
- Phase 3 (Year 2012) – Expansion of the wastewater treatment plant to 3.0 mgd capacity. **WWTP Capacity = 3.0 mgd**
- Phase 4 (Year 2017) – Expansion of the wastewater treatment plant to 4.5 mgd capacity. **WWTP Capacity = 4.5 mgd**
- Phase 5 (Year 2022) – Expansion of the wastewater treatment plant to 5.5 mgd capacity. **WWTP Capacity = 5.5 mgd**

Preliminary opinion of the estimated construction costs are shown in Section 4.0.



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Proposed Sewer System

3-3

3.7 Reclaimed Water System

Table 3-6 summarizes projected reclaimed water demands for Nocatee from Year 2002 through anticipated buildout in Year 2026. Also shown is the reclaimed water available from the wastewater treatment plant and additional reclaimed water needs.

Table 3-6
Projected Reclaimed Water Demands

Year End	Annual ERC's	Total ERC's	Reclaimed Water ADF (mgd)	Avail Reclm from WRF (mgd)	Avail Reclm from East WRF (mgd)	Additional Reclm Need (mgd)
2002	**2713**	**2713**	**0.708**	**0.123**	**0.450**	**0.135**
2003	**498**	**3211**	**0.838**	**0.245**	**0.520**	**0.073**
2004	**498**	**3709**	**0.968**	**0.368**	**0.590**	**0.010**
2005	**498**	**4207**	**1.098**	**0.491**	**0.670**	
2006	**498**	**4705**	**1.228**	**0.614**	**0.763**	
2007	643	5348	1.396	0.802	0.960	
2008	643	5991	1.564	0.990	0.980	
2009	643	6634	1.731	1.179	1.083	
2010	643	7277	1.899	1.367	1.150	
2011	646	7923	2.068	1.555	1.150	
2012	**2204**	**10127**	**2.643**	**1.812**	**1.150**	
2013	**743**	**10870**	**2.837**	**2.069**	**1.150**	
2014	**743**	**11613**	**3.031**	**2.325**	**1.150**	
2015	**743**	**12356**	**3.225**	**2.582**	**1.150**	
2016	**745**	**13101**	**3.419**	**2.840**	**1.150**	
2017	2414	15515	4.049	3.083	1.150	
2018	681	16196	4.227	3.325	1.150	
2019	681	16877	4.405	3.567	1.150	
2020	681	17558	4.583	3.810	1.150	
2021	681	18239	4.760	4.053	1.150	
2022	**482**	**18721**	**4.886**	**4.284**	**1.150**	
2023	**482**	**19203**	**5.012**	**4.515**	**1.150**	
2024	**482**	**19685**	**5.138**	**4.746**	**1.150**	
2025	**482**	**20167**	**5.264**	**4.977**	**1.150**	
2026	**482**	**20649**	**5.389**	**5.209**	**1.150**	

3.7.1 Evaluation of Alternatives for the Reclaimed Water System

Utilization of excess reclaimed water from the easterly discharge was considered to supplement the reclaimed water demands of the westerly franchise area and thought to be cost prohibitive. However, a further look at this option considered the use of a combined wet weather outfall and reclaimed water transfer line from the easterly side of the Intracoastal Waterway. Under is option, a reclaimed water pumping station capable of pumping the projected excess of 1.150 mgd from the easterly system to the

westerly reclaimed water storage would be provided with a pipeline crossing under the Intracoastal Waterway. The pipeline from the westerly side of the waterway to the reclaimed water storage and pumping facility will double as a wet weather discharge to the waterway under conditions when storage is full and usage is minimal. This arrangement can be operated with a set of control valves to divert from transfer to wet weather discharge.

Reclaimed water storage options were given further consideration in this revised conceptual plan and storage reservoirs are considered the better option versus open storage ponds. The closed storage reservoirs provide added protection of fecal contamination from wildlife. The reclaimed water storage and pumping facility will be located adjacent to the wastewater treatment facility and provide the necessary transmission mains for connection to the various development pods and public access irrigation storage ponds. A temporary supply well to provide supplement to the reclaimed water system will be provided. This well will take its supply from the lower Floridian aquifer to minimize impact on the area water resources. Use of this will be required only during the initial three (3) years of development. This system will be designed to comply with all local, state, and federal regulations and provide Class I reliability service to the area for residential, public area, and golf course irrigation.

Although the addition of reclaimed water to stormwater storage ponds would be permitted by FDEP[h], it is our opinion that the resultant solids concentration would cause considerable problems in residential reuse systems (i.e. small orifice sprinkler heads).

Filtration the stormwater to a solids concentration of the reclaimed water would not be cost-effective. We, therefore, have not considered the use of stormwater as a supplemental supply to the reclaimed water system. However, stormwater, supplemented with reclaimed water for public access irrigation (i.e. golf courses with larger orifice sprinkler heads) could be implemented.

A map of the proposed reclaimed water system is shown on Figure No. 3-4.

3.7.2 Reclaimed Waterr System Phasing

The reclaimed water system will generally follow the phasing summarized below:

- Phase 1 (Year 2002) – Provide a 3.0 mg storage reservoir, reclaimed water pumping station, temporary supply well, easterly transfer pumping station, waterway crossing, and transmission mains. **Reclaimed Water Capacity = 1.50 mgd**

- Phase 2 (Year 2007) – Expansion of the reclaimed water storage reservoirs to 6.0 mg with additional reclaimed water pumping. **Reclaimed Water Capacity = 2.5 mgd**

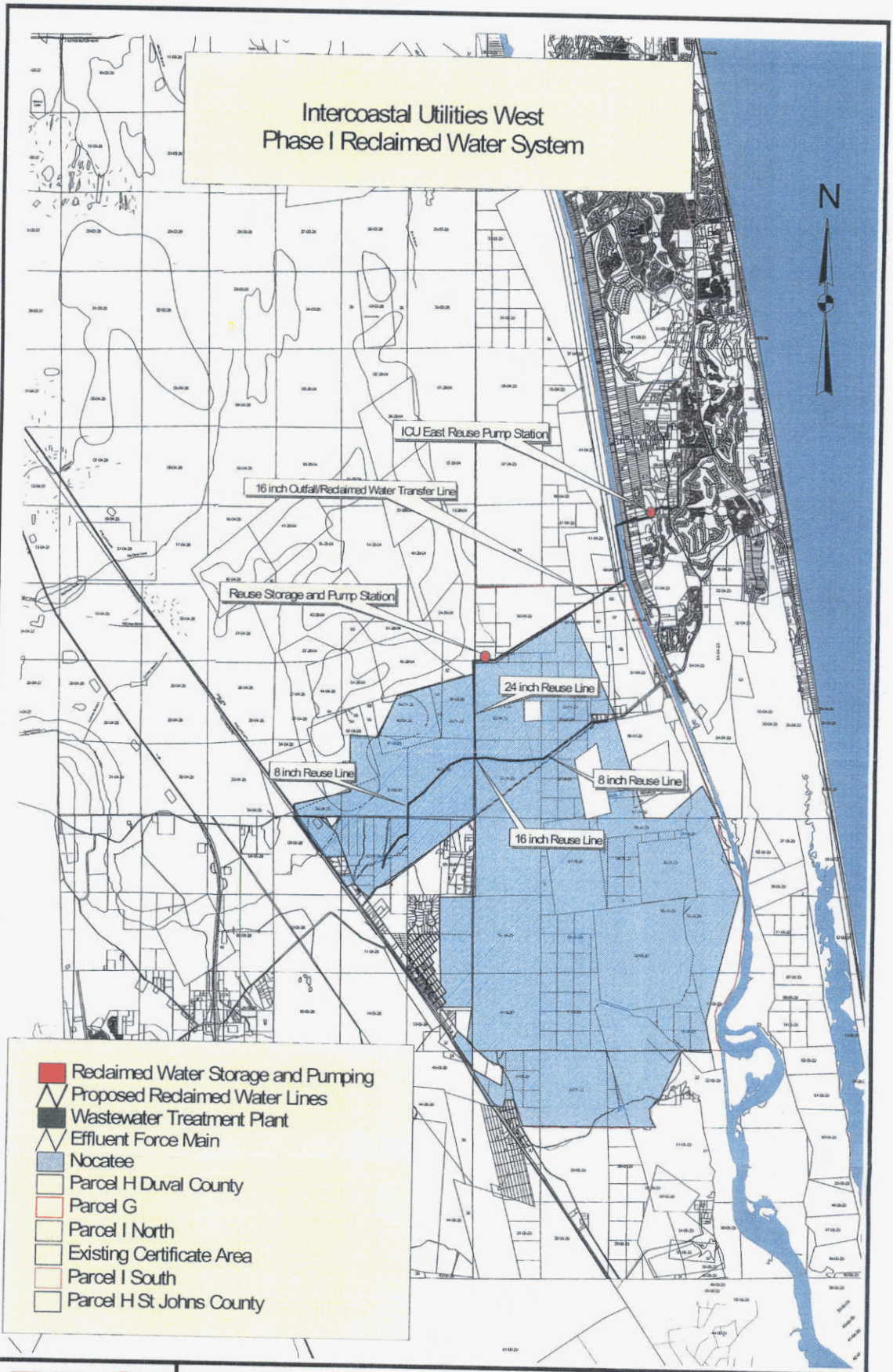
- Phase 3 (Year 2012) – Expansion of the reclaimed water storage reservoirs to 9.0 mg with additional reclaimed water pumping. **Reclaimed Water Capacity = 4.0 mgd**

- Phase 4 (Year 2017) – Expansion of the reclaimed water storage ponds to 12.0 mg with additional reclaimed water pumping. **Reclaimed Water Capacity = 5.0 mgd**

[h] Letter from Ernest Frye, P.E., FDEP to Juanita B. Clem, P.E. (England, Thims and Miller, Inc.), dated 7/8/99

- Phase 5 (Year 2022) – Expansion of the reclaimed water storage reservoirs to 15.0 mg with additional reclaimed water pumping. **Reclaimed Water Capacity = 6.250 mgd**

An opinion of the estimated costs for the reclaimed water system is presented in Section 4.0



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Proposed Reuse System

3-4

4.0 Opinion of Estimated Cost

4.1 Basis for Cost Estimates

Costs presented in this section are based on our opinion of current (1999) costs for construction of water, wastewater, and reclaimed water facilities in northeast Florida. A contingency factor of 10% and engineering cost of 15% has been added to the cost for each construction phase.

A tabulation of estimated costs are shown in Table Nos. 4-1through 4-3.

In reviewing this cost opinion, please be aware that the costs are presented in 1999 dollars and are based on the phasing (capacity increments) shown in the master plan.

Table 4-1

Potable Water System

Description	Quantity	Units	Unit Price			Extended Total
			Material	Labor	Total	
Phase 1 (2002)						
2.0 MG Reservoir w/Aerator	1	LS			$ 700,000	$ 700,000
Pump Sta #1 Complete	1	LS			$ 1,400,000	$ 1,400,000
Land	10	Ac			$ 10,000	$ 100,000
12" PVC Water Main	12000	LF			$ 30	$ 360,000
16" PVC Water Main	10000	LF			$ 38	$ 380,000
750 GPM Supply Wells	3	EA			$ 75,000	$ 225,000
8" PVC Well Header	1000	LF			$ 24	$ 24,000
12" PVC Well Header	1000	LF			$ 30	$ 30,000
Subtotal						$ 3,219,000
Contingency (10%)						$ 321,900
Engineering (15%)						$ 482,850
Total Phase 1						**$ 4,023,750**
Phase 2 (2007)						
2.0 MG Reservoir w/Aerator	1	LS			$ 700,000	$ 700,000
Expand Pump Station #1	1	LS			$ 600,000	$ 600,000
750 GPM Supply Wells	3	EA			$ 75,000	$ 225,000
8" PVC Well Header	1000	LF			$ 24	$ 24,000
12" PVC Well Header	1000	LF			$ 30	$ 30,000
16" PVC Well Header	1000	LF			$ 38	$ 38,000
24" PVC Water Main	9000	LF			$ 45	$ 405,000
Subtotal						$ 2,022,000
Contingency (10%)						$ 202,200
Engineering (15%)						$ 303,300
Total Phase 2						**$ 2,527,500**
Phase 3 (2012)						
2.0 MG Reservoir w/Aerator	1	LS			$ 700,000	$ 700,000
Pump Sta #2 Complete	1	LS			$ 1,400,000	$ 1,400,000
Land	10	Ac			$ 10,000	$ 100,000
24" PVC Water Main	8000	LF			$ 45	$ 360,000
16" PVC Water Main	8000	LF			$ 38	$ 304,000
750 GPM Supply Wells	4	EA			$ 75,000	$ 300,000
16" PVC Well Header	3000	LF			$ 38	$ 114,000
Subtotal						$ 3,278,000
Contingency (10%)						$ 327,800
Engineering (15%)						$ 491,700
Total Phase 3						**$ 4,097,500**
Phase 4 (2017)						
2.0 MG Reservoir w/ Aerator	1	LS			$ 700,000	$ 700,000
Expand Pump Station #2	1	LS			$ 600,000	$ 600,000
750 GPM Supply Wells	2	EA			$ 75,000	$ 150,000
16" PVC Well Header	8000	LF			$ 38	$ 304,000
Subtotal						$ 1,754,000
Contingency (10%)						$ 175,400
Engineering (15%)						$ 263,100
Total Phase 4						**$ 2,192,500**
Phase 5 (2022)						
750 GPM Supply Wells	2	EA			$ 75,000	$ 150,000
8" PVC Well Header	2000	LF			$ 30	$ 60,000
Subtotal						$ 210,000
Contingency (10%)						$ 21,000
Engineering (15%)						$ 31,500
Total Phase 5						**$ 262,500**

Table 4-2

Wastewater System

Description	Quantity	Units	Unit Price Material	Unit Price Labor	Unit Price Total	Extended Total
Phase 1 (2002)						
Master Lift Station #1	1	LS			$ 200,000	$ 200,000
8" PVC Force Main	17000	LF			$ 24	$ 408,000
16" PVC Force Main	12000	LF			$ 38	$ 456,000
1.0 MGD WWTP	1	LS			$ 5,500,000	$ 5,500,000
16" PVC Outfall/Xfer (50% Cost)	18000	LF			$ 20	$ 360,000
Land	25	Ac			$ 10,000	$ 250,000
Subtotal						$ 7,174,000
Contingency (10%)						$ 717,400
Engineering (15%)						$ 1,076,100
Total Phase 1						**$ 8,967,500**
Phase 2 (2007)						
1.0 MGD WWTP Expansion	1	LS			$ 5,000,000	$ 5,000,000
12" PVC Force Main	8000	LF			$ 30	$ 240,000
Subtotal						$ 5,240,000
Contingency (10%)						$ 524,000
Engineering (15%)						$ 786,000
Total Phase 2						**$ 6,550,000**
Phase 3 (2012)						
1.0 MG WWTP Expansion	1	LS			$ 5,000,000	$ 5,000,000
Master Lift Station #2	1	LS			$ 200,000	$ 200,000
8" PVC Force Main	5000	LF			$ 24	$ 120,000
12" PVC Force Main	5000	LF			$ 30	$ 150,000
16" PVC Force Main	30000	LF			$ 38	$ 1,140,000
Land	25	AC			$ 10,000	$ 250,000
Subtotal						$ 6,860,000
Contingiency (10%)						$ 686,000
Engineering (15%)						$ 1,029,000
Total Phase 3						**$ 8,575,000**
Phase 4 (2017)						
16" PVC Outfall	18000	LF			$ 38	$ 646,000
1.5 MG WWTP Expansion	1	LS			$ 5,500,000	$ 5,500,000
Subtotal						$ 6,146,000
Contingency (10%)						$ 614,600
Engineering (15%)						$ 921,900
Total Phase 4						**$ 7,682,500**
Phase 5 (2022)						
1.0 MG WWTP Expansion	1	LS			$ 4,500,000	$ 4,500,000
12" PVC Force Main	3000	LF			$ 30	$ 90,000
Subtotal						$ 4,590,000
Contingency (10%)						$ 459,000
Engineering (15%)						$ 688,500
Total Phase 5						**$ 5,737,500**

Table 4-3

Reclaimed Water System

Description	Quantity	Units	Unit Price Material	Unit Price Labor	Unit Price Total	Extended Total
Phase 1 (2002)						
16" PVC Outfall/Xfer (50% Cost)	18000	LF			$ 20	$ 360,000
12" ICWW Crossing	1000	LF			$ 300	$ 300,000
ICU-East Reclaim P.S.	1	LS			$ 250,000	$ 250,000
3.0 MG Reclaimed Storage Reservoir	1	LS			$ 1,100,000	$ 1,100,000
Reclaimed Water P.S.	1	LS			$ 500,000	$ 500,000
24" PVC Reclaimed Water Main	8000	LF			$ 45	$ 360,000
16" PVC Reclaimed Water Main	12000	LF			$ 38	$ 456,000
8" PVC Reclaimed Water Main	12000	LF			$ 24	$ 288,000
Subtotal						$ 3,614,000
Contingency (10%)						$ 361,400
Engineering (15%)						$ 542,100
Total Phase 1						**$ 4,517,500**
Phase 2 (2007)						
16" PVC Reuse Main	8000	LF			$ 38	$ 304,000
Expand Reclamed Water P.S.	1	LS			$ 100,000	$ 100,000
3.0 MG Reservoir	1	LS			$ 1,100,000	$ 1,100,000
Subtotal						$ 1,504,000
Contingency (10%)						$ 150,400
Engineering (15%)						$ 225,600
Total Phase 2						**$ 1,880,000**
Phase 3 (2012)						
16" PVC Reclaimed Water Main	8000	LF			$ 38	$ 304,000
12" PVC Reuse Main	8000	LF			$ 30	$ 240,000
Expand Reclamed Water P.S.	1	LS			$ 100,000	$ 100,000
3.0 MG Reservoir	1	LS			$ 1,100,000	$ 1,100,000
Subtotal						$ 1,744,000
Contingency (10%)						$ 174,400
Engineering (15%)						$ 261,600
Total Phase 3						**$ 2,180,000**
Phase 4 (2017)						
Expand Reclamed Water P.S.	1	LS			$ 100,000	$ 100,000
3.0 MG Reservoir	1	LS			$ 1,100,000	$ 1,100,000
8" PVC Reclaimed Water Main	6000	LF			$ 24	$ 144,000
Subtotal						$ 1,344,000
Contingency (10%)						$ 134,400
Engineering (15%)						$ 201,600
Total Phase 4						**$ 1,680,000**
Phase 5 (2022)						
Expand Reclamed Water P.S.	1	LS			$ 100,000	$ 100,000
3.0 MG Reservoir	1	LS			$ 1,100,000	$ 1,100,000
Subtotal						$ 1,200,000
Contingency (10%)						$ 120,000
Engineering (15%)						$ 180,000
Total Phase 5						**$ 1,500,000**

5.0 Summary

5.1 Overview

In our review of the Intercoastal Utilities, Inc. system in northeast St. Johns County, it is our opinion that the existing system is operated and maintained in a condition that meets or exceeds many non-regulated systems throughout the State. While the current excess capacity in the existing system cannot be cost-effectively used to provide initial service to the westerly franchise area, we feel that the economy of operation and the existing customer base will substantially benefit both the existing customers in the existing system, as well as future customers in the proposed system.

Our review of documents provided by Nocatee form much of the basis for our conclusions and recommendations. While planning projects are always somewhat unpredictable, we see no reason to criticize or modify projections developed be planners who have spent hundreds of hours of effort on the project. Our review of documents, such as the Nocatee Water Resources Study, also indicate the amount of effort and study that have gone into this planning effort. We are confident from the review this document that adequate investigations have been made to assure that the proposed development will not adversely effect the water resources in the area.

The conceptual planning by PBS&J and resulting cost opinions provide for facilities that are intended to provide "state of the art" design features to enhance operational effectiveness. These facilities will also incorporate the necessary emergency generation and backup/equipment to assure the highest level of reliability, that meets or exceeds current regulations. When these facilities are placed into operation, they will provide a level of service that meets or exceeds that of other area public or private utilities.

While our recommendations focus on providing on-site facilities to serve this area, Intercoastal can easily and cost-effectively adapt the planning effort to utilize wholesale service from an off-site supplier, should that option become available. Because of Intercoastal's existing customer base and scale of operation, they are in the unique position to be able to cost-effectively adapt to various service scenarios, that benefit both existing and future customers in Intercoastal's system.

5.2 Recommendations

We recommend that Intercoastal Utilities, Inc. use this Conceptual Master Plan as the initial tool for the development of utility systems to serve the westerly franchise area, while continuing to maintain the current high level of service in the existing system. As the westerly area begins to grow, Intercoastal should update the planning for both systems and look towards beginning to integrate the two systems into a single system.

Because of the dynamic growth predicted for the area, the utility planning must be closely monitored (and modified when necessary) to maintain cost-effective service to the area.