



LEE COUNTY
SOUTHWEST FLORIDA

BOARD OF COUNTY COMMISSIONERS

ORIGINAL

Writer's Direct Dial Number: (941) 335-2236

John E. Manning
District One

November 4, 1998

Douglas R. St. Cerny
District Two

Ray Judah
District Three

Andrew W. Coy
District Four

Blanca S. Bayo
Director, Division of Records & Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0870

John E. Albion
District Five

Donald D. Stilwell
County Manager

James G. Yaeger
County Attorney

BY: FEDERAL EXPRESS

Diana M. Parker
County Hearing
Examiner

RE: LEE COUNTY'S FORMAL OBJECTION TO APPLICATION FOR
ORIGINAL WATER CERTIFICATE BY TOWN AND COUNTRY
UTILITY COMPANY IN LEE COUNTY, FLORIDA

981288-WW

Dear Ms. Bayo:

Enclosed are the original and twelve (12) copies of Lee County's Formal Objection to Application for Original Water Certificate by Town and Country Utility Company in Lee County, Florida.

Please acknowledge receipt of the foregoing by stamping the enclosed extra copy of this letter and returning same to me at your convenience. Thank you for your assistance in this matter.

Cordially,

David M. Owen
Assistant County Attorney

ACK _____

AFA _____

APP _____

CAF _____

CMU _____

CTR _____ DMO:dm

EAG _____ Enclosures

LEG 2 xc: James G. Yaeger, County Attorney

LIN _____ Robert W. Gray, Deputy County Attorney

OPC _____ J.W. French, P.E., Director, Public Works Administration

RCH _____ Larry Johnson, P.E., Director, Environmental Services

SEC 1 Glenn Greer, P.E., Director, Lee County Utilities

(above w/o enclosures)

WAS Walker

OTH _____ BAYO.T

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FPSC-RECORDS/REPORTING



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Glenn Greer, P.E., Director, Lee County Utilities
(above w/o enclosures)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Application for)
Original Water Certificate)
by TOWN & COUNTRY UTILITY)
COMPANY in Lee County, Florida)

**LEE COUNTY'S OBJECTION TO TOWN & COUNTRY
UTILITY COMPANY'S APPLICATION FOR AN
ORIGINAL WATER CERTIFICATE IN LEE COUNTY.**

COMES NOW Lee County, by and through its undersigned County Attorney, and makes its formal objection to the Town & Country Utility Company's (Town & Country's) Application for an Original Water Certificate in Lee County, and states as follows:

1. On or about October 8, 1998, Town & Country filed its Notice and Application for an Original Water Certificate in Charlotte County and Lee County, Florida, with the Florida Public Service Commission (FPSC).
2. On October 8, 1998, the Notice of Application publication as required by Section 367.045, Florida Statutes, and Rule 25-30.030, Florida Administrative code, was made in the Fort Myers News Press (Exhibit "A").
3. The Lee County Board of County Commissioners is the governing body in and for unincorporated Lee County, a political subdivision of the State of Florida, and a charter county pursuant to Article VIII, Section 1. of the Florida Constitution.
4. The Lee County Board of County Commissioners as the governing body and

governmental regulatory authority for unincorporated Lee County pursuant to Chapter 125, Florida Statutes, has the exclusive authority to provide water and sewer service through its own forces or by County franchise, in those areas of unincorporated Lee County not franchised by the Florida Public Service Commission.

5. Town & Country's Application for the Original Water Service Certificate in Lee County is inappropriate in Lee County inasmuch as the Lee County area described in the Certificate Application is within the existing service area of Lee County Utilities.
6. Town & Country's Application for its Original Water Service Certificate in Lee County is inconsistent with, and violates the provisions of the Lee County Comprehensive Plan developed pursuant to Chapter 163, Florida Statutes, as approved by the Florida Department of Community Affairs (Composite Exhibit "B").
7. Lee County is the current potable water supplier for the area of Lee County commonly known as the "North Fort Myers" area of unincorporated Lee County, which includes areas of unincorporated Lee County that are identified in the Lee County Comprehensive Plan as "Lee County Future Water Service Areas", and are listed in Town & Country's Water Certificate Application.
8. The Lee County Utilities Department has certain infrastructure currently in place with respect to the future Lee County water customers within the

subject area, to wit: test wells for a future Lee County potable water wellfield which will be located in Sections 9, 10 and 11, Township 43 South, Range 26 East, and which will serve a new, Lee County, five (5) million gallon per day water production plant, to be located in Section 14, Township 43S, Range 26E, Lee County, Florida.

9. The Lee County Utilities Department, through the Board of County Commissioners, is actively pursuing and developing additional water service infrastructure for the area lying east of U.S. Highway 41, from the southern border of Charlotte County south to the Caloosahatchee River, which includes the proposed construction of the new water wellfield and the new potable water plant located in Section 14, Township 43 South, Range 25 East, Lee County, Florida.
10. Lee County specifically objects to the issuance of Town & Country's Original Water Service Certificate relating to any portions of Lee County.
11. Lee County presently serves the water customers in the southerly one-half of the unincorporated area of Lee County commonly known as "North Fort Myers", and has taken certain affirmative steps to provide potable water to the northern one-half of said area which constitutes Lee County's "Future Water Service Area" pursuant to its approved Comprehensive Plan.
12. Lee County is developing, and will, within no more than the next thirty-six (36) months, construct and have operating for production, a five (5) million gallon per day water treatment plant for water service to be provided to

unincorporated Lee County customers within the sections of Lee County as currently listed in Town & Country's Application (Composite Exhibit "C").

13. Town & Country has neither a superior legal right nor the superior ability to serve the customers in Lee County which are the subject of Lee County's objection.
14. The proposed Town & Country Application for an Original Water Certificate constitutes direct competition with the Lee County Department of Utilities System, specifically prohibited by Section 367.045(5)(a), Florida Statutes.

For the foregoing reasons, Lee County hereby requests a hearing relative to Lee County's objections, and other such relief as may be deemed appropriate by the Commission.

Lee County respectfully requests that Town & Country's Application for an Original Water Certificate as it pertains to Lee County, and as specifically objected to by Lee County herein, be denied.

Respectfully submitted this 4th day of
November, 1998

JAMES G. YAEGER
LEE COUNTY ATTORNEY
FLORIDA BAR NO. 121712

By:  _____

David M. Owen
Assistant County Attorney
Florida Bar No. 380547
2115 Second Street, 6th Floor
Post Office Box 398
Fort Myers, Florida 33902-0398
(941) 335-2236

EXHIBIT "A"

NEWS-PRESS
Published every morning — Daily and Sunday
Fort Myers, Florida

Affidavit of Publication

STATE OF FLORIDA
COUNTY OF LEE

Before the undersigned authority, personally appeared _____
Suzanne Crawford

who on oath says that he/she is the _____ Assistant
Legal Coordinator _____ of the News-Press, a

daily newspaper published at Fort Myers, in Lee County, Florida; that the
attached copy of advertisement, being a _____

Notice of Application

is the matter of _____

Town & Country Utility Co. Application

in the _____ Court

was published in said newspaper in the issues of _____
October 8, 1998

Affiant further says that the said News-Press is a paper of general circulation
daily in Lee, Charlotte, Collier, Glades and Hendry Counties and published at
Fort Myers, in said Lee County, Florida and that said newspaper has heretofore
been continuously published in said Lee County, Florida, each day, and has
been entered as a second class mail matter at the post office in Fort Myers in
said Lee County, Florida, for a period of one year next preceding the first
publication of the attached copy of the advertisement; and affiant further says
that he/she has neither paid nor promised any person, firm or corporation any
discount, rebate, commission or refund for the purpose of securing this
advertisement for publication in the said newspaper.

Suzanne Crawford

Sworn to and subscribed before me this
14th day of _____
October _____ 19 98 by

Suzanne Crawford

who is personally known to me or who has produced

as identification, and who did or did not take an oath.

Notary Public _____

Print Name _____

My Commission Expires: _____

CLASS-18



Janet E. Cobb
MY COMMISSION # 02602835 EXPIRES
November 19, 2000
BANKRUPT THROUGH FAIR INSURANCE INC.

NOTICE OF APPLICATION FOR ORIGINAL WATER CERTIFICATE

Pursuant to Section 307.045, Florida Statutes, and Section 25-30.030, Florida Administrative Code, notice is hereby given by Town & Country Utility Company, 8000 State Road 31, Punta Gorda, Florida 33982, of their application for original water certificate for the following described territory in Charlotte and Lee Counties, Florida:
All of Sections 1 through 36, Township 41 South Range 26 East, Charlotte County, Florida, Less road right-of-way for S.R. 31 and C.R. 74

AND
All of Sections 1 through 36, Township 42 South Range 26 East, Charlotte County, Florida, Less road right-of-way for S.R. 31

AND
All of Sections 1 through 19, Township 41 South Range 27 East, Charlotte County Florida

AND
All of Sections 1 through 11, the west 1/2 of Section 12, and all of Sections 13 through 36, Township 43 South Range 27 East, Charlotte County, Florida.

AND
All of sections 1 through 7, the west 1/2 of Section 9, and all of Section 12, Township 43 South, Range 28 East, Lee County, Florida, Less the road right-of-way for S.R. 31 and C.R. 78.

AND
All of Sections 1 through 8, Township 43 South, Range 27 East, Lee County, Florida

AND
Section 9, Township 43 South, Range 27 East, Lee County, Florida, Less the south 1/2 of the southeast 1/4 of S. 43-27

AND
The Northwest 1/4 and the North 1/2 of the Northeast 1/4 of Section 17, Township 43 South, Range 27 East, Lee County, Florida.

AND
The North 1/2 of Section 18, Township 43 South, Range 27 East, Lee County, Florida.

Written objections, at the above noted extension must be filed with the Director of the Division of Records and Reporting, Florida Public Service Commission, 2549 Shumard Oak Boulevard, Tallahassee, Florida 32399-0870, and a copy provided to F. Marshall DeLording, ROSE SUNDSTROM & BENTLEY, 2548 Blaisdell Pines Drive, Tallahassee, Florida 32301, no later than 30 days after the last date this notice was mailed or published whichever is later.
Oct 8 No. 27225

COMPOSITE EXHIBIT "B"

V. COMMUNITY FACILITIES AND SERVICES

a. Potable Water

GOAL 31: 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 31.1:

The county shall 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 a utility authority, or indirectly through franchised utility companies.

POLICY 31.1.1:

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 31.1.2:

The minimum acceptable level-of-service standards (see Policy 70.1.3) for potable water connections to Lee County Utilities shall be: (Amended by Ordinance 92-35)

- 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 shall have a capacity of 187.5 gallons per day and facilities serving only travel trailer residential structures shall have a capacity of 150 gallons per day.

POLICY 31.1.3:

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 shall apply in those certificated or franchised areas and will be used in enforcing concurrency regulations (see Policy 70.1.3).

After the deadline set above any private utility that cannot meet the Level-of-Service standards set forth for Lee County Utilities shall 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 shall 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 92-35)

POLICY 31.1.4:

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 92-35)

POLICY 31.1.5:

County development regulations shall be amended to specify that no county development order under the Development Standards Ordinance 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, shall 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 shall in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 31.1.2 and 70.1.3.

POLICY 31.1.6:

No permit shall 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 shall be enforced along municipal and state rights-of-way by interlocal agreement and memoranda of agreement as required.

POLICY 31.1.7:

In allocating Industrial Development Revenue Bond capacity, the county shall 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.

POLICY 31.1.8:

The county shall investigate the legality and desirability of using Municipal Services Taxing/Benefit Units (MSTU/MSBU) to finance the extension of water mains or replacement of inadequate infrastructure for water service in any franchised or certificated service area where all other services are adequate and proposed development is consistent with the adopted Future Land Use Map.

POLICY 31.1.9:

Provide regulation and administrative processes that ensure that the costs of new or augmented potable water infrastructure are borne by those who benefit from the improved supply.

POLICY 31.1.10:

New development shall pay through appropriate financial mechanisms its fair share of the costs of providing standard potable water for that development.

GOAL 32: 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 32.1:

By the dates specified, the county shall establish and commence implementing programs to reduce potable water consumption, and consumption of large volumes of potentially potable raw water, by 5% by 1994. These programs include:

- education, technical advice, and demonstration (1989);
- revised rate structures (1990); and
- reuse water programs (1990).

POLICY 32.1.1:

Using the personnel and resources of various county agencies, Lee County shall immediately begin to design a program of public information and education for implementation during 1989. 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 87.2) and demonstrating the uses of native vegetation in landscaping; and
- generally encouraging the thoughtful use of water in all necessary activities.

POLICY 32.1.2:

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 32.1.3:

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 32.1.4:

The Board of County Commissioners shall re-examine the rate structure for the Lee County Utilities water systems and reform the rate structure to encourage 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.

POLICY 32.1.5:

The Board of County Commissioners shall encourage privately operated potable water utilities to adopt a "conservation" rate structure for users in their respective service areas.

POLICY 32.1.6:

Development regulations shall continue to require that any development shall 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 shall be amended further as follows: (Amended by Ordinance 91-19)

- Where a significant modification is proposed to a major development subject to the Development Standards Ordinance, wastewater reuse systems shall be required in the same manner as for new developments.
- The county shall 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.

POLICY 32.1.7:

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 32.1.8:

Priority in the use of Industrial Development Revenue Bonds or other mechanisms of public finance shall be given to regulated private utilities where not prohibited by the Florida constitution or statutes in order to achieve these public ends.

POLICY 32.1.9:

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 shall amend current regulations to provide that new wells in Lehigh Acres shall be constructed to accommodate submersible pumps. (Also see Policy 15.2.2 for new permit requirements for irrigation wells in Bonita Springs, and Policy 2.4.3 for special requirements for amendments to the Future Land Use Map.)

POLICY 32.1.10:

The county shall implement an effluent reuse program to reduce the amount of sewage effluent being discharged into surface waters. (Amended by Ordinance 91-19)

GOAL 33: ORGANIZATION OF SERVICE AND FACILITY DELIVERY.

To provide greater local coordination of the activities of public and private utilities within the county.

OBJECTIVE 33.1:

Re-examine during 1989 the organization of potable water service delivery, and plan and implement, as required, alternate institutional or corporate structures for the efficient delivery of central water service within the county.

POLICY 33.1.1:

Lee County shall commission an independent study of the fiscal and policy feasibility of local regulation of water (and sewer) utilities, with particular attention to the role such regulation would play in regulating land use and insuring the just and equitable distribution of costs and benefits of potable water service among various segments of the community.

POLICY 33.1.2:

If such action is determined to be feasible and desirable, the Board of County Commissioners may exercise its options under Section 367.171(1), F.S., and by ordinance assert local regulatory authority over private potable water utilities by withdrawing Lee County from the jurisdiction of the Florida Public Service Commission under Chapter 367, F.S.

POLICY 33.1.3:

The Board of County Commissioners, desiring to effectively manage and efficiently provide potable water service, shall investigate through staff, consultant, and the utilities task force the feasibility of establishing a Utilities Authority for various purposes, these being (in order of importance and priority):

- operating directly or through contract services the water (and sewer) systems of the Lee County Utilities Department;
- construction and financing of the expansion of Lee County's water systems;
- consolidating through purchase or operating agreement existing water (and sewer) utilities into a single county-wide agency;
- establishing control over all potable water sources and becoming sole provider of raw water to all utilities in Lee County; and
- exercising possible delegated regulatory authority over private utilities in the name of the Lee County Commission.

POLICY 33.1.4:

By 1991, Lee County shall establish a program 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 including proposed expansion plans. By 1992, this data shall be analyzed in accordance with all state statutes and regulations and then incorporated into the Lee Plan.

b. Sanitary Sewer

GOAL 34: SANITARY SEWER INFRASTRUCTURE.

To protect the public health and environmental quality by encouraging and ensuring the provision of sanitary sewer service and wastewater treatment and disposal throughout the future urban areas of the unincorporated county.

OBJECTIVE 34.1:

The county shall ensure the provision of acceptable levels of sanitary sewer service throughout the future urban areas of the unincorporated county, either directly by Lee County Utilities or a utility authority, or indirectly through franchised utility companies.

POLICY 34.1.1:

The Board of County Commissioners hereby establishes service areas for the Fort Myers Beach/Iona sewer system, the South Fort Myers sewer system, the East Lee County sewer system, and the Matlacha sewer system throughout which it will provide standard service as required by demand, and within which it will challenge applications by private sanitary sewer 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 7. 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 34.1.2:

The minimum acceptable level-of-service standards (see Policy 70.1.3) for sanitary sewer connections to Lee County Utilities shall be: (Amended by Ordinance 92-35)

- available basic facility capacity (see glossary) to treat and dispose of a volume of wastewater equal to 200 gallons per day per equivalent residential connection (ERC) for the peak month, except that facilities serving only mobile home residential structures shall

have a capacity of 150 gallons per day and facilities serving only travel trailer residential structures shall have a capacity of 120 gallons per day.

POLICY 34.1.3:

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 Lee County Utilities' sanitary sewer systems shall apply in those certificated or franchised areas and will be used in enforcing concurrency regulations (see Policy 70.1.3).

After the deadline set above any private utility that cannot meet the Level-of-Service standards set forth for Lee County Utilities shall 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 shall 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 92-35)

POLICY 34.1.4:

The Board of County Commissioners urges all utilities to construct and install sufficient treatment facilities and collection systems that will meet or exceed the minimum acceptable service standards and with the capacity to service the demand so generated and will meet or exceed the minimum requirements of the Department of Environmental Regulation, the Department of Health and Rehabilitative Services, U.S. Environmental Protection Agency, or any local ordinances which exceeds the foregoing. Each utility is encouraged to advise the planning and utility engineering staffs of the county regarding system expansions or modification 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 92-35)

POLICY 34.1.5:

County development regulations shall be amended to specify that no county development order under the Development Standards Ordinance for a residential development more intense than 2.5 dwelling units per gross acre, or for any commercial or industrial development that generates more than 5,000 gallons of sewage per day, shall be issued in any franchised or certified sanitary sewer service area, without a connection to such service if capacity is available at the minimum acceptable level of service anywhere within 1/4 mile of the development. This policy shall in no way exempt any development of any size from meeting the levels of service required for concurrency under Policies 34.1.2 and 70.1.3. (Amended by Ordinance No. 93-25)

POLICY 34.1.6:

No permit shall 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 shall be enforced along municipal and state rights-of-way by interlocal agreement and memorandum of agreement as required.

POLICY 34.1.7:

In allocating Industrial Development Revenue Bond capacity, the county shall give highest priority to private sanitary sewer utilities proposing to construct basic facilities and/or to provide or upgrade infrastructure serving developed areas and antiquated subdivision undergoing redevelopment.

POLICY 34.1.8:

The county shall investigate the legality and desirability of using Municipal Service Taxing/Benefit Units (MSTU/MSBU) to finance the extension of sewer mains or for the replacement or augmentation of inadequate infrastructure for sanitary sewer service in any franchised or certificated service area where all other services are adequate and proposed development is consistent with the adopted Future Land Use Map.

POLICY 34.1.9:

County development regulations shall be amended to specify that any change in use or intensity in an approved development order shall be subject to compliance with Policy 34.1.5. (Added by Ordinance No. 93-25)

OBJECTIVE 34.2.a:

During 1989, the county shall analyze the costs and feasibility of establishing a local program to regulate wastewater treatment package plants as allowed by the Florida Department of Environmental Regulation.

OBJECTIVE 34.2.b:

The county shall adopt and enforce such ordinances as are necessary to require the connection of commercial and larger residential establishments to such public or private central utility systems when those systems are available for service.

POLICY 34.2.1:

It is hereby declared that in the interests of preserving public health and of preserving and enhancing environmental quality, it is in the public interest to abate and cease use of septic tanks and wastewater treatment package plants where and when central sewer is available.

POLICY 34.2.2:

With the cooperation of the respective utility firms or agencies, the county will establish a program and schedule for the abatement of septic tanks and package plants in areas in which sewer is presently available and in areas encompassed by assessment districts established for upgrading sewer availability.

POLICY 34.2.3:

The county shall encourage utilities to maintain or plan sufficient treatment capacity for near-term (2 years) availability to provide capacity for unserved development surrounded by existing areas with sewer service.

POLICY 34.2.4:

If found to be feasible and desirable, the county shall adopt appropriate regulations for wastewater treatment package plants permitting them under license contingent on proper operation and maintenance, providing for local inspection, providing for fees and fines for improper operation and maintenance (including temporary receivership with appropriate charges to the owner/users in order to recover public costs), and providing for abatement and connection to a sewer utility where said utility is available.

OBJECTIVE 34.3:

By 1991, the county shall establish regulations prohibiting the disposal of grease and septage by landspreading without proper treatment, and shall construct or cause to be constructed by private enterprise sufficient processing facilities to treat these products and waste-water sludge so they can be recycled as a beneficial product or disposed of properly.

POLICY 34.3.1:

The desired future level-of-service standard for a sludge disposal facility shall be 0.755 dry weight tons per day (dwtd) per million gallons per day of sewage treatment capacity (non-regulatory standard, see Policy 70.1.4); a standard for septage will be developed by 1994.

GOAL 35: RESOURCE MANAGEMENT.

To further the public health and protect environmental quality by using and encouraging conservation and resource management measures to reduce consumption of potable water and subsequent generation of wastewater.

OBJECTIVE 35.1:

By the dates specified, the county shall establish and commence implementing programs to reduce per-capita water consumption and subsequent wastewater generation. These programs include:

- education, technical advice, and demonstration (1989);
- revised rate structures (1990); and
- reuse water programs (1990).

POLICY 35.1.1:

Using the personnel and resources of various county agencies, Lee County shall immediately begin to design, for implementation during 1989, a program of public information and education to reduce demands on sewer facilities and natural systems. This program should include the use of print media, advertising, and public service announcements on radio and television highlighting and advocating various strategies to reduce demand for wastewater services, 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;
- supporting various aspects of the concurrent water conservation program, particularly reliance on appliances and fixtures that use less water and maximizing the cost-effective use of those appliances;

- providing information on proper maintenance of septic tanks and package plants; and
- generally encouraging the thoughtful use of water in all necessary activities that generate wastewater.

POLICY 35.1.2:

Programs to reduce the time and cost to treat wastewater shall be considered, including discouraging excessive use of garbage grinders and identification of industrial or commercial users that produce excess biological oxygen demand (BOD) or chemical oxygen demand (COD) or toxic discharges which may stop or inhibit the treatment process, and requiring those users to install pretreatment to reduce BOD/COD or to give prior notice of discharge, and pay a surcharge proportional to the extraordinary costs of treatment.

POLICY 35.1.3:

The Board of County Commissioners shall re-examine the rate structure for the various sanitary sewer systems operated by Lee County Utilities and reform the rate structure to encourage the reduction of wastewater effluents by requiring the commodity charge (basic monthly charges less readiness to serve fee, administrative charges, and capital debt contribution) above a reasonable minimum to rise continuously or by specified increments for the increased volume of effluent.

POLICY 35.1.4:

The Board of County Commissioners shall encourage privately operated sanitary sewer utilities to adopt a "conservation" rate structure for users in their respective service areas.

POLICY 35.1.5:

In the design of each new wastewater treatment plant, the county shall dispose of effluent through reuse water systems.

POLICY 35.1.6:

Development regulations shall be amended to require that any development shall pay the appropriate fees and connect to a reuse water system if such system is near or adjacent to the development and has sufficient surplus to supply the development.

POLICY 35.1.7:

On-site sewer plants serving new golf course communities shall be designed to reuse effluent for irrigation purposes.

POLICY 35.1.8:

In order to ensure its effectiveness as an effluent disposal system, reuse water may be provided at cost.

POLICY 35.1.9:

In order to ensure the equitable distribution of the costs of a reuse water system, the costs of operation not covered by the commodity charge should fall to the sewer users as a charge for effluent disposal.

POLICY 35.1.10:

Priority in the use of Industrial Development Revenue Bonds or other mechanisms of public finance shall be given to regulated private utilities where not prohibited by the Florida constitution or statutes in order to achieve these public ends.

GOAL 36: ORGANIZATION OF SERVICE AND FACILITY DELIVERY.

To provide greater local coordination of the activities of public and private utility facilities within the county.

OBJECTIVE 36.1:

Re-examine during 1989 the organization of sewer service delivery, and plan and implement, as required, alternate institutional or corporate structures for the efficient delivery of sewer service to the future urban areas of the county.

POLICY 36.1.1:

Lee County shall commission an independent study of the fiscal and policy feasibility of local regulation of (water and) sewer utilities, with particular attention to the role such regulation would play in regulating land use and insuring the just and equitable distribution of costs and benefits of sanitary sewer service among various segments of the community.

POLICY 36.1.2:

If such action is determined to be feasible and desirable, the Board of County Commissioners may exercise its options under Section 367.171(1), F.S., and by ordinance assert local regulatory authority over private sanitary sewer utilities by withdrawing Lee County from the jurisdiction of the Florida Public Service Commission under Chapter 367, F.S.

POLICY 36.1.3:

The Board of County Commissioners, desiring to effectively manage and efficiently provide sanitary sewer service, shall investigate through staff, consultant, and the utilities task force the feasibility of establishing a

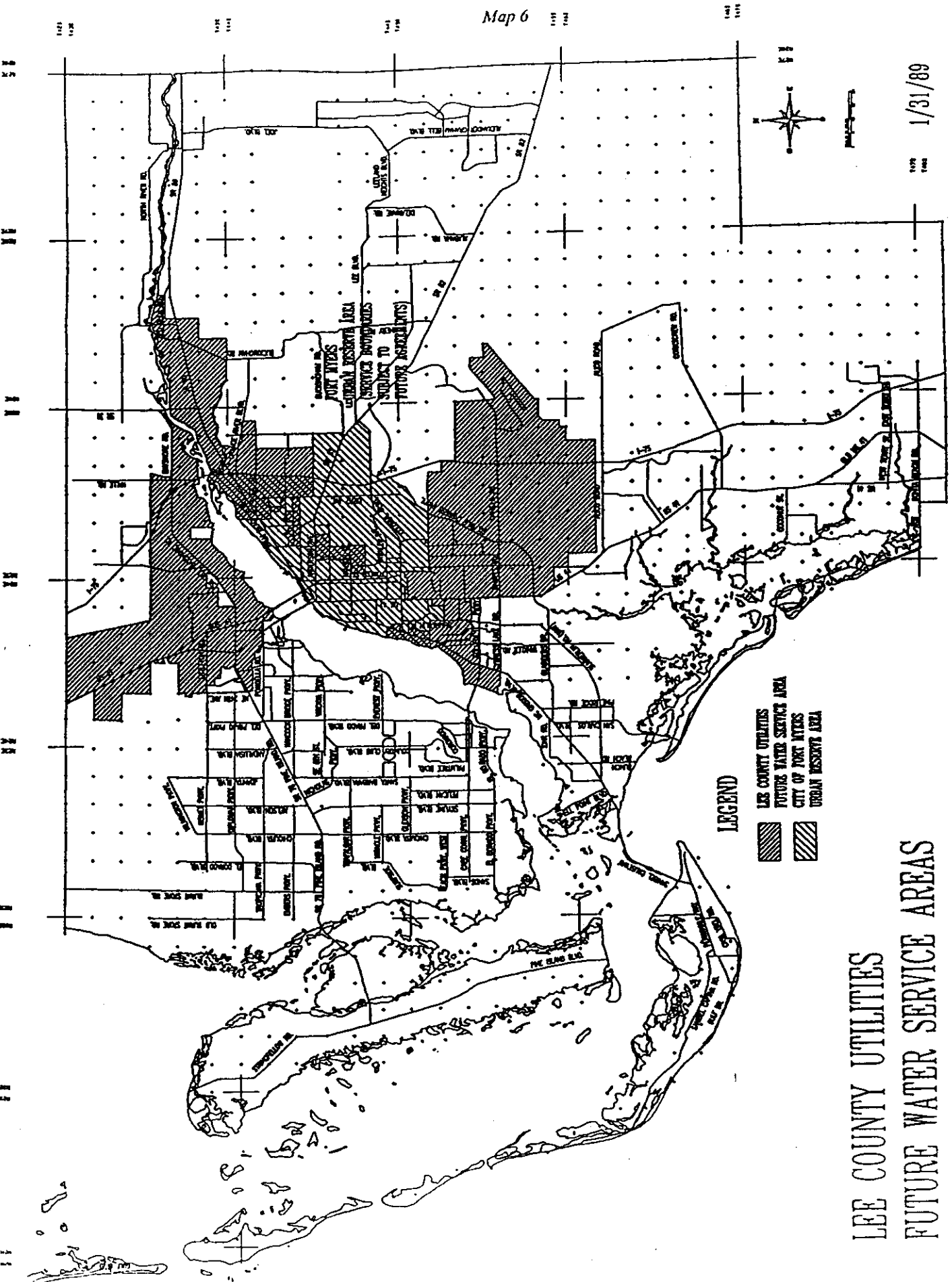
Utilities Authority for various purposes, these being (in order of importance and priority):

- operating directly or through contract services the sewer (and water) systems of the Lee County Utilities Department;
- construction and financing of the expansion of Lee County's sanitary sewer systems;
- consolidating through purchase or operating agreement the existing sewer (and water) utilities into a single county-wide agency; and
- exercising possible delegated regulatory authority over private utilities in the name of the Lee County Commission.





POLICY 36.1.4:

By 1991, Lee County shall establish a program to collect data from private sanitary sewer providers, including reporting of sewage flows, holding and treatment capacity, number of customers, and committed future connections; and including proposed expansion plans. By 1992, this data shall be analyzed in accordance with all state statutes and regulations and then incorporated into the Lee Plan.

1/31/89

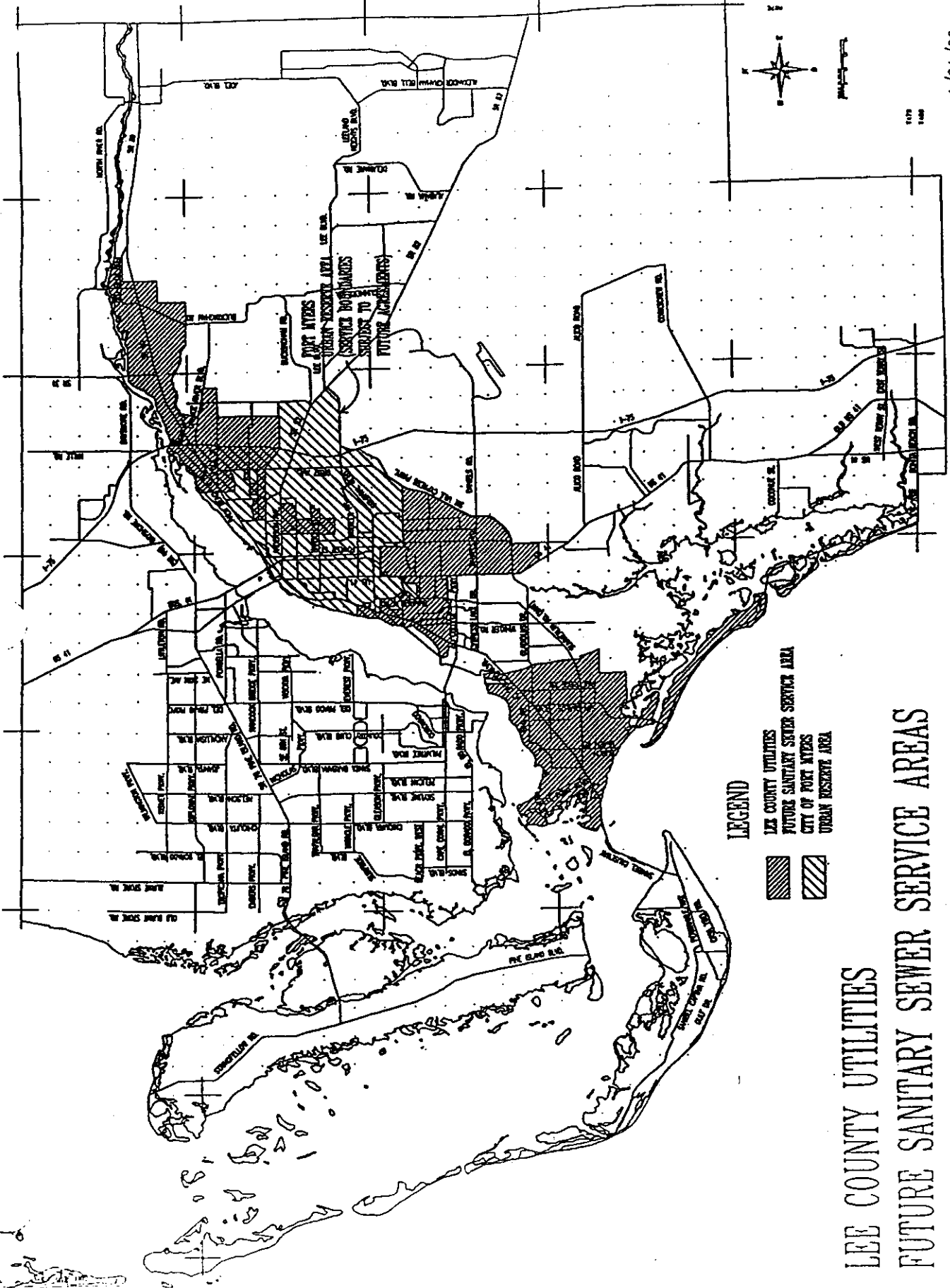
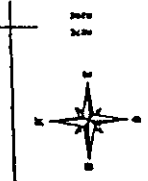


LEGEND





-  LEE COUNTY UTILITIES
-  FUTURE WATER SERVICE AREA
-  CITY OF FORT MYERS
-  URBAN RESORT AREA

LEE COUNTY UTILITIES
 FUTURE WATER SERVICE AREAS

1/31/89



LEGEND

-  LEE COUNTY UTILITIES
-  FUTURE SANITARY SEWER SERVICE AREA
-  CITY OF FORT MYERS
-  URBAN RESERVE AREA

LEE COUNTY UTILITIES
FUTURE SANITARY SEWER SERVICE AREAS

COMPOSITE EXHIBIT "C"

1. REQUESTED MOTION: ADDENDUM

ACTION REQUESTED: Authorize Chairman to Approve Resolution regarding reimbursement of costs related to the construction of the North Lee County Water Treatment Plant.

WHY ACTION IS NECESSARY: U.S. Treasury Regulation Section 1.150-2 requires any reimbursement of moneys from tax exempt obligations (bonds) to be set forth prior to the sale of those bonds.

WHAT ACTION ACCOMPLISHES: Allows proceeds from the sale of any forthcoming bond issue to fund construction of the North Lee County Water Treatment Plant to be used to reimburse certain previous expenditures.



March 13, 1997

Mr. Ivan Velez, P.E.
Department of Public Works
Environmental Services
Utilities Section
1500 Monroe Street
Fort Myers, FL 33901

VIA FAX: 479-8176

RE: North Lee County WTP

Dear Mr. Velez:

The North Lee County Water Treatment Facilities project will be an exciting and dynamic undertaking for Lee County, as well as for the Montgomery Watson project team. Until we reach the completion of Phase 1, there will be many unanswered questions such as water source, method of treatment, location of facilities, etc. With all of these unknowns, it is difficult at best to predict what the capital costs associated with the facilities might be. Typical costs may include:

<u>Component Description</u>	<u>Opinion of Capital Cost \$ Million</u>
5 MGD "basic" surface water treatment plant (assume \$2.25-2.50/gal. for construction)	\$11.25-12.50
Additional infrastructure to support future expansion to 10 MGD	\$2.0
On-site water storage tank	\$2.5
Injection well for concentrate disposal	\$2.5-3.0
Allowance for land acquisition	\$0.5
ORDER OF MAGNITUDE ESTIMATE FOR 5 MGD SURFACE WTP:	\$18.75-\$20.50

Mr. Ivan Velez, P.E.
North Lee County WTP
March 13, 1997
Page 2

Based upon our current knowledge of the proposed project known as the North Lee County Water Treatment Facilities, it is our opinion the professional engineering fees (excluding ASR, storage tanks and transmission improvements) may be as follows:

Phase	Approximate Fee (\$ Million)	Comments
1	\$1.1	If groundwater investigation is not required and not authorized by the County, Phase 1 cost will be reduced by approximately \$400,000
2	\$1.0 - \$1.5	Dependent upon results obtained in Phase 1
3	\$1.0 - \$1.5	Estimate includes allowances for engineer during construction and construction manager fees

**ORDER OF MAGNITUDE ESTIMATE
FOR PROFESSIONAL SERVICES:**

\$3.1-\$4.1 MILLION

With a project of this magnitude, the County should consider including a 10% contingency (\$2.5 million) in the budget for unforeseen issues which may arise.

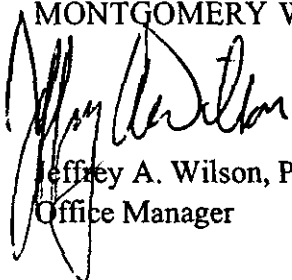
Additional improvements which the County may wish to include through future CIP budgets would include the following projects which would enhance the efficiency and effectiveness of the new water treatment facility

<u>Component Description</u>	<u>Opinion of Capital Cost \$ Million</u>
ASR wells	\$0.8-2.4
Transmission improvements	\$0.5-1.5

Should you have any additional questions, please let me know.

Very truly yours,

MONTGOMERY WATSON AMERICAS, INC.


Jeffrey A. Wilson, P.E.
Office Manager

LEE COUNTY BOARD OF COUNTY COMMISSIONERS
 AGENDA ITEM SUMMARY

BLUE SHEET NO: 980 994

1. REQUESTED MOTION:

ACTION REQUESTED:

Approve Change Order No. 2 to the North Lee County Water Treatment Facilities Project, Contract No. C970324 with Montgomery Watson Americas, Inc. for the detailed design phase of the project with a contract increase not-to-exceed \$1,830,000; and a total contract amount of \$2,961,400.

WHY ACTION IS NECESSARY:

The Engineering Consultant was selected under the state required competitive negotiation process, and the contract was awarded for the preliminary design phase, with later phases to be negotiated.

WHAT ACTION ACCOMPLISHES:

Approval of this action will provide the Utilities Division of the Environmental Services Department, with a consultant that will provide Phase II, Final Design of the North Lee County Water Treatment Plant. The plant's initial capacity will be 5 MGD and it will be expandable to 10 MGD. Construction of the water plant is required to meet growth projections within the Lee County Utility service area.

2. DEPARTMENTAL CATEGORY: 10 - UTILITIES
COMMISSION DISTRICT #: 4

10a

3. MEETING DATE: 11-10-98

4. AGENDA:

- CONSENT
- ADMINISTRATIVE
- APPEALS
- PUBLIC
- TIME REQUIRED: _____

5. REQUIREMENT/PURPOSE:

(Specify)

- STATUTE _____
- ORDINANCE _____
- ADMIN. CODE _____
- OTHER Change Order

6. REQUESTOR OF INFORMATION:

- A. COMMISSIONER: _____
- B. DEPARTMENT: Lee County-Public Works
- C. DIVISION/SECTION: Environmental Services/Utilities
- BY: Glenn Greer, Util. Director
- DATE: 10-8-98

7. BACKGROUND:

On May 8, 1996, the Board approved the ranking of consultants and authorized negotiations to commence with the number one ranked firm. The ranking was as follows: 1) Montgomery Watson Americas, Inc.; 2) CH2M Hill, Inc.; 3) Kimley Horn & Associates, Inc.

Contract negotiations were successful with the number one ranked firm, Montgomery Watson Americas, Inc. and required Board approval of the final agreement. Phase I engineering was needed to establish the preliminary design including recommended water sources, plant location, water treatment process and capital cost estimates prior to the design of this North Lee County Water Treatment Plant project. Phase II will provide final design including drawings and specifications needed for construction. This is an approved CIP Project #7084.

Funding for the design is budgeted and available in Account No.

487-2510-536120-6510-498-7084-00

(Utilities Operating/Capital Projects/Water System Projects/Professional Services/Utilities Capital Improvements/N. Lee Co. Water Treatment Plant)

8. MANAGEMENT RECOMMENDATIONS:

Approve change order for final design needed to complete the CIP.

9. RECOMMENDED APPROVAL

DEPARTMENT DIRECTOR	PURCHASING	HUMAN RES.	Office of Budget Services				OTHER	COUNTY ATTORNEY	COUNTY MANAGER
			OA	OM	Risk	GC			
<i>L.A. JOHNSON</i> DATE: <i>10/9/98</i>	N/A	N/A	<i>RK 10/9</i>	<i>[Signature] 10/9</i>	<i>[Signature] 10/9</i>	<i>RK 10/9</i>	<i>[Signature] 10/9/98</i>	<i>[Signature]</i>	

10. COMMISSION ACTION:

- APPROVED
- DENIED
- DEFERRED
- OTHER

to the meeting of 11/10/98

RECVD BY CO. ADMIN.
 10-9-98
 1:45

RECVD. 10/8/98
 by CO. ATTY.
 3:55 pm

CO. ADMIN FORWARDED TO LEE CARES
 10-12-98
 1:20

CO. ATTY. 10/9/98
 FORWARDED TO BUDGET
 9:40 AM

**MEMORANDUM
FROM
PUBLIC WORKS**

ENVIRONMENTAL SERVICES DEPARTMENT

DATE: OCTOBER 21, 1998

To: BOARD OF COUNTY
COMMISSIONERS

FROM: *Larry A. Johnson*
LARRY JOHNSON
DIRECTOR

**SUBJECT: 10-27-98/C-10-A , NORTH LEE COUNTY WATER PLANT
SUPPLEMENTAL INFORMATION**

Lee County Utilities is requesting approval of a Change Order for the design phase of engineering work for the new North Lee County Water Treatment Plant. This new 5 million gallons per day (MGD) water supply and treatment plant is an approved part of the Capital Improvement Program, which is needed to supply additional potable water for the expected growth in the existing Lee County Utilities system. Montgomery Watson Americas, Inc. (MWA) has completed the preliminary design phase of the project. An executive summary of the preliminary design report and additional figures are attached for your information.

The potable water supply needs (demands) of the existing Lee County Utilities are shown on the two attached figures, ES-2 and 10-4. These figures show that the maximum water needs grow from approximately 13 MGD in 1998 to 18 MGD by 2005. Figure ES-2 shows that the existing water plant capacity of 15 MGD will be exceeded by the year 2000 if we did not take other actions. Instead of building a water plant expansion by 2000, LCU has chosen to install a 3 MGD Aquifer Storage and Recovery well system at the Corkscrew plant. This additional treated water storage will allow us to meet the maximum daily water demands, and delay the construction of the new water plant until 2002. Figure 10-4 shows that the combined water plant and ASR well capacity will meet the expected water demands until the new North Lee County Plant is built. Lee County has received grants from SFWMD and the LCRWSA to partially fund the ASR wells for this purpose, and is currently constructing the ASR wells.

The North Lee County Water Treatment Plant will allow additional potable water to be pumped through the LCU water distribution system to accommodate growth throughout our service area. The estimated capital and operating cost of the proposed plant are the lowest of the options considered, as shown on Table ES-4. A comparison of the O&M costs for the proposed new plant shows that it is in the lower half of O&M costs for other neighboring facilities. This emphasis on cost-effectiveness will help to stabilize future utility rates.

BOCC
October 21, 1998
Page Two

Please call me (479-8779) or Glenn Greer (479-8134) if you have questions concerning the proposed Board agenda item.

/laj-sdg

Attachments

cc: D. D. Stilwell, County Manager
J. W. French, Public Works
D. M. Owen, County Attorney's Office
Jeff Wilson, MWA
A. G. Greer, Utilities

Executive Summary

Background

The demand for drinking water will exceed the capacity of the Corkscrew and Olga Water Treatment Plants in the future as the area population continues to grow within the Lee County Utilities (LCU) water service area. The area annual average and maximum daily demands are developed and presented in Table ES-1 and Table ES-2 estimating when the demand will exceed the supply. The latest Lee County Metropolitan Planning Organization's Traffic Analysis Zone populations for three sub-areas in the County developed the projected demands. The north sub-area is north of the Caloosahatchee River; the east sub-area is south of the Caloosahatchee River and north of the City of Fort Myers, and the south sub-area is south of the City Fort Myers and State Route 82 in Figure ES-1.

Table ES-1
Projected Annual Average Daily Demands (mgd)

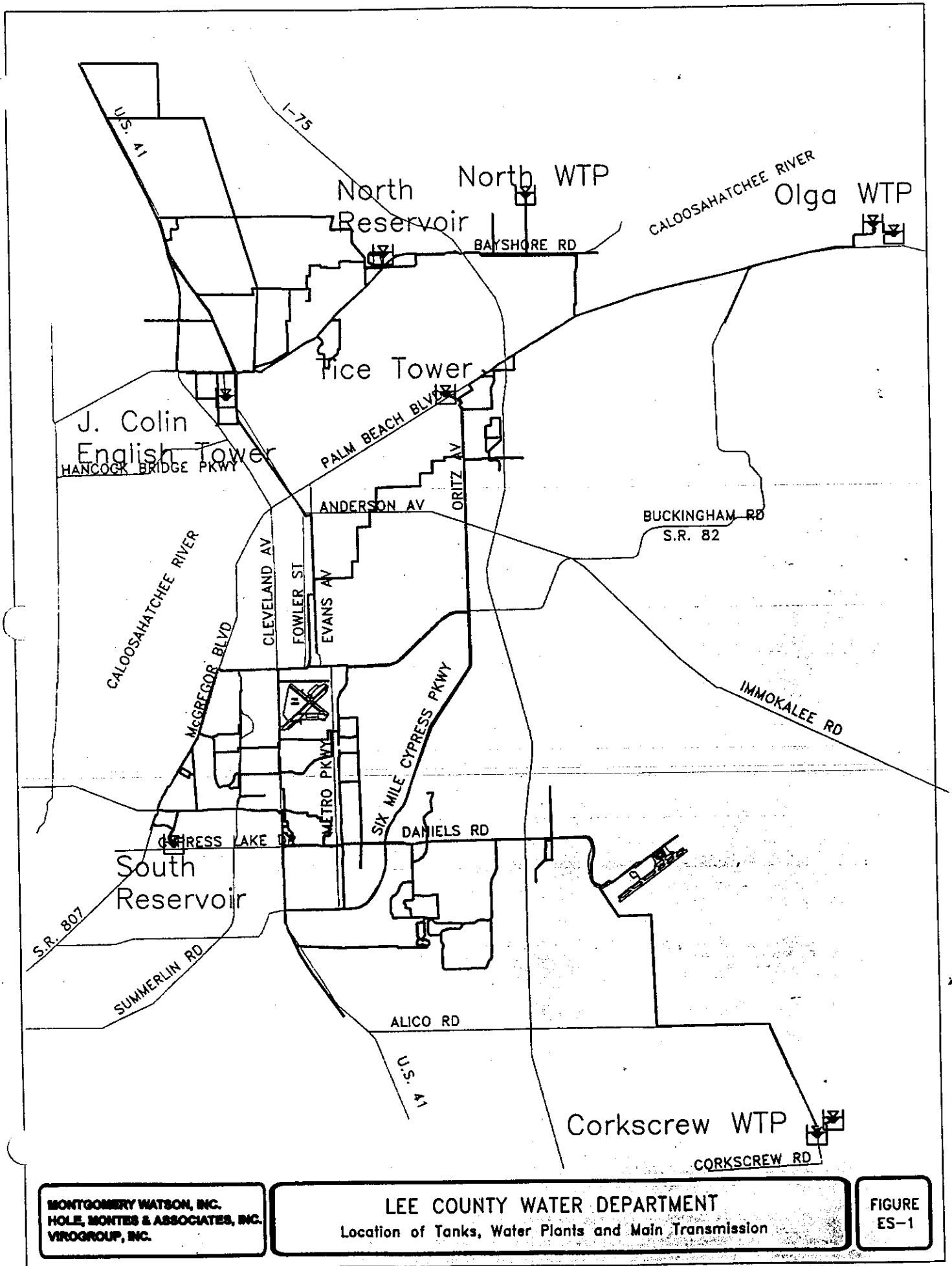
Area	Year				
	1990	1995	2000	2005	2020
North	2.93	3.13	3.71	4.36	6.01
East	1.94	2.04	2.30	2.55	3.13
South	3.94	4.12	4.97	6.05	8.88
Total	8.81	9.29	10.98	12.96	18.02

The capacity of the Corkscrew Water Treatment Plant (WTP) is 10 million gallons per day (mgd) and the Olga WTP capacity is 5 mgd. The Corkscrew and Olga WTPs will supply the annual average daily demands before 1999, and provide a combined capacity of up to 15 mgd.

Table ES-2
Projected Maximum Daily Demands (mgd)

Area	Year				
	1990	1995	2000	2005	2020
North	4.10	4.39	5.19	6.10	8.41
East	2.72	2.86	3.22	3.57	4.38
South	5.51	5.76	6.96	8.48	12.43
Total LCU	12.33	13.01	15.37	18.15	25.22

Presuming both Corkscrew and Olga WTP's can continuously meet their respective firm capacities, the maximum daily demands cannot be satisfied by the two plants after 2000. Shortfalls that may occur before final commissioning of the new 5 mgd North WTP will be augmented by a proposed 3 mgd Aquifer Storage and Recovery (ASR) system under construction at the Corkscrew WTP.



MONTGOMERY WATSON, INC.
 HOLE, MONTES & ASSOCIATES, INC.
 VIROGROUP, INC.

LEE COUNTY WATER DEPARTMENT
 Location of Tanks, Water Plants and Main Transmission

FIGURE
 ES-1

Increasing the North WTP capacity by an additional 5 mgd or an additional 3 mgd ASR system at the North Reservoir will help satisfy the maximum daily demands past 2020. **Figure ES-2** presents the annual average and minimum daily demands and WTP capacities plotted from **Table ES-2**.

Project Goal

Lee County Environmental Services authorized Montgomery Watson Americas, Inc. with sub-consultants Hole, Montes & Associates, Inc. and Virogroup, Inc. to prepare this report with the knowledge that demand may soon exceed the water production capacity of the County. Two primary directives for the report are:

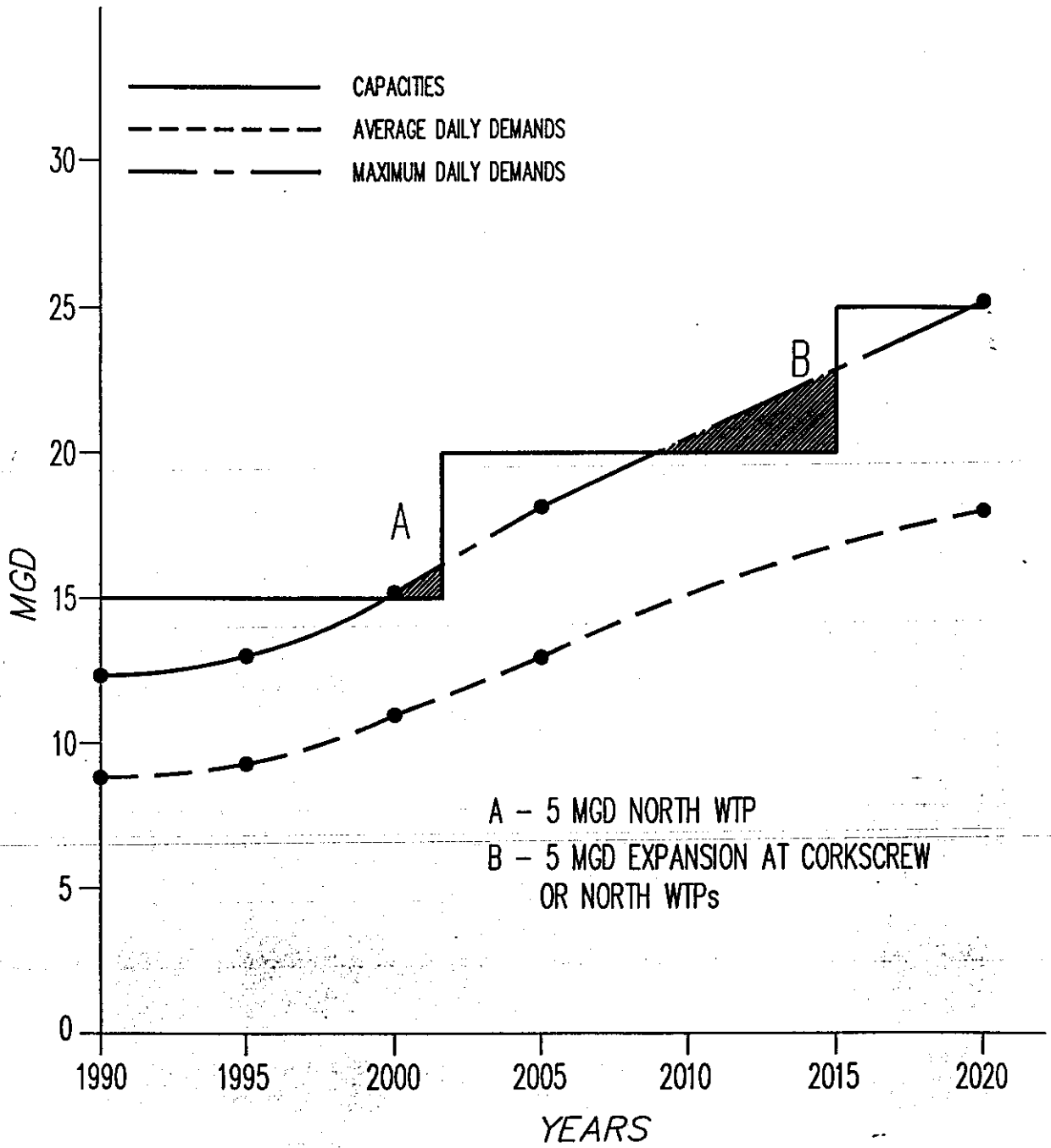
1. Evaluate the potential surface water and groundwater supply sources in the region that can supply an initial and ultimate treatment capacity of 5 and 10 mgd, respectively;
2. Evaluate the viability, reliability and prepare opinions of probable cost for different water treatment processes based on the water supply source via desktop pre-screening.

Supply Source Evaluation

Montgomery Watson performed an investigation and analysis was performed on surface water from the Caloosahatchee River and Telegraph Creek, fresh groundwater from the water-table and Sandstone aquifers, and brackish groundwater from the Upper Floridan aquifer to determine viable water supply sources to the new facility.

The end of dry season baseflow to Telegraph Creek in 1997 is approximately 1.1 mgd and is not suitable as a primary water supply source for the new WTP. This option was eliminated from further consideration. Groundwater modeling predicts the water table aquifer will yield up to 5 mgd, insufficient for a membrane facility and insufficient to supply additional source water if needed for an expansion. Additionally, the decision was made to eliminate the water-table aquifer as a viable water source due to potential permitting problems. Feedwater from the Sandstone aquifer is projected to have a Total Dissolved Solids (TDS) range of approximately 250 to 600 mg/L. The Floridan aquifer (brackish) source option requires a higher membrane process operating pressure since the TDS range increases to approximately 1,000 to 2,500 mg/L. Increased operating pressure for a brackish membrane system and increased chemical and residuals costs for a lime softening and coagulation treatment system will elevate the annual operation and maintenance costs of either option. Deeper supply wells also add to project cost. With the availability of a Sandstone aquifer source, the Floridan aquifer was eliminated from further consideration.

DATE STAMP: 08/21/98-1009 PLOT SCALE: 1 PATH: FLEWING: 10/17/96/1009/000000/000000/000000



MONTGOMERY WATSON AMERICAS, INC.
 HOLE, MONTES & ASSOCIATES, INC.
 VIROGROUP, INC.

NORTH LEE COUNTY
 WATER TREATMENT FACILITY
 LEE COUNTY, FLORIDA
 ANNUAL DAILY
 DEMANDS AND WTP CAPACITIES

The raw water sources were narrowed down to the Sandstone aquifer, Caloosahatchee River, and Sandstone aquifer with Caloosahatchee River combined supply. A chloride content less than 125 mg/L from the source is an additional criterion for acceptable raw water due to .

Surface water from the Caloosahatchee River, obtained upstream from the Franklin Locks, is fresh (i.e., a dissolved chloride concentration of less than 250 mg/L). However, other water quality parameters vary like color, a trihalomethane (THM) precursor. Surface water supplies from the Caloosahatchee River have seasonal and drought condition limitations. During drought years extended periods of low flows and base flow deficits have occurred in the Caloosahatchee River. During the drought of 1981-1982, releases from Lake Okochobee were less than 37.5 mgd in an average year during the months of January through April. This is considerably less than the maximum permitted withdrawal rate for the County. Historical flow data indicates that during the months of December through May, flows averaging less than 10 mgd occurred 14 times at Olga over 30-day periods. During these times of extremely low flow a supplemental component to the new WTP, like ASR, should be implemented to assure uninterrupted service. Other factors, in addition to variable water quality and drought resource limitations, include susceptibility to contamination, algal blooms, and higher levels of required treatment.

Large, essentially untapped groundwater resources are mapped as part of this project in the Sandstone aquifer. Computer modeling predicts the Sandstone aquifer wellfield can safely yield of up to 15 mgd. A membrane softening system treating Sandstone aquifer supply would not require a supplemental water supply component during drought conditions.

Desktop Prescreening

The design team conducted desktop prescreening of viable treatment processes for the selected water supply sources. The treatment process goals are to produce a finished water with the following characteristics:

- Total trihalomethane (TTHM) level less than or equal to 0.080 mg/L
- Total haloacetic acid (HAA) level less than or equal to 0.060 mg/L
- Color level less than or equal to 10 color units (CU)
- Total hardness level ranging from 80 to 100 mg/L as Calcium Carbonate (CaCO₃)

Combinations of the water sources are evaluated, including surface water (Caloosahatchee River) combined with the Sandstone aquifer, Sandstone aquifer, and surface water. Considering the source water and potential treatment processes, twenty-one treatment process combinations, including lime softening,

membrane softening, ultrafiltration and sand filtration are evaluated to achieve the treatment goals.

Process Selection

The evaluation determined that membrane softening with pretreatment, lime softening with ultrafiltration, and lime softening with enhanced coagulation achieved the treatment goals for raw water sources. The range of finished water quality from these processes is in Table ES-3.

Table ES-3
Finished Water Quality Range

Parameter	Range
Hardness (mg/L as CaCO ₃)	55 to 105
Color (CU)	0 to 7
Turbidity (NTU)	0 to 0.2
Total Organic Carbon (TOC) (mg/L)	0 to 3

Based on the calculated TOC levels, total trihalomethane and total haloacetic acid levels will meet the stated goal concentrations of 0.080 mg/L and 0.060 mg/L, respectively. Additionally, the membrane treatment process offers a significant chloride and overall TDS reduction compared to the lime softening process.

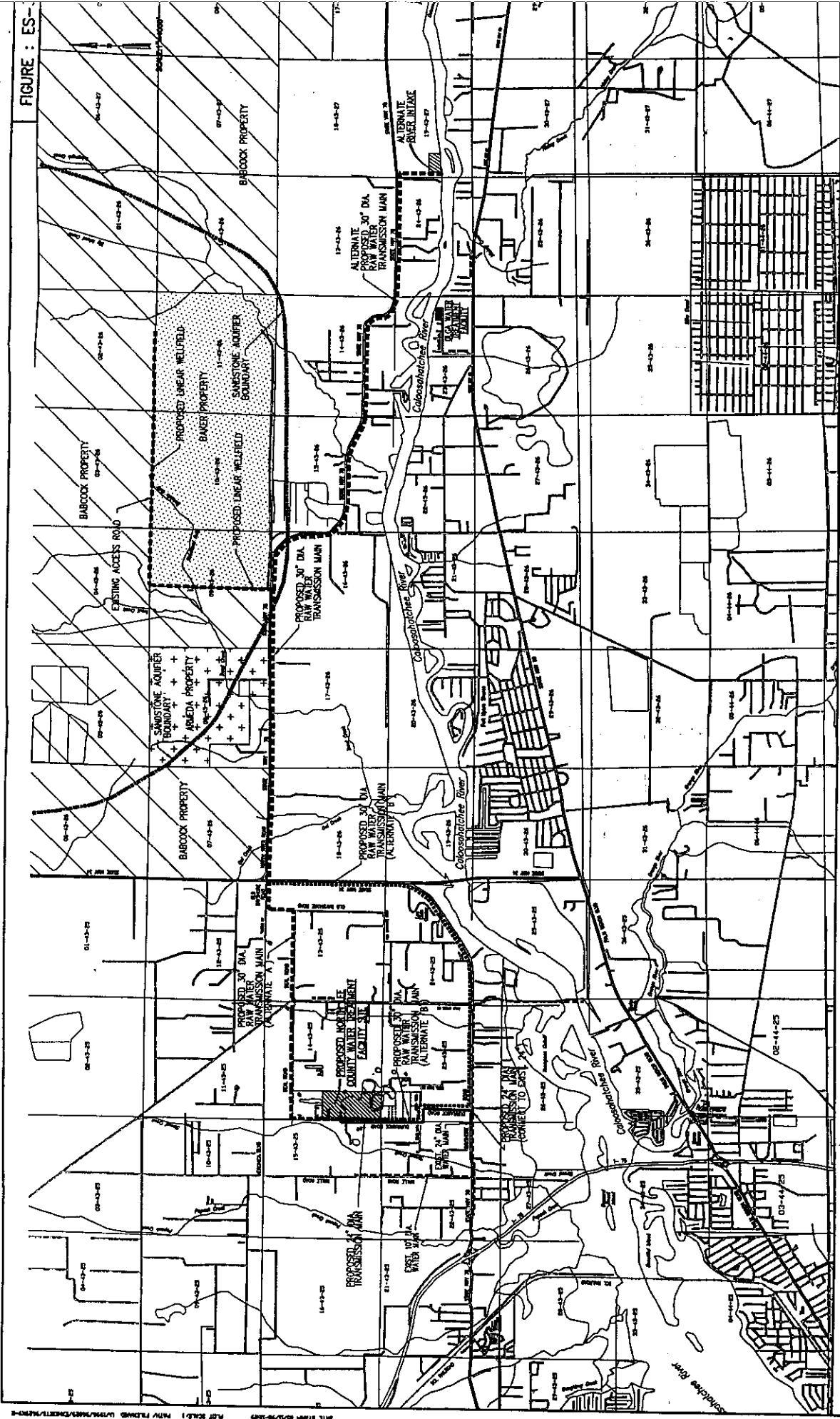
Residuals Disposal

Certain assumptions are necessary to estimate residual options and costs. Considering process and economic issues and available sites, these assumptions are:

1. The new plant will probably be located in north Lee County
2. The new plant will use membrane softening with an approximate 85 percent recovery efficiency, and
3. The feedwater will be groundwater from the Sandstone aquifer (Figure ES-3).

The initial capacity of the new WTP will be 5 mgd with an additional 5 mgd infrastructure in-place. The future 5 mgd expansion may have the capability to process a combination of one additional fresh water source, probably from the Caloosahatchee River, if directed by the County.

A 10 mgd membrane softening system operating at 85 percent feedwater recovery will produce 1.8 mgd of concentrate from the Sandstone aquifer plus other plant residuals (drains, etc.). Considering the volume and projected concentrate quality, deep well injection or surface water discharge is the most favorable residual disposal options. Mixing with the cooling water discharge at



NORTH LEE COUNTY
 WATER TREATMENT FACILITY
 LEE COUNTY, FLORIDA

SANDSTONE AQUIFER AND PLANT LOCATION

MONTGOMERY WATSON AMERICAS, INC.
 HOLE, MONTES & ASSOCIATES, INC.
 VIROGROUP, INC.

the FPL power generation plant site is possible and should be further investigated.

Cost Estimate

The most feasible treatment processes, costs for conveyance of the water, treatment and support facilities, transmission, residuals, and land are tabulated. The matrix in Table ES-4 presents the budget level opinions of probable costs for the three selected raw water sources and the three treatment processes that meet the treatment water quality goals. The least expensive alternatives use the Sandstone aquifer for raw water supply. The membrane softening option and lime softening with enhanced coagulation option are relatively equal in cost. The membrane softening option assumes a cost for surface water discharge to dispose of concentrate residuals. That cost is approximately one million dollars more if deep well injection is permitted for residuals disposal.

An engineering estimate of Sandstone aquifer water quality is used in the annual operation and maintenance cost calculations. The range of costs is calculated to be \$0.62 to \$0.67 per thousand gallons of finished water. Factors that affect the operation and maintenance cost include:

- Raw water TDS
- Magnesium content impacts lime dosage
- Residuals generation and sludge disposal costs
- Power
- Labor
- Chemicals

Table ES-5 compares water treatment costs in the Lee County area. The new North Water Treatment Plant is projected to cost less than the area average cost per thousand gallons of finished water. During Phase II of the Project, additional feedback from the County will enhance and further define costs related to plant layout and functionality.

Recommendations

- Acquire property within the mapped prospective area of the Sandstone aquifer where the dissolved chloride concentration is less than 125 mg/L and develop a fresh water wellfield.
- Acquire the Noack 80-acre property for a water treatment plant site.
- Construct a membrane softening treatment facility with a Phase I capacity of 5 mgd with a supplemental 5 mgd infrastructure in-place.

- Lee County has a rapidly growing base population. The 80-acre site has space for additional production capacity. Based on direction from the County, design considerations should incorporate an ultimate expansion capacity of up to 20 mgd.
- Preliminary discussions should be held with the identified necessary cooperative entities for each of the concentrate disposal options in order to determine feasibility.
- Surface water residual disposal and its attendant requirements for implementation (including permitting, land acquisition, and easement procurement) should be more definitively delineated.

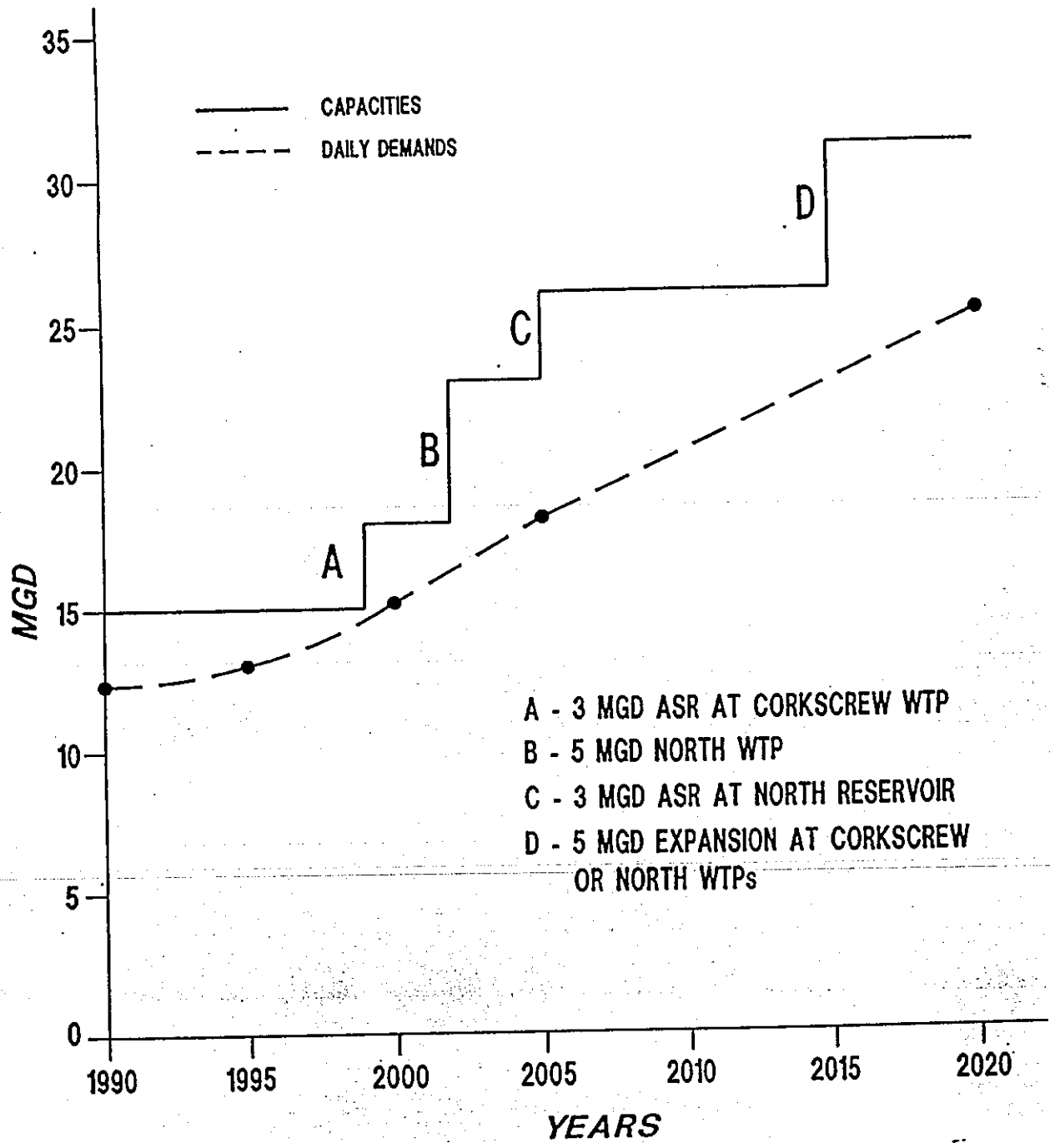
**Table ES-4
EXECUTIVE SUMMARY
PRELIMINARY OPINION OF COSTS, 5 mgd PLANT WITH 10 mgd INFRASTRUCTURE**

	SANDSTONE			CALOOSAHATCHEE RIVER			SANDSTONE & CALOOSAHATCHEE		
	Membrane Softening	Lime Softening & Ultrafiltration	Lime Softening & Enhanced Coagulation	Membrane Softening	Lime Softening & Ultrafiltration	Lime Softening & Enhanced Coagulation	Membrane Softening	Lime Softening & Ultrafiltration	Lime Softening & Enhanced Coagulation
PRESENT WORTH (PW) ANALYSIS (\$Millions)									
PW-initial capital	\$20.9	\$23.0	\$19.8	\$26.5	\$28.6	\$25.0	\$29.1	\$31.2	\$26.9
PW-expansion in yr 10 (0.5584) (note 1)	\$ 5.2	\$ 7.4	\$ 7.1	\$ 4.8	\$ 6.9	\$ 7.2	\$ 4.8	\$ 6.9	\$ 7.2
Sub Total PW: Capital costs	\$26.1	\$30.4	\$26.9	\$31.3	\$35.5	\$32.2	\$33.9	\$38.1	\$34.1
PW-O&M 20 yr. (11.47)	\$15.1	\$17.8	\$15.0	\$17.1	\$21.1	\$16.6	\$18.2	\$22.2	\$17.7
Present Worth (note 2)	\$41.3	\$48.2	\$41.9	\$48.4	\$56.6	\$48.8	\$52.1	\$60.3	\$51.8
O&M Cost per 1,000 gallons									
Supply	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.09	\$ 0.09	\$ 0.09
Treatment	\$ 0.66	\$ 0.75	\$ 0.63	\$ 0.77	\$ 0.92	\$ 0.72	\$ 0.77	\$ 0.92	\$ 0.72
Disposal	\$ 0.01	\$ 0.05	\$ 0.04	\$ 0.01	\$ 0.05	\$ 0.04	\$ 0.01	\$ 0.05	\$ 0.04
O&M Total (per 1,000 gal.)	\$ 0.72	\$ 0.85	\$ 0.72	\$ 0.82	\$ 1.01	\$ 0.79	\$ 0.87	\$ 1.06	\$ 0.85

Note 1: Additional 5 mgd from river (no wellfield expansion) for the Caloosahatchee / Sandstone & Caloosahatchee options; wellfield expansion for the Sandstone option.

Note 2: The present worth of the membrane option with deepwell discharge of concentrate will increase the cost by \$1.9 Million compared to surface discharge (shown).

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MONTGOMERY WATSON AMERICAS, INC.
HOLE, MONTES & ASSOCIATES, INC.
VIROGROUP, INC.

**NORTH LEE COUNTY
WATER TREATMENT FACILITY
LEE COUNTY, FLORIDA**
**MAXIMUM DAILY DEMANDS
AND WTP CAPACITIES**

**Table ES-5
Local Operation and Maintenance Cost Data
Sorted by O & M Cost**

Water System	Plant Type	Plant Capacity mgd	O & M Cost \$/1,000 gal
Florida Water Services: Marco Island	RO (Brackish)	4	**
Florida Water Services: Lehigh Acres	Lime Softening	2.5	**
Florida Water Services: Marco Island	Lime Softening	8	**
Bonita Springs Utilities	Lime Softening	6	**
Florida Cities Water: Waterway Estates	Lime Softening	1.5	\$1.78
Florida Cities Water: College Parkway	Lime Softening	0.75	\$1.52
Florida Cities Water: Green Meadows	Lime Softening	9	\$1.52
Pine Island Water	RO (Brackish)	1.5	\$1.25
Lee County (Olga)	Lime Softening: River	5	\$0.80
Lee County (New North)	Membrane Softening: River	5	\$0.77
Collier County	Lime Softening	12	\$0.77
Cape Coral* (1994 dollars)	RO (Brackish)	14	\$0.74
Lee County (New North)	Lime Softening: River	5	\$0.72
Collier County	RO (Brackish)	12	\$0.71
Sanibel Island	RO (Brackish)	4.7	\$0.70
Gulf Utility Co.	Membrane Softening	1.8	\$0.70
Lee County (New North)	Membrane Softening: Well	5	\$0.66
Gulf Utility Co.	Lime Softening	2.5	\$0.65
Lee County (New North)	Lime Softening: Well	5	\$0.63
Ft. Myers ***	Membrane Softening	12	\$0.61
Lee County (Corkscrew)	Lime Softening: Well	10	\$0.60

Data as of April, 1998. Not including wellfield, transmission, or other off-site costs.

* Operation and Maintenance costs include power, chemicals, and labor (excluding membrane replacement).

** Data not provided

*** Ft Myers costs will increase in 1999/2000 when brackish water membrane system replaces membrane softening