

**LEE COUNTY BOARD OF COUNTY COMMISSIONERS**  
**AGENDA ITEM SUMMARY** **BLUE SHEET NO: 20021227-UTL**

**1. REQUESTED MOTION:**

**ACTION REQUESTED:**

1) Approve South Florida Water Management District (SFWMD) Funding Agreement for North Lee County Water Treatment Plant Project (Contract #C-15920). The total SFWMD grant funds are \$300,000.00 and the total project cost is \$24,200,000.00. Remaining funds are from Lee County Utilities (LCU) CIP budgeted funds; 2) Approve a Budget Amendment Resolution for \$300,000.00 and amend FY 02/03-06/07 C.I.P. accordingly.

**WHY ACTION IS NECESSARY:**

To establish the responsibilities and funding obligations of the County as this partially grant-funded project is completed.

**WHAT ACTION ACCOMPLISHES:**

Allows Lee County to work cooperatively with SFWMD to complete the project that will provide additional alternative water supply within the Lee County Utilities system.

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

C10B

**3. MEETING DATE:**

11-19-2002

**4. AGENDA:**

- CONSENT
- ADMINISTRATIVE
- APPEALS
- PUBLIC
- WALK ON
- TIME REQUIRED: \_\_\_\_\_

**5. REQUIREMENT/PURPOSE:**

- (Specify)
- STATUTE
  - ORDINANCE
  - ADMIN. CODE
  - OTHER Funding Agreement/  
Budget Amendment Res

**6. REQUESTOR OF INFORMATION:**

- A. COMMISSIONER: \_\_\_\_\_
- B. DEPARTMENT: Lee County - Public Works
- C. DIVISION/SECTION: Utilities Division
- BY: Rick Diaz, Utilities Director
- DATE: 10/25/02

**7. BACKGROUND:**

Last year this planned capital project for increasing the capacity of Lee County Utilities' potable water system was identified as potentially qualifying for grant funding under the SFWMD Alternative Water Supply Program, as established under Florida Statutes 373.1961.

Lee County Utilities staff prepared the grant application for this and other projects. This project was approved by the SFWMD. Lee County Utilities is responsible for the engineering, construction and operation of the project, as well as

(CONT'D.)

**8. MANAGEMENT RECOMMENDATIONS:**

**9. RECOMMENDED APPROVAL**

(A) DEPARTMENT DIRECTOR	(B) PURCH. OR CONTRACTS	(C) HUMAN RESOURCES	(D) OTHER	(E) COUNTY ATTORNEY	(F) BUDGET SERVICES				(G) COUNTY MANAGER
					OA	OM	Risk	GC	
 J. Lavender Date: <u>10-25-02</u>	N/A	N/A	 B. Dearborn Date: _____	 D. Owen Date: <u>10/28/02</u>	 W. M. [unclear] Date: _____	 [unclear] Date: <u>10-30-02</u>	 [unclear] Date: <u>10/31/02</u>	 [unclear] Date: <u>10-30-02</u>	 J. Lavender Date: <u>10-25-02</u>

**10. COMMISSION ACTION:**

- \_\_\_\_\_ APPROVED
- \_\_\_\_\_ DENIED
- \_\_\_\_\_ DEFERRED
- \_\_\_\_\_ OTHER

**Rec. by CoAtty**  
 Date: 10/28/02  
 Time: 11:07 am  
 Forwarded To: \_\_\_\_\_

RECEIVED BY  
 COUNTY ADMIN. EW  
10/28 2:10  
 COUNTY ADMIN.  
 FORWARDED TO: PR  
10/31/02  
2:30 PM

administration of the grant. The project will result in additional assets for the Lee County Utilities System and is described as follows:

This project will include the design and construction of a 5.0 million gallons per day (MGD) capacity Reverse Osmosis Water Treatment Plant with an ultimate expansion capacity of 10.0 MGD, including construction of 8 production wells. The total project cost is estimated at \$24,200,000.00. The SFWMD grant is for \$300,000.000 and the balance is proposed to be funded from Lee County Utilities approved Capital Improvement Program budget.

Funds are available in Account No. 227084487<sup>30</sup>.506540.

*APW*

Attachments: 2 Originals of Agreement C15920 (NLCWTP)

# RESOLUTION #

Amending the Budget of LCU Capital Improvements-Fund 48730 to incorporate the unanticipated receipts into Estimated Revenues and Appropriations for the fiscal year 2002-2003.

**WHEREAS**, in compliance with the Florida Statutes 129.06(2), it is the desire of the Board of County Commissioners of Lee County, Florida, to amend the LCU Capital Improvements-Fund 48730 budget for \$300,000 of the unanticipated revenue from SFWMD Grant and an appropriation of a like amount for improvements construction and reserves and;

**WHEREAS**, the LCU Capital Improvements-Fund 48730 budget shall be amended to include the following amounts which were previously not included.

<b>ESTIMATED REVENUES</b>		
Prior Total:		\$ 45,372,667
Additions		
22708448730.337300.9006	SFWMD Grants	300,000
Amended Total Estimated Revenues		\$ 45,672,667

<b>APPROPRIATIONS</b>		
Prior Total:		\$ 45,372,667
Additions		
22708448730.506540	Improvements Construction	300,000
Amended Total Appropriations		\$ 45,672,667

**NOW, THEREFORE, BE IT RESOLVED** by the Board of County Commissioners of Lee County, Florida, that the LCU Capital Improvements-Fund 48730 budget is hereby amended to show the above additions to its Estimated Revenue and Appropriation accounts.

Duly voted upon and adopted in Chambers at a regular Public Hearing by the Board of County Commissioners on this \_\_\_\_ day of \_\_\_\_\_, 2002.

ATTEST:  
CHARLIE GREEN, EX-OFFICIO CLERK

BOARD OF COUNTY COMMISSIONERS  
LEE COUNTY, FLORIDA

BY: \_\_\_\_\_  
DEPUTY CLERK

\_\_\_\_\_  
CHAIRMAN

APPROVED AS TO FORM

\_\_\_\_\_  
OFFICE OF COUNTY ATTORNEY

DOC TYPE YA  
LEDGER TYPE BA



## 2002 - 2003 SOUTH FLORIDA WATER MANAGEMENT DISTRICT AWS FUNDING PROGRAM AGREEMENT

<p><b>Recipient:</b> Lee County Utilities</p> <p><b>Recipient's Project Manager:</b> Rick Diaz, P.E.</p> <p><b>Address:</b> P.O. Box 398 Fort Myers, Florida 33902-0398</p> <p><b>Telephone No:</b> (941) 479-8181</p> <p><b>Fax No:</b> (941) 479-8176</p>	<p><b>Contract Number:</b> <u>C-15920</u></p> <p><b>Governing Board Approval Date:</b></p> <p><b>District Funding Amount:</b> \$ 300,000.00 <b>Not to Exceed 50% of total project cost</b></p>
<p><b>SFWMD Project Manager:</b> Clyde Dabbs</p> <p><b>Address:</b> 2301 McGregor Boulevard Ft. Myers, FL 33901</p> <p><b>Telephone No:</b> (941) 338-2929</p> <p><b>Fax No:</b> (941) 338-2936</p>	
<p><b>Insurance:</b> <u>Applicable/Not Applicable</u></p>	
<p><b>Federal Employer Identification Number:</b></p>	
<p><b>Project Title:</b> North Lee County Water Treatment Plant</p> <p><b>Description:</b> Construction of a 5MGD capacity Reverse Osmosis Plant, with an ultimate expansion capacity of 10 mgd, including the construction of eight (8) production wells using the Lower Hawthorn Acquifer.</p>	

This **Agreement** is entered into between "the Parties", the South Florida Water Management **District**, the "**District**", and the undersigned Applicant, hereinafter referred to as the "**Recipient**". The **Recipient** warrants and represents that it has no obligation or indebtedness that would impair its ability to fulfill the terms and conditions of this **Agreement**, and shall abide by all legal, financial, and reporting requirements, such as matching funds and final reports for all funding received by the **Recipient** from the **District**.

#### ARTICLE 1 – PROJECT

- 1.1 The **Recipient** shall, to the satisfaction of the **District**, fully and timely construct and perform all work items described in the "Detailed Description of the Project," attached hereto as Attachment "A", and made a part of this **Agreement**.
- 1.2 As part of the services to be provided by the **Recipient** under this **Agreement**, the **Recipient** shall substantiate, in whatever forum reasonably requested by the **District**, any supporting documentation utilized as a basis for payment by the **District**. This paragraph shall survive the expiration or termination of this **Agreement**.
- 1.3 The **Recipient** shall submit to the **District**, proof of Florida Department of Environmental Protection (FLDEP) and South Florida Water Management District permit applications prior to September 1<sup>st</sup> of the current fiscal year, to ensure timely completion of the project.
- 1.4 The **Recipient** shall submit to the **District** notification of *complete* permit applications from FLDEP and SFWMD prior to September 1<sup>st</sup> of the *next* fiscal year, to demonstrate proposed project readiness. Should the permitting element of an application for a construction project not be completed by the **District's** required deadline, the **District** will deem the project ineligible for funding.

#### ARTICLE 2 - TERM OF THE AGREEMENT

- 2.1 The period of performance of this **Agreement** shall commence on the Construction Start Date stated by the **Recipient** on the last page of this **Agreement** and shall continue for a period of one (1) year.
- 2.2 The Parties agree that time is of the essence in the performance of each and every obligation under this **Agreement**.

#### ARTICLE 3 – COMPENSATION/CONSIDERATION

- 3.1 As consideration for providing the goods and services required by this **Agreement**, the **District** shall pay the **Recipient** the funding amount as specified on front page. Such amount is a not to exceed amount and therefore, no additional consideration shall be authorized. **Recipient** must provide at least fifty (50) percent of the total project cost.

- 3.2 The **Recipient** assumes sole responsibility for all work, which is performed pursuant to Attachment "A." By providing funding hereunder, the **District** does not make any warranty, guaranty, or any representation whatsoever regarding any of the work performed hereunder, including but not limited to the adequacy or sufficiency of all or any part of work described in Attachment "A".
- 3.3 The **Recipient** hereby agrees that it shall use other sources of funding for all work associated with the design and permitting aspects of the Project. **District** funds shall only be used for capital or infrastructure costs for the construction activities described in Attachment "A".

#### **ARTICLE 4 – FUNDING PAYMENTS AND REPORTING**

- 4.1 The **District** shall make payment to the **Recipient** upon completion and acceptance of the Project. The **Recipient** shall provide certification that all construction has been completed in accordance with Attachment "A" of this **Agreement**.
- 4.2 The **Recipient's** invoice shall reference the **District's** Contract Number and shall be sent to the Project Manager at the address stated on the first page of this **Agreement**. The **Recipient** shall not submit an invoice to any other address at the **District**.
- 4.3 The **District** shall inspect all work and review final reports before authorization of payment is made to the **Recipient**. The **District** shall pay the full amount of the invoice within thirty (30) days of receipt and acceptance, provided the **Recipient** has performed the work according to the terms and conditions of this **Agreement**. Funding will be withheld if the **Recipient** has not submitted required reports or met all of the administrative requirements.
- 4.4 Upon award of the **Agreement**, the **Recipient** shall provide to the **District** a detailed schedule of the Project. The **Recipient** shall provide three (3) copies of progress reports on a quarterly basis to the **District**, which shall describe the extent of Project completion. Upon request by the **District**, the **Recipient** shall provide as supporting documentation, all work products associated with the completion of the tasks designated in the Work Breakdown Structure and Deliverable Schedule of Attachment "A", attached hereto to this **Agreement**.
- 4.5 However, failure by the **Recipient** to follow the foregoing instructions may result in an unavoidable delay of payment by the **District**.

#### **ARTICLE 5 - PROJECT MANAGEMENT**

- 5.1 The Parties shall direct all matters arising in connection with the performance of this **Agreement**, other than invoices and notices, to the attention of the Project Managers for attempted resolution or action. The Project Managers shall be responsible for overall coordination and oversight relating to the performance of this **Agreement**.

5.2 All notices, demands, or other communications to the **Recipient** under this **Agreement** shall be in writing and shall be deemed received if sent by certified mail, return receipt requested, to the address stated.

All notices to the **District** under this **Agreement** shall be in writing and sent by certified mail to:

South Florida Water Management **District**  
Attn: (Project Manager's name as stated on the first page of the **Agreement**)  
(Address as stated on the first page of the **Agreement**)

5.3 All notices required by this **Agreement** shall be considered delivered *upon receipt*. Should either Party change its address, written notice of such new address shall promptly be sent to the other Party.

5.4 All correspondence to the **District** under this **Agreement** shall reference the District's Contract Number.

#### **ARTICLE 6 - TERMINATION/REMEDIES**

6.1 If **Recipient** fails to fulfill its obligations under this **Agreement** in a timely and proper manner, the **District** shall have the right to terminate this **Agreement** by giving written notice of any deficiency. The **Recipient** in default shall then have ten (10) calendar days from receipt of notice to correct the deficiency. If the **Recipient** fails to correct the deficiency within this time, the **District** shall have the option to terminate this **Agreement** at the expiration of the ten (10) day time period.

6.2 The **District** may terminate this **Agreement** at any time for convenience upon thirty (30) calendar days prior written notice to the **Recipient**. The performance of work under this **Agreement** may be terminated by the **District** in accordance with this clause in whole, or from time to time in part, whenever the **District** shall determine that such termination is in the best interest of the **District**. Any such termination shall be effected by delivery to the **Recipient** of a Notice of Termination specifying the extent to which performance of work under the **Agreement** is terminated, and the date upon which such termination becomes effective.

6.3 In the event of termination, the **District** shall compensate the **Recipient** for all authorized and accepted work performed through the termination date. The **District** shall be relieved of any and all future obligations hereunder, including but not limited to, lost profits and consequential damages under this **Agreement**. The **District** may withhold all payments to the **Recipient** for such work until such time as the **District** determines the exact amount due to the **Recipient**.

6.4 If either Party initiates legal action, including appeals, to enforce this **Agreement**, the prevailing Party shall be entitled to recover a reasonable attorney's fee, based upon the fair market value of the services provided.

6.5 In the event the **Recipient's** funding becomes unavailable, that shall be good and sufficient cause for the **District** to terminate the **Agreement**, pursuant to Paragraph 6.2, above.

6.6 In the event a dispute arises which the Project Managers cannot resolve between themselves, the Parties shall have the option to submit to non-binding mediation. The mediator or mediators shall be impartial, shall be selected by the Parties, and the cost of the mediation shall be borne equally by the Parties. The mediation process shall be confidential to the extent permitted by law.

## ARTICLE 7 - RECORDS RETENTION

7.1 The **Recipient** shall maintain records and the **District** shall have inspection and audit rights as follows:

A. Maintenance of Records. The **Recipient** shall maintain all financial and non-financial records and reports directly or indirectly related to the negotiation or performance of this **Agreement**, including supporting documentation for any service rates, expenses, research or reports. Such records shall be maintained and made available for inspection for a period of five (5) years from completing performance and receiving final payment under this **Agreement**.

B. Examination of Records. The **District** or its designated agent shall have the right to examine in accordance with generally accepted governmental auditing standards all records directly or indirectly related to this **Agreement**. Such examination may be made only within five (5) years from the date of final payment under this **Agreement** and upon reasonable notice, time and place.

C. Extended Availability of Records for Legal Disputes. In the event that the **District** should become involved in a legal dispute with a third party arising from performance under this **Agreement**, the **Recipient** shall extend the period of maintenance for all records relating to the **Agreement** until the final disposition of the legal dispute, and all such records shall be made readily available to the **District**.

## ARTICLE 8 - STANDARDS OF COMPLIANCE

8.1 The **Recipient**, its employees, subcontractors or assigns, shall comply with all applicable federal, state, and local laws and regulations relating to the performance of this **Agreement**. The **District** undertakes no duty to ensure such compliance, but will attempt to advise the **Recipient**, upon request, as to any such laws of which it has present knowledge.

8.2 The laws of the State of Florida shall govern all aspects of this **Agreement**. In the event it is necessary for either party to initiate legal action regarding this **Agreement**,



venue shall be in the Fifteenth Judicial Circuit for claims under state law and in the Southern **District** of Florida for any claims which are justiciable in federal court.

- 8.3 The **Recipient** shall allow public access to all Project documents and materials in accordance with the provisions of Chapter 119, Florida Statutes. Should the **Recipient** assert any exemptions to the requirements of Chapter 119 and related Statutes, the burden of establishing such exemption, by way of injunctive or other relief as provided by law, shall be upon the **Recipient**.
- 8.4 Pursuant to Section 216.347, Florida Statutes, the **Recipient** is prohibited from the expenditure of any funds under this **Agreement** to lobby the Legislature, the judicial branch, or another state agency.
- 8.5 The **Recipient** shall obtain, at its sole expense, all necessary licenses, authorizations and permits from the appropriate private party or federal, state, municipal or local agency, and other governmental approvals, prior to commencing performance of this **Agreement**.
- 8.6 The **Recipient** hereby assures that no person shall be excluded on the grounds of race, color, creed, national origin, handicap, age, or sex, from participation in, denied the benefits of, or is otherwise subjected to discrimination in any activity under this **Agreement**. The **Recipient** shall take all measures necessary to effectuate these assurances.

#### ARTICLE 9 - INDEMNIFICATION AND INSURANCE

- 9.1 *The following indemnification clause shall only be applicable to Investor-owned Utilities or Private Entities*

For value received, which is hereby acknowledged, the **Recipient** shall defend, indemnify, save, and hold the **District**, its agents, assigns, and employees, harmless from any and all claims or causes of action, including without limitation, all damages, losses, liabilities, expenses, costs, and attorney's fees related to such claims, resulting from any negligent or intentional act or omission, or the violation of any federal, state, or local law or regulation, by the **Recipient**, its subcontractors, agents, assigns, invitees, or employees in connection with this **Agreement**. The **Recipient** further acknowledges that it is solely responsible for ensuring its compliance and the compliance of its subcontractors, agents, assigns, invitees and employees with the terms of this **Agreement**. The provisions of this paragraph survive the termination or expiration of this **Agreement**.

- 9.2 *The following shall only apply if the work is being performed on **District** property.*

The **Recipient** shall procure and maintain, through the term of this **Agreement**, insurance coverage reflecting, at a minimum, the limits and coverage conditions identified on the **District's** Certificate of Insurance, attached and made a part of this

**Agreement.** The coverage required shall extend to all employees and subcontractors of the **Recipient**. The attached **District's** Certificate of Insurance shall be completed in full, indicating the producer, insured, carrier's name and Best rating, policy numbers and effective and expiration dates of each type of coverage required. The Certificate shall be signed by the insurance carrier's authorized representative.

#### **ARTICLE 10 - RELATIONSHIP BETWEEN THE PARTIES**

- 10.1 The **Recipient** is an independent contractor and is not an employee or agent of the **District**. Nothing in this **Agreement** shall be interpreted to establish any relationship other than that of an independent contractor between the **District** and the **Recipient**, its employees, agents, subcontractors, or assigns, during or after the performance of this **Agreement**. The **Recipient** is free to provide similar services for others.
- 10.2 The **Recipient** shall not assign, delegate, or otherwise transfer its rights and obligations as set forth in this **Agreement** without the prior written consent of the **District**. Any attempted assignment in violation of this provision shall be void.
- 10.3 It is the intent and understanding of the Parties that this **Agreement** is solely for the benefit of the **Recipient** and the **District**. No person or entity other than the **Recipient** or the **District** shall have any rights or privileges under this **Agreement** in any capacity whatsoever, either as third-party beneficiary or otherwise.

#### **ARTICLE 11 - GENERAL PROVISIONS**

- 11.1 Notwithstanding any provisions of this **Agreement** to the contrary, the Parties shall not be held liable for any failure or delay in the performance of this **Agreement** that arises from fires, floods, strikes, embargoes, acts of the public enemy, unusually severe weather, outbreak of war, restraint of Government, riots, civil commotion, force majeure, act of God, or for any other cause of the same character which is unavoidable through the exercise of due care and beyond the control of the Parties. Failure to perform shall be excused during the continuance of such circumstances, but this **Agreement** shall otherwise remain in effect. This provision shall not apply if the Detailed Description of Work - Attachment "A" of this **Agreement** specifies that performance by the **Recipient** is specifically required during the occurrence of any of the events herein mentioned.
- 11.2 In the event any provisions of this **Agreement** shall conflict, or appear to conflict, the **Agreement**, including all Attachments, and all documents specifically incorporated by reference, shall be interpreted as a whole to resolve any inconsistency.
- 11.3 Failures or waivers to insist on strict performance of any covenant, condition, or provision of this **Agreement** by the Parties, their successors and assigns shall not be deemed a waiver of any of its rights or remedies, nor shall it relieve the other Party from performing any subsequent obligations strictly in accordance with the terms of this **Agreement**. No waiver shall be effective unless in writing and signed by the Party

against whom enforcement is sought. Such waiver shall be limited to provisions of this **Agreement** specifically referred to therein and shall not be deemed a waiver of any other provision. No waiver shall constitute a continuing waiver unless the writing states otherwise.

- 11.4 Should any term or provision of this **Agreement** be held, to any extent, invalid or unenforceable, as against any person, entity or circumstance during the term hereof, by force of any statute, law, or ruling of any forum of competent jurisdiction, such invalidity shall not affect any other term or provision of this **Agreement**, to the extent that the **Agreement** shall remain operable, enforceable and in full force and effect to the extent permitted by law.
- 11.5 This **Agreement** may be amended only with the written approval of the Parties.
- 11.6 This **Agreement** states the entire understanding and **Agreement** between the Parties and supersedes any and all written or oral representations, statements, negotiations or **Agreements** previously existing between the Parties with respect to the subject matter of this **Agreement**. The **Recipient** recognizes that any representations, statements or negotiations made by **District** staff do not suffice to legally bind the **District** in a contractual relationship unless they have been reduced to writing and signed by an authorized **District** representative. This **Agreement** shall inure to the benefit of and shall be binding upon the parties, their respective assigns, and successors in interest.

IN WITNESS WHEREOF, the Parties or their duly authorized representatives hereby execute this **Agreement** on the date written below.

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD**

By: \_\_\_\_\_  
**Frank Hayden, Procurement Director**

Date: \_\_\_\_\_

Recipient's Legal Name: \_\_\_\_\_

By Authorized Official: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Construction Project Start Date: \_\_\_\_\_

**SFWMD Procurement approved:**

By: \_\_\_\_\_ Date: \_\_\_\_\_

**2002-2003 SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
FUNDING PROGRAM APPLICATION FORM**



Application No: **AWS - 03** 15920  
(District to provide)

<p>The undersigned Applicant has read all of the terms and conditions of the Alternative Water Supply Funding Program Guidelines And Application, and certify that all of the information contained within this Application and subsequent Attachments is true and correct to the best of its knowledge.</p>	
<p><b>Applicant's Legal Name:</b>  Lee County Utilities  (State Div/Dept. if applicable)</p>	<p><b>Applicant's Address:</b>  1500 Monroe Street, 3rd Floor Fort Myers, FL 33901</p>
<p><b>Project Title:</b>  North Lee County Water Treatment Plant <b>Description:</b> Construction of a SMGD capacity Reverse Osmosis Plant, with an ultimate expansion capacity of 10mgd, including the const. of 8 production wells using the Lower</p>	<p><b>Funding Amount Requested:</b>  \$12,100,000.00 <b>County in which Project will be Built:</b>  Lee</p>
<p><b>Type of Organization:</b> Hawthorn Aquifer.  County Government</p>	<p><b>Date of Incorporation:</b>  <b>State of Incorporation:</b>  <b>Federal ID No.:</b> 46-0705210453C</p>
<p><b>Has your organization ever received funding under the Alternative Water Supply Program?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Year last received: <u>2000</u> Amount of Funding Received: <u>\$100,000</u> Is the project(s) still ongoing? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> District's contract number(s): <u>C-12123</u> Expected completion date(s): <u>December 2002</u> Current status on the project(s): <u>obtaining easement design 30%complete</u></p>	
<p><b>Authorized Person's Name:</b> Rick Diaz, P.E.  <b>Signature:</b> <u>[Handwritten Signature]</u>  <b>Title:</b> <u>Utilities Director</u></p>	<p><b>Telephone Area Code /Number:</b>  (941) 479-8181 <b>Fax Number:</b>  (941) 479-8176</p>



**Exhibit "A"**

**C-15920**

**Lee County Utilities**

**North Lee County Water Treatment Plant**

## 1. INTRODUCTION

The Division of Lee County Utilities is proposing the construction of a water treatment plant with an initial capacity of 5.0 M.G.D. and expandable to 10.0 M.G.D. Additional water is needed to satisfy future water demands created by the County's rapid growth. At the present time, L.C.U. operates four (4) main water treatment facilities with a total treatment capacity of 25 M.G.D. The raw water source used by the plants are mainly the Caloosahatchee River, surficial and sandstone aquifers.

The proposed North Lee County Water Treatment Facility (NLCWTF) will be treating raw water from the lower Hawthorn Aquifer.

The proposed project is consistent with the Lower West Coast Water Supply Plan (LWCWSP). The LWCWSP states the following: "Local water uses should consider using the Floridan Aquifer System (FAS) to reduce demands on fresh water sources in the LWC Planning Area. Within the LWC Planning Area, the FAS is not influenced by variations in rainfall."

## 2. SCOPE

The project consists on the construction of a Reverse Osmosis Water Treatment Plant with an ultimate treatment capacity of 10.0 M.G.D. The initial capacity will be 5.0 M.G.D. The Lower Hawthorn Aquifer will be the source of raw water. Approximately seven (7) well will be constructed initially as a deep injection well and transmission lines.

This plant will diversify the source of water used for the supply of potable water and reduce the potential for adverse environmental impacts. The principle benefits of constructing this water treatment plant are as follows:

- Reduce the withdraw of water from fresh water aquifers.
- Reduce saltwater intrusion by depending less from freshwater aquifers for the water supply.

## 3. WORK BREAKDOWN STRUCTURE

### Description of Project Elements

The North Lee County Water Treatment Plant (NLCWTP) will be designed for an ultimate treatment capacity of 10 mgd. Initial installed capacity will be 5 mgd. Up to an additional 1 mgd of raw water may be blended with the permeate prior to disinfection and post-treatment to provide alkalinity and hardness addition to the finished water.

The treatment system is comprised of raw water wells, pre-treatment facilities, membrane treatment facilities, post-treatment facilities, scavenger system, potable water storage, and high service pumps for distribution. Component descriptions of each facility follow.

## Raw Water Wells

The raw water wells will provide water from the Floridan aquifer to the head of the NLCWTP for treatment. The well construction (drilling) will be permitted under separate application.

### Design Information:

- Number of wells 7
- Pump Design Rate, gpm 800
- Pump TDH, feet 230
- Horsepower 75
- Drive Constant Speed

## Pre-Treatment

Pre-treatment involves conditioning the water prior to membrane contact. Chemical addition of sulfuric acid and scale inhibitor will be used to obtain the proper raw water conditioning prior to the membranes. Provisions for pressure filters and sand separators will be incorporated into the piping design. This will be done to allow for further pre-treatment in the event the raw water wells provide water quality not acceptable to the cartridge filters.

## Sulfuric Acid

The sulfuric acid system is used to reduce the pH of the raw water prior to the membrane treatment, thereby raising the solubility levels of mineral constituents in the water.

### Design Information:

- Chemical Concentration 93% H<sub>2</sub>SO<sub>4</sub>
- Design Dosage, mg/L 90
- Pump Design Rate, gph 13
- Total Bulk Storage Volume, gal. 10,000
- Day Tank Volume, gal. 320
- Required 30 Day Storage, gal. 9,600 (at buildout)
- Containment Volume, gal. 12,000

## Scale Inhibitor

The scale inhibitor system is used to prevent scale from forming on the membrane units.

### Design Information:

- Chemical Concentration N/A - Proprietary
- Design Dosage, mg/L 3.0
- Pump Design Rate, gph 1.7



- Total Bulk Storage Volume, gal. 1,000
- Day Tank Volume, gal. 100
- Required 30 Day Storage, gal. 940 (at buildout)
- Containment Volume, gal. 1,200

### Cartridge Filters

The purpose of the cartridge filters is to remove suspended solids from the feed water prior to the membrane units.

#### Design Information:

- Design Flow Rate, gpm 2,895
- Number of Cartridge Filter vessels 3 (with one out of service)
- Number of Filters per vessel 145
- Filter Element Length 40"

### Membrane Treatment

#### RO Feed Pumps

The purpose of the RO feed pumps is to boost the pressure of the water from wellfield (after pre-treatment) to the required supply pressure to the first stage membrane arrays. This pressure boost increases the energy of the water from the wellfield to a level necessary for treatment.

#### Design Information:

- Number of Feed Pumps Two plus one standby
- Maximum Flow Rate, gpm 2,566
- Maximum TDH, feet 315
- Minimum Flow Rate, gpm 1,822
- Minimum TDH, feet 200
- Horsepower 300
- Drive Variable Speed

### Reverse Osmosis (RO) Membrane Treatment Units

The purpose of the RO membrane units is to provide primary treatment of the water. The RO membrane acts as a barrier to dissolved salts and inorganic molecules, as well as organic molecules with a molecular weight greater than 100 (approx.). Water molecules, on the other hand, pass freely through the membrane creating a purified product stream.

#### Design Information:

- Permeate Capacity, mgd 5.0
- Design Recovery per Train, % 80
- Concentrate Produced, mgd 1.25
- Min. Membrane Area per train, ft<sup>2</sup> 168,000
- Design Flux, gpd/ft<sup>2</sup> 15
- No. of Stages per Train 2
- No. of Elements per Vessel 7
- No. of Vessels in First Stage 40
- No. of Vessels in Second Stage 20

#### Membrane Cleaning System

The purpose of the cleaning system is to provide a means of removing biological and organic fouling and mineral scale from the membrane elements. Cleaning will be performed at regularly schedule intervals to maintain finished water quality and maximum plant efficiency. Cleaning solutions will vary from acidic to basic solutions depending on the type of scaling and fouling encountered.

#### Design Information:

- Total Storage Volume, gal 7,000
- Containment Volume, gal 8,400
- Pump Design Flow, gpm 800
- Pump Design TDH, ft 135
- Horsepower 40
- Pump Drive Constant Speed

#### Post Treatment

The post treatment system of the North Lee County WTP consists of caustic soda, sodium hypochlorite, fluoride, ammonia and corrosion inhibitor addition. Additional components of post treatment include degasification, odor control, disinfection clearwell, and transfer pumps.

#### Degasification and Odor Control System

The purpose of the degasification system is to strip volatile gases from the membrane permeate water. An air quality control system has been incorporated into the design. The purpose of the air quality control system is to neutralize the hydrogen sulfide in the air exhaust from the degasifiers before the air is released into the atmosphere.

### Design Information: Degasifier

- Influent H<sub>2</sub>S Concentration, mg/L 2.5
- Outlet H<sub>2</sub>S Concentration 0.2
- Max. Flow Rate, mgd 6
- Max. Air to Water Ratio 24
- Max. Water Loading Capacity, gpm/ft<sup>2</sup> 45

### Design Information: Air Quality Control

- Max. Flow Rate, cfm 35,000
- Recirculation Rate, gpm 415

### Disinfection Clearwell

A clearwell has been included to provide a volume to receive the discharge from the degasifiers, a pumping well for the transfer pumps, and to provide chlorine contact time for the primary disinfection. The plant has been designed to achieve a 4-log inactivation of viruses (as determined by the Surface Water Treatment Rule and proposed by EPA in 40 CFR Part 141 - Groundwater Rule). The RO membrane process is credited with a minimum of 2-log virus inactivation and the clearwell has been designed for an additional 2-log virus inactivation.

### Design Information:

- Clearwell Volume, ft<sup>3</sup> 35,000
- Max pH in Clearwell 8.5
- Temperature of Permeate, °C 25
- Min. Contact Time, min. 40

### Caustic Soda System

The purpose of the caustic soda feed system is to raise the pH and the alkalinity of the permeate flow through the addition of sodium hydroxide. Caustic soda will be added to the permeate water after air-stripping (degasification) and at the odor control system at the dosages identified below.

### Design Information:

- Chemical Concentration 25% NaOH
- Design Dosage, mg/L 13.5 (post-degasification), 46 (odor control)
- Pump Design Dosage, gph 10 (post-degasification), 20 (odor control)
- Total Bulk Storage Volume, gal. 27,000
- Day Tank Volume, gal. 550
- Required 30 Day Storage, gal. 26,550
- Containment Volume, gal. 32,400

## Sodium Hypochlorite System

The purpose of the sodium hypochlorite feed system is to provide primary and residual flow disinfection. This system will provide both primary and distribution system residual disinfection. In addition, sodium hypochlorite is also used in the odor control process.

### Design Information:

- Chemical Concentration 12% NaOCl
- Design Dosage, mg/L 5 (clearwell), 12 (odor control)
- Pump Design Rate, gph 22 (clearwell), 52 (odor control)
- Total Bulk Storage Volume, gal. 24,000
- Day Tank Volume, gal. 1,065
- Provided Storage for Disinfection, days 20
- Provided Storage for Odor Control, days 10
- Containment Volume, gal. 28,800

## Ammonia Feed System

The finished water from the NLCWTP will blend in the distribution system with water from other facilities that use a combined chlorine residual for distribution disinfection. The function of ammonia addition is to form a combined chlorine residual for compatibility with the disinfection residual in the County's distribution system.

### Design Information:

- Chemical Concentration Anhydrous Ammonia
- Design Dosage, mg/L 1.0
- Ammonia Feed Rate, lb./day 52
- Tank Volume, gal 1,000

## Corrosion Inhibitor System

The purpose of applying a corrosion inhibitor is to reduce the amount of corrosion on metal distribution piping and appurtenances which will help to minimize lead and copper concentration at the consumer's tap. The design is based on an application rate sufficient to maintain a residual of 0.5 mg/L of  $PO_4$  in the permeate water.

### Design Information:

- Chemical Concentration 81.5%  $PO_4$
- Design Dosage, mg/L 0.5 - 4.0
- Pump Design Rate, gph 4.5
- Total Bulk Storage Volume, gal. 400

## Transfer Pumps

The purpose of the transfer pumps is to transfer the finished water from the clearwell to the finished water storage tanks.

### Design Information:

- Pump Design Flow, gpm 3,500
- Pump Design TDH, ft. 60
- Pump Drive Constant Speed

## Fluoride System

The purpose of the fluoride system is to promote dental health. Dosage rates are in accordance with AWWA recommendations.

### Design Information:

- Chemical Concentration 23%
- Design Dosage, mg/L 0.8
- Pump Design Rate, gph 0.35
- Total Bulk Storage Volume, gal. 250 (at buildout)
- Day Tank Volume, gal. 20

## By-Product Water Disposal (Scavenger System)

A scavenger system has been provided for disposal of by-product water. All by-product water and plant drains will be pumped or gravity fed to the scavenger system wet well for neutralization before injection into the deep well. The injection well system will be permitted under a separate bid package.

### Design Information:

- Chemical Concentration Plant Drains (pH 2-12)
- Pump Design Rate, gpm 625
- Design Flow TDH, feet 115
- Horsepower 60
- Drive Constant Speed
- Total Storage Volume, gallon 12,000

## Potable Water Storage and High Service Pumping

The distribution system consists of three (3) high service pumps (two plus one stand-by) and two (2) 2.5 mg ground storage tanks.

Design Information:

- Ground Storage Tank Volume, mgal 2.5 each
- Pump Design Flow, gpm 3,255
- Pump Design TDH, feet 195
- Horsepower 200
- Pump Drive Two (2) variable, one (1) constant speed

Auxiliary Power

A generator has been provided as part of the design to power the WTP for 100% of the load at initial capacity (5 mgd). Diesel fuel storage volume is provided for 100% of the plant's load for three (3) days.

Design Information:

- Generator, kW 1,500
- Fuel Bulk Storage Tank, gal. 10,000
- Containment Volume, gal. 12,000
- Day Tank Volume, gal. 275
- Utility Transformer, VA 1,500
- Diesel Fuel Storage Required for 3 day, 100% load, gal. 7,700

**Project Justification and Cost/Benefit Estimate**

The construction of the NLCWTP will provide for the diversification of the Lee County Utilities Potable Water Sources.

Site specific costs associated with reverse osmosis (RO) can vary significantly as a result of source water quality, concentrate disposal requirements, and land costs. As a general rule, RO costs are 10 to 50 percent higher than lime softening depending on the water quality of the source of water.

**Potential for Significant and Lasting Benefits**

By constructing a Reverse Osmosis Water Treatment Plant with a raw water source from the Lower Hawthorne Aquifer, the Lee County's water system future supply will become less dependent on the Caloosahatchee River and the sandstone and surficial aquifers as a source of potable water.

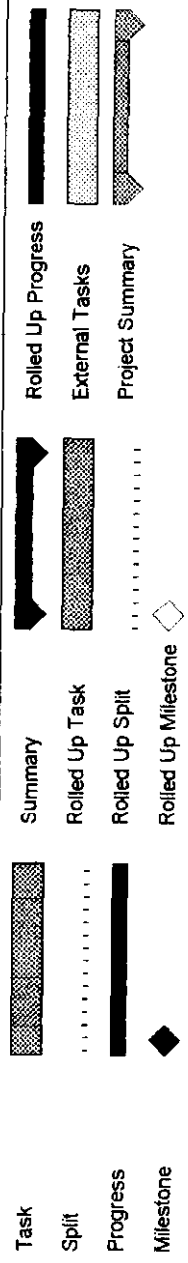
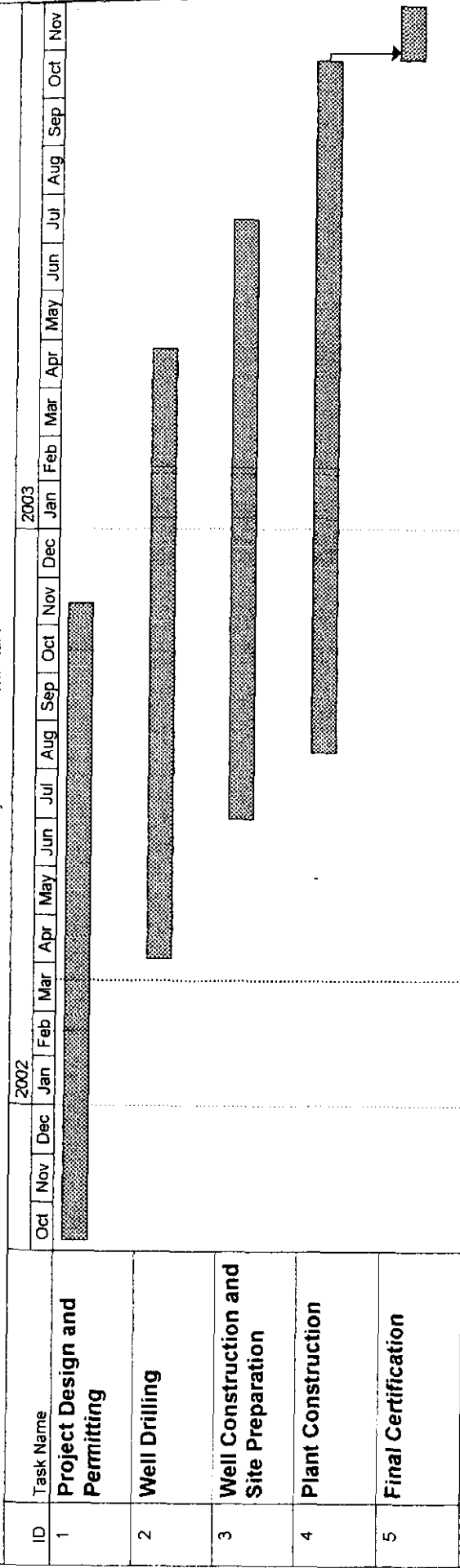
**4. LOCATION OF THE PROJECT**

The proposed plant and wellfield is located within the North Lee County Area west of I-75 and north of the Caloosahatchee River.

Figure 1 shows the project location.



North Lee County Water Treatment Plant



Project: North Lee County WTP  
Date: Thu 3/21/02